APPENDIX B

FIGURES

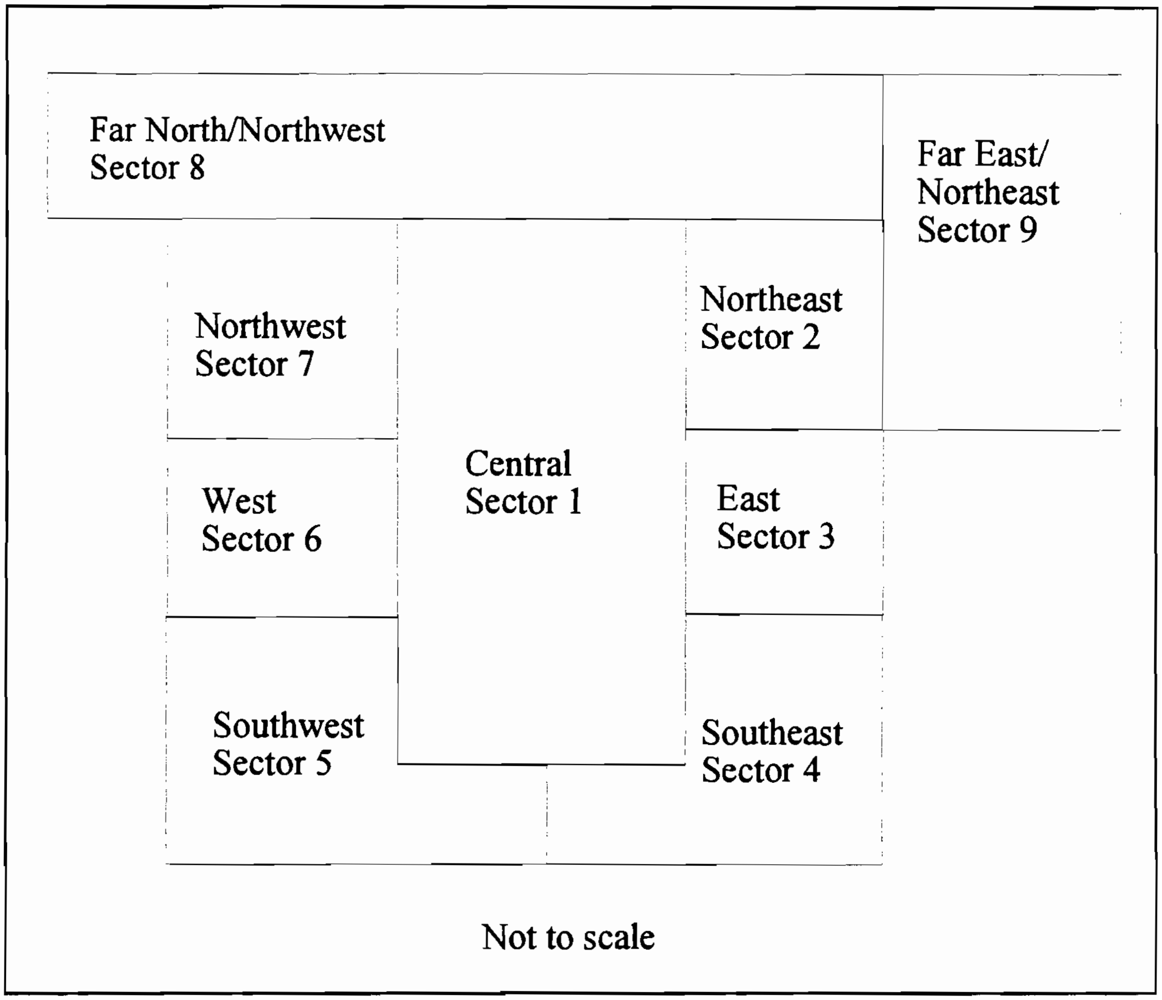

Fig. 1.1. Schematic diagram of WAG 6 sectors.

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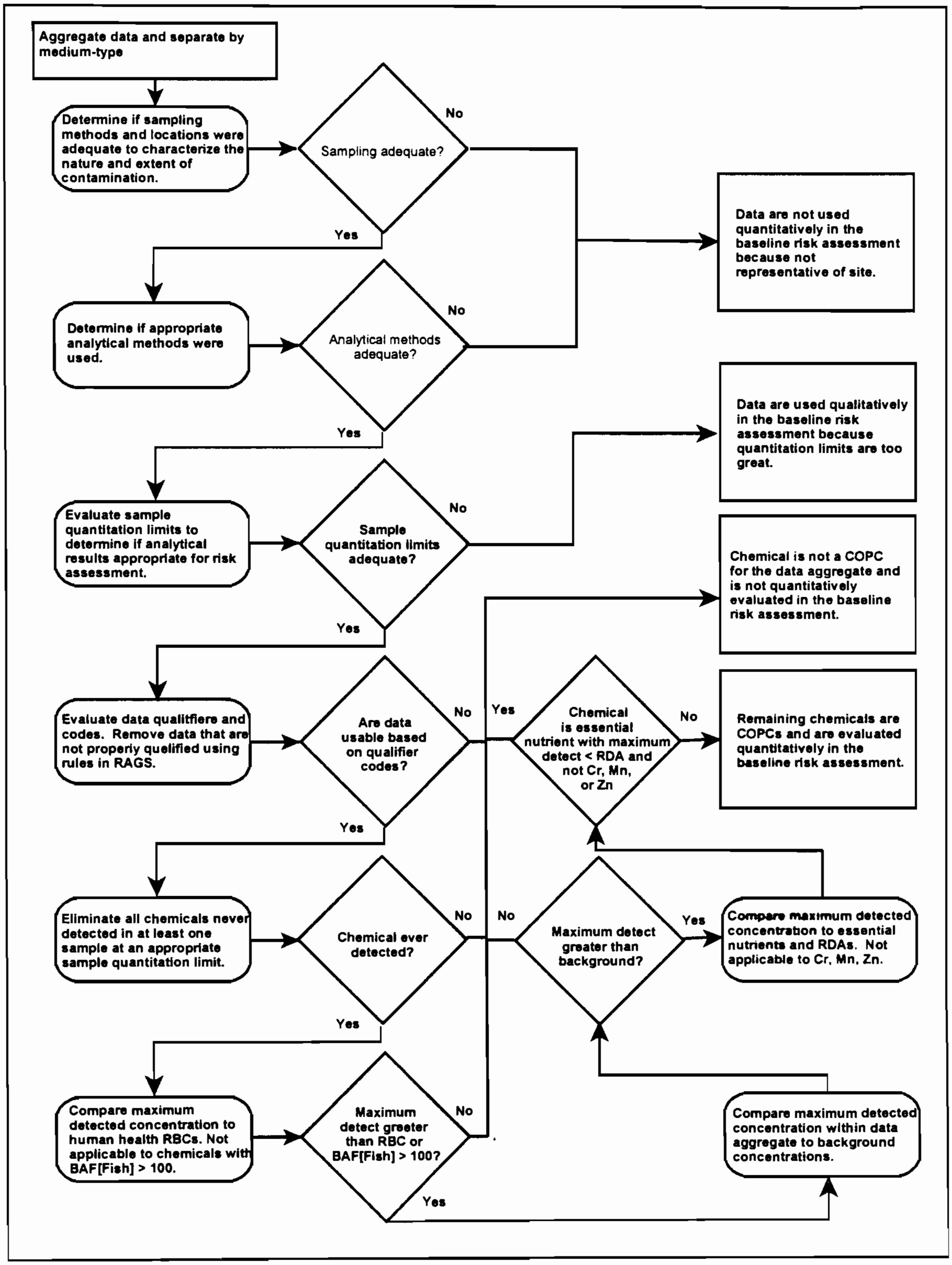

Fig. 1.2. Data evaluation steps.

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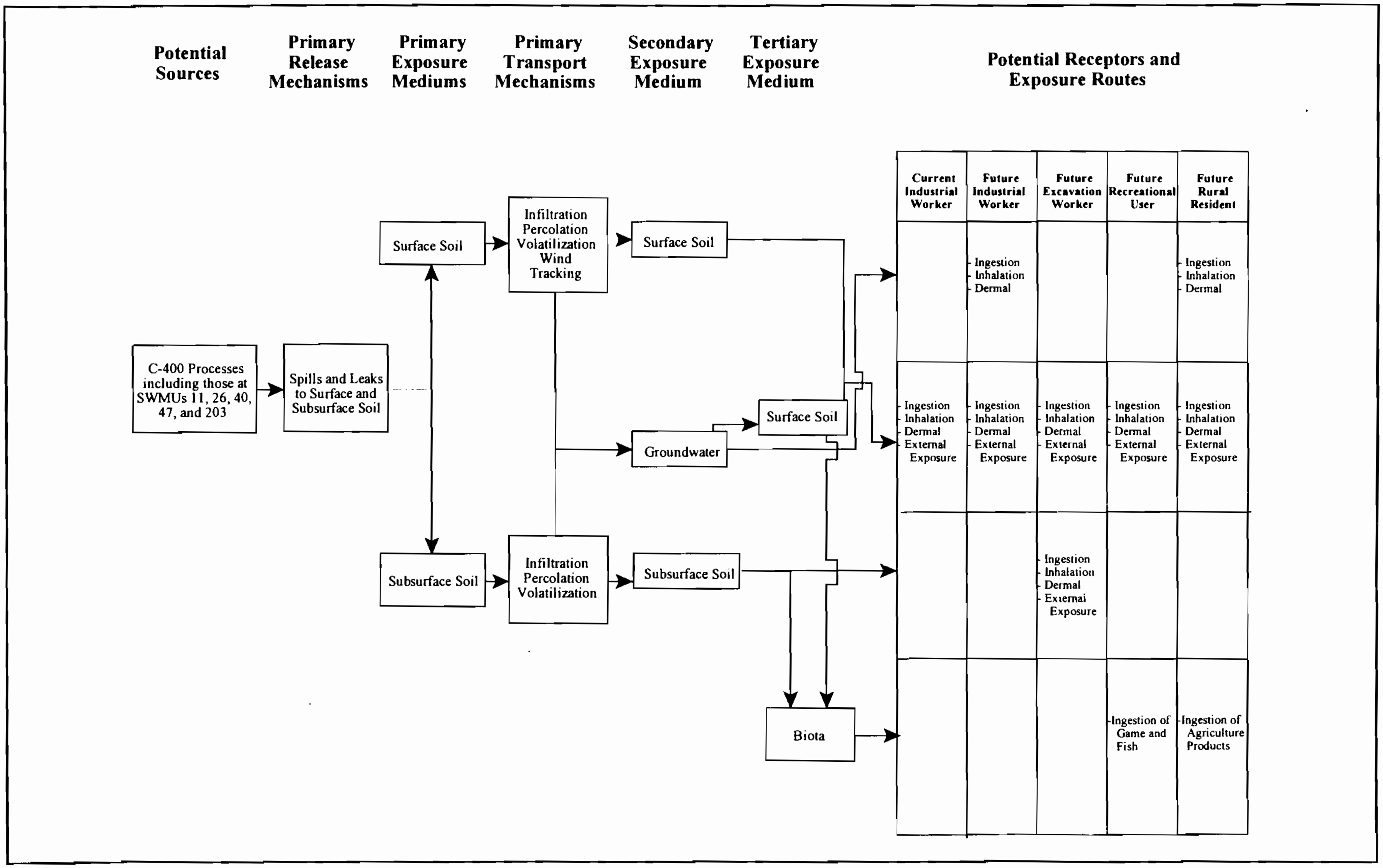

Fig. 1.8. Conceptual site model for the WAG 6 area and its sectors.

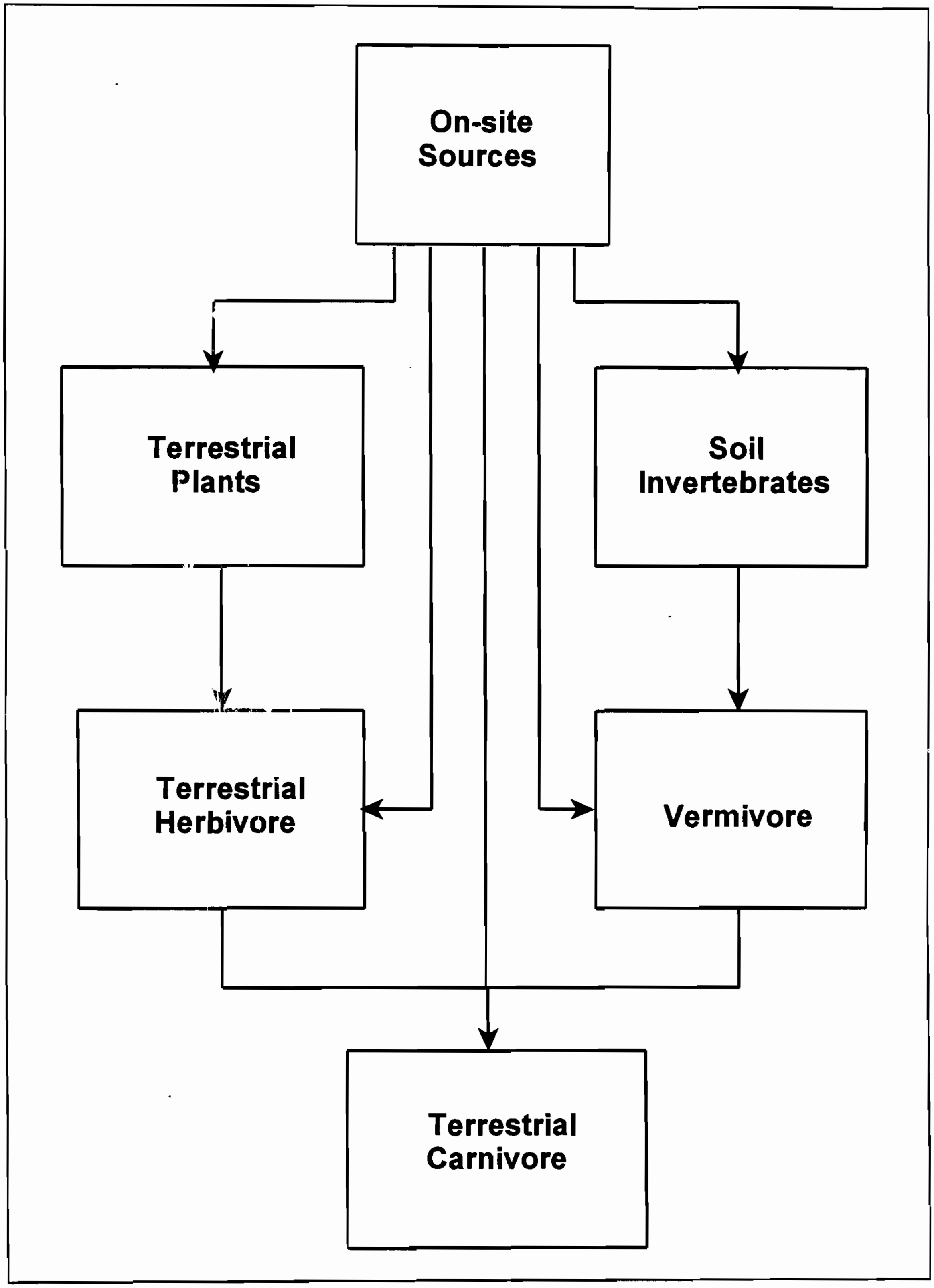

Fig. 2.1 Conceptual site model for ecological receptors at WAG 6.

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-23

DOE/OR/07-1727/V3a&D2
PRIMARY DOCUMENT

Remedial Investigation Report for Waste Area Grouping 6 at Paducah Gaseous Diffusion Plant Paducah, Kentucky

Volume 3a. Risk Assessment Main Text
Appendix A–Tables
Appendix B–Figures

Date Issued—May 1999

Prepared by
Toxicology and Risk Analysis Section
Life Sciences Division
Oak Ridge National Laboratory

for the
U.S. Department of Energy
Office of Environmental Management

Environmental Management Activities at the
PADUCAH GASEOUS DIFFUSION PLANT
Paducah, Kentucky 42002
managed by
BECHTEL JACOBS COMPANY LLC
for the
U.S. DEPARTMENT OF ENERGY
under contract DE-AC05-98OR22700

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PREFACE

This Remedial Investigation for Waste Area Grouping 6 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (Volume 3. Baseline Risk Assessment) (DOE/OR/07-1727/V3&D2) was prepared in accordance with the requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) and utilizes and references information found in Volumes 1 and 2 of this report. This document provides information on the baseline risks posed to human health and the environment from contamination at Waste Area Grouping (WAG) 6 that will be used to support the need for remedial action in WAG 6 and to assist in the selection of the remedial alternatives. This report was prepared under Work Breakdown Structure 1.4.12.7.1.09.06.03.01 (Activity Data Sheet 5309).

In accordance with Section IV of the draft *Federal Facilities Agreement for the Paducah Gaseous Diffusion Plant*, this integrated technical document was developed to satisfy both CERCLA and RCRA corrective action requirements. It is noted that the phases of the investigation process are referenced by CERCLA terminology within this document to reduce the potential for confusion.

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ACKNOWLEDGMENTS

This baseline risk assessment (BRA) was written and compiled by the WAG 6 BRA Report Team. This interdisciplinary team included R. R. Bonczek, F. G. Dolislager, C. J. E. Welsh, and L. D. Bloom.

The Team would like to thank the many support personnel in the Toxicology and Risk Analysis Section of the Life Sciences Division of Oak Ridge National Laboratory for their contributions to the report.

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CONTENTS

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530307

530308

530309

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APPENDIXES

530312

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EXHIBITS

Exhibits are presented in the text and summarize information found in tables.

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TABLES

Tables are located in Appendix A.

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FIGURES

All figures are presented in the text; however, all figures, except photographs, are also presented a second time in Appendix B. Figures in Appendix B are enlargements of the figures included within the text and are numbered similarly.

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EXECUTIVE SUMMARY

In 1997, the U.S. Department of Energy (DOE) conducted a Remedial Investigation/Resource Conservation and Recovery Act Facility Investigation for solid waste management units (SWMUs) 11, 26, 40, 47, and 203 in Waste Area Grouping (WAG) 6 at the Paducah Gaseous Diffusion Plant (PGDP) in Paducah, Kentucky. In addition, this remedial investigation included areas surrounding the C-400 Building that are not part of any recognized SWMU. The overall purpose of this activity was to determine the presence, nature, and extent of contamination at each of the SWMUs and in the C-400 area. The primary focus of the remedial investigation was to collect sufficient information about surface and subsurface soil and the shallow groundwater of the Upper Continental Recharge System (UCRS) contamination to support an assessment of risks to human health and the environment and the selection of actions to reduce these risks. In addition, contamination in the Regional Gravel Aquifer (RGA) and McNairy Formation was characterized to determine if contamination in the RGA acted as a secondary source of contamination to groundwater. Investigative activities included sampling and analysis of surface and subsurface soils, groundwater, and investigation derived waste.

This baseline risk assessment utilizes information collected during the recently completed remedial investigation of WAG 6 to characterize the baseline risks posed to human health and the environment from contact with contaminants in soil and ground water at SWMUs 11, 26, 40, 47, and 203 and at areas surrounding the C-400 Building that are not part of any recognized SWMU. In addition, this baseline risk assessment uses results of fate and transport modeling to estimate the baseline risks posed to human health and the environment through contact with media impacted by contaminants migrating from the various sources in WAG 6. (Note, baseline risks are those which may be present now or in the future in absence of corrective or remedial actions.) Methods used for fate and transport modeling are presented in Chapts. 4 and 5 of Vol. 1 of this report.

To facilitate data aggregation and to focus results on specific areas, this baseline risk assessment derives risk estimates for the sectors defined in Vol. 1 of this report in addition to the whole of WAG 6. The sectors and their definitions are as follows:

- Sector 1–the area under the C-400 Building.
- Sector 2–the area to the northeast of the C-400 Building. This sector contains SWMU 40.
- Sector 3–the area to the east of the C-400 Building. This sector does not contain a SWMU.
- Sector 4–the area to the southeast of the C-400 Building. This sector contains SWMU 11.
- Sector 5–the area to the southwest of the C-400 Building. This sector does not contain a SWMU.
- Sector 6–the area to the west of the C-400 Building. This sector contains SWMU 47.
- Sector 7–the area to the northwest of the C-400 Building. This sector contains SWMU 203.
- Sector 8–the area to the far north and northwest of the C-400 Building. This sector contains SWMU 26.
- Sector 9–the area to the far east and northeast of the C-400 Building. This sector does not contain a SWMU.

Consistent with regulatory guidance and previous agreements, the human health portion of this baseline risk assessment (BHHRA) evaluates scenarios which encompass current use and several hypothetical future uses of the WAG 6 area and areas to which contaminants from WAG 6 may migrate. These are as follows.

- Current onsite industrial—direct contact with surface soil (soil found 0 to 1 ft below ground surface).

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- Future onsite industrial—direct contact with surface soil at and use of groundwater drawn from aquifers below the WAG 6 area.
- Future onsite excavation scenario—direct contact with surface and subsurface soil (soil found 1 to 15 ft below ground surface).
- Future onsite recreational user—consumption of game exposed to contaminated surface soil.
- Future offsite recreational user—direct contact with surface water impacted by contaminants migrating from sources and consumption of game exposed to this surface water.
- Future onsite rural resident—direct contact with surface soil at and use of groundwater drawn from aquifers below the WAG 6 area, including consumption of vegetables that were posited to be raised in this area.
- Future offsite rural resident—use in the home of groundwater drawn from the RGA at the DOE property boundary.

This report also contains a baseline ecological risk assessment (BERA) for nonhuman receptors that may come into contact with contaminated media at or migrating from sources in the WAG 6 area. As with the BHHRA, the BERA utilizes information collected during the recently completed remedial investigation.

The reader should note that the information collected during the WAG 6 remedial investigation will also be used in the plant-wide baseline human health and ecological risk assessments for PGDP. These assessments will be completed at a future date as discussed in *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE/OR/07-1207&D2).

Major conclusions and observations of the BHHRA and BERA are presented below.

General

- For all sectors and the C-400 area, the cumulative human health excess lifetime cancer risk (ELCR) and systemic toxicity exceeds the accepted standards of the Kentucky Department of Environmental Protection (KDEP) and the United States Environmental Protection Agency (EPA) for one or more scenarios. The results for each scenario and sector combination are presented in ES.1. (Executive Summary tables are presented at the end of this Executive Summary.) More detailed summaries of the human health risk assessment results for all land uses, including contaminants of concern (COCs) and pathways of concern (POCs) are in Tables ES.2 to ES.11. Note, Tables ES.2 to ES.11 present the risk results calculated using default exposure parameters, exposure pathways, and toxicity values. Because there is considerable uncertainty in some of these exposure parameters, exposure pathways and toxicity values, four additional tables (Tables ES.12 through ES.15) present results of a quantitative uncertainty analysis. In this analysis, approved toxicity values and site-specific exposure parameters and exposure pathways are used to calculate risk estimates for the current and future industrial worker. Although Tables ES.2 to ES.11 summarize the risk results for all land uses, only the results for the current land use and the most plausible future land use are discussed in this Executive Summary.

- Because the WAG 6 area is located in the heavily industrialized portion of the Paducah Gaseous Diffusion Plant, the BERA concluded during problem formulation that it would not be appropriate to derive risk estimates for impacts to nonhuman receptors in the WAG 6 area under current conditions. However, in an analysis to determine potential impacts to nonhuman receptors exposed to contaminants in surface soil in the future if the industrial infrastructure was removed or abandoned and to estimate the potential impact of surface migration of contaminated media, several contaminants in surface soil were found to be at concentrations greater than those derived from ecological benchmarks for protection of nonhuman receptors. Table ES.16 summarizes these

530326

chemicals of potential ecological concern (COPECs), including those for which nonhuman toxicity information is lacking.

Baseline Human Health Risk Assessment–Specific

- The use of the provisional lead reference doses (RfDs) provided by KDEP resulted in total hazard indices (a measure of potential for the development of systemic toxic effects) that exceeded 1,000. However, when this provisional value was not included in the risk characterization, total hazard indices were less than 100 in most cases. Because the total hazard indices calculated using the provisional lead RfD were dominated by the hazard index of lead, the BHHRA contains a quantitative uncertainty analysis to determine the hazards presented by other COCs. (Note, all observations presented in this Executive Summary after this discussion do not include the quantitative risk contribution from lead. Therefore, the reader must take care when examining the risk characterization tables to determine if the reported results contain or do not contain lead as a COC.)

  Because of the uncertainty in the provisional RfD, the risk presented by lead may be better understood using comparisons to regulatory agency screening values and results of EPA's IEUBK lead model. The comparisons show that lead concentrations in soil in WAG 6 are below regulatory values; however, lead concentrations in groundwater exceed these values. Similarly, the results of the lead model indicate that the concentrations of lead found in groundwater are unacceptable.

- In the BHHRA, the dermal contact with soil exposure route poses considerable risk, and a significant portion of this risk comes from contact with metals in soil. In fact, for all land use scenarios evaluated, the systemic toxicity and the ELCR posed through the soil dermal contact exposure route exceeds that posed by the soil ingestion route. This result is due, in part, to the use of dermal absorption factors (ABS values) for metals that exceed gastrointestinal absorption values and may be too conservative. This observation indicates that the risk estimates for dermal exposure to metals in soil may be unrealistic and exceed the real risk posed by this route of exposure. Because of the uncertainty associated with risk from this exposure route, remedial decisions based on the dermal contact with soil exposure route should be carefully considered before taking action.

- Except for Sector 1, which does not have surface soil data because it is covered by the C-400 Building, the current land use scenario (industrial use) has risk that is unacceptable for each sector and for the WAG 6 area as a whole when dose is derived using default exposure durations and frequencies. At each location, the pathway driving systemic toxicity and ELCR is dermal contact with soil. The primary contaminants driving systemic toxicity and ELCR within this pathway are metals and polyaromatic hydrocarbons (PAHs). If site-specific exposure durations and frequencies are used at each sector and the WAG 6 area as a whole, then the systemic toxicity (not including contributions from lead) is below 1 for the WAG 6 area and all sectors, but the ELCR still exceeds 1×10^{-6} for the WAG 6 area and Sectors 2, 3, 5, 6, 7, and 8. Results of the BHHRA indicate that for the current industrial worker land use scenario, current institutional controls for WAG 6 should be maintained. Current risks are manageable under these conditions. (See Tables ES.12 through ES.15).

- The most plausible future land use scenario (industrial use) has risk that is unacceptable at each location when assessed using default exposure parameters. This result is consistent with those for the current industrial land use because the future industrial land use scenario is identical to the current industrial land use scenario except that the future industrial land use scenario also evaluates use of groundwater. Addition of groundwater as a medium of exposure adds significantly to the risk for this scenario. If groundwater contribution is removed from the risk totals, the pathway driving systemic toxicity and ELCR is dermal contact with soil. The primary contaminants driving systemic toxicity and ELCR within this pathway are metals and PAHs. As with the current industrial worker, if current

530327

institutional controls at PGDP are maintained then risks are manageable. (See Table ES.12 through ES.15).

- Inhalation of vapors and particulates emitted from soil is the only pathway evaluated that is not of concern for any of the WAG 6 sectors or for WAG 6 as a whole for the current use and most plausible future use scenarios (industrial use). [Note, unlike other assessments for the PGDP where this pathway is never of concern, this assessment determined that emission of vapors from soil was the driving pathway for ELCR to an excavation worker in Sectors 4 and 5 (Southeast and Southwest, respectively. The driving contaminant within this pathway was vinyl chloride.)]

- Risks from use of groundwater drawn from both the RGA and the McNairy Formation are unacceptable for all scenarios. For the RGA (ignoring contribution from lead as a metal), the contaminants driving systemic toxicity were iron and trichloroethene, and the contaminants driving ELCR were trichloroethene, vinyl chloride, and lead-210. For the McNairy Formation (ignoring contribution from lead as a metal), the contaminants driving systemic toxicity were arsenic and iron, and the contaminants driving ELCR were arsenic and lead-210.

- Contaminants of concern (COCs) in RGA groundwater at the DOE fence boundary for a future rural resident selected using a comparison between maximum modeled concentrations and human health risk-based concentrations are 1,1-dichloroethene; 1,2-dichloroethene; 2,4-dinitrotoluene; carbon tetrachloride; N-nitroso-di-n-propylamine; tetrachloroethene; *trans*-1,2-dichloroethene; trichloroethene, vinyl chloride; antimony; copper; iron; and manganese; and technetium-99. (Note, technetium-99 was placed on this list using professional judgement because technetium-99 sources in the RGA were not modeled.) This list of chemicals is similar to that developed in two earlier assessments for the Northwest Plume and is in agreement with the hypothesis that sources in WAG 6 are major contributors to that plume.

- The identification of PAHs as risk drivers in soil at WAG 6 is in agreement with earlier work. However, the significance of this finding needs to be considered along with the potential sources of PAHs previously and currently at PGDP. Generally, before taking action to address PAH contamination in soil at WAG 6, it may be prudent to consider how wide-spread PAH contamination is at PGDP, the continuing sources of PAH contamination at PGDP (e.g., motorized vehicles, asphalt roads), and the level of PAH contamination present at areas away from PGDP.

Baseline Ecological Risk Assessment–Specific

- No unacceptable future ecological risks are expected from exposure to radionuclides.

- No unacceptable future ecological risks were identified for the Sector 1 (Central).

- Nine inorganics and polychlorinated biphenyl (PCB)-1260 pose potential future ecological risks at one or more sectors (Table ES.16). Of these, arsenic, cadmium, chromium, thallium, uranium, and PCB-1260 may warrant concern while aluminum, iron, vanadium, and zinc are near background levels and are not likely to present significant risks to ecological receptors.

- Arsenic and cadmium appeared elevated in Sector 6(West). PCB-1260 was only of concern for wildlife in Sector 3 (East). Thallium was only of concern in Sector 3 (East) and Sector 5 (Southwest). Uranium appeared elevated relative to plant toxicity levels in all sectors except Sectors 1 and 4 (Central and Southeast, respectively). Chromium was a potential concern in all sectors except Sector 1 (Central).

Table ES.1. Land uses of concern for WAG 6

Scenario	Location (Sector Number)									
	WAG 6	1	2	3	4	5	6	7	8	9
Results for systemic toxicity[a]										
Current Industrial Worker	X[d]	NA	–	–	–	X	X	X[d]	–	X
Future Industrial Worker										
Exposure to Soil	X[d]	NA	–	–	–	X	X	X[d]	–	X
Exposure to Water[b]	X[d]									
Future Excavation Worker	X[d]	X	X	X[e]	X[d]	X[d]	X	X[d]	X[d]	X[d]
Future Recreational User	X[e]	NA	–	–	–	–	–	–	–	–
Future On Site Resident										
Exposure to Soil	X[d]	NA	X	X	X	X	X	X[d]	X	X
Exposure to Water[b]	X[d]									
Future Off Site Resident Exposure to Water[c]	X	–	–	–	X	X	–	X	X	–
Results for excess lifetime cancer risk										
Current Industrial Worker	X	NA	X	X	X	X	X	X	X	X
Future Industrial Worker										
Exposure to Soil	X	NA	X	X	X	X	X	X	X	X
Exposure to Water[b]	X									
Future Excavation Worker	X	X	X	X	X	X	X	X	X	X
Future Recreational User	X	NA	–	X	–	X	X	–	X	–
Future On Site Resident										
Exposure to Soil	X	NA	X	X	X	X	X	X	X	X
Exposure to Water[b]	X									
Future Off Site Resident Exposure to Water[c]	X	NA	X	X	X	X	X	X	X	–

Notes: Scenarios where risk exceeded the benchmark levels are marked with an X.
Scenarios where risk did not exceed a benchmark level are marked with a –.
NA indicates that the scenario/land use combination is not appropriate.

[a] For the future recreational user, the future teen recreational user results are used. For the future onsite resident, the results for exposure to a child are used.

[b] In the BHHRA, the risk from exposure to water was assessed on a WAG 6 area basis; therefore, these risks are not summed with those from exposure to soil. Additionally, the BHHRA assessed risks from use of water drawn from the RGA separately from use of water drawn from the McNairy Formation. The value reported here is for use of water from the RGA.

[c] Based on results of contaminant transport modeling. X indicates that the location contains a source of unacceptable offsite contamination.

[d] Even if contribution from lead is not considered, these remain of concern.

[e] If contribution from lead is not considered, then the total HI falls below 1, and the scenario is not of concern.

530329

Table ES.2. Summary for risk characterization for WAG 6 without lead as a COPC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations (soil only)	3.3×10^{-4}	Arsenic	5	Ingestion of soil	3	1.8	Aluminum	7	Dermal contact with soil	98
		Beryllium	28	Dermal contact with soil	95		Antimony	17	Ingestion of soil	2
		PAHs	65	External exposure to soil	2		Arsenic	5		
		PCBs	<1				Chromium	14		
		Cesium-137	1				Iron	29		
		Neptunium-237	<1				Vanadium	23		
		Uranium-238	<1							
Future industrial worker at current concentrations (RGA groundwater only)	2.7×10^{-3}	Arsenic	6	Ingestion of groundwater	85	37.7	Aluminum	1	Ingestion of groundwater	82
		Beryllium	8	Dermal contact with groundwater	8		Antimony	1	Dermal contact with groundwater	16
		1,1-Dichloroethene	1				Arsenic	3		
		Carbon tetrachloride	2	Inhalation while showering	7		Chromium	<1	Inhalation while showering	2
		Chloroform	<1				Iron	34		
		N-nitroso-di-n-propylamine	<1				Manganese	2		
		Tetrachloroethene	<1				Nitrate	<1		
		Trichloroethene	20				Vanadium	<1		
		Vinyl chloride	37				Carbon tetrachloride	5		
		Americium-241	<1				Trichloroethene	49		
		Cesium-137	<1				*cis*-1,2-Dichloroethene	1		
		Lead-210	24							
		Neptunium-237	<1							
		Technetium-99	<1							
		Thorium-228	<1							
		Uranium-238	<1							

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

Table ES.2. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future industrial worker at current concentrations (McNairy Formation groundwater only)	4.5×10^{-3}	Arsenic	31	Ingestion of groundwater	98	20.6	Aluminum	4	Ingestion of groundwater	94
		Beryllium	4	Dermal contact with groundwater	1		Arsenic	42	Dermal contact with groundwater	6
		1,1-Dichloroethene	<1	Inhalation while showering	<1		Chromium	3		
		Bromodichloromethane	<1				Iron	35		
		Chloroform	<1				Manganese	2		
		Dibromochloromethane	<1				Vanadium	9		
		Tetrachloroethene	<1				Zinc	1		
		Trichloroethene	<1				Di-N-octylphthalate	1		
		Vinyl chloride	2							
		Cesium-137	<1							
		Lead -210	59							
		Lead-212	<1							
		Neptunium-237	<1							
		Plutonium-239	<1							
		Potassium-40	<1							
		Technetium-99	<1							
		Thorium-228	<1							
		Thorium-234	2							
		Uranium-235	<1							
Future industrial worker at current concentrations (soil only)	3.3×10^{-4}	Arsenic	5	Ingestion of soil	3	1.8	Aluminum	7	Dermal contact with soil	98
		Beryllium	28	Dermal contact with soil	95		Antimony	17	Ingestion of soil	2
		PAHs	65	External exposure to soil	2		Arsenic	5		
		PCBs	1				Chromium	14		
		Cesium-137	<1				Iron	29		
		Neptunium-237	<1				Vanadium	23		
		Uranium-238	<1							

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

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Table ES.2. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI [a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future child rural resident at current concentrations (McNairy Formation groundwater only)	NA	NA	NA	NA	NA	224	Aluminum	4	Ingestion of groundwater	58
							Arsenic	44	Dermal contact with groundwater	2
							Barium	<1		
							Beryllium	<1	Consumption of vegetables	40
							Cadmium	<1	Inhalation from household use	<1
							Chromium	3		
							Cobalt	<1		
							Iron	36		
							Manganese	1		
							Nickel	<1		
							Selenium	<1		
							Vanadium	8		
							Zinc	2		
							1,1-Dichloroethene	<1		
							1,2-Dichloroethane	<1		
							Chloroform	<1		
							Di-N-octylphthalate	<1		
							Tetrachloroethene	<1		
							Trichloroethene	<1		
							cis-1,2-Dichloroethene	<1		

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

Table ES.2. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident at current concentrations (McNairy Formation groundwater only)	3.5×10^{-2}	Arsenic	33	Ingestion of groundwater	57	84.4	Aluminum	4	Ingestion of groundwater	64
		Beryllium	3	Dermal contact with groundwater	<1		Arsenic	44	Dermal contact with groundwater	2
		1,1-Dichloroethene	3				Barium	<1		
		1,2-Dichloroethane	<1	Inhalation while showering	<1		Cadmium	<1	Consumption of vegetables	34
		Bis(2-ethylhexyl)phthalate	<1	Consumption of vegetables	40		Chromium	3		
		Bromodichloromethane	<1				Iron	36		
		Chloroform	<1				Manganese	1		
		Dibromochloromethane	<1				Nickel	<1		
		Tetrachloroethene	<1				Selenium	<1		
		Trichloroethene	<1				Vanadium	8		
		Vinyl chloride	6				Zinc	2		
		Actinium-228	<1				Di-N-octylphthalate	<1		
		Cesium-137	<1				Trichloroethene	<1		
		Lead-210	43							
		Lead-212	<1							
		Neptunium-237	<1							
		Plutonium-239	<1							
		Potassium-40	<1							
		Technetium-99	10							
		Thorium-228	<1							
		Thorium-230	<1							
		Thorium-234	1							
		Uranium-234	<1							
		Uranium-235	<1							
		Uranium-238	<1							

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

Table ES.2. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	475	Aluminum	1	Ingestion of groundwater	44
							Antimony	<1	Dermal contact with groundwater	3
							Arsenic	2		
							Barium	<1	Consumption of vegetables	41
							Beryllium	<1	Inhalation while showering	<1
							Cadmium	<1	Inhalation from household use	10
							Chromium	<1		
							Cobalt	<1		
							Copper	<1		
							Iron	30		
							Manganese	1		
							Nickel	<1		
							Nitrate	<1		
							Silver	<1		
							Uranium	<1		
							Vanadium	<1		
							Zinc	<1		
							1,1-Dichloroethene	<1		
							Carbon tetrachloride	14		
							Chloroform	<1		
							Di-N-octylphthalate	<1		
							Tetrachloroethene	<1		
							Toluene	<1		
							Trichloroethene	46		
							cis-1,2-Dichloroethene	1		
							trans-1,2-Dichloroethene	<1		

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

Table ES.2. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident	6.4×10^{-2}	Arsenic	2	Ingestion of groundwater	17	169	Aluminum	2	Ingestion of groundwater	52
at current concentrations		Beryllium	2	Dermal contact with	<1		Antimony	<1	Dermal contact with	5
(RGA groundwater only)		1,1-Dichloroethene	1	groundwater			Arsenic	2	groundwater	
		Bromodichloromethane	<1	Inhalation while showering	1		Barium	<1	Consumption of vegetables	37
		Carbon tetrachloride	<1	Consumption of vegetables	69		Cadmium	<1	Inhalation while showering	<1
		Chloroform	<1				Chromium	<1	Inhalation from household	6
		N-nitroso-di-n-propylamine	<1				Copper	<1	use	
		Tetrachloroethene	<1				Iron	32		
		Trichloroethene	12				Manganese	1		
		Vinyl chloride	30				Nickel	<1		
		Americium-241	<1				Nitrate	<1		
		Cesium-137	<1				Silver	<1		
		Lead-210	6				Vanadium	<1		
		Neptunium-237	<1				Zinc	<1		
		Technetium-99	45				Carbon tetrachloride	10		
		Thorium-228	<1				Chloroform	<1		
		Thorium-230	<1				Tetrachloroethene	<1		
		Uranium-234	<1				Trichloroethene	48		
		Uranium-238	<1				*cis*-1,2-Dichloroethene	1		
							trans-1,2-Dichloroethene	<1		
Future child rural resident	NA	NA	NA	NA	NA	89.6	Aluminum	7	Ingestion of surface soil	1
at current concentrations							Antimony	5	Dermal contact with soil	12
(soil only)							Arsenic	19	Consumption of vegetables	87
							Beryllium	<1		
							Cadmium	<1		
							Chromium	4		
							Iron	40		
							Uranium	9		
							Vanadium	5		
							Zinc	<1		
							PAHs	<1		
							PCBs	9		

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

Table ES.2. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI [a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident at current concentrations (soil only)	1.3×10^{-2}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-234 Uranium-235 Uranium-238	14 4 77 2 <1 <1 <1 <1 1	Ingestion of soil Dermal contact with soil Consumption of vegetables External exposure	<1 7 92 <1	26.9	Aluminum Antimony Arsenic Cadmium Chromium Iron Uranium Vanadium PCBs PAHs	7 5 20 <1 4 41 9 4 9 <1	Ingestion of soil Dermal contact with soil Consumption of vegetables	<1 8 92
Future child recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations (soil only)	1.1×10^{-4}	PAHs PCBs	96 3	Ingestion of deer Ingestion of rabbit Ingestion of quail	69 22 9	<0.1	NE	NE	NE	NE
Future excavation worker at current concentrations (soil only)	2.6×10^{-3}	Arsenic Beryllium 1,1-Dichloroethene PAHs N-nitroso-di-n-propylamine PCBs Trichloroethene Vinyl chloride Cesium-137 Neptunium-237 Uranium-238	<1 3 <1 2 <1 <1 2 91 <1 <1 <1	Ingestion of soil Dermal contact with soil Inhalation of vapors and particulates External exposure to soil	2 7 91 <1	3.25	Aluminum Antimony Chromium Iron Manganese Vanadium Trichloroethene	3 3 5 14 6 10 50	Ingestion of soil Dermal contact with soil	12 88

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

530337

Table ES.3. Summary for risk characterization for Sector 1 without lead as a COPC

Receptor	Total ELCR[a]	COCs	% Total ELCR	POCs	% Total ELCR	Total HI[a]	COCs	% Total HI	POCs	% Total HI
Current industrial worker at current concentrations	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Future industrial worker at current concentrations	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE
Future adult rural resident at current concentrations	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE
Future adult recreational user at current concentrations	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Future excavation worker at current concentrations	2.0×10^{-6}	Cesium-137	83	Ingestion of soil External exposure	6 93	1.7	Antimony Chromium Iron	34 21 45	Ingestion of soil Dermal contact with soil	14 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern or land use not evaluated because contact with medium is not possible as long as C-400 Building exists..
[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included.

530338

Table ES.4. Summary for risk characterization for Sector 2 without lead as a COPC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	1.7×10^{-5}	PAHs Uranium-238	88 9	Dermal contact with soil External exposure	86 10	0.4	NE	NE	NE	NE
Future industrial worker at current concentrations	1.7×10^{-5}	PAHs Uranium-238	88 9	Dermal contact with soil External exposure	86 10	0.4	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	10.6	Chromium Uranium Zinc	55 40 4	Ingestion of soil Dermal contact with soil Consumption of vegetables	1 23 76
Future adult rural resident at current concentrations	8.1×10^{-4}	PAHs PCBs Uranium-235 Uranium-238	84 5 <1 11	Ingestion of soil Dermal contact with soil External exposure	<1 5 93	3.0	Chromium Uranium Zinc	51 44 5	Dermal contact with soil Consumption of vegetables	16 84
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	4.7×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future excavation worker at current concentrations	1.6×10^{-4}	Arsenic Beryllium PAHs N-nitroso-di-n-propylamine Uranium-234 Uranium-238	6 44 35 10 <1 3	Ingestion of soil Dermal contact with soil External exposure	17 81 2	1.2	Aluminum Antimony Chromium Manganese Vanadium	10 20 14 16 28	Ingestion of soil Dermal contact with soil	11 88

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 in Volume 3 without lead included. Also, values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.5. Summary human health risk characterization for Sector 3 without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	8.5×10^{-5}	PAHs PCBs Cesium-137 Uranium-238	52 37 6 3	Ingestion of soil Dermal contact with soil External exposure	8 82 10	0.3	NE	NE	NE	NE
Future industrial worker at current concentrations	8.5×10^{-5}	PAHs PCBs Cesium-137 Uranium-238	52 37 6 3	Ingestion of soil Dermal contact with soil External exposure	8 82 10	0.3	NE	NE	NE	NE
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	5.9×10^{-6}	PAHs PCBs	16 84	Ingestion of deer Ingestion of rabbit Ingestion of quail	10 86 5	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	13.3	Cadmium Chromium Uranium	5 31 63	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 14 84
Future adult rural resident at current concentrations	8.2×10^{-3}	PAHs PCBs Cesium-137 Neptunium-237 Uranium-235 Uranium-238	25 72 <1 <1 <1 2	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 3 96 <1	4.0	Cadmium Chromium Uranium	5 28 66	Dermal contact with soil Ingestion of vegetables	9 90
Future excavation worker at current concentrations	1.2×10^{-4}	Arsenic Beryllium PAHs PCBs Cesium-137	12 61 21 2 1	Ingestion of soil Dermal contact with soil External exposure	15 83 2	0.7	NE	NE	NE	NE

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.6. Summary human health risk characterization for Sector 4 (including SWMU 11) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	3.7×10^{-6}	PAHs	95	Dermal contact with soil	96	1.0	None	–	None	--
Future industrial worker at current concentrations	3.7×10^{-6}	PAHs	95	Dermal contact with soil	96	1.0	None	–	None	--
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	1.5×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	24.8	Aluminum Antimony Cadmium Chromium	59 9 2 29	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 23 76
Future adult rural resident at current concentrations	1.9×10^{-4}	PAHs PCBs	83 17	Ingestion of soil Dermal contact with soil Ingestion of vegetables	<1 5 94	7.1	Aluminum Antimony Cadmium Chromium	62 9 2 27	Dermal contact with soil Ingestion of vegetables	16 84
Future excavation worker at current concentrations	3.6×10^{-4}	Arsenic Beryllium 1,1-Dichloroethene PAHs PCBs Trichloroethene Vinyl chloride Cesium-137	3 22 1 11 <1 <1 61 <1	Ingestion of soil Dermal contact with soil Inhalation of vapors and particles External exposure	6 32 62 <1	1.6	Aluminum Antimony Chromium Iron Manganese Vanadium	7 6 10 29 12 20	Ingestion of soil Dermal contact with soil	15 85

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.7. Summary human health risk characterization for Sector 5 without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	4×10^{-4}	Beryllium PAHs Uranium-238	31 68 1	Ingestion of soil Dermal contact with soil External exposure	3 96 2	1.8	Antimony Chromium Iron	22 26 47	Dermal contact with soil	98
Future industrial worker at current concentrations	4×10^{-4}	Beryllium PAHs Uranium-238	31 68 1	Ingestion of soil Dermal contact with soil External exposure	3 96 2	1.8	Antimony Chromium Iron	22 26 47	Dermal contact with soil	98
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	2.5×10^{-5}	PAHs	99	Ingestion of deer Ingestion of rabbit Ingestion of quail	9 82 9	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	85.5	Antimony Beryllium Cadmium Chromium Iron Uranium Zinc PAHs	7 <1 <1 8 66 18 <1 <1	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 12 87
Future adult rural resident at current concentrations	1.4×10^{-2}	Beryllium PAHs PCBs Neptunium-237 Uranium-235 Uranium-238	5 92 <1 <1 <1 2	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 8 91 <1	25.6	Antimony Cadmium Chromium Iron Uranium	6 <1 7 67 19	Ingestion of soil Dermal contact with soil Ingestion of vegetables	<1 8 92
Future excavation worker at current concentrations	2.3×10^{-4}	Arsenic Beryllium PAHs N-nitroso-di-n-propylamine Vinyl chloride Cesium-137	6 34 21 10 27 <1	Ingestion of soil Dermal contact with soil Inhalation of particulates and vapors External exposure	12 60 27 1	1.6	Aluminum Antimony Chromium Iron Manganese Vanadium	7 15 9 30 12 18	Ingestion of soil Dermal contact with soil	15 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

530342

Table ES.8. Summary human health risk characterization for Sector 6 (including SWMU 47) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	1.1×10^{-3}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-238	3 9 86 <1 <1 <1 <1	Ingestion of soil Dermal contact with soil External exposure	3 95 1	1.2	Aluminum Antimony Arsenic Chromium PCBs	13 22 20 22 13	Dermal contact with soil	95
Future industrial worker at current concentrations	1.1×10^{-3}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-238	3 9 86 <1 <1 <1 <1	Ingestion of soil Dermal contact with soil External exposure	3 95 1	1.2	Aluminum Antimony Arsenic Chromium PCBs	13 22 20 22 13	Dermal contact with soil	95
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	3.2×10^{-5}	PAHs	98	Ingestion of deer Ingestion of rabbit Ingestion of quail	9 81 10	<0.1	NE	NE	NE	NE

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.8. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	119	Aluminum	6	Ingestion of soil	1
							Antimony	3	Dermal contact with soil	6
							Arsenic	36	Ingestion of vegetables	93
							Beryllium	<1		
							Cadmium	1		
							Chromium	3		
							Uranium	9		
							Zinc	<1		
							PAHs	2		
							PCBs	38		
Future adult rural resident at current concentrations	5.0×10^{-2}	Arsenic	9	Ingestion of soil	<1	36.4	Aluminum	6	Ingestion of soil	<1
		Beryllium	1	Dermal contact with soil	6		Antimony	3	Dermal contact with soil	4
		PAHs	88	Ingestion of vegetables	93		Arsenic	36	Ingestion of vegetables	96
		PCBs	1	External exposure	<1		Cadmium	1		
		Cesium-137	<1				Chromium	3		
		Neptunium-237	<1				Uranium	10		
		Uranium-234	<1				PAHs	2		
		Uranium-235	<1				PCBs	38		
		Uranium-238	<1							
Future excavation worker at current concentrations	5.5×10^{-4}	Arsenic	31	Ingestion of soil	29	2.1	Aluminum	7	Ingestion of soil	31
		Beryllium	14	Dermal contact with soil	69		Antimony	8	Dermal contact with soil	69
		PAHs	52	External exposure	2		Arsenic	50		
		PCBs	<1				Chromium	9		
		Cesium-137	<1				Vanadium	16		
		Neptunium-237	<1							
		Uranium-234	<1							
		Uranium-238	1							

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.9. Summary of human health risk characterization for Sector 7 (including SWMU 203) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	1.2×10^{-4}	Beryllium PAHs Uranium-238	85 14 <1	Dermal contact with soil	98	1.6	Antimony Chromium Iron Vanadium	6 26 36 30	Dermal contact with soil	99
Future industrial worker at current concentrations	1.2×10^{-4}	Beryllium PAHs Uranium-238	85 14 <1	Dermal contact with soil	98	1.6	Antimony Chromium Iron Vanadium	6 26 36 30	Dermal contact with soil	99
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	5.1×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	53.6	Antimony Beryllium Cadmium Chromium Iron Vanadium	3 <1 <1 12 75 9	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 18 81
Future adult rural resident at current concentrations	1.5×10^{-3}	Beryllium PAHs Uranium-238	41 55 4	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 24 75 <1	15.7	Antimony Chromium Iron Vanadium	3 10 78 8	Dermal contact with soil Ingestion of vegetables	12 88
Future excavation worker at current concentrations	1.3×10^{-4}	Arsenic Beryllium PAHs n-nitroso-di-n-propylamine PCBs Uranium-238	8 62 12 14 1 <1	Ingestion of soil Dermal contact with soil External exposure	13 86 1	1.7	Aluminum Antimony Chromium Iron Manganese Vanadium	7 12 11 29 12 22	Ingestion of soil Dermal contact with soil	14 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.10. Summary of human health risk characterization for Sector 8 (including SWMU 26) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	2.4×10^{-4}	Beryllium PAHs Neptunium-237 Uranium-238	93 5 <1 <1	Ingestion of soil Dermal contact with soil External exposure	<1 98 1	1.0	NE	NE	NE	NE
Future industrial worker at current concentrations	2.4×10^{-4}	Beryllium PAHs Neptunium-237 Uranium-238	93 5 <1 <1	Ingestion of soil Dermal contact with soil External exposure	<1 98 1	1.0	NE	NE	NE	NE
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	1.3×10^{-6}	None	--	None	--	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	18.8	Antimony Beryllium Cadmium Chromium Uranium	29 2 3 44 23	Ingestion of soil Dermal contact with soil Ingestion of vegetable	<1 31 68
Future adult rural resident at current concentrations	2.1×10^{-3}	Beryllium PAHs Neptunium-237 Uranium-235 Uranium-238	63 29 3 <1 4	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 34 65 <1	5.2	Antimony Cadmium Chromium Uranium	28 3 42 25	Dermal contact with soil Ingestion of vegetables	22 78

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
None = No COCs or POCs selected because all chemical-specific or pathway-specific risk values were below the benchmarks used for selection.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

530346

Table ES.10. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future excavation worker at current concentrations	2.3×10^{-4}	Arsenic	8	Ingestion of soil	27	4.4	Aluminum	3	Ingestion of soil	32
		Beryllium	38	Dermal contact with soil	45		Antimony	6	Dermal contact with soil	68
		PAHs	6	External exposure	28		Arsenic	2		
		Cesium-137	10				Chromium	12		
		Neptunium-237	5				Copper	8		
		Plutonium-239	<1				Iron	15		
		Technetium-99	7				Manganese	7		
		Uranium-234	3				Nickel	30		
		Uranium-235	<1				Uranium	17		
		Uranium-238	22							

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
None = No COCs or POCs selected because all chemical-specific or pathway-specific risk values were below the benchmarks used for selection.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

530347

Table ES.11. Summary human health risk characterization for Sector 9 without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	5.2×10^{-6}	PAHs Uranium-238	34 53	Dermal contact with soil External exposure	33 62	1.3	Aluminum Antimony Chromium	23 59 17	Dermal contact with soil	99
Future industrial worker at current concentrations	5.2×10^{-6}	PAHs Uranium-238	34 53	Dermal contact with soil External exposure	33 62	1.3	Aluminum Antimony Chromium	23 59 17	Dermal contact with soil	99
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	2.7×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	36.8	Aluminum Antimony Chromium Uranium	39 31 9 22	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 21 78
Future adult rural resident at current concentrations	2.7×10^{-4}	PAHs PCBs Uranium-235 Uranium-238	31 2 4 63	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 2 89 8	10.7	Aluminum Antimony Chromium Uranium	40 28 8 24	Dermal contact with soil Ingestion of vegetables	14 86
Future excavation worker at current concentrations	1.5×10^{-4}	Arsenic Beryllium PAHs Cesium-137 Uranium-238	18 74 4 1 2	Ingestion of soil Dermal contact with soil External exposure	12 85 2	2.7	Aluminum Antimony Arsenic Chromium Iron Manganese Vanadium	5 19 6 7 24 18 19	Ingestion of soil Dermal contact with soil	14 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.68 to 1.77 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table ES.2.

Table ES.12. Quantitative summary of uncertainties for the current industrial worker– excess lifetime cancer risk

Location	Default ELCR[a]	Site-specific ELCR[b]	Default ELCR minus common laboratory contaminants	Default ELCR calculated using EPA default dermal absorption values[c]	Default ELCR minus analytes infrequently detected	Lower-bound ELCR[d]
WAG 6	3.3×10^{-4}	2.1×10^{-5}	3.3×10^{-4}	4.1×10^{-5}	3.3×10^{-4}	2.6×10^{-6}
Sector 1	NV	NV	NV	NV	NV	NV
Sector 2	1.7×10^{-5}	1.1×10^{-6}	1.7×10^{-5}	3.8×10^{-6}	1.7×10^{-5}	2.4×10^{-7}
Sector 3	8.5×10^{-5}	5.4×10^{-6}	8.5×10^{-5}	3.0×10^{-5}	8.5×10^{-5}	1.9×10^{-6}
Sector 4	3.7×10^{-6}	2.3×10^{-7}	3.7×10^{-6}	5.9×10^{-7}	3.7×10^{-6}	3.8×10^{-8}
Sector 5	4.0×10^{-4}	2.6×10^{-5}	4.0×10^{-4}	4.5×10^{-5}	4.0×10^{-4}	2.9×10^{-6}
Sector 6	1.1×10^{-3}	7.3×10^{-5}	1.1×10^{-3}	1.5×10^{-4}	1.1×10^{-3}	9.8×10^{-6}
Sector 7	1.2×10^{-4}	7.9×10^{-6}	1.2×10^{-4}	5.7×10^{-6}	1.2×10^{-4}	3.7×10^{-7}
Sector 8	2.4×10^{-4}	1.5×10^{-5}	2.4×10^{-4}	9.8×10^{-6}	2.4×10^{-4}	6.2×10^{-7}
Sector 9	5.2×10^{-6}	3.3×10^{-7}	5.2×10^{-6}	3.7×10^{-6}	5.2×10^{-6}	2.3×10^{-7}

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.

[a] These values were derived using the default exposure rates for the reasonable maximum exposure scenario approved by regulatory agencies.

[b] These values were derived using site-specific exposure rates for general maintenance workers at PGDP. (See Subsect. 1.6.2.5.)

[c] The values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)

[d] These values were derived using site-specific exposure rates for general maintenance workers at PGDP and EPA default dermal absorption values and omitting contributions from common laboratory contaminants and infrequently detected analytes. The values should be used as a lower-bound estimates of risk when considering the appropriate actions to address contamination at WAG 6.

Table ES.13. Quantitative summary of uncertainties for the future industrial worker–excess lifetime cancer risk

Location	Default ELCR[a]	Site-specific ELCR[b]	Default ELCR minus common laboratory contaminants	Default ELCR calculated using EPA default dermal absorption values[c]	Default ELCR minus analytes infrequently detected	Lower-bound ELCR[d]
WAG 6 McNairy[e]	4.5×10^{-3}	4.5×10^{-3}	4.5×10^{-3}	4.5×10^{-3}	1.7×10^{-3}	1.7×10^{-3}
WAG 6 RGA[e]	2.7×10^{-3}	2.7×10^{-3}	2.7×10^{-3}	2.7×10^{-3}	2.1×10^{-3}	2.0×10^{-3}
WAG 6 soil	3.3×10^{-4}	3.3×10^{-4}	3.3×10^{-4}	4.1×10^{-5}	3.3×10^{-4}	4.1×10^{-5}
Sector 1	NV	NV	NV	NV	NV	NV
Sector 2	1.7×10^{-5}	1.7×10^{-5}	1.7×10^{-5}	3.8×10^{-6}	1.7×10^{-5}	3.8×10^{-6}
Sector 3	8.5×10^{-5}	8.5×10^{-5}	8.5×10^{-5}	3.0×10^{-5}	8.5×10^{-5}	3.0×10^{-5}
Sector 4	3.7×10^{-6}	3.7×10^{-6}	3.7×10^{-6}	5.9×10^{-7}	3.7×10^{-6}	5.9×10^{-7}
Sector 5	4.0×10^{-4}	4.0×10^{-4}	4.0×10^{-4}	4.5×10^{-5}	4.0×10^{-4}	4.5×10^{-5}
Sector 6	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.5×10^{-4}	1.1×10^{-3}	1.5×10^{-4}
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1.2×10^{-4}	5.7×10^{-6}	1.2×10^{-4}	5.7×10^{-6}
Sector 8	2.4×10^{-4}	2.4×10^{-4}	2.4×10^{-4}	9.8×10^{-6}	2.4×10^{-4}	9.8×10^{-6}
Sector 9	5.2×10^{-6}	5.2×10^{-6}	5.2×10^{-6}	3.7×10^{-6}	5.2×10^{-6}	3.7×10^{-6}

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.

[a] These values were derived using the default exposure rates for the reasonable maximum exposure scenario approved by regulatory agencies.

[b] These values were also derived using the default exposure rates for the reasonable maximum exposure scenario because it is unknown what the site-specific exposure rates may be in the future.

[c] These values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)

[d] These values were derived using default exposure rates for the reasonable maximum exposure scenario and EPA default dermal absorption values and omitting contributions from laboratory contaminants and infrequently detected analytes. The values should be used as lower-bound estimates of risk when considering the appropriate actions to address contamination at WAG 6.

[e] Values are for groundwater use by the future industrial worker.

530349

530350

Table ES.14. Quantitative summary of uncertainties for the current industrial worker–systemic toxicity

Location	Default HI[a]	Default HI w/o lead	Site-specific HI w/o lead[b]	Default HI minus common laboratory contaminants w/o lead	Default HI calculated EPA default dermal absorption values w/o lead[c]	Default HI minus analytes infrequently detected w/o lead	Lower-bound HI[d]
WAG 6	1,160	1.8	<1	1.8	<1	1.8	<1
Sector 1	NV	NV	NV	NV	NV	NV	NV
Sector 2	<1	<1	<1	<1	<1	<1	<1
Sector 3	<1	<1	<1	<1	<1	<1	<1
Sector 4	<1	<1	<1	<1	<1	<1	<1
Sector 5	1.8	1.8	<1	1.8	<1	1.8	<1
Sector 6	1.2	1.2	<1	1.2	<1	1.2	<1
Sector 7	1,890	1.6	<1	1.6	<1	1.6	<1
Sector 8	1.0	1.0	<1	1.0	<1	1.0	<1
Sector 9	1.3	1.3	<1	1.3	<1	1.3	<1

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.
<1 indicates that the hazard index is less than the *de minimis* level.

[a] These values were derived using the default exposure rates for the reasonable maximum exposure scenario approved by regulatory agencies.
[b] These values were derived using site-specific exposure rates for general maintenance workers at PGDP. (See Subsect. 1.6.2.5.)
[c] The values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)
[d] These values were derived using site-specific exposure rates for general maintenance workers at PGDP and EPA default dermal absorption values and omitting contributions from common laboratory contaminants and infrequently detected analytes. The values should be used as a lower-bound estimates of risk when considering the appropriate actions to address contamination at WAG 6.

530351

Table ES.15. Quantitative summary of uncertainties for the future industrial worker–systemic toxicity

Location	Default HI[a]	Default HI w/o lead	Site-specific HI w/o lead[b]	Default HI minus common laboratory contaminants w/o lead	Default HI calculated using EPA default dermal absorption values w/o lead[c]	Default HI minus analytes infrequently detected w/o lead	Lower-bound HI[d]
WAG 6 McNairy[e]	11,500	20.6	20.6	20.6	20.6	20.6	20.6
WAG 6 RGA[e]	3,320	37.7	37.7	37.7	37.7	37.7	37.7
WAG 6 soil	1,160	1.8	1.8	1.8	<1	1.8	<1
Sector 1	NV	NV	NV	NV	NV	NV	NV
Sector 2	<1	<1	<1	<1	<1	<1	<1
Sector 3	<1	<1	<1	<1	<1	<1	<1
Sector 4	<1	<1	<1	<1	<1	<1	<1
Sector 5	1.8	1.8	1.8	1.8	<1	1.8	<1
Sector 6	1.2	1.2	1.2	1.2	<1	1.2	<1
Sector 7	1,890	1.6	1.6	1.6	<1	1.6	<1
Sector 8	1.0	1	1	1.0	<1	1.0	<1
Sector 9	1.3	1.3	1.3	1.3	<1	1.3	<1

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.
<1 indicates that the hazard index is less than the *de minimis* level.

[a] These values were derived using the default exposure rates for the reasonable maximum exposure scenario approved by regulatory agencies.

[b] These values were also derived using the default exposure rates for the reasonable maximum exposure scenario because it is unknown what the site-specific exposure rates may be in the future.

[c] These values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)

[d] These values were derived using default exposure rates for the reasonable maximum exposure scenario and EPA default dermal absorption values and omitting contributions from laboratory contaminants and infrequently detected analytes. The values should be used as lower-bound estimates of risk when considering the appropriate actions to address contamination at WAG 6.

[e] Values are for groundwater use by the future industrial worker.

Table ES.16. Summary of chemicals[a] posing potential future risks[b] to nonhuman receptors

Location	Receptor	Chemicals of Potential Ecological Concern									
		Al	As	Cd	Cr	Fe	Tl	U	V	Zn	PCBs
Sector 1 (Central)		Not evaluated because all soil is under C-400 Building									
Sector 2 (Northeast)	Microbe	–	–		1.9	–		nb	–	–	nb
	Plant	–	–		19.3	nb		2.8	–	1.4	–
	Worm	nb	–		48.3	nb		nb	nb	–	nb
	Shrew	–	–		3.4	nb		–	–	–	–
	Mouse	–	–		–	nb		–	–	–	–
	Deer	–	–		–	nb		–	–	–	–
Sector 3 (East)	Microbe	–	–	–	1.8	–	nb	nb	–	–	nb
	Plant	–	–	–	18.2	nb	1.2	5.5	–	–	–
	Worm	nb	–	–	45.5	nb	nb	nb	nb	–	nb
	Shrew	–	–	–	2.4	nb	–	–	–	–	37.1
	Mouse	–	–	–	–	nb	–	–	–	–	5.2
	Deer	–	–	–	–	nb	–	–	–	–	–
Sector 4 (Southeast)	Microbe	23.7	–	–	2.4	–		nb	–	–	nb
	Plant	284.0	–	–	23.6	nb		–	–	–	–
	Worm	nb	–	–	59.0	nb		nb	nb	–	nb
	Shrew	92.1	–	–	4.2	nb		–	–	–	–
	Mouse	8.8	–	–	–	nb		–	–	–	–
	Deer	6.0	–	–	–	nb		–	–	–	–
Sector 5 (Southwest)	Microbe	–	–	–	4.8	185.0	nb	nb	–	1.1	nb
	Plant	–	–	–	48.0	nb	1.5	10.0	–	2.2	–
	Worm	nb	–	–	120.0	nb	nb	nb	nb	–	nb
	Shrew	–	–	–	3.7	nb	–	–	–	–	–
	Mouse	–	–	–	–	nb	–	–	–	–	–
	Deer	–	–	–	–	nb	–	–	–	–	–
Sector 6 (West)	Microbe	29.5	–	–	4.6	–		nb	–	–	nb
	Plant	354.0	4.5	1.4	45.8	nb		23.8	–	1.5	–
	Worm	nb	–	–	115.0	nb		nb	nb	–	nb
	Shrew	47.2	5.0	–	2.2	nb		–	–	–	–
	Mouse	4.5	–	–	–	nb		–	–	–	–
	Deer	3.1	–	–	–	nb		–	–	–	–
Sector 7 (Northwest)	Microbe	–	–	–	6.6	153.0		nb	2.1	–	
	Plant	–	–	–	66.0	nb		1.9	21.2	–	
	Worm	nb	–	–	165.0	nb		nb	nb	–	
	Shrew	–	–	–	3.6	nb		–	–	–	
	Mouse	–	–	–	–	nb		–	–	–	
	Deer	–	–	–	–	nb		–	–	–	
Sector 8 (Far North/ Northwest)	Microbe	–	–	–	2.7	–	nb	nb	–	–	
	Plant	–	–	–	27.2	nb	–	2.8	–	–	
	Worm	nb	–	–	68.0	nb	nb	nb	nb	–	
	Shrew	–	–	–	4.8	nb	–	–	–	–	
	Mouse	–	–	–	–	nb	–	–	–	–	
	Deer	–	–	–	–	nb	–	–	–	–	
Sector 9 (Far East/ Northeast)	Microbe	26.2	–		1.7	–		nb	–	–	nb
	Plant	314.0	–		16.8	–		5.2	–	–	–
	Worm	nb	–		42.0	–		nb	nb	–	nb
	Shrew	89.6	–		1.8	–		–	–	–	–
	Mouse	8.6	–		–	–		–	–	–	–
	Deer	5.8	–		–	–		–	–	–	–

530352

Table ES.16. (Continued)

Notes: Al = aluminum; As = arsenic; Cd = cadmium; Cr = chromium; Fe = iron; Tl = thallium; U = uranium; V = vanadium; Zn = zinc; PCBs = polychlorinated biphenyls.
– indicates that the hazard quotient for the chemical/receptor combination did not exceed 1 or the chemical was below background in that sector.
nb indicates that no toxicological benchmark was available for the chemical/receptor combination.
Blank cells indicate that the analyte was not detected in surface soil in the sector.

[a] The table includes values for those chemicals with a maximum concentration above background (or no background available) and a hazard quotient > 1.0. Analytes for which ecological benchmarks were not available are shown in Tables 2.1 and 2.2 of Volume 3.

[b] Values in this table are hazard quotients estimated by dividing the dose to the receptor by the benchmark dose.

530353

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1. BASELINE HUMAN HEALTH RISK ASSESSMENT

This baseline human health risk assessment (BHHRA) utilizes information collected during the recently completed remedial investigation of Waste Area Grouping (WAG) 6 to characterize the baseline risks posed to human health from contact with contaminants in soil and ground water at Solid Waste Management Units (SWMUs) 11, 26, 40, 47, and 203 and at areas surrounding the C-400 Building that are not part of any recognized SWMU in WAG 6. The BHHRA also uses information from the fate and transport modeling performed in Chapt. 5 of Vol. 1 of this report to estimate the baseline risks posed to human health through contact with media impacted by contaminants migrating from the various sources in WAG 6 to the points of exposure defined in *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* [United States Department of Energy (DOE)/OR/07-1207&D2] (DOE 1996a). Generally, baseline risks are defined as those which may be present now or in the future in absence of corrective or remedial actions.

The methods and presentations used in this BHHRA are consistent with those presented in *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant* (DOE/OR/07-1506&D1 as modified by regulatory comments) (DOE 1996b). That document, which integrates the human health risk assessment guidance from the United States Environmental Protection Agency (EPA) and the Kentucky Department of Environmental Protection (KDEP) and incorporates instructions contained in regulatory agency comments on earlier risk assessments performed for the Paducah Gaseous Diffusion Plant (PGDP), received final approval from the Commonwealth of Kentucky for use in environmental investigations and restoration activities at the PGDP in February 1998 (KDEP 1998).

Consistent with the "Methods Document" (DOE 1996b), this BHHRA is presented in nine sections. The first section reviews the results of previous risk assessments which are useful in understanding the risks posed to human health by contaminants at or migrating from the WAG 6 area. This section also presents sources of information that were used to complete the exposure assessment contained in this BHHRA. The second section describes the evaluation of data collected during the WAG 6 field investigation and identifies chemicals of potential concern (COPCs) for WAG 6. The third section documents the exposure assessment for WAG 6, including the characterization of the exposure setting, identification of exposure pathways, consideration of land use, determination of potential receptors, delineation of exposure points and routes (including development of the conceptual site model), and calculation of chronic daily intakes. The fourth section presents the toxicity assessment, including information on the noncarcinogenic and carcinogenic effects of the COPCs and the uncertainties in the toxicity information. The fifth section reports the results of the risk characterization for current and various future land uses and identifies contaminants, pathways, and land use scenarios of concern. The sixth section contains qualitative and quantitative analyses of the uncertainties affecting the results of the BHHRA. The seventh section summarizes the methods used in the BHHRA and presents the BHHRA's conclusions and observations. The eighth section uses the results of the BHHRA to develop site-specific risk-based remedial goal options (RGOs). The ninth section contains references.

Because of their length, all tables cited within this BHHRA are presented in App. A of Vol. 3. However, because some reviewers have noted in the past that such placement makes the information in the tables difficult to access, this BHHRA also includes exhibits within the text which summarize much of the material presented in the tables. Similarly, in response to comments made by some reviewers in the past, all figures cited in this BHHRA are presented in the text. However, to be consistent with past risk assessments, some of these figures are also presented in App. B.

530356

1.1 RESULTS OF PREVIOUS STUDIES

Four previous reports contain risk assessment results that are useful in understanding the risks posed by exposure to contaminants at or migrating from the WAG 6 area. These reports are:

- *Results of the Site Investigation, Phase I at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1991a);
- *Results of the Public Health and Ecological Assessment, Phase II* (CH2M Hill 1991b) [This report is Volume 6 of *Results of the Site Investigation, Phase II at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1992)];
- *Human Health Baseline Risk Assessment for the Northwest Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1993a); and,
- *Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant* (DOE 1994a).

In addition, Chapter 6 "Initial Evaluation" in *Integrated Remedial Investigation/Feasibility Study Work Plan for Waste Area Grouping 6 at Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1997a), contains a risk evaluation. In this evaluation, the maximum concentrations of chemicals and compounds detected in samples collected from WAG 6 media before the recently completed field investigation are compared to various risk-based concentrations, screening values, and regulatory values.

Finally, several studies that discuss the environmental conditions around WAG 6 were used in the preparation of this report. These studies were primarily used to complete the exposure assessment step of the BHHRA and are not summarized in detail here. These reports include:

- *Report of the Paducah Gaseous Diffusion Plant, Groundwater Investigation Phase III* (Claussen *et al.* 1992a);
- *Northeast Plume Preliminary Characterization Summary Report* (DOE 1995a);
- *Phase I: Paducah Gaseous Diffusion Plant, Waste Area Group 6 Industrial Hydrology Study* (DOE 1996c); and,
- *Environmental Investigations at the Paducah Gaseous Diffusion Plant and Surrounding Area, McCracken County, Kentucky* [United States Army Corps of Engineers (COE) 1994].

The remainder of this section of the BHHRA presents the results of the previous risk assessments and risk evaluations listed earlier. The methods used in the previous risk assessment are <u>not</u> consistent with those prescribed in the Methods Document. Therefore, the results reported in the following subsections are presented for comparison only and should be considered preliminary to the results reported later in the BHHRA. The results in the Phase I investigation (CH2M Hill 1991a) and in the two baseline risk assessments for the Northwest Plume are presented first below because each of these deals with risks posed to offsite users through use of groundwater that may contain contaminants originating from sources within WAG 6. Results concerning exposure to contamination at WAG 6 taken from the Public Health and Ecological Assessment (CH2M Hill 1991b) and the WAG 6 work plan are presented last.

1.1.1Results in *Results of the Site Investigation, Phase I at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1991a)

The Phase I investigation evaluated the nature and extent of offsite contamination originating at the PGDP and determined risk presented by this contamination to offsite receptors. In the investigation, risk from chemicals and radionuclides found offsite were characterized using methods described in EPA's *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Part A* (RAGS) (EPA

530357

1989a). Although this guidance document is primary among those used in preparation of the Methods Document, the methods used in the Phase I assessment are not consistent with those in the Methods Document. The primary reason for this is that the methods used in the assessment in the Phase I investigation do not incorporate guidance developed later by the regulatory community [e.g., *Supplement Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment* (EPA 1995a) and *Risk Assessment Guidance* (KDEP 1995)].

Of the risk assessment results in the Phase I report, the most relevant to WAG 6 is that for offsite users of groundwater drawn from the Regional Gravel Aquifer (RGA). These results are most relevant to the WAG 6 area because that area is a primary source of offsite contamination in this aquifer. (See Vol. 1 of this report).

The results of the risk assessment of groundwater usage are discussed in Subsect. 6.5 "Risk Characterization" of the Phase I report and tabulated in App. 6C and 6D of that report. The results found there are presented in Tables 1.1, 1.2, and 1.3 of this volume and are summarized in the following exhibits. [Note, all tables can be found in App. A of this volume. Tables are not presented within the text portion of this document because several of these tables are very large (i.e., over 25 pages in length), and such a presentation would make the text portion of the risk assessment difficult to use. However, exhibits summarizing the information in the large tables are presented within in text.]

Exhibit 1.1. Excess lifetime cancer risk and hazard indices from chemicals in groundwater–residential use

Well Category and Exposure Assumptions[a]	Excess Lifetime Cancer Risk			Hazard Index		
	Ingestion	Inhalation[b]	Total	Ingestion	Inhalation[b]	Total
Average Exposure Assumptions						
Residential	2×10^{-5}	2×10^{-5}	4×10^{-5}	0.6	0.3	0.9
Monitoring	1×10^{-5}	6×10^{-6}	2×10^{-5}	1.1	<0.1	1.1
TVA	5×10^{-5}	7×10^{-7}	6×10^{-5}	0.5	<0.1	0.5
Maximum Exposure Assumptions						
Residential	3×10^{-4}	4×10^{-4}	7×10^{-4}	2.0	0.7	2.7
Monitoring	1×10^{-4}	9×10^{-5}	2×10^{-4}	3.8	0.1	3.9
TVA	7×10^{-4}	2×10^{-5}	7×10^{-4}	1.7	<0.1	1.7

[a] See Chapter 4 *in* CH2M Hill 1991a for a description of well categories. The residential well category may include wells not completed in the RGA. See Table 6-29 and the discussion in Subsect. 6.4.5.1 *in* CH2M Hill 1991a for descriptions of exposure assumptions and dose calculations.

[b] The dose from inhalation was estimated using dose from ingestion. See Subsect. 6.4.5.1 *in* CH2M Hill 1991a.

As shown in Exhibit 1.1, total ELCRs from residential use of offsite groundwater exceed the *de minimis* level defined in the Methods Document (i.e., 1×10^{-6}) for all well categories under average and maximum exposure assumptions. Hazard indices for all well categories exceed the *de minimis* level defined in the Methods Document (i.e., 1) for all well categories under maximum exposure assumptions but only for the monitoring well category under average exposure assumptions.

As shown in Tables 1.1 and 1.2, the contaminants in groundwater contributing most to ELCRs and hazard indices are relatively consistent between well categories. For ELCR, the primary contaminants over all well categories are trichloroethene, arsenic, and bis(2-ethylhexyl)phthalate. For hazard indices, the primary

530358

contaminants over all well categories are various metals, carbon tetrachloride, and bis(2-ethylhexyl)phthalate.

As shown in Exhibit 1.2, total cancer incidence from ingestion of radionuclides in groundwater during residential use exceeds *de minimis* levels for all well categories under both average and upperbound exposure. As shown in Table 1.3, the primary contaminants in groundwater over all well categories are ^{234}U, ^{238}U, and ^{99}Tc.

Exhibit 1.2. Excess total cancer incidence from radionuclides in groundwater–residential use

Well Category[a]	Average Exposure Assumptions[b]	Upperbound Exposure Assumptions
Residential	4×10^{-6}	5×10^{-5}
Monitoring	3×10^{-6}	5×10^{-5}
TVA	1×10^{-5}	3×10^{-4}

a See Chapter 4 *in* CH2M Hill 1991a for a description of well categories. The residential well category may include wells not completed in the RGA.

b See Table 6-51 and the discussion in Subsect. 6.5.2.2 *in* CH2M Hill 1991a descriptions of exposure assumptions and dose calculations.

Uncertainties in the Phase I risk assessment and the effects of uncertainty on the risk characterization are presented in Table 6-66 of the Phase I report. Most uncertainties discussed in that table are common to all risk assessments (e.g., uncertainties related to cancer potency factors, toxicity values, effect of absorption, magnitude of exposure factors, assumption of additive effects, etc.); however, three specific uncertainties make the results of the Phase I assessment differ markedly from those presented later in this BHHRA. These are:

- The exposure assessment in the Phase I assessment did not consider all possible pathways and routes of exposure. For example, dermal contact with groundwater was not assessed quantitatively. Although this pathway often contributes little to cumulative risk in most risk assessments, its absence reduced the estimate of cumulative risk. Similarly, the exposure assessment did not consider consumption of foods that may be raised using contaminated groundwater.

- Current concentrations were used to determine potential future risk. Because the source of contamination was not determined before the Phase I assessment was performed, it was not possible to determine how much contaminant concentrations may increase or decrease in the future. Therefore, there is considerable uncertainty in the estimate of future risk.

- Because measured concentrations were used to develop the representative concentrations of contaminants in groundwater, all sources of contamination at the PGDP are integrated in the risk estimates. That is, the results are not specific to the contamination that is originating at WAG 6.

1.1.2 Results in *Human Health Baseline Risk Assessment for the Northwest Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1993a)

This investigation evaluated the nature and extent of contamination in the RGA in the Northwest Plume and determined risk presented by this contamination to groundwater users. In the investigation, risk from chemicals and radionuclides found in groundwater were characterized using methods described in EPA's RAGS. As with the Phase I investigation, the methods used in the assessment are <u>not</u> consistent with those in the Methods Document. Again, the primary reason for the inconsistencies is that the methods used in the assessment do not incorporate guidance developed later by the regulatory community [e.g., *Supplement Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment* (EPA 1995a) and *Risk Assessment Guidance* (KDEP 1995)].

The results of the risk assessment of groundwater usage are discussed in Subsect. 5 "Risk Characterization" of the report (DOE 1993a) and tabulated in Tables 5.1 through 5.10 of that report. The results found there are presented in Tables 1.4 through 1.7 of this volume and are summarized in the following exhibits.

As shown in Exhibit 1.3, total ELCRs from residential use of groundwater taken from the Northwest Plume exceed the *de minimis* level defined in the Methods Document (i.e., 1×10^{-6}) for all well categories. However, as shown in Exhibit 1.4, only the High trichloroethene (TCE)/^{99}Tc Plume category has a total hazard index which exceeds the *de minimis* level defined in the Methods Document (i.e., 1). For both ELCR and hazard index, the exposure routes contributing most were ingestion of groundwater and consumption of vegetables irrigated with groundwater.

Exhibit 1.5 displays the contaminants in groundwater contributing most to ELCR. For the High TCE/^{99}Tc Plume category, which may be most relevant to the WAG 6 investigation, the contaminants contributing most to excess cancer risk were bis(2-chloroethyl)ether and trichloroethene. Similarly, Exhibit 1.6 shows the contaminants in groundwater contributing most to hazard indices. For the High TCE/^{99}Tc Plume category, the contaminants contributing most to the hazard index were carbon tetrachloride, chloroform, and bromodichloromethane.

Exhibit 1.3. Excess lifetime cancer risk from chemicals in groundwater–residential use

Well Category[a]	Excess Lifetime Cancer Risk					
	Ingestion	**Inhalation**	**Dermal**	**Vegetables**	**Beef & Milk[b]**	**Total**
High TCE/^{99}Tc Plume	3×10^{-4}	2×10^{-4}	1×10^{-5}	2×10^{-3}	1×10^{-5}	3×10^{-3}
TCE/^{99}Tc Plume	3×10^{-5}	9×10^{-6}	1×10^{-6}	5×10^{-5}	4×10^{-5}	1×10^{-4}
Outside the Plume	1×10^{-5}	NV[c]	2×10^{-7}	2×10^{-6}	3×10^{-7}	1×10^{-5}
Reference[d]	3×10^{-5}	NV	3×10^{-6}	1×10^{-5}	6×10^{-6}	5×10^{-5}
Naturally Occurring Metals[e]	2×10^{-4}	NV	6×10^{-7}	7×10^{-5}	6×10^{-6}	3×10^{-4}

[a] Wells were grouped according to the concentration of trichloroethene found in groundwater samples. See Table 2.1 *in* DOE 1993a for a list of wells by group.

[b] Risks presented are the sum of risks from consumption of milk and meat from cows drinking contaminated groundwater.

[c] NV indicates no value was reported for the exposure route in the assessment.

[d] Contaminant concentrations in other well categories were compared to concentrations in reference wells. As a result of this comparison, some contaminants were removed from the analysis; therefore, risks for the categories High trichloroethene (TCE)/^{99}Tc Plume, TCE/^{99}Tc Plume, and Outside the Plume may be greater than reported.

[e] Naturally occurring metals were assessed separately for each well category. The results presented are for the High TCE/^{99}Tc category. Results for other categories were similar.

530360

Exhibit 1.4. Hazard Indices from chemicals in groundwater–residential use

Well Category[a]	Hazard Index					
	Ingestion	Inhalation	Dermal	Vegetables	Beef & Milk[b]	Total
High TCE/^{99}Tc Plume	0.4	<0.1	<0.1	1.5	<0.1	1.9
TCE/^{99}Tc Plume	0.1	<0.1	<0.1	0.4	0.1	0.6
Outside the Plume	0.3	NV[c]	<0.1	<0.1	<0.1	0.4
Reference[d]	0.3	<0.1	<0.1	0.1	<0.1	0.4
Naturally Occurring Metals[e]	1.2	NV	<0.1	1.8	0.7	4.5

[a] Wells were grouped according to the concentration of trichloroethene found in groundwater samples. See Table 2.1 *in* DOE 1993a for a list of wells by group.
[b] Risks presented are the sum of risks from consumption of milk and meat from cows drinking contaminated groundwater.
[c] NV indicates no value was reported for the exposure route in the assessment.
[d] Contaminant concentrations in other well categories were compared to concentrations in reference wells. As a result of this comparison, some contaminants were removed from the analysis; therefore, risks for the categories High TCE/^{99}Tc Plume, TCE/^{99}Tc Plume, and Outside the Plume may be greater than reported.
[e] Naturally occurring metals were assessed separately for each well category. The results presented are for the High TCE/^{99}Tc category. Results for other categories were similar.

Exhibit 1.5. Contaminants[a] contributing to excess lifetime cancer risk by well category

Well Category[b]	Excess Lifetime Cancer Risk	
	Contaminants	Total Risk
High TCE/^{99}Tc Plume	bis(2-chloroethyl)ether (52%); trichloroethene (41%) bromodichloromethane (3%); carbon tetrachloride (2%) technetium-99 (1%)	3×10^{-3}
TCE/^{99}Tc Plume	dieldrin (60%); trichloroethene (18%); 1,2-dichloroethane (15%); bis(2-ethylhexyl)phthalate (4%) technetium-99 (2%)	1×10^{-4}
Outside the Plume	uranium-238 (54%); uranium-234 (21%) bis(2-ethylhexyl)phthalate (21%)	1×10^{-5}
Reference[c]	bis(2-ethylhexyl)phthalate (98%)	5×10^{-5}
Naturally Occurring Metals[d]	arsenic (100%)	3×10^{-4}

[a] Contaminants contributing more than 1% of total risk are shown.
[b] Wells were grouped according to the concentration of trichloroethene found in groundwater samples. See Table 2.1 *in* DOE 1993a for a list of wells by group.
[c] Contaminant concentrations in other well categories were compared to concentrations in reference wells. As a result of this comparison, some contaminants were removed from the analysis; therefore, total risks for the categories High TCE/^{99}Tc Plume, TCE/^{99}Tc Plume, and Outside the Plume may be greater than reported.
[d] Naturally occurring metals were assessed separately for each well category. Contaminants listed here were for naturally occurring metals found in the High TCE/^{99}Tc Plume well category.

530361

Exhibit 1.6. Contaminants[a] contributing to hazard index by well category

Well Category[b]	Hazard Index	
	Contaminants	Total Risk
High TCE/^{99}Tc Plume	carbon tetrachloride (68%); chloroform (18%); bromodichloromethane (9%), uranium (4%)	1.9
TCE/^{99}Tc Plume	2-butanone (48%); dieldrin (34%); uranium (10%) bis(2-ethylhexyl)phthalate (6%); xylene (2%)	0.6
Outside the Plume	uranium (94%); bis(2-ethylhexyl)phthalate (6%)	0.4
Reference[c]	bis(2-ethylhexyl)phthalate (95%); uranium (5%)	0.4
Naturally Occurring Metals[d]	copper (40%); arsenic (33%); cyanide (16%); silver (6%); barium (4%); cadmium (2%)	3.7

[a] Only those contaminants contributing more than 1% of total risk are shown.
[b] Wells were grouped according to the concentration of trichloroethene found in groundwater samples. See Table 2.1 *in* DOE 1993a for a list of wells by group.
[c] Contaminant concentrations in other well categories were compared to concentrations in reference wells. As a result of this comparison, some contaminants were removed from the analysis; therefore, total risks for the categories High TCE/^{99}Tc Plume, TCE/^{99}Tc Plume, and Outside the Plume may be greater than reported.
[d] Naturally occurring metals were assessed separately for each well category. Contaminants listed here were for naturally occurring metals found in the High TCE/^{99}Tc Plume well category.

Uncertainties in the assessment in DOE 1993a and the effects of uncertainty on the risk characterization are summarized in Subsect. 5.4 of that report. As noted in that summary, the greatest uncertainty is related to the use of models to estimate contaminant concentrations in biota, the effect contaminants that are rarely detected have on the final risk estimates, the effect common laboratory contaminants have on the final risk estimates, and the use of unfiltered water samples to estimate exposure concentrations. As always, these uncertainties are common to all risk assessments and should be considered when the risk results are utilized; however, two uncertainties make the results of that assessment differ markedly from those presented later in this BHHRA. These are:

- Current concentrations were used to determine potential future risk. Because the source of contamination was not determined before the assessment was performed, the assessment does not consider how much contaminant concentrations may increase or decrease in the future. Therefore, considerable uncertainty exists in the estimate of future risk.

- Because measured concentrations were used to develop the representative concentrations of contaminants in groundwater, all sources of contamination at the PGDP are integrated in the risks estimates. That is, the results are not specific to the contamination that is originating at WAG 6.

1.1.3 Results in *Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1994a)

This investigation evaluated the nature and extent of offsite contamination in the RGA in the Northwest Plume and determined risk presented by this contamination to groundwater users. However, unlike the earlier investigations, which focused only on risk under current conditions, this assessment focused on both risk under current conditions and risk because of changes in contaminant concentrations over time, assuming that the onsite sources of the Northwest Plume (i.e., those sources that are within the controlled area at PGDP) were contained. In the assessment, risk from chemicals and radionuclides found in groundwater were characterized using methods described in EPA's RAGS. However, as with the assessments reviewed in

530362

Subsect. 1.1.1 and 1.1.2, the methods used are not consistent with those in the Methods Document. Again, the primary reason for the inconsistencies is that the methods used in this assessment do not incorporate guidance developed later by the regulatory community [e.g., *Supplement Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment* (EPA 1995a) and *Risk Assessment Guidance* (KDEP 1995)].

The results of the risk assessment of groundwater usage are discussed in Subsect. 5.5 "Risk Characterization" of DOE 1994a and tabulated in Tables 5.51 through 5.111 of that report. Because the volume of the material in the report is so large and because the modeling contained in DOE 1994a was deemed suspect by regulatory agencies, only the results for exposure to contaminants under current conditions are reported here. These results are presented in Tables 1.8 and 1.9 of this volume and are summarized in the following exhibits.

As shown in Exhibit 1.7, total ELCRs from rural residential use of groundwater taken from the Northwest Plume exceed the *de minimis* level defined in the Methods Document (i.e., 1×10^{-6}) for all well categories. However, as shown in Exhibit 1.8, only the Plume Centroid, Dissolved Plume, and Near Shawnee Steam Plant categories have a total hazard index that exceeds the *de minimis* level defined in the Methods Document (i.e., 1). For both ELCR and hazard index, the exposure routes contributing most were ingestion of groundwater and consumption of either vegetables or animal products (i.e., biota) raised using contaminated groundwater.

As shown in Exhibit 1.9, the contaminants in groundwater contributing most to ELCRs varied between the well categories. For the Plume Centroid category, which may be most relevant to the WAG 6 investigation, the contaminants contributing most to excess cancer risk were vinyl chloride, bis(2-chloroethyl)ether, trichloroethene, and technetium-99.

Exhibit 1.7. Excess lifetime cancer risk from chemicals in groundwater–rural residential use

Well Category[a]	Excess Lifetime Cancer Risk					
	Ingestion	Inhalation	Dermal[b]	Vegetables	Biota[c]	Total[d]
Plume Centroid	1×10^{-3}	8×10^{-5}	1×10^{-6}	3×10^{-3}	4×10^{-4}	5×10^{-3}
Dissolved Plume	2×10^{-4}	2×10^{-4}	6×10^{-6}	2×10^{-4}	2×10^{-3}	3×10^{-3}
Outside and West of Plume	9×10^{-6}	NV[e]	1×10^{-6}	2×10^{-5}	7×10^{-6}	4×10^{-5}
Near Shawnee Steam Plant	6×10^{-4}	1×10^{-5}	2×10^{-6}	5×10^{-4}	2×10^{-4}	1×10^{-3}
Near Ohio River	5×10^{-6}	1×10^{-7}	3×10^{-7}	2×10^{-6}	5×10^{-6}	1×10^{-5}

[a] Wells were grouped according to the concentration of trichloroethene found in groundwater samples and according to prominent offsite features. See Table 5.11 *in* DOE 1994a for a list of wells by group.

[b] Risks presented are the sum of risks from dermal contact while bathing and dermal contact while swimming.

[c] Risks presented are the sum of risks from consumption of milk and meat from cows drinking contaminated groundwater and eating pasture irrigated contaminated groundwater, ingestion of venison from deer drinking contaminated groundwater and eating pasture irrigated with contaminated groundwater, and consumption of fish raised in ponds filled with contaminated groundwater.

[d] Total risks also include risks from ingestion of soil contaminated through irrigation with contaminated groundwater. The soil ingestion risks are not presented separately.

[e] NV indicates no value was reported for the exposure route in the assessment.

Exhibit 1.8. Hazard indices from chemicals in groundwater–rural residential use (child)

Well Category[a]	Hazard Index					
	Ingestion	Inhalation	Dermal[b]	Vegetables	Biota[c]	Total[d]
Plume Centroid	3.0	NV[e]	0.2	0.8	2.0	6.0
Dissolved Plume	6.0	<0.1	0.7	0.4	9.0	20.0
Outside and West of Plume	0.2	NV	<0.1	<0.1	<0.1	0.3
Near Shawnee Steam Plant	20.0	<0.1	2.0	0.7	8.0	30.0
Near Ohio River	<0.1	<0.1	<0.1	<0.1	<0.1	0.1

[a] Wells were grouped according to the concentration of trichloroethene found in groundwater samples and according to prominent offsite features. See Table 5.11 *in* DOE 1994a for a list of wells by group.
[b] Hazard indices presented are the sum of risks from dermal contact while bathing and dermal contact while swimming.
[c] Hazard indices presented are the sum of risks from consumption of milk and meat from cows drinking contaminated groundwater and eating pasture irrigated contaminated groundwater, ingestion of venison from deer drinking contaminated groundwater and eating pasture irrigated with contaminated groundwater, and consumption of fish raised in ponds filled with contaminated groundwater.
[d] Total hazard indices are rounded to one significant digit. This value also includes risks from ingestion of soil contaminated through irrigation with contaminated groundwater. The soil ingestion risks are not presented separately.
[e] NV indicates no value was reported for the exposure route in the assessment.

Similarly, as shown in Exhibit 1.10, the contaminants in groundwater contributing most to hazard indices varied between well categories. For the Plume Centroid category, the contaminants contributing most to the hazard index were carbon tetrachloride, manganese, and copper.

Exhibit 1.9. Contaminants[a] contributing to excess lifetime cancer risk by well category

Well Category[b]	Excess Lifetime Cancer Risk	
	Contaminants	Total Risk
Plume Centroid	vinyl chloride (81%); bis(2-chloroethyl)ether (9%); trichloroethene (5%); technetium-99 (2%)	5×10^{-3}
Dissolved Phase	dieldrin (72%); trichloroethene (17%); vinyl chloride (5%); 1,1,2-trichloroethane (1%); 1,2-dichloroethane (1%); carbon tetrachloride (1%)	3×10^{-3}
Outside and West of Plume	uranium-238 (66%); bis(2-ethylhexyl)phthalate (24%); uranium-234 (3%)	4×10^{-5}
Near Shawnee Steam Plant	arsenic (50%); vinyl chloride (48%); technetium-99 (2%)	1×10^{-3}
Near Ohio River	1,1,2-trichloroethane (100%)	1×10^{-5}

[a] Contaminants contributing more than 1% of total risk are shown.
[b] Wells were grouped according to the concentration of trichloroethene found in groundwater samples and according to prominent offsite features. See Table 5.11 *in* DOE 1994a for a list of wells by group.

Exhibit 1.10. Contaminants[a] contributing to hazard index (child) by well category

Well Category[b]	Hazard Index	
	Contaminants	Total Risk[c]
Plume Centroid	carbon tetrachloride (61%); manganese (31%); copper (6%)	6.0
Dissolved Phase	manganese (47%); dieldrin (42%); carbon tetrachloride (6%); 1,1,2-trichloroethane (2%)	20.0
Outside and West of Plume	nitrate as nitrogen (71%); bis(2-ethylhexyl)phthalate (29%)	0.3
Near Shawnee Steam Plant	manganese (82%); arsenic (14%); nickel (2%); barium (1%)	30.0
Near Ohio River	1,1,2-trichloroethane (100%)	0.1

[a] Contaminants contributing more than 1% of total risk are shown.
[b] Wells were grouped according to the concentration of trichloroethene found in groundwater samples and according to prominent offsite features. See Table 5.11 *in* DOE 1994a for a list of wells by group.
[c] Values are rounded to one significant digit.

Uncertainties in this assessment and the effects of uncertainty on the risk characterization are summarized in Subsect. 5.5.5 and Table 5.117 of the assessment. As noted in that summary, the greatest uncertainties are related to the use of models to estimate contaminant concentrations in biota and in groundwater in the future, the effect contaminants that are rarely detected have on the final risk estimates, the effect common laboratory contaminants have on the final risk estimates, and the use of unfiltered water samples to estimate exposure concentrations. As always, these uncertainties are common to all risk assessments and should be considered when the risk results are utilized; however, there is one uncertainty that makes the results of that assessment differ markedly from those presented later in this BHHRA. Because measured concentrations were used to develop the representative concentrations of contaminants in groundwater, all sources of contamination at the PGDP are integrated in the risks estimates. That is, the results are not specific to the contamination that is originating at WAG 6.

1.1.4 Results of the Site Investigation, Phase II (CH2M Hill 1991b)

The Phase II investigation (CH2M Hill 1992) further evaluated the nature and extent of offsite contamination originating from PGDP and characterized onsite units by identifying contaminant migration routes that may contribute to offsite contamination. The Phase II investigation used this information to develop a baseline risk assessment (BRA) (CH2M Hill 1991b). As with the other assessments that contain information relevant to the WAG 6 investigation, risk from chemicals and radionuclides were characterized using methods described in EPA's RAGS. However, as with the assessments reviewed in Subsect. 1.1.1, 1.1.2, and 1.1.3, the methods used are <u>not</u> consistent with those in the Methods Document. Again, the primary reason for the inconsistencies is that the methods used in this assessment do not incorporate guidance developed later by the regulatory community [e.g., *Supplement Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment* (EPA 1995a) and *Risk Assessment Guidance* (KDEP 1995)].

Unlike the assessments summarized in Subsects. 1.1.1, 1.1.2, and 1.1.3, the Phase II risk assessment presents risk estimates for workers exposed to soil contamination at SWMUs 11, 40, and 47 of WAG 6. The results of the assessments for these units are presented in tables on pages H-61, H-70, H-74, H-75, and H-76; are summarized in Table 3-24 (SWMUs 11 and 40, only); and discussed in Subsect. 3.3.6.7 (SWMUs 11 and 40, only). These results are reiterated in the following exhibits. The ELCR results for the frequent worker taken from CH2M Hill 1991b are shown in Table 1.10. (Complete results for systemic toxicity are not shown because cumulative hazard index was less than the *de minimis* level.)

530365

As shown in Exhibit 1.11, total ELCRs for the frequent worker and the infrequent worker/intruder exceed the *de minimis* level defined in the Methods Document (i.e., 1×10^{-6}). However, the total hazard indices for both the frequent worker and infrequent worker/intruder are less than the *de minimis* level defined in the Methods Document (i.e., 1). For both ELCR and hazard index, the exposure route contributing most was dermal exposure (chemicals) and external exposure (radionuclides).

As shown in Table 1.10, the chemical contaminants in soil contributing most to excess lifetime cancer were polyaromatic hydrocarbons. The radionuclide contaminants in soil contributing most to excess cancer risk were uranium isotopes and daughters (radionuclides).

Uncertainties in this assessment and the effects of uncertainty on the risk characterization are summarized in Subsect. 3.4 and Table 3-33 of CH2M Hill 1991b. As shown there, the uncertainties important to the final risk estimates in this assessment are similar to those discussed for other assessments.

Exhibit 1.11. Excess lifetime cancer risk and hazard indices from exposure to chemicals and radionuclides in soil–industrial use

Exposure Assumptions[a]	Excess Lifetime Cancer Risk				Hazard Index		
	Ingestion	Dermal[b]	Inhalation	Total	Ingestion	Dermal[b]	Total
Risk from exposure to chemicals							
Frequent worker	8×10^{-6}	4×10^{-5}	NV	4×10^{-5}	<0.1	<0.1	<0.1
Infrequent worker/intruder	8×10^{-7}	4×10^{-6}	NV	4×10^{-6}	<0.1	<0.1	<0.1
Risk from exposure to radionuclides							
Frequent worker	2×10^{-6}	9×10^{-6}	5×10^{-6}	2×10^{-5}	NA	NA	NA
Infrequent worker/intruder	2×10^{-7}	9×10^{-7}	5×10^{-7}	2×10^{-6}	NA	NA	NA

Notes: NV indicates value for exposure route not provided in CH2M Hill 1991b.
NA indicates endpoint is not applicable radionuclides.

[a] In CH2M Hill 1991b, risk estimates were only calculated for worker exposure to contaminants in soil. The frequent worker is assumed to be exposed 250 days/year for 25 years, and the infrequent worker/intruder is one exposed 25 days/year for 25 years. App. G *in* CH2M Hill 1991b describes the calculation methods.

[b] For chemicals, this column reports risk estimates for dermal absorption. For radionuclides, this column reports risk estimates for external exposure to ionizing radiation.

1.1.5 Risk Evaluation in *Integrated Remedial Investigation/Feasibility Study Work Plan for Waste Area Grouping 6 at Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1997a)

As part of the production of the WAG 6 work plan, maximum detected concentrations of analytes identified in previous investigations were screened against a series of values to develop a preliminary list of COPCs. Values against which maximum detected concentrations were screened and their source are presented in Exhibit 1.12. The preliminary COPCs identified as the result of the screening are presented by unit in Exhibit 1.13. The reader should note that the preliminary COPC list is based on sampling conducted before the recently completed field investigation. Because the earlier sampling was limited for some areas, the list in Exhibit 1.13 differs from the list of COPCs presented later in this risk assessment.

530366

Exhibit 1.12. Screening values used in the WAG 6 work plan to identify preliminary COPCs

Value	Source
Screening Values for Soil	
Site-specific risk-based concentration–residential use	Methods Document (DOE 1996b)
Commonwealth of Kentucky soil screening value	*Risk Assessment Guidance* (KDEP 1995)
Background value	*Background Concentrations and Human Health Risk-based Screening Criteria for Metals in Soil at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1995b)[a]
Screening Values for Water	
Site-specific risk-based concentration–residential use	Methods Document (DOE 1996b)
Commonwealth of Kentucky water screening value	*Risk Assessment Guidance* (KDEP 1995)
Background value	*Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant* (DOE 1994a)[b]
Maximum Contaminant Level (MCL)	*Chemical-specific Applicable or Relevant and Appropriate Requirements (ARARs): Federal/Kentucky* (Energy Systems 1996a)

[a] Background values in this document have since been superceded by those in *Background Levels of Selected Radionuclides and Metals in Soil and Geologic Media at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1997b).

[b] Background values for groundwater at PGDP are currently being reevaluated. Values in DOE 1994a are now considered reference values only.

1.2 IDENTIFICATION OF CONTAMINANTS OF POTENTIAL CONCERN

This subsection describes the process used to determine the list of COPCs used in both the BHHRA and the ecological risk assessment (Chapt. 2 in this volume). Specifically, this subsection describes the sources of data, the procedures used to screen the data, and the methods used to derive representative concentrations in environmental media and biota under both current and future conditions. Additionally, this section describes the site characterization data used in the exposure assessment performed in Subsect. 1.3.

1.2.1 Sources of Data

All data used the BHHRA and baseline ecological risk assessment (BERA) describing current contaminant concentrations in soil and groundwater were from the recently completed field investigation at WAG 6. These data and how they were generated are described in Sect. 3 and 4 of Vol. 1 of this report. That material will not be repeated here. In addition, Sect. 3 of Vol. 1 of this report utilizes these data to discuss the nature and extent of contamination at WAG 6, and Sect. 4 of Vol. 1 of this report utilizes these data to determine the environmental fate and transport of contaminants found at and migrating from WAG 6. The analytical results of the environmental fate and transport modeling from Sect. 4 of Vol. 1 are used in the BHHRA as future contaminant concentrations in groundwater at points of exposure to which

Exhibit 1.13. Preliminary COPCs identified in the WAG 6 work plan

C-400 Area (Groundwater only)	
Organics:	bromodichloromethane; carbon tetrachloride; 1,1-dichloroethene; 1,2-dichloroethene; 1,1,2-trichloroethane; trichloroethene; bis(2-ethylhexyl)phthalate
Inorganics:	aluminum; antimony; arsenic; barium; beryllium; cadmium; chromium; iron; lead; manganese; nickel; silver; vanadium
Radionuclides:	technetium-99; uranium-238
SWMU 11 (TCE Leak Site)	
Organics:	bromodichloromethane; carbon tetrachloride; 1,1-dichloroethene; 1,2-dichloroethene; tetrachloroethene; 1,1,2-trichloroethane; trichloroethene; benz[a]anthracene; benzo[a]pyrene; benzo[b]fluoranthene; benzo[k]fluoranthene; bis(2-ethylhexyl)phthalate; dibenz[a,h]anthracene; 2,4-dinitrotoluene; indeno[1,2,3-cd]pyrene; pentachlorophenol; Aroclor 1260; octachlorodibenzo-p-dioxin
Inorganics:	aluminum; antimony; arsenic; barium; beryllium; cadmium; chromium; iron; lead; manganese; nickel; vanadium
Radionuclides:	technetium-99; uranium-238
SWMU 26 (C-401 Transfer Line)	
Organics:	benzo[b]fluoranthene
Inorganics:	aluminum; arsenic; barium; beryllium; chromium; iron; manganese; vanadium
Radionuclides:	uranium-238
SWMU 40 (C-403 Neutralization Tank)	
Organics:	trichloroethene; bis(2-ethylhexyl)phthalate
Inorganics:	aluminum; arsenic; barium; beryllium; cadmium; chromium; iron; lead; manganese; nickel; silver; vanadium
Radionuclides:	technetium-99; uranium-238
SWMU 47 (C-400 Technetium Storage Tank)	
Organics:	1,1-dichloroethene; trichloroethene
Inorganics:	aluminum; antimony; arsenic; barium; beryllium; cadmium; chromium; iron; lead; manganese; nickel; vanadium
Radionuclides:	technetium-99; uranium-238; neptunium-237
SWMU 203 (C-400 Sump)	
Organics:	None
Inorganics:	None
Radionuclides:	cesium-137

contamination may migrate. Additionally, the current contaminant concentration data are used in this BHHRA to model contaminant concentrations in animals and vegetables. The methods and models used to determine contaminant concentrations in biota are described in Subsect. 1.3 of this BHHRA.

As in Vol. 1 of this report, to allow this remedial investigation to consider specific areas of contamination within WAG 6, soil data were assigned to one of nine sectors. A schematic diagram of these sectors is presented in Fig. 1.1, and a list of the sampling stations by sector is presented in Table 1.11.

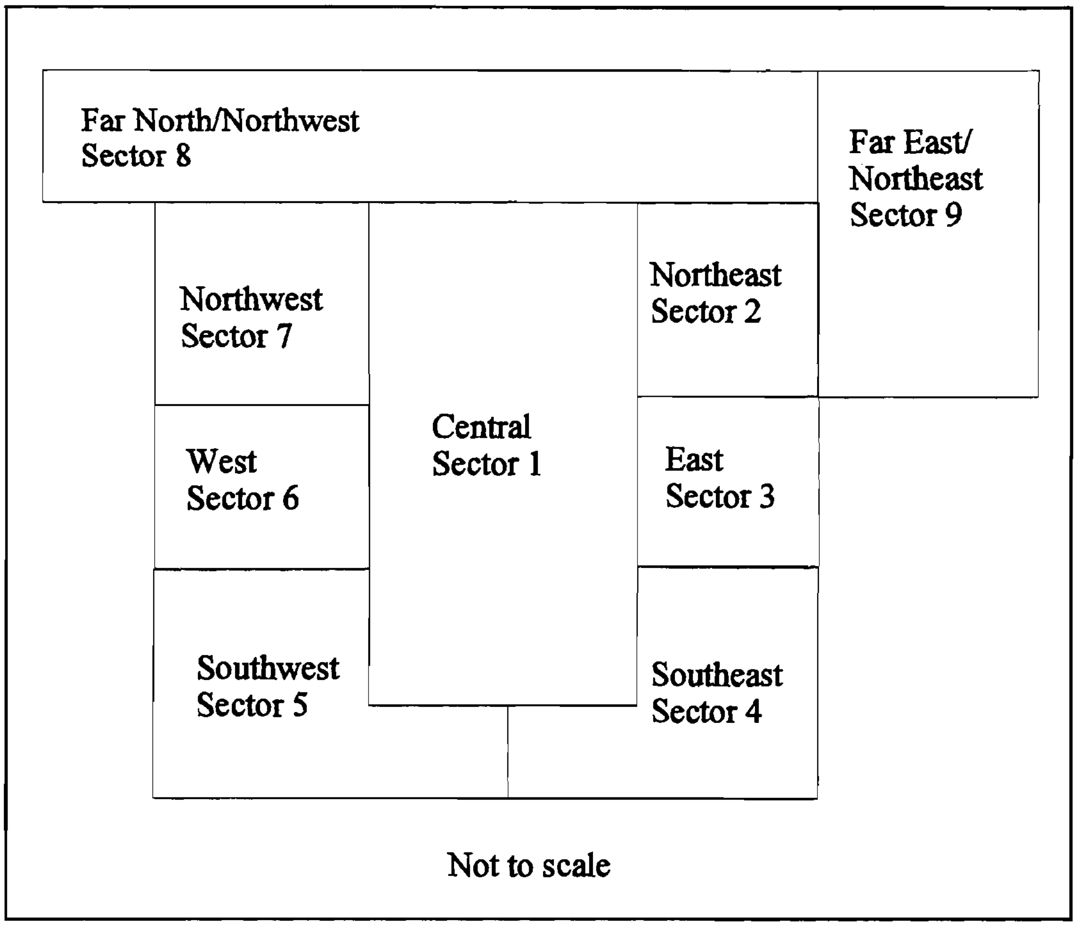

Fig. 1.1. Schematic diagram of WAG 6 sectors.

These sectors can be generally described as follows:

- the Central Sector (Sector 1) includes soil samples collected from below the C-400 building;
- the Northeast Sector (Sector 2) includes soil samples collected from the area near SWMU 40 (C-403 Neutralization Tank);
- the East Sector (Sector 3) includes soil samples used to characterize an area not associated with a SWMU included in the WAG 6 investigation;
- the Southeast Sector (Sector 4) includes soil samples collected from the area near SWMU 11 (C-400 TCE Leak Site);
- the Southwest Sector (Sector 5) includes soil samples used to characterize an area not associated with a SWMU included in the WAG 6 investigation;
- the West Sector (Sector 6) includes soil samples collected from the area near SWMU 47 (Tc-99 Storage Tank Area);
- the Northwest Sector (Sector 7) includes soil samples collected from the area near SWMU 203 (C-400 Waste Discard Sump);
- the Far North/Northwest Sector (Sector 8) includes soil samples used to characterize the area around SWMU 26 (C-400 to C-404 Transfer Line); and,
- the Far East/Northeast Sector (Sector 9) contains samples used to characterize an area not associated with a SWMU included in the WAG 6 investigation.

Note, because sectors are contiguous, both the BHHRA and BERA also include evaluations of the WAG 6 soil data as a whole.

Unlike the soil data, groundwater data are not assigned to sectors because the groundwater data collected during the field investigation is representative of WAG 6 as a whole. However, groundwater data from the RGA are evaluated separately from groundwater data from the underlying McNairy Formation.

1.2.2 General Data Evaluation Considerations

Data described previously were evaluated to ensure that the data were appropriate for use in baseline risk assessments. A general description of this evaluation is provided in this subsection. A graphical presentation of this evaluation is in Fig. 1.2.

Data evaluation was performed in eight steps:

(1) **Evaluation of sampling**. Data were examined to ensure that the samples from which the data were derived were collected using sampling methods that were adequate to determine the nature and extent of contamination.

(2) **Evaluation of analytical methods**. Methods used to analyze samples were evaluated to determine if they were those approved by EPA.

(3) **Evaluation of sample quantitation limits (SQLs).** The SQLs for each analyte and sample were examined to determine if they were below the concentration at which the contaminant may pose a threat to human health or the environment. If the SQL for an analyte was greater than the concentration that may pose a threat to human health and that analyte was not detected in any sample, then the data for that chemical were deemed of insufficient quality, and only a qualitative assessment for that chemical is presented in this assessment. In developing the qualitative assessment for such chemicals, the SQL for the chemical was used in the qualitative assessment if historical or process knowledge indicated that the chemical could potentially be present. If historical or process knowledge indicated that the chemical is not expected to be present, one-half of the SQL was used in the qualitative assessment.

(4) **Evaluation of data qualifiers and codes**. The data used in the risk assessment were tagged with various qualifiers and codes. Tagged data were evaluated following rules in Exhibits 5-4 and 5-5 of RAGS.

(5) **Elimination of chemicals not detected**. For each sample, any chemical not detected in at least one sample using an appropriate SQL was eliminated from the data set.

(6) **Examination of toxicity of detected analytes**. For the data set created for the BHHRA only, a comparison of the analyte's maximum detected concentration in the data set to that analyte's residential use human health risk-based screening value was performed. Human health risk-based screening values used in this comparison were taken from the Methods Document. To ensure that the human health risk-based screening criteria used in this step were conservative, routes of exposure used to develop the criteria for chemicals were ingestion of potentially contaminated media, dermal contact with potentially contaminated media, and inhalation of vapors and particulates emitted by potentially contaminated media. Direct contact exposure routes used to develop screening criteria for radionuclides were ingestion of potentially contaminated media, inhalation of vapors and particulates emitted by potentially contaminated media, and external exposure to ionizing radiation emitted by potentially contaminated media. The target cancer risks and target hazard indexes used in calculating the criteria for chemicals

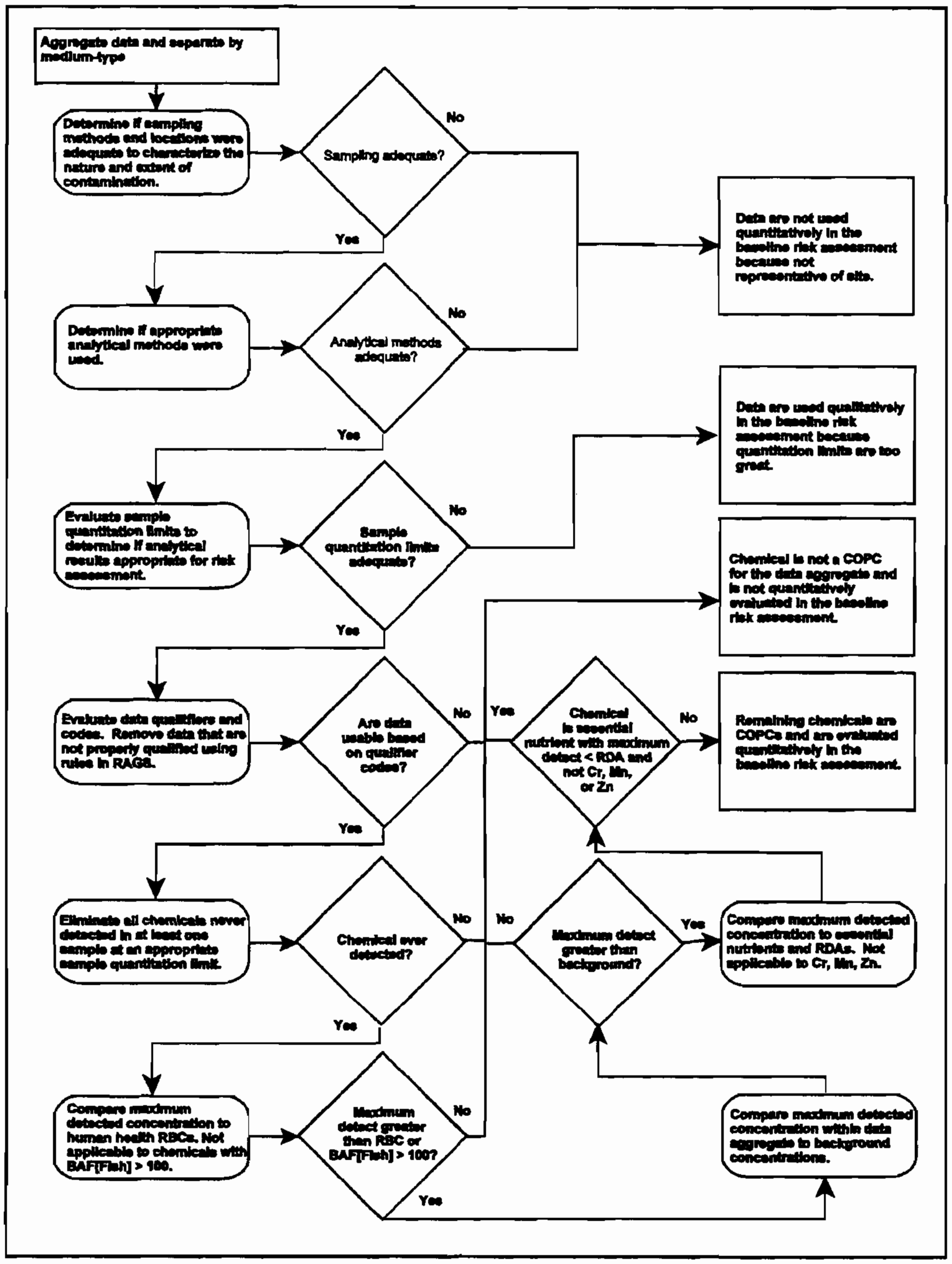

Fig. 1.2. Data evaluation steps.

were set by regulatory agreement in the Methods Document at 1×10^{-7} and 0.1, respectively. The target cancer risks used in calculating the criteria for radionuclides were set by regulatory agreement in the Methods Document at 1×10^{-6}. In this screen, the lower of the human health risk-based screening criteria calculated for cancer effects from lifetime exposure and for systemic toxicity in children was used. In addition, per regulatory agreement in the Methods Document, this screen was not applied to those analytes known to accumulate significantly in biota (i.e., not used for analytes with a bioaccumulation factor for fish greater than 100).

(7) **Comparison of analyte maximum concentrations and activities detected in site samples to analyte concentrations and activities detected in background samples.** Background concentrations for soil were taken from *Background Levels of Selected Radionuclides and Metals in Soils and Geologic Media at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1997b) and were compared to the maximum detected analyte concentration over all site samples. The background concentrations for soil are presented in Table 1.12.

Background data sets for RGA and McNairy Formation groundwater were not available for this assessment because these values are undergoing revision. Therefore, a comparison between maximum detected concentrations in groundwater and background concentrations was not performed. However, the groundwater background values used in previous risk assessments at PGDP are provided in Table 1.12. These values are provided because they are used in the uncertainty analysis contained in this risk assessment.

(8) **Examination of analyte maximum concentrations for essential human nutrients detected in site samples to Recommended Dietary Allowances (RDAs) for children.** For the data set developed for the BHHRA only, analytes not removed from the data set to this point were examined, and the maximum detected concentration of those analytes known to be essential nutrients were compared to their respective RDAs for children to determine if it would be appropriate to remove any essential nutrients from the data set. Generally, analytes whose potential intakes based on the maximum detected concentrations were less than one-fifth of the RDA for children were removed from the data set, as agreed upon by the Commonwealth of Kentucky and EPA in the Methods Document. Analytes that were not candidates to be removed based on this screen, even though they are essential nutrients, were chromium, manganese, and zinc. Analytes that were removed regardless of the results of this screen were calcium, chloride, iodine, magnesium, phosphorus, potassium, and sodium (EPA 1995a).

1.2.3 Risk Assessment Specific Data Evaluation

The specific processes used to evaluate data and calculate exposure concentrations under both current and future conditions are described in this section. Subsect. 1.2.3.1 summarizes the evaluation performed to determine representative concentrations of COPCs under current conditions. Subsect. 1.2.3.2 summarizes the evaluation performed to determine modeled representative concentrations of COPCs under future conditions.

1.2.3.1 Current conditions

The specific processes used to evaluate data and calculate exposure concentrations under current conditions are described in this section. The Statistical Analysis System (SAS®; SAS 1990) was used to input and evaluate the data set. The following material summarizes the actions performed by various programs during the evaluation. The complete programs are presented in App. D of this volume.

First SAS® program (data consolidation). The first program read the data set developed from sampling during the recently completed field investigation into SAS®. This program read the data into fields to produce a data set with a uniform format to facilitate further data handling. Specific functions performed by this program were:

- Drop all groundwater data except for that from the RGA and McNairy Formation. Groundwater data from samples collected from the UCRS were dropped at this point because this groundwater is not available for use because of the poor yields from wells completed in the UCRS. (See Chapt. 4 of Vol. 1.) [Please note, while the UCRS was not evaluated as a drinking water source in this assessment,

530372

contamination in the UCRS was evaluated as a source of contamination for groundwater drawn from the RGA and McNairy Formation.]

- Segregate soil samples into surface (collected 0 to 1 foot below ground surface), subsurface (0 to 16 feet below ground surface), and deep (greater than 16 feet below ground surface) classes. These soil sample depth classes are developed because they are the classes used for the selected exposed populations discussed in Subsect. 1.3. It should be noted that in previous risk assessments at PGDP, the subsurface class only contained samples collected from 0 to 10 feet below ground surface. The ending depth was increased to 16 feet in this assessment because many of the utilities in the WAG 6 area are at or below 12 feet below ground surface.

- Assign each sampling station to one of the nine sectors. (See Table 1.11.) As discussed earlier, data were assigned to sectors to better organize the investigation of the nature and extent of contamination in the WAG 6 area. This would also allow for close examination of those sections of the WAG 6 area that do not contain a recognized SWMU.

- Check spelling of all analytes and their association with CAS registry numbers. This screen allows the SAS® program to accurately merge contaminant and toxicity information later in the assessment.

- Convert units of measure to those units that will be used in the CDI calculations. All chemical concentrations were converted to units of mg/kg or mg/L, and all radionuclide activities were converted to units of pCi/g or pCi/L. This conversion places all chemical information upon common bases and allows SAS® to accurately calculate the representative exposure concentrations used in the derivation of contaminant doses. In addition, the units of measure to which chemicals are converted match those that are included in the toxicity value data base; therefore, this conversion allows SAS® to merge the contaminant and toxicity information correctly during risk characterization.

- Distinguish between and code observations as detects and nondetects. Because specific rules must be followed when investigating nondetects, this program performed two filters. The first filter converted the nondetected concentration for analytes not believed to be site-related contaminants to one-half the SQL and the nondetected concentration for analytes believed to be site-related contaminants to the SQL. [In this assessment, site-related analytes are trichloroethene and its breakdown products, technetium-99, uranium (metal and all radioisotopes), PCBs, and fluoride.] The second filter dropped those observations that had nondetected concentrations exceeding an analyte's maximum detected concentration. Note, the rules followed here and the filters applied are those approved in the Methods Document.

Second SAS® program (precursor program). This program organized all the subroutines that were run in the third SAS® program.

Third SAS® Program (summary statistics preparation). This program calculated summary statistics for the "cleaned-up" data set prepared by the first SAS® program. Included in the summary (see Tables 1.13 and 1.14 in App. A of this volume) are: analyte name, frequency of detection, the range of detected values, the range of nondetected values (i.e., the range of the sample quantitation limits used in samples in which the analyte was not detected), the form of the distribution of the data, the arithmetic means of the detected concentrations, and the units of measure for the analyte. In addition, this program created a permanent SAS® data set.

Fourth SAS® program (residential use human health risk-based concentration). The fourth program compared the maximum detected concentration of each analyte in each media to that analyte's medium-specific residential use human health risk-based concentration. Even though WAG 6 is currently industrial, the residential use human health risk-based screening criteria were used to comply with previous agreements with the regulatory agencies specified in the Methods Document. (Note, the data set that was used in the ecological risk assessment was not passed through this procedure because the human health risk-based concentrations are not applicable to nonhuman receptors.) The exposure routes included in the calculations of the risk-based concentrations for chemicals were ingestion of a potentially contaminated medium, inhalation of emissions from a potentially contaminated medium, and dermal contact with a potentially contaminated medium. The exposure routes included in the calculations of the risk-based concentrations for radionuclides were ingestion of a potentially contaminated medium, inhalation of emissions from a potentially contaminated medium, and external exposure to ionizing radiation emitted from a potentially contaminated medium.

As discussed in the Methods Document, the target hazard index (HI) and excess lifetime cancer risk (ELCR) used in the calculation of risk-based concentrations for chemicals were 0.1 and 1×10^{-7}, respectively, and the target ELCR used in the calculation of risk-based concentrations for radionuclides was 1×10^{-6}. Also, per regulatory agreement, when performing the comparisons, the lesser of an analyte's hazard and cancer risk-based screening criteria was used.

Analytes known to bioaccumulate or bioconcentrate significantly were not removed from the data set based upon this comparison. The benchmark used to determine if an analyte bioaccumulates significantly was the bioaccumulation factor (BAF) for fish. This factor was used per regulatory agreement (Methods Document) because of the known propensity of fish to bioaccumulate contaminants and because data on chemical bioaccumulation in fish are readily available. Specifically, if an analyte's BAF for fish exceeded 100, then that analyte was not eligible for removal from the data set based on the toxicity screen. Please note, the results of the BAF screen are not reported individually in Table 1.15.

Fifth SAS® program (background and RDA screen). This program compared the maximum detected concentration of each analyte in soil against their respective background concentrations and compared the maximum detected concentration of essential nutrients in soil and groundwater to one-fifth of that nutrient's RDA for children. The background values used in this comparison were taken from *Background Levels of Selected Radionuclides and Metals in Soils and Geologic Media at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1997b) and are presented in Table 1.12. The results of the comparison are shown in Table 1.16. The RDAs used in this comparison are shown in Table 1.17, and the results are shown in Table 1.18. Note, the data set developed for the ecological risk assessment was not compared against RDAs because the RDAs are not relevant for exposure by nonhuman receptors.

As discussed in the Methods Document, before comparing an analyte's maximum detected concentration against one-fifth of the analyte's RDA, the analyte's concentration was converted to a daily intake for a child. For soil, this conversion was performed by multiplying the analyte's maximum detected concentration in soil by an intake of 200 mg/day and then converting this result to a g/day dose. For water, this conversion was performed by multiplying the maximum detected concentration by an intake of 1 L/day and then converting this result to a g/day dose.

Per regulatory agreement (Methods Document), three analytes for which RDAs for children are available were not included in this screen. These analytes were chromium, manganese, and zinc. In addition, also per regulatory guidance (EPA 1995a), seven essential nutrients were removed from the data set even if their maximum detected value exceeded one-fifth of their RDA. These were calcium, chloride, iodine, magnesium, potassium, sodium, and phosphorus.

530374

[illegible]

Sixth SAS® program (toxicity values). This program merged toxicity information with the list of COPC.

Seventh SAS® program (output production). This program compiled the results of the previous programs and produced the tables listed earlier. These tables are:

Table 1.13	Data summary for all analytes by location and medium
Table 1.14	Data summary for detected analytes by location and medium
Table 1.15	Comparison of maximum detected concentrations and activities to human health risk-based screening criteria by location and medium
Table 1.16	Comparison of maximum detected concentrations and activities to background concentrations by location and medium
Table 1.17	Recommended dietary allowances of essential human nutrients
Table 1.18	Comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

In addition, this program produced two additional tables that present the lists of COPCs and a summary of the data evaluation process. These tables are:

Table 1.19	Chemicals of potential concern
Table 1.20	Summary of data evaluation

Note, Table 1.20 is a complete summary of the data evaluation process and includes a listing of all detected analytes by location and medium. In addition to the analyte's name, this table also contains the analyte's frequency of detection, range of nondetected values, range of detected values, arithmetic mean of detected values, background value, human health systemic toxicity and ELCR-based concentrations, RDA (one-fifth value shown), and units of measure. The last column of this table indicates whether or not the analyte is a COPC and, if the analyte is selected as a COPC, the basis for its selection. Codes used to indicate the basis are P, B, E, and Qual. Definitions of these codes are as follows:

- P: analyte is a COPC because the analyte's maximum detected concentration is greater than a human health risk-based concentration.
- B: analyte is a COPC because the analyte's maximum detected concentration is greater than the background concentration.
- E: analyte is an essential nutrient but its maximum concentration results in a daily dose that is greater than one-fifth of the analyte's RDA for children.
- Qual: analyte is retained as a COPC because screening criteria used in the data evaluation were not available or because the fish bioaccumulation factor for the chemical is greater than 100.

In some cases, an analyte's basis of selection may include more than one of the aforementioned codes. In this case, the analyte was selected as a COPC because it "failed" multiple screens. For example, in Table

1.20, iron is retained as a COPC in subsurface soil for the WAG 6 area with a basis of "PBE." This coding indicates that iron is retained as a COPC because its maximum detected concentration in soil samples collected from 0 to 16 feet below ground surface (51,700 mg/kg) was greater than the smallest risk-based concentration for iron (310 mg/kg), was greater than the iron subsurface background concentration (28,000 mg/kg), and could result in a daily dose that is greater than one-fifth of the child RDA (2 mg/day).

1.2.3.2 Evaluation of modeled concentrations for groundwater and surface water

As reported in Chapt. 5 of Vol. 1, models were used to simulate fate and transport of selected contaminants in soil to RGA and McNairy Formation groundwater. The results of the modeling used in the BHHRA are summarized in App. C of this volume. The reader is referred to Chapt. 5 of Vol. 1 for a complete discussion of the methods used to complete the modeling.

Exhibit 1.14 displays the maximum modeled concentrations of the selected contaminants at the PGDP fence boundary and the contaminant's sources, compares the concentrations to residential use human health risk-based concentrations, and reports the chemicals with maximum detected concentrations that exceed the risk-based concentrations (RBCs). Note, the RBCs used in these comparisons are the same as those used in the screening steps discussed earlier.

In Exhibit 1.14, the maximum concentrations of all modeled radionuclides and the inorganic chemicals chromium and copper are seen to not exceed their respective RBCs. Therefore, these contaminants can be removed from the list of COPCs that migrate from the WAG 6 area.

Exhibit 1.14. Comparison between maximum modeled concentrations at the PGDP fence boundary and residential use risk-based concentrations (RBCs)

Contaminant[a]	Source[b]	Maximum Concentration[c]	Residential Use RBC[d]		Exceed?[e]
			Cancer	Systemic Toxicity	
Organic Chemicals (mg/L)					
1,1-Dichloroethene	Southeast; Sector 4	4.14E-03	1.62E-06	1.34E-02	Cancer
1,2-Dichloroethene	West; Sector 6	7.64E-02	NV	1.36E-02	ST
2-Methylnaphthalene	West; Sector 6	1.27E-06	NV	NV	NC
2,4-Dinitrotoluene	Far North; Sector 8	1.07E-01	7.69E-06	3.00E-03	Both
Acenaphthylene	Southwest; Sector 5	3.18E-04	NV	NV	NC
Carbon tetrachloride	Southeast; Sector 4	4.87E-04	2.07E-05	2.03E-04	Both
N-Nitroso-di-n-propylamine	Northeast; Sector 2	2.17E-02	7.39E-07	NV	Cancer
Phenanthrene	Southwest; Sector 5	1.02E-04	NV	NV	NC
Tetrachloroethene	Southeast; Sector 4	6.44E-04	5.91E-05	9.87E-03	Cancer
trans-1,2-Dichloroethene	West; Sector 6	7.64E-02	NV	3.02E-02	ST
Trichloroethene	Southeast; Sector 4	5.00E+00	2.01E-04	7.86E-03	Both
Vinyl chloride	Southeast; Sector 4	1.14E-03	2.04E-06	NV	Cancer
Inorganic Chemicals (mg/L)					
Antimony	Northwest; Sector 7	5.73E-03	NV	5.64E-04	ST

TT8085

Exhibit 1.14. (Continued)

Contaminant[a]	Source[b]	Maximum Concentration[c]	Residential Use RBC[d]		Exceed?[e]
			Cancer	Systemic Toxicity	
Copper	Far North; Sector 8	1.50E-01	NV	6.02E-02	ST
Chromium	RGA	6.91E-05	NV	7.05E-03	No
Cobalt	RGA	2.74E-02	NV	9.06E-02	No
Iron	RGA	8.18E+01	NV	4.49E-01	ST
Manganese	RGA	5.71E-01	NV	6.81E-02	ST
Thallium	Southwest; Sector 5	4.74E-01	NV	NV	NC
Radionuclides (pCi/L)					
Americium-241	Far North; Sector 8	2.97E-21	1.18E-02	NA	No
Neptunium-237	Far North; Sector 8	4.30E-06	1.29E-02	NA	No
Plutonium-239	Southeast; Sector 4	1.22E-08	1.22E-02	NA	No
Technetium-99	Northwest; Sector 7	5.35E-06	2.76E+00	NA	No
Thorium-230	Southeast; Sector 4	2.23E-23	1.03E-01	NA	No
Uranium-234	Far North; Sector 8	1.34E-06	8.70E-02	NA	No
Uranium-235	Southwest; Sector 5	7.95E-07	8.21E-02	NA	No
Uranium-238	Far North; Sector 8	1.04E-05	9.04E-02	NA	No

[a] All contaminants with an identified source and a modeled concentration are listed.

[b] Sector in which the source contributing the maximum modeled concentration is located.

[c] Maximum modeled contaminant concentration among all sources modeled.

[d] All residential use risk-based concentrations were taken from Table 2 in Appendix 1 of *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant* (1996b). All cancer RBCs are based on a 40 year exposure; all systemic toxicity RBCs are based on chronic exposure by a child aged 1 to 7. Both cancer and systemic toxicity RBCs integrate exposure through ingestion of water, inhalation of vapors emitted by water (showering and household use), and dermal contact with water (showering). Target risk for all cancer RBCs is 1×10^{-7} because more than 5 contaminants are present. Target HI for all systemic toxicity RBCs is 0.1 because more than 5 contaminants are present. "NV" indicates an RBC for the endpoint is not available because toxicity information is lacking. "NA" indicates that the endpoint is no applicable (radionuclides only). The RBC for chromium is for exposure to chromium VI. The RBCs for neptunium-237, uranium-235, and uranium-238 include contributions from short-lived daughters.

[e] "Cancer" indicates that the modeled concentration exceeds the cancer RBC.
"ST" indicates that the modeled concentration exceeds the systemic toxicity RBC.
"Both" indicates that the modeled concentration exceeds both the cancer and systemic toxicity RBC.
"NC" indicates that a comparison could not be performed because neither a cancer nor a systemic toxicity RBC is available.
"No" indicates that neither RBC is exceeded by the maximum modeled concentration.

Exhibit 1.15 displays a summary of the sources and maximum modeled concentrations for contaminants that have a source within the WAG 6 area that exceeds a RBC. This exhibit is similar to Exhibit 1.14 except it shows all modeled sources of a contaminant. As shown in this table, the only contaminants with multiple sources which have a maximum modeled concentration exceeding a RBC are trichloroethene and its breakdown product vinyl chloride. (Please note, the trichloroethene and technetium-99 sources in the RGA

530377

Exhibit 1.15. Summary of sources and maximum modeled concentrations for contaminants that have a source within the WAG 6 area that exceeds a residential use risk-based concentration (RBC)

Contaminant[a]	Source[b]	Maximum Concentration[c]	Residential Use RBC[d]		Exceed?[e]
			Cancer	Systemic Toxicity	
Organic Chemicals (mg/L)					
1,1-Dichloroethene	Southeast; Sector 4	4.14E-03	1.62E-06	1.34E-02	Cancer
1,2-Dichloroethene	West; Sector 6	7.64E-02	NV	1.36E-02	ST
2,4-Dinitrotoluene	Far North; Sector 8	1.07E-01	7.69E-06	3.00E-03	Both
Carbon tetrachloride	Southeast; Sector 4	4.87E-04	2.07E-05	2.03E-04	Both
N-Nitroso-di-n-propylamine	Northeast; Sector 2	2.17E-02	7.39E-07	NV	Cancer
Tetrachloroethene	Southeast; Sector 4	6.44E-04	5.91E-05	9.87E-03	Cancer
trans-1,2-Dichloroethene	West; Sector 6	7.64E-02	NV	3.02E-02	ST
Trichloroethene	East; Sector 3	2.91E-02	2.01E-04	7.86E-03	Both
	Southeast; Sector 4	5.00E+00			Both
	Southwest; Sector 5	2.53E-01			Both
	West; Sector 6	9.58E-03			Both
	Northwest; Sector 7	4.92E-03			Cancer
Vinyl chloride	Southeast; Sector 4	1.14E-03	2.04E-06	NV	Cancer
	Southwest; Sector 5	8.04E-04			Cancer
Inorganic Chemicals (mg/L)					
Antimony	Northwest; Sector 7	5.73E-03	NV	5.64E-04	ST
Copper	Far North; Sector 8	1.50E-01	NV	6.02E-02	ST
Iron	RGA	8.18E+01	NV	4.49E-01	ST
Manganese	RGA	5.71E-01	NV	6.81E-02	ST

[a] Only contaminants which have a maximum modeled contaminant concentration over all sources that exceed either RBC are listed.

[b] Maximum modeled concentration reported for sources within a sector. Sectors not listed do not contain a source of the contaminant.

[c] Maximum modeled contaminant concentration for source.

[d] All residential use risk-based concentrations were taken from Table 2 in Appendix 1 of *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant* (1996b). All cancer RBCs are based on a 40-year exposure; all systemic toxicity RBCs are based on chronic exposure by a child aged 1 to 7. Both cancer and systemic toxicity RBCs integrate exposure through ingestion of water, inhalation of vapors emitted by water (showering and household use), and dermal contact with water (showering). Target risk for all cancer RBCs is 1×10^{-7} because more than 5 contaminants are present. Target HI for all systemic toxicity RBCs is 0.1 because more than 5 contaminants are present. "NV" indicates an RBC for the endpoint is not available because toxicity information is lacking.

[e] "Cancer" indicates that the modeled concentration exceeds the cancer RBC.
"ST" indicates that the modeled concentration exceeds the systemic toxicity RBC.
"Both" indicates that the modeled concentration exceeds both the cancer and systemic toxicity RBC.

described in Vol. 1 were not included in the model. These sources were not included because they were assumed *a priori* to contribute unacceptable concentrations to points of exposure away from the WAG 6 area under current conditions, as discussed in Vol. 1.) In total, Exhibit 1.15 shows that there are 9 organic chemicals and 4 inorganic chemicals that may migrate from sources in the WAG 6 area to the PGDP fence boundary at concentrations that exceed the RBC.

The times the maximum concentrations are attained from each of the sources are shown in Exhibit 1.16. In this material, the time presented is years from present. That is, the time assumes that the release from the WAG 6 area source occurs today. This material indicates that most of the organic chemicals, if released from their sources today, would take from 21 to 105 years to attain their maximum modeled concentration. However, the organic chemicals, carbon tetrachloride and tetrachloroethene, and the inorganic chemicals

Exhibit 1.16. Summary of time required to reach maximum modeled concentrations at the PGDP fence boundary for contaminant sources within the WAG 6 area that contribute maximum contaminant concentrations exceeding residential use risk-based concentrations (RBCs)

Contaminant[a]	Source[b]	Maximum Concentration[c]	Year[d]
Organic Chemicals (mg/L)			
1,1-Dichloroethene	Southeast; Sector 4	4.14E-03	62
1,2-Dichloroethene	West; Sector 6	7.64E-02	21
2,4-Dinitrotoluene	Far North; Sector 8	1.07E-01	47
Carbon tetrachloride	Southeast; Sector 4	4.87E-04	386
N-Nitroso-di-n-propylamine	Northeast; Sector 2	2.17E-02	24
Tetrachloroethene	Southeast; Sector 4	6.44E-04	285
trans-1,2-Dichloroethene	West; Sector 6	7.64E-02	21
Trichloroethene	East; Sector 3	2.91E-02	105
	Southeast; Sector 4	5.00E+00	105
	Southwest; Sector 5	2.53E-01	105
	West; Sector 6	9.58E-03	105
	Northwest; Sector 7	4.92E-03	89
Vinyl chloride	Southeast; Sector 4	1.14E-03	54
	Southwest; Sector 5	8.04E-04	54
Inorganic Chemicals (mg/L)			
Antimony	Northwest; Sector 7	5.73E-03	707
Copper	Far North; Sector 8	1.50E-01	9510
Iron	RGA	8.18E+01	377
Manganese	RGA	5.71E-01	633

[a] Only contaminants which have a maximum modeled contaminant concentration over all sources that exceed either RBC are listed.
[b] Maximum modeled concentration reported for sources within a sector. Only sectors that contain a source are listed.
[c] Maximum modeled contaminant concentration for source.
[d] All dates taken from MEPAS modeling results and are years from present.

would take much longer with times ranging from 285 to 9,510 years from present. This observation is important because it indicates that the risks from exposure to the maximum modeled concentrations of 1,1-dichloroethene; 1,2-dichloroethene; 2,4-dinitrotoluene; n-nitroso-di-n-propylamine; *trans*-1,2-dichloroethene; trichloroethene; and vinyl chloride may be additive. Risks from exposure to these chemicals is characterized in Subsect. 1.5.

1.2.4 Evaluation of Data from Other Sources

This subsection describes results of the Phase I groundwater user survey, agriculture extension agent interviews, Kentucky Department of Fish and Wildlife Resources (KDFWR) information, deer range information, exposure unit information for workers, and SWMU size information. This information was used to develop the exposure assessment in Subsect. 1.3.

1.2.4.1 Groundwater User Survey Phase I (CH2M Hill 1991a)

In response to the discovery of groundwater contamination in residential wells near PGDP, a survey of users of groundwater and surface water in the vicinity of PGDP was conducted in February and March of 1990. The two objectives of the survey were to (1) estimate the number of residents using water wells that may be affected by groundwater contamination originating at PGDP and (2) determine the number of surface water intakes on the Ohio River within 15 miles downstream of PGDP. The groundwater users' survey included residences and businesses with wells within a 4-mile radius of the plant; therefore, this survey included parts of McCracken and Ballard counties in Kentucky and part of Massac County in Illinois. A questionnaire was mailed to local residents to identify well water users. State agencies and major industrial facilities were contacted to identify surface water users. The information provided by respondents was developed into a database, which is summarized in the following text.

A total of 1988 surveys was delivered; forty-four percent (872) of these were returned. Of the respondents, 58 percent used well water for some purpose. Eighty-four percent used well water as their sole water supply. Eighty-five percent used well water for drinking; 47 percent used well water for irrigation; 29 percent used well water for watering livestock; and 80 percent used well water for domestic uses such as laundry, washing cars, etc. The total depth of wells in the study area (i.e., the area investigated by this survey) was reported to range from 15 ft to 245 ft; however, 21 percent of residents did not report total depth. The most frequently reported total depth was 40 ft (26 respondents), followed by 30 ft (21 respondents) and 100 ft (20 respondents). Fifty-four percent of wells were reported to be 20 ft to 60 ft deep. Plastic and tile were the predominant construction materials; however, steel, brick, and concrete were also reported.

Unfortunately, the questionnaire used in this survey did not determine frequency of groundwater use. (See Sect. 1 of App. 5 in the Methods Document for a reproduction of the questionnaire.) However, as indicated earlier, these data were used qualitatively in the exposure assessment to develop the site conceptual model and reduce the level of uncertainty of the exposure assessment in the BHHRA.

1.2.4.2 Agriculture Extension Agent interviews

To gather site-specific agricultural information, the Agricultural Extension Agents for Ballard and McCracken counties were contacted in February 1994. Information on population, gardening, crop farming, livestock farming, and fish farming was requested. Summaries of the interviews are presented in Sect. 2 of App. 5 of the Methods Document. Data gathered from the agents were used qualitatively in the exposure assessment to develop the site conceptual model and reduce the level of uncertainty of the exposure assessment in the BHHRA.

1.2.4.3 Kentucky Department of Fish and Wildlife Resources information

During the development of the site conceptual model, it was determined that wildlife may also serve as an important exposure pathway to humans. To determine the level of importance of this pathway, requests were made for reports on harvest of deer, ducks, geese, and turkey in Ballard and McCracken counties. Information on these game species was solicited because they are the most widely hunted animals in the area and require specific licenses and check-in procedures. Harvest information is provided in Sect. 3 of App. 5 of the Methods Document.

1.2.4.4 Sector size information

To accurately represent exposure to contaminated soil in each of the sectors, the size of each sector was determined. (See Exhibit 1.17.) These sizes were subsequently integrated with the exposure unit information presented in Subsects. 1.2.4.5, 1.2.4.6, and 1.2.4.7 when calculating the daily intake or daily dose for each COPC. Methods used to integrate exposure unit size and sector size are presented along with the exposure equations presented in Subsect. 1.3.

Exhibit 1.17. Areas of WAG 6 sectors

Sector Name	Sector Number	Area (sq. feet)	Area (acres)
Central	1	116,986.9	2.69
Northeast	2	48,474.9	1.11
East	3	28,574.0	0.66
Southeast	4	78,680.4	1.81
Southwest	5	118,114.8	2.71
West	6	45,194.6	1.04
Northwest	7	56,638.5	1.30
Far North	8	250,262.8	5.75
Far East	9	Not Applicable[a]	
Total	–	742,926.9	17.06

[a] Sampling in the Far East Sector (Sector 9) was conducted to define potential sources of contamination in the RGA. As such, the surface soil sample results are not believed to be representative of contamination that may be in the area. Therefore, surface soil sampling results are assessed using a default area of 1 acre.

1.2.4.5 Exposure unit information for workers

During the development of the site conceptual model, it was determined that the size of each sector was directly proportional to the time that a worker would be directly exposed to potentially contaminated soil in each sector. To account for this fact, an exposure unit representing the reasonable range a utility worker would cover in a day's time was selected. This value was 0.5 acres as presented in Sect. 5 of App. 5 of the Methods Document.

1.2.4.6 Exposure unit information for residents

During the development of the site conceptual model, it was determined that the size of each sector was directly proportional to the time that a resident would be exposed to potentially contaminated soil in each sector. To account for this fact, an exposure unit representing the reasonable range for a rural resident in a day's time was selected. The selected value was the area of the average residential garden in western Kentucky (0.25 acres). This area was determined from interviews with local agricultural extension agents as presented in Sect. 2 of App. 5 of the Methods Document.

1.2.4.7 Deer range information

During the development of the site conceptual model, it was determined that the size of each sector was directly proportional to the time that a deer would be exposed to potentially contaminated soil and vegetation in the sector. An exposure unit was implemented to represent the reasonable amount of time that a deer would spend at each sector. The exposure unit size for a deer was based on the average range of deer in the United States; this value is 494 acres. How this area was determined is presented in Sect. 4 of App. 5 of the Methods Document.

1.2.5 Summary of COPCs

A general summary of COPCs in soil by depth class for each sector, in soil by depth class over the whole of WAG 6, and in RGA and McNairy Formation groundwater over the whole of WAG 6 is presented in Exhibit 1.18. A detailed summary listing the COPCs individually is in Table 1.19. In Table 1.19, analytes marked with an asterisk lack toxicity information [i.e., a toxicity value is not in the EPA's Integrated Risk Information System (IRIS) (EPA 1998a) or *Health Effects Assessment Summary Tables* (HEAST) (EPA 1998b) and is not available from the alternate approved sources listed in the Methods Document]. Finally, Table 1.20 presents information summarizing information about each detected analyte, including the reason for the retention of an analyte as a COPC.

A comparison between the COPCs listed in Table 1.19 for the WAG 6 Area and the various sectors and the preliminary COPCs listed in Exhibit 1.13 shows that the lists in Table 1.19 are more extensive but similar to the lists of preliminary COPCs. Of the analytes listed as preliminary COPCs in Exhibit 1.13, the only analytes not in Table 1.19 (either in RGA or McNairy Formation groundwater or in the WAG 6 area lists for surface or subsurface soil) are 1,1,2-trichloroethane (groundwater), pentachlorophenol (soil), and octachlorodibenzo-p-dioxin (soil).

1.3 EXPOSURE ASSESSMENT

Exposure is the contact of an organism with a chemical or physical agent. The magnitude of exposure (i.e., dose) is determined by measuring or estimating the amount of an agent available at exchange boundaries (e.g., gut, skin, etc.) during a specified period. Exposure assessment is a process that uses information about the exposure setting and human activities to develop conceptual site models under current and potential future conditions. This subsection introduces the general methods used in exposure assessment, applies these methods to WAG 6 and its sectors to develop a conceptual site model, and presents the doses for the COPCs resulting from this application.

The first step in the exposure assessment is to characterize the exposure setting. This includes describing the activities of the human population, on or near the sight, that may affect the extent of exposure and the physical characteristics of the site. During this process, sensitive subpopulations that may be present

Exhibit 1.18. General summary of COPCs by location, medium, and analyte type

Location	Medium[a]	Analyte Type		
		Organics	Inorganics	Radionulides
WAG 6 Area	Surface Soil	23	13	7
	Subsurface Soil	39	19	10
	RGA Groundwater	14	23	14
	McNairy Groundwater	12	19	17
Central; Sector 1	Surface Soil	0	1	2
(includes C-400 building)	Subsurface Soil	2	5	4
Northeast; Sector 2	Surface Soil	14	3	4
(includes SWMU 40)	Subsurface Soil	22	13	6
East; Sector 3	Surface Soil	17	4	6
	Subsurface Soil	20	11	6
Southeast; Sector 4	Surface Soil	10	4	2
(includes SWMU 11)	Subsurface Soil	28	16	6
Southwest; Sector 5	Surface Soil	19	8	5
	Subsurface Soil	29	16	6
West; Sector 6	Surface Soil	21	9	7
(includes SWMU 47)	Subsurface Soil	22	11	7
Northwest; Sector 7	Surface Soil	7	7	3
(includes SWMU 203)	Subsurface Soil	12	14	5
Far North; Sector 8	Surface Soil	15	6	5
(includes SWMU 26)	Subsurface Soil	20	16	10
Far East; Sector 9	Surface Soil	10	4	4
	Subsurface Soil	16	12	5

[a] Media are listed by groups used in the risk assessment. A brief list is provided below. A complete discussion is in Subsect. 1.3 of this assessment.
Surface Soil (0 to 1' below ground surface): Receptors are the current and future worker, future resident, and future recreational user.
Subsurface Soil (0 to 16' below ground surface): The receptor is the excavation worker.
RGA and McNairy Groundwater: The receptors are the future worker and future resident.

at the site or that may be exposed to contamination migrating from the site are also considered to determine if the BHHRA needs to pay special attention to these populations. Generally, site characterization results in a qualitative evaluation of the site and the surrounding population.

The second step in the exposure assessment is to identify exposure pathways. Exposure pathways describe the path a contaminant travels from its source to an individual. A complete exposure pathway includes all links between the source and the exposed population. Therefore, a complete pathway consists of the source of release, a mechanism of release, a transport medium, a point of potential human contact, and an exposure route.

The third step in the exposure assessment is to calculate dose by quantifying the magnitude, frequency, and duration of exposure for the populations for the exposure pathways selected for quantitative evaluation. This step involves estimating exposure or representative concentrations for COPCs and quantifying pathway-specific intakes.

All exposure estimates in this BHHRA represent normalized exposure rates which are evaluated for sources of uncertainty such as variability in data, modeling results, and/or parameter assumptions. Specifically, in this BHHRA, the exposure estimate is an estimation of the RME which can be expected to occur under current or future site conditions. As defined by RAGS, an RME estimate is a conservative estimate of exposure that falls within the upper bound of the range of all possible exposure estimates. In situations where populations are exposed through multiple pathways, RME estimates are calculated for both individual and multiple pathways.

The focus of the exposure assessment for WAG 6 at PGDP is to determine chronic intake or dose. The chronic exposure estimate is used because it allows for the estimation of the health consequences that result from long-term or unrestricted exposure to contaminants present at sources in WAG 6. Subchronic exposures receive less attention because these exposures require the use of assumptions concerning restrictions on rates of contact with contaminated media. Such assumptions are best left to managers who can use risk management to make remedial decisions that can reduce risks from chronic exposures to acceptable levels.

1.3.1 Characterization of Exposure Setting

The first step in evaluating exposure is to characterize surface features, meteorology, geology, demography and land use, ecology, hydrology, and hydrogeology of the area inhabited by potential receptors. These aspects are fully discussed in Chapts. 1, 2, and 3 of Vol. 1 of this report, and much of that information does not bear repeating here. However, physical descriptions and pictures (Fig. 1.3, 1.4, 1.5, 1.6, and 1.7) of the C-400 area and each sector are included within this exposure assessment to support later discussions of the conceptual model and its uncertainties.

1.3.1.1 Physical description of the WAG 6 area

The C-400 area is located near the center of the industrial section of PGDP. It contains the C-400 block, bound by 10th and 11th Streets to the west and east, respectively, and Virginia and Tennessee Avenues to the north and south, respectively. It also includes the area near SWMU 26 in the Far North Sector (i.e., Sector 8). (See Fig. 1.1 in this volume for a schematic diagram of the WAG 6 area and Fig. 4.3, 4.4, 4.5, 4.6, 4.11, 4.13, 4.14, 4.15, and 4.16 in Vol. 1 for detailed diagrams.) In general, the area contains the C-400 Building (Sector 1) at its center; SWMU 40, the C-403 Neutralization Tank, in its northeast portion (Sector 2); SWMU 11, the Trichloroethene Leak Site, in its southeast portion (Sector 4); SWMU 47, the Technetium Storage Tank Area, in its western portion (Sector 6); SWMU 203, the C-400 Waste Discard System Sump, in its near northwest portion; and SWMU 26, the C-400 to C-404 Transfer Line, in its far north northwest portion. In total, the WAG 6 area covers approximately 17 acres.

As part of the industrialized portion of PGDP, the WAG 6 area contains many above and below ground utility lines, is bounded or transected by asphalt and concrete roads, and is gravel or concrete covered in many places. Exhibit 1.19 presents the percentages of each SWMU covered by either concrete, asphalt, gravel, or grass. In total, it is estimated that 51% of the WAG 6 area (not including Sector 9) is covered by either buildings, gravel, asphalt, or concrete. In addition, if Sector 8 (Far North/Northwest Sector) is also not included in the WAG 6 area because it is located across Virginia Street from the C-400 Building, it is estimated that about 75% of the WAG 6 area is covered by either buildings, gravel, asphalt, or concrete.

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Exhibit 1.19. Surface cover in WAG 6 and its sectors

Sector Name	Sector Number	Area (acres)	Cover Type and Percent of Total Area Covered[a]			
			Concrete[b]	Asphalt	Gravel	Grass
Central	1	2.69	100%	0%	0%	0%
Northeast	2	1.11	80%	0%	0%	20%
East	3	0.66	20%	0%	60%	20%
Southeast	4	1.81	45%	20%	0%	35%
Southwest	5	2.71	25%	0%	25%	50%
West	6	1.04	10%	0%	65%	25%
Northwest	7	1.30	35%	0%	45%	20%
Far North/Northwest	8	5.75	5%	0%	0%	95%
Far East/Northeast	9	NA	NA	NA	NA	NA
Total (inc. Sector 8)	–	17.06	35%	2%	14%	49%
Total (not inc. Sector 8)	–	11.31	53%	3%	21%	25%

Notes:

NA Sampling in the Far East Sector (Sector 9) was conducted to define potential subsurface sources of contamination in the RGA. As such, the surface soil sample results are not believed to be representative of contamination that may be in the area. Therefore, surface soil sampling results are assessed using a default area of 1 acre.

[a] All percentages are estimates.

[b] Includes areas of buildings.

1.3.1.2 Physical description of the Central Sector (Sector 1)

The Central Sector is composed entirely of the C-400 Building. All surrounding areas are parts of the surrounding sectors. The C-400 Building rests on a 16" concrete floor designed with four main pits/sumps and an east-side basement area. Sector 1 encompasses approximately 2.6 acres.

1.3.1.3 Physical description of the Northeast Sector (Sector 2)

The Northeast Sector is a flat, 1.1 acre area that includes SWMU 40 (the C-403 Neutralization Tank) and the C-402 Lime House (not a SWMU). The sector is bordered on the north by Virginia Avenue, on the east by 11[th] Street, on the south by the East Sector (Sector 3), and on the west by the C-400 Building. The C-403 tank is a 25-ft square, 26-ft-deep, in ground, open-top tank constructed of concrete and lined with two layers of acid brick. Service to the tank, which is currently covered and not in use, was through below ground lines. One of these lines ran from the C-402 Lime House which is located south of the C-402 tank and is an enclosed structure covering approximately 50 by 20 feet. Other underground lines ran from the C-400 Building to the tank and from the tank to either the C-404 Holding Pond or the North-South Diversion Ditch. (The effluent's ultimate destination varied over years. See Vol. 1 for a description of these changes.) The sector also includes a driveway which runs from Virginia Avenue to the C-400 Building. In total, approximately 80% of the sector is covered by concrete or structures.

Fig. 1.3 View looking north down the east side of C-400 Building along 11th Street–Sectors 4, 3, and 2.

1.3.1.4 Physical description of the East Sector (Sector 3)

The East Sector is a flat, 0.7 acre area that does not include an identified SWMU. The sector is bordered on the north by the Northeast Sector (Sector 2), on the east by 11th Street, on the south by the Southeast Sector (Sector 4) and on the west by the C-400 Building. Approximately 60% of this sector's surface is covered by gravel, 20% is covered by concrete, and 20% is uncovered soil. The uncovered area is on the east side of the sector near 11th Street.

1.3.1.5 Physical description of the Southeast Sector (Sector 4)

The Southeast Sector is an "L" shaped, flat, 1.8 acre area that includes SWMU 11 [C-400 Trichloroethene (TCE) Leak Site]. Major borders of the sector are formed by the East Sector (Sector 3) on the north, by 11th Street on the east, by Tennessee Avenue on the south, and by the C-400 Building on the west. However, because of its irregular shape, a portion of the north boundary of the sector is made-up of the C-400 Building, and a portion of the west boundary is made up of the Southwest Sector (Sector 5). In addition to SWMU 11, which is composed of an underground discharge line running from the C-400 Building and the associated soils, the Southeast Sector also contains the TCE Truck Unloading Pumps and storage tank, a parking lot, and a cylinder storage and handling area. The soils associated with SWMU 11 were excavated to a depth of 16 feet in 1986. The area covered by the excavation, which was backfilled with clean soil, was 20 by 40' (long axis running north to south). In total, approximately 45% of the sector is covered by concrete, 20% covered by asphalt, and 35% covered by grass.

1.3.1.6 Physical description of the Southwest Sector (Sector 5)

The Southwest Sector is an "L" shaped, flat, 2.7 acre area that does not include an identified SWMU. The sector is bordered on the north by either the West Sector (Sector 6) or the C-400 Building, on the east by either the C-400 Building or the Southeast Sector (Sector 4), on the south by Tennessee Avenue, and on the west by 10th Street. This sector includes a cylinder storage and handling area, a nitric acid tank, and a transformer station. In total, approximately 25% of the sector is covered by concrete, 25% is covered by gravel, and 50% is covered by grass.

530386

Fig. 1.4 View looking southwest toward east side of the C-400 Building–Sectors 9, 2, 3, and 4.

Fig. 1.5. View of Sector 4 (Southeast) including SWMU 11–TCE Leak Site

1.3.1.7 Physical description of the West Sector (Sector 6)

The West Sector is a flat, 1 acre area that includes SWMU 47 (Technetium-99 Storage Tank Area). The sector is bordered on the north by the Northwest Sector (Sector 7), on the east by the C-400 Building, on the south by the Southwest Sector (Sector 5), and on the west by 10th Street. In addition to SWMU 47, which is presently a berm-enclosed area approximately 14 by 14' containing a concrete pad, the West Sector also includes part of a transformer station. The aboveground tank which was part of the SWMU 47 area was removed in 1986. In total, approximately 10% of the sector is covered by concrete, 65% is covered with gravel, and 25% is covered by grass.

Fig. 1.6. View of Sector 6 (West) including SWMU 47 Tc-99 Storage Tank Area

1.3.1.8 Physical description of the Northwest Sector (Sector 7)

The Northwest Sector is a flat, 1.3 acre area that includes SWMU 203 (C-400 Waste Discard Sump). The sector is bordered on the north by Virginia Avenue, on the east by the C-400 Building, on the south by the West Sector (Sector 7), and on the east by 10th Street. In addition to SWMU 203, the Northwest Sector also contains the laundry entrance to the C-400 Building and, on its western edge, part of the C-405 Incinerator. SWMU 203 is a concrete, acid brick-lined, below ground, open, 6 by 11' pit that is 6' deep. SWMU 203 also includes the below ground service lines that run to SWMU 203 from the C-400 Building and from SWMU 203 to the North-South Diversion Ditch located across Virginia Avenue. In total, approximately 35% of the sector is covered by concrete, 45% is covered by gravel, and 20% is covered by grass.

1.3.1.9 Physical description of the Far North/Northwest Sector (Sector 8)

The Far North/Northwest Sector is a flat, 5.8 acre area that includes SWMU 26 (C-400 to C-404 Transfer Line). The sector runs along Virginia Avenue from 11th Street to the C-404 Landfill. SWMU 26 is

Fig. 1.7 View of Sector 8 (Far North/Northwest) including SWMU 26–C-400 to C-404 Transfer Line.

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composed of a below ground line that once transported effluents from the C-403 Neutralization Tank (SWMU 40), the C-400 Waste Discard Sump (SWMU 203), and, possibly, the C-400 Building to the previous C-404 Holding Pond. In addition to SWMU 26, the sector also contains the North-South Diversion Ditch and the C-726 Sand Blast Facility. Note that although a portion of the North-South Diversion Ditch can be considered to be in this sector, the contamination in this ditch is to be considered in another study; that is, the ditch is not considered in this assessment. In total, approximately 5% of the sector is covered by concrete and 95% is covered by grass.

1.3.1.10 Physical description of the Far East/Northeast Sector (Sector 9)

The Far East/Northeast Sector is a flat area that does not include an identified SWMU. Unlike the other sectors, Sector 9 does not border the Central Sector. Additionally, unlike the other sectors, the remedial investigation team did not determine the area of this sector because sampling in this sector was not performed to characterize potential surface contamination. It was performed to investigate potential subsurface sources of the trichloroethene contamination. (See Vol. 1 for additional discussion of surface soil sampling in this sector.)

1.3.1.11 Demography and land use

As shown in the physical descriptions presented above, current land use of all sectors within the WAG 6 area is industrial. This area is located near the center of the secure, industrialized portion of PGDP which has an area of 749 acres. Under current use, because of security arrangements, only plant workers and authorized visitors are allowed access to the WAG 6 area. As discussed in the PGDP Site Management Plan (DOE 1996a), foreseeable future land use of the area is expected to be industrial as well; however, alternative uses farther into the future are possible as shown by the current use of areas surrounding PGDP.

At present, both recreational and residential land uses occur in areas surrounding PGDP. Recreational use occurs in the Western Kentucky Wildlife Management Area (WKWMA). The WKWMA is used primarily for hunting and fishing, but other activities include horseback riding, field trials, hiking, and bird watching. An estimated 5000 fishermen visit the area annually, according to the KDFWR, manager of the WKWMA. Residential use near the plant generally is rural residential and includes agricultural activities. However, more urban residential use occurs in the villages of Heath, Grahamville, and Kevil, which are within 3 miles of DOE property boundaries. The closest major urban area is the municipality of Paducah, Kentucky, which has a population of approximately 28,000 and is approximately 10 miles from PGDP. Other municipalities in the region near PGDP are Cape Girardeau, Missouri, which is approximately 40 miles west of the plant, and the cities of Metropolis and Joppa, Illinois, which are across the Ohio River from PGDP. Total population within a 40-mile radius of the plant is approximately 500,000 people, with about 50,000 people living within 10 miles, based on 1990 census data. The population of McCracken County, in which PGDP lies, is estimated at 63,000 people.

In the area near PGDP and in western Kentucky in general, the economy has historically been agriculturally based; however, industry has increased in recent years. The PGDP is a major employer with approximately 1,800 workers. Another major employer near the PGDP is the Tennessee Valley Authority (TVA) Shawnee Steam Plant which employs approximately 500 individuals.

530389

1.3.2 Identification of Exposure Pathways

Exposure pathways describe how a contaminant travels from its source to an individual. A complete exposure pathway includes all links between the source and the exposed population. That is, a complete pathway consists of the source of release, a mechanism of release, a transport medium, a point of potential human contact, and an exposure route. Sources of release, mechanisms of release, and transport media are discussed completely in Chapt. 4 of Vol. 1 of this report. Therefore, the following discussions focus on points of potential human contact, types of receptors, and exposure routes.

1.3.2.1 Points of human contact – land use considerations

As discussed earlier, at present, WAG 6 is an industrial area located near the center of a large industrial facility. Therefore, the current land use is industrial. Per KDEP and EPA agreement (Methods Document), this land use limits the current exposure medium for a receptor to the first foot of surface soil.

Also as discussed earlier, the current land use at WAG 6 can be expected to continue in the foreseeable future. That is, the most plausible future land use of the WAG 6 area is also industrial. However, uses of areas surrounding PGDP indicate that it would be prudent to examine a range of land uses to provide managers with estimates of the risk which may be posed to humans under these alternate uses. In addition, consideration of a range of land uses is consistent with requirements outlined in the Commonwealth of Kentucky's *Risk Assessment Guidance* (KDEP 1995). Alternate land uses considered in this assessment, in order of their plausibility, are excavation, recreational, and rural residential. As with industrial land use and per agreement with KDEP and EPA (Methods Document), soil exposure for the industrial worker (future conditions), rural resident, and recreational user is limited to the first foot of surface soil; therefore, materials in lines or in line bedding materials are assumed to not be available for direct contact for these land use scenarios. However, for the excavation worker, the first 16 ft of soil are assumed to be available for direct contact. (Note, the Methods Document directs that the excavation worker scenario consider soil to 10 ft deep. This assessment uses soil to 16 ft deep for the excavation worker because many of the utility lines in the WAG 6 area are at or near this depth.) In addition, per the site descriptions contained in Vol. 1 and per agreement with KDEP and EPA in the Methods Document, both the future industrial worker and future rural resident are assumed to use groundwater withdrawn from the RGA and McNairy Formation underlying WAG 6.

The assessment assumes that residents are the individuals most likely to partake in recreational activities at WAG 6 and near PGDP. That is, in addition to exposure from rural residential activities, a resident may also be exposed during frequent recreational activities. This assumption means that it is possible that the exposure to a rural resident may be greater than that reported later if the rural resident also receives exposure through the recreational routes of exposure. To address this issue, the reader may wish to combine the exposure values from the recreational user scenario with those from the rural resident scenario.

1.3.2.2 Potential receptor populations

As noted above, the receptor populations are industrial workers under current conditions and industrial workers, excavation workers, recreational users, and rural residents under potential future conditions. Within these broad categories, the recreational users and rural residents contain age cohorts that need to be considered (Methods Document). For the recreational users, the cohorts considered are the child (aged 1 to 7), teen (aged 8 to 20), and the adult (older than 21). For rural residents, the cohorts considered are children (aged 1 to 7) and older individuals (termed adults in this assessment). The recreational user and the rural resident population may also contain sensitive subpopulations such as pregnant women, young children (aged 0 to 1), the elderly, and the infirm. In this assessment, exposure to these subpopulations is not quantified because much of the information that is needed is not available; however, these subpopulations are considered qualitatively in the uncertainty discussion included in this assessment. Also, as noted earlier, this assessment assumes that the recreational user is a rural resident that has repeated access to the study area. Recreational users not residing in the study area are not considered separately because nearby residents were determined to be the individuals most likely to take part in recreational activities at PGDP on a continual basis. In addition, the exposure assessment determined that little useful information would be obtained by including a separate visiting recreational user to the assessment.

1.3.2.3 Delineation of exposure point/exposure routes

As discussed, human health risks are assessed by determining exposure points and exposure routes. Exposure points are locations where human receptors can contact contaminated media. Exposure routes are the processes by which human receptors contact contaminated media. The exposure routes considered during the exposure assessment per agreement with the regulatory agencies (Methods Document) are listed in the following paragraphs. This material also presents reasons for selecting or not selecting each exposure route for each of the potentially exposed populations. Note that not all exposure routes presented in the following list are quantitatively evaluated in the BHHRA; after extensive review of all possible exposure routes, only the probable exposure routes are quantified in the BHHRA.

- Ingestion of water while using groundwater as a drinking water source. Residential and industrial use of groundwater is common in western Kentucky. Potential receptors for this pathway are rural residents and industrial workers.

- Inhalation of volatile constituents emitted while using groundwater. As noted previously, residential and industrial use of groundwater is common in western Kentucky. Rural residents and industrial workers are potential receptors for this exposure route.

- Dermal contact with groundwater while showering. As noted earlier, residential and industrial use of groundwater is common in western Kentucky. Rural residents and industrial workers are potential receptors for this exposure route.

- External exposure to ionizing radiation emitted by contaminants in groundwater while showering. As noted previously, residential and industrial use of groundwater is common in western Kentucky. Rural residents and industrial workers are potential receptors for this exposure route.

- Inhalation of volatile organic compounds during irrigation with contaminated groundwater. In the Midwest, irrigation of farm land with groundwater using center pivot irrigation is common. Rural residents are potential receptors for this exposure route.

- Incidental ingestion of contaminated soil (soil and waste). Industrial processes at WAG 6 have contaminated the soil. Recreational users may ingest soil while recreating, and residents may ingest soil while gardening. Industrial workers may ingest soil while working outdoors, and excavation workers may ingest soil while digging. Recreational users, rural residents, industrial workers, and excavation workers are potential receptors for this exposure route.

- Dermal contact with contaminated soil (soil and waste). Industrial processes at WAG 6 have contaminated the soil. Recreational users may get soil on their skin while recreating, and residents may get soil on their skin while gardening. Industrial workers may get soil on their skin while working outdoors, while excavation workers may get soil on their skin while digging. Recreational users, rural residents, industrial workers, and excavation workers are potential receptors for this exposure route.

- Inhalation of particulates emitted from contaminated soil (soil and waste). Industrial processes at WAG 6 have contaminated the soil, and this soil may release particulates to the air when the soil is dry and disturbed. Recreational users may inhale these particulates while recreating, and residents may inhale these particulates while gardening. Industrial workers may inhale these particulates while working outdoors, and excavation workers may inhale these particulates while digging. Recreational users, rural residents, industrial workers, and excavation workers are potential receptors for this exposure route.

- Inhalation of volatile constituents emitted from contaminated soil (soil and waste). Industrial processes at WAG 6 have contaminated the soil. Some of these contaminants may be volatile and released to the air as vapors. Recreational users may inhale these vapors while recreating, and residents may inhale these vapors while gardening. Industrial workers may inhale these vapors while working outdoors, and excavation workers may inhale these vapors while digging. Recreational users, rural residents, industrial workers, and excavation workers are potential receptors for this exposure route.

- External exposure to ionizing radiation emitted from contaminated soil (soil and waste). Industrial processes at WAG 6 have contaminated the soil. Radionuclides present in contaminated soil will, in turn, undergo decay and emit ionizing radiation. Recreational users may be exposed to this ionizing radiation while recreating, and residents may be exposed to it while gardening. Industrial workers may be exposed to the ionizing radiation while working outdoors, and excavation workers may be exposed to it while digging. Recreational users, rural residents, industrial workers, and excavation workers are potential receptors for this exposure route.

- Incidental ingestion of water while swimming in privately owned fish ponds filled with groundwater. Construction of fish ponds was determined to be a viable future agriculture land use after the Agriculture Extension Agents for Ballard and McCracken counties noted that "pay-to-fish" lakes filled with groundwater exist in Ballard County and that the Agriculture Extension office has actively promoted the construction of commercial ponds. (See Sect. 2 of App. 5 of the Methods Document.) Although the agents disagreed how profitable this form of farming could be in western Kentucky, the presence of "pay-to-fish" lakes filled with groundwater in Ballard County indicates that aquaculture is a viable alternative rural residential land use in the study area. Because open bodies of water are often attractive for recreation, swimming and wading in these ponds by residents is reasonable. Incidental ingestion of water could occur during swimming. Rural residents are potential receptors for this exposure route.

- Dermal contact with water while swimming or wading in privately owned fish ponds filled with groundwater. The rationale for considering ponds is presented in the previous paragraph. In addition, recreational use of these ponds by residents may reasonably be expected to occur. During recreational use (e.g., swimming or wading), dermal contact with water could occur. Rural residents are potential receptors for this exposure route.

- Incidental ingestion of sediment while swimming or wading in privately owned fish ponds filled with groundwater. The rationale for considering ponds is presented previously. In addition, recreational use of these ponds by residents may reasonably be expected to occur. During recreational activities, incidental ingestion of sediment contaminated by constituents in groundwater is possible. Rural residents are potential receptors for this exposure route.

- External exposure to ionizing radiation emitted by contaminants in groundwater while swimming or wading in privately owned fish ponds filled with groundwater. The rationale for considering ponds is presented previously. During use of these ponds by residents, exposure to ionizing radiation emitted by radionuclides in water could occur. Rural residents are potential receptors for this exposure route.

- External exposure to ionizing radiation emitted by contaminants in sediment while swimming or wading in privately owned fish ponds filled with groundwater. The rationale for considering ponds is presented previously. During use of these ponds by residents, exposure to ionizing radiation emitted by radionuclides in groundwater and sediment could occur. Rural residents are potential receptors for this exposure route.

- Consumption of fish raised in privately owned fish ponds filled with groundwater. The fish raised in ponds would be exposed to contaminants in groundwater and may accumulate some contaminants in their edible tissues. These fish, caught in either a "pay-to-fish" or a commercial pond by residents, could reasonably be expected to be consumed. Recreational users (i.e., visitors) and rural residents are potential receptors for this exposure route.

- Incidental ingestion of surface water in creeks or ponds. Open bodies of water, such as Bayou Creek or settling ponds, are attractive for recreation (e.g., swimming and wading) and must be maintained. Although such bodies of water are not included in the assessment of the WAG 6 area, contaminants may migrate from WAG 6 to these areas. Recreational users and industrial workers are potential receptors for this exposure route. (Note, surface migration to offsite locations is not believed to be an important pathway of migration at WAG 6 as discussed in Chapt. 5 of Vol. 1.)

- Dermal contact with surface water while swimming or wading in creeks or ponds. Open bodies of water, such as Bayou Creek or settling ponds, are attractive for recreation (e.g., swimming and wading) and must be maintained. Although such bodies of water are not included in this assessment of the WAG 6 area, contaminants may migrate from WAG 6 to these areas. Recreational users and industrial workers are potential receptors for this exposure route. (Note, surface migration to offsite locations is not believed to be an important pathway of migration at WAG 6 as discussed in Chapt. 5 of Vol. 1.)

- Incidental ingestion of sediment while swimming or wading in creeks or ponds. Open bodies of water, such as Bayou Creek or settling ponds, are attractive for recreation (e.g., swimming and wading) and must be maintained. Although such bodies of water are not included in this assessment of the WAG 6 area, contaminants may migrate from WAG 6 to these areas. Recreational users and industrial workers are potential receptors for this exposure route. (Note, surface migration to offsite locations is not believed to be an important pathway of migration at WAG 6 as discussed in Chapt. 5 of Vol. 1.)

- External exposure to ionizing radiation emitted by contaminants in surface water while swimming or wading in creeks or ponds. Open bodies of water, such as Bayou Creek or settling ponds, are attractive for recreation (e.g., swimming and wading) and must be maintained. Although such bodies of water are not included in this assessment of the WAG 6 area, contaminants may migrate from WAG 6 to these areas. Recreational users and industrial workers are potential receptors for this exposure route. (Note, surface migration to offsite locations is not believed to be an important pathway of migration at WAG 6 as discussed in Chapt. 5 of Vol. 1.)

- External exposure to ionizing radiation emitted by contaminants in sediment while swimming or wading in creeks or ponds. Open bodies of water, such as Bayou Creek or settling ponds, are attractive for recreation (e.g., swimming and wading) and must be maintained. Although such bodies of water are not included in this assessment of the WAG 6 area, contaminants may migrate from WAG 6 to these areas. Recreational users and industrial workers are potential receptors for this exposure route. (Note, surface migration to offsite locations is not believed to be an important pathway of migration at WAG 6 as discussed in Chapt. 5 of Vol. 1.)

530393

- Consumption of fish taken from creeks and ponds containing contaminated surface water. Fish living in Bayou Creek or settling ponds may accumulate contaminants in surface water in their edible tissues. Although such bodies of water are not included in this assessment of the WAG 6 area, contaminants may migrate from WAG 6 to these areas. Recreational users and residents may catch and consume fish from the potential impacted surface water bodies. Potential receptors for this route of exposure are recreational users. (Note, surface migration to offsite locations is not believed to be an important pathway of migration at WAG 6 as discussed in Chapt. 5 of Vol. 1.)

- Consumption of vegetables and produce raised in contaminated soil (soil and waste). As noted in Sect. 2 of App. 5 of the Methods Document, crop farming and gardening are common activities near the PGDP, and this land use pattern may be expanded to the WAG 6 area in the future after the industrial infrastructure is removed. Because industrial use of the WAG 6 has contaminated soil, plants raised in this soil may, in turn, accumulate these contaminants. Finally, humans may consume this contaminated produce. Potential receptors for this route of exposure are rural residents.

- Consumption of beef from cattle contaminated by consuming vegetation (pasture and concentrates) irrigated with groundwater, consuming soil (soil and waste) contaminated through irrigation or industrial use while on pasture, and drinking groundwater. During interviews, Agriculture Extension Agents for Ballard and McCracken counties indicated that small scale cow-calf operations are common in western Kentucky . (See Sect. 2 of App. 5 of the Methods Document.) They further noted that slaughtering feeder cattle for home consumption is common. In the study area, such beef may be contaminated by incidental ingestion of soil while on pasture, by consumption of contaminated vegetation (pasture and concentrate), and by ingestion of contaminated groundwater. Residents may eat this beef. Therefore, potential receptors for this route of exposure are rural residents.

- Consumption of dairy products (i.e., milk) from cows contaminated by consuming vegetation (pasture or concentrates) irrigated with groundwater, consuming soil (soil and waste) contaminated through industrial use while on pasture, and drinking groundwater. During interviews, Agriculture Extension Agents for Ballard and McCracken counties noted that dairy farming still occurs in their counties. (See Sect. 2 of App. 5 of the Methods Document.) Furthermore, the agents stated that these cattle are fed stored feed and are allowed to graze on pasture. As noted previously, the soil at WAG 6 is contaminated, and the vegetation may become contaminated. Therefore, dairy cattle raised at WAG 6 after the industrial infrastructure is removed may become contaminated through incidental ingestion of soil while on pasture, consumption of contaminated vegetation, and ingestion of contaminated groundwater. Products made from milk from these cows could in turn be consumed by residents. Therefore, potential receptors for this route of exposure are rural residents.

- Consumption of poultry given groundwater to drink. During interviews, Agriculture Extension Agents for Ballard and McCracken counties noted that commercial broiler production did occur in their counties but not near PGDP. (See Sect. 2 of App. 5 of the Methods Document.) (Home flocks for both meat and eggs were noted as being uncommon.) Furthermore, they stated that broilers were fed bought (not locally raised) feed, that normal resident time in poultry houses was 2 months, and that commercial distribution of the product occurs. However, the agents did note that the birds are most likely watered with groundwater. Therefore, broilers may become contaminated through ingestion of contaminated groundwater. For this exposure assessment, the receptor assumed to consume the contaminated poultry is the rural resident.

- Consumption of pork from swine fed contaminated feed and water with groundwater. During interviews, Agriculture Extension Agents for Ballard and McCracken counties noted that both large commercial and small hog farms exist in their counties. (See Section 2 of Appendix 5 of the Methods

Document.) Furthermore, they indicated that swine on both types of farms were fed locally raised feed and, on the smaller farms, that farm-raised pork was consumed by farmers. Therefore, any swine raised may be contaminated through consumption of contaminated feed and groundwater, and this pork may be eaten by rural residents. Therefore, rural residents are potential receptors for this pathway.

- Consumption of game contaminated by consumption of vegetation grown in contaminated soil (soil and waste) and ingestion of groundwater. As indicated in the Methods Document and discussed earlier, the taking of game is common around the study area. Potential game species include deer, rabbits, ducks, geese, quail, and wild turkey. Each of these species may be contaminated by consumption of contaminated vegetation, soil, or groundwater. Potential receptors for this route of exposure are recreational users.

As demonstrated above, a total of 28 routes of exposure, including those which consider biota, are possible for the WAG 6 area. However, not all of these routes are quantified in this assessment. The routes that are quantified and the number of the table in which the equation used to quantify each route is presented, is in the Exhibit 1.20. Note, the list in Exhibit 1.20 does not include when and where exposure may occur.

As noted above, there are several potential routes of exposure that are not quantified in this assessment. The exposure routes not quantified, and the reasons they were not selected are presented in the following discussions. Note, this information is summarized in Table 1.44.

Five exposure routes ending with external exposure to ionizing radiation were not quantified in the BHHRA:

- external exposure by a resident to groundwater while showering,
- external exposure by a resident to groundwater while swimming in a privately owned pond filled with groundwater,
- external exposure by a resident to sediment while swimming in a privately owned pond filled with groundwater,
- external exposure by a recreational user to soil, and
- external exposure by a recreational visitor or industrial worker to surface water while swimming or wading in creeks or ponds.

These routes were not quantified for several reasons. Primary among these reasons are the facts that the WAG 6 area does not include any ditches and that surface migration of contaminants from WAG 6 to surrounding water bodies was deemed unlikely. (See Chapt. 5 of Vol. 1). Additional reasons are listed in the following. 1) Because radionuclide slope factors for external exposure to ionizing radiation emitted by radionuclides in water are currently not available from EPA, the information needed to quantify these routes is not sufficient. 2) The exposure assessment indicated that recreational user exposure to sediment would be greater; therefore, including these routes for the resident would be redundant, 3) The exposure assessment and previous work indicated that external exposure to ionizing radiation from soil by the recreational user would not result in a significant dose because repeated contact with contaminated media in the WAG 6 area would be unlikely, and exposure time would be minimal. Therefore, the determination was made to estimate this dose for the rural resident and industrial worker.

530395

Exhibit 1.20. Exposure routes quantified in the baseline human health risk assessment

Exposure Route	Table[a]
Residential Use	
Ingestion of water while using groundwater as a drinking water source	Table 1.21
Dermal contact with groundwater while showering	Table 1.22
Inhalation of volatiles in groundwater while showering	Table 1.23
Inhalation of volatiles in groundwater during household use	Table 1.24
Incidental ingestion of soil contaminated by industrial use	Table 1.25
Dermal contact with contaminated soil	Table 1.26
Inhalation of volatiles and particulates emitted from soil	Table 1.27
External exposure to ionizing radiation emitted from soil	Table 1.28
Consumption of vegetables raised in study area	Table 1.29
Recreational Visitor	
Consumption of venison ranging in study area	Table 1.30
Consumption of rabbit ranging in study area	Table 1.31
Consumption of quail ranging in study area	Table 1.32
Industrial Worker	
Ingestion of groundwater	Table 1.33
Dermal contact with groundwater while showering	Table 1.34
Inhalation of volatile compounds emitted by groundwater while showering	Table 1.35
Ingestion of soil	Table 1.36
Dermal contact with soil	Table 1.37
Inhalation of volatile compounds and particulates emitted from soil	Table 1.38
External exposure to ionizing radiation emitted from soil	Table 1.39
Excavation Worker	
Ingestion of contaminated soil	Table 1.40
Dermal contact with contaminated soil	Table 1.41
Inhalation of volatile compounds and particulates emitted from contaminated soil	Table 1.42
External exposure from contaminated soil	Table 1.43

[a] Table in App. A where equation and exposure parameters are displayed.

Three routes involving inhalation of either volatile organic compounds (VOCs) or contaminated particulates emitted by groundwater and soil were not quantified in the BHHRA:

- inhalation of vapors during irrigation by resident,
- inhalation of particles emitted from soil by recreational visitor, and

- inhalation of vapors emitted from soil by recreational visitor.

These routes were not quantified for several reasons. First, the routes involving inhalation of vapors during irrigation were removed because a qualitative evaluation in *Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant* (DOE 1994a) indicated that the volume of air in which mixing could occur out of doors resulted in potential intakes that were very small and insignificant compared to those from ingestion. Second, the determination was made that the potential importance of vapor emission could be more conservatively estimated using the indoor pathways (i.e., inhalation of vapors while using groundwater in a shower). Third, as with external exposure to ionizing radiation emitted by soil, the route involving inhalation of particulates and vapors emitted by soil during recreational use were not quantified because the determination was made that this route of exposure would be best quantified for the rural resident and industrial worker.

Six routes of exposure involving contacts with media in ponds filled with groundwater were not quantitatively evaluated in the BHHRA:

- ingestion of groundwater by a resident while swimming in a privately owned pond filled with groundwater,
- ingestion of sediment by a resident while swimming in a privately owned pond filled with groundwater,
- dermal contact with groundwater by a resident while swimming in a privately owned pond filled with groundwater,
- dermal contact with sediment by a resident while swimming in a privately owned pond filled with groundwater,
- consumption of fish raised in privately owned ponds filled with groundwater by a resident, and
- consumption of fish by a recreational visitor raised in privately owned ponds filled with groundwater.

These routes were not quantified because the determination was made that these pathways would be best quantified when considering the groundwater operable unit (OU) as a whole. [This decision is consistent with material in the Methods Document.]

Four routes of exposure involving consumption of livestock products by a rural resident were not quantitatively evaluated in the BHHRA:

- consumption of beef,
- consumption of dairy products,
- consumption of poultry and eggs, and
- consumption of pork.

These were not quantified because the determination was made that the industrial nature of the WAG 6 area would prevent livestock production in this area in the foreseeable future. In addition, the belief is that the contaminant concentrations in soil may change markedly by the time the industrial infrastructure is removed making any calculations using current contaminant concentration meaningless. However, the reader should recognize that past assessments at PGDP have shown that dose from the livestock pathways can be significant. [Note, the exclusion of the livestock production pathways and exposure routes is consistent with material in the Methods Document. In that document, the assessor is directed to quantify these pathways only in assessment of the groundwater and surface water integrator OUs.]

Industrial worker and excavation worker routes for exposure to sediment and surface water were not quantified in this BHHRA for two reasons. First, as noted earlier, there are no ditches with flowing surface water included in this assessment in the WAG 6 area. Second, the fate and transport discussion in Sect. 4 of Vol. 1 indicates that surface migration of contaminants from the WAG 6 area is unlikely. The specific routes not quantified are:

- ingestion of surface water,
- dermal contact with surface water,
- inhalation of vapors emitted from surface water,
- external exposure to ionizing radiation emitted from surface water,
- ingestion of sediment,
- dermal contact with sediment,
- inhalation of vapors and particulates emitted from sediment, and
- external exposure to ionizing radiation emitted from sediment.

Finally, one exposure route dealing with radionuclides in soil was not quantified in the BHHRA—dermal absorption from contaminated soil. This pathway was dismissed because dermal absorption of radionuclides has not been shown to contribute significantly to risk from radionuclides (RAGS).

1.3.2.4 Development of conceptual site models

Using the information presented in the previous subsections, a conceptual site model was developed for the sectors and the WAG 6 area. This conceptual site model (Fig. 1.8) illustrates all sources, pathways of migration, and routes of exposure for each potential receptor. This conceptual site model is common to all sectors, except Sector 1, because the contaminated media in each of the remaining sectors are the same because of releases from C-400 processes. Sector 1 is unique. Exposure to surface soil is not possible in this sector because the surface of the sector is covered by the C-400 building.

1.3.2.5 Calculation of representative concentrations of COPCs

The representative concentrations of COPCs in each medium under current conditions for each sector were determined before the intake models presented in Subsect. 1.3.2.3 were used to calculate the chronic daily intakes used in the risk calculations. The representative concentrations for COPCs in surface soil, subsurface soil, and RGA and McNairy groundwater are presented in Table 1.45. The program used to calculate these values is SAS® Program 3 in App. D of this volume.

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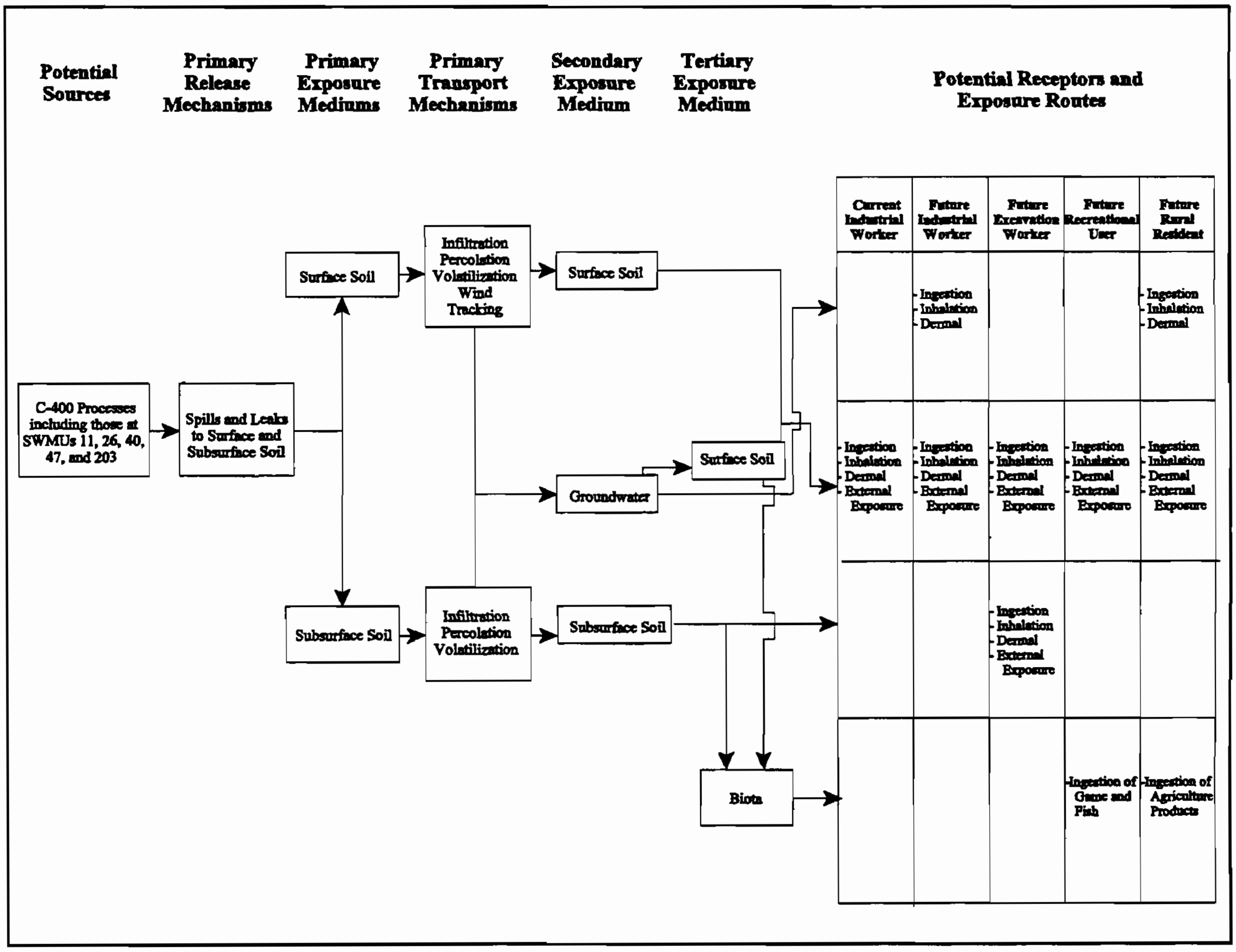

Fig. 1.8. Conceptual site model for the WAG 6 area and its sectors.

In all cases, the representative concentration for a COPC within a medium was the lesser of the maximum detected concentration of the COPC in the medium and the upper 95% confidence limit on the arithmetic mean [95% upper confidence limit (UCL)] concentration of the COPC in the medium (EPA 1992a, Methods Document). In deriving the 95% UCL concentrations for COPCs expected to be present at WAG 6 and its sectors (e.g., trichloroethene and its degradation products, uranium isotopes), the surrogate concentration used for samples in which the COPC was not detected was the detection limit of the COPC in the medium. For COPCs not expected to be present at WAG 6, the surrogate concentration used when calculating the 95% UCL concentration for samples in which the COPC was not detected was one-half the detection limit of the COPC in the medium. After surrogate concentrations were assigned and before calculating the representative concentration, the form of the distribution of the concentrations for each COPC within a medium was determined. In this analysis, the two distribution forms against which data were compared were the normal distribution and the log-normal distribution (EPA 1992a). The test used for the comparisons was the W-test contained in the Univariate Procedure of SAS® (SAS 1990). If data were determined to be normally distributed, the following equation was used to calculate the 95% UCL (EPA 1992a, Methods Document).

$$95\%\ \mathbf{UCL} = \overline{\mathbf{X}} + \left[\mathbf{t} \times \left(\frac{\mathbf{s}}{\sqrt{\mathbf{n}}}\right)\right]$$

where:

95% UCL is the upper 95% confidence limit on the mean
X is the arithmetic mean
t is the Student's-t value for the appropriate number of degrees of freedom
s is the standard deviation of the sample data
n is the number of observations

If data were determined to be log-normally distributed, the following equation was used to calculate the 95% UCL (EPA 1992a).

$$95\%\ \mathbf{UCL} = \mathbf{e}^{\left[\overline{\mathbf{X}} + (0.5 \times s^2) + \left(\frac{s \times \mathbf{H}}{\sqrt{\mathbf{n-1}}}\right)\right]}$$

where:

95% UCL is the upper 95% confidence limit on the mean
e is the base of the natural log
X is the arithmetic mean of the log transformed values
s^2 is the variance of the log transformed sample data
H is the H-statistic
n is the number of observations

After the 95% UCL concentration of the COPC was determined, this value was compared to the maximum detected concentration of the COPC. As noted above, the representative concentration of each COPC in each medium was the lessor of the maximum detected concentration and the appropriate 95% UCL concentration (RAGS).

To determine the representative concentrations of COPCs in biota, the models in Tables 1.46 to 1.49 were used. These tables present the models and the values of the input parameters. Chemical-specific parameters called out in Tables 1.46 to 1.49, such as biotransfer factors, are in Table 1.50. Finally, Table 1.51 presents the representative concentrations of COPCs in biota derived using these models.

1.3.2.6 Chronic daily intakes

Using the human exposure models presented in Subsect. 1.3.2.3, the conceptual site model presented in Subsect. 1.3.2.4, and the representative concentrations and uptake models discussed in Subsect. 1.3.2.5, chronic daily intakes of each of the COPCs were determined. The program used to calculate the chronic daily intakes is Program 8 as described in App. D; these chronic daily intakes are presented in Tables 1.52 to 1.61. In this presentation, the chronic daily intakes used to estimate current systemic toxicity at current concentrations (i.e., noncarcinogenic effects) are presented first, and the values used to estimate current ELCR at current concentrations follow. Next, chronic daily intakes used to estimate future systemic toxicity at current concentrations are presented, and the values used to estimate future ELCR at current concentrations follow. Within each of these broad classifications, chronic daily intakes are presented by sector, exposure pathway, medium, and time.

1.3.2.7 Summary of exposure assessment

Media available for contact in the WAG 6 area and its sectors are soil and groundwater. Industrial land use currently characterizes the WAG 6 area and its sectors. However, onsite future potential human receptors are industrial workers, recreational users (children, teens, and adults), rural residents (children and adults), and excavation workers. Additional offsite current and future potential human receptors are rural residents (children and adults). (Note, only the residential receptor is quantitatively evaluated for offsite exposure because that is the most sensitive receptor.)

Several potential routes of exposure exist. Routes quantified for the current industrial worker are ingestion of soil, dermal contact with soil, inhalation of volatile compounds and particulates emitted from soil, and external exposure to ionizing radiation emitted from soil.

Routes quantified for the future onsite industrial worker are ingestion of groundwater, dermal contact with groundwater while showering, inhalation of volatile compounds in groundwater while showering, ingestion of soil, dermal contact with soil, inhalation of volatile compounds and particulates emitted from soil, external exposure to ionizing radiation emitted from soil. Routes quantified for the future offsite industrial worker are ingestion of groundwater, dermal contact with groundwater while showering, and inhalation of volatile compounds in groundwater while showering. Routes quantified for the future onsite recreational user are consumption of venison, rabbit, and quail ranging in the study area. No routes were quantified for the future offsite recreational user because a fate and transport analysis (see Chapt. 5 in Vol. 1) indicated that contaminant migration to offsite surface water is not a viable pathway. Routes quantified in this BHHRA for the onsite future rural resident are ingestion of groundwater as a drinking water source, dermal contact with groundwater while showering, inhalation of volatiles in groundwater while showering, incidental ingestion of soil, dermal contact with contaminated soil, inhalation of volatiles and particulates emitted from soil, external exposure to ionizing radiation emitted from soil, and consumption of vegetables raised in study area. Routes considered in this BHHRA for the offsite future rural resident are ingestion of groundwater as a drinking water source, dermal contact with groundwater while showering, inhalation of volatiles in groundwater while showering, and inhalation of volatiles in groundwater during household use. Routes quantified for the excavation worker were ingestion of contaminated soil and waste, dermal contact with contaminated soil and waste, inhalation of volatile compounds and particulates emitted from contaminated soil and waste, and external exposure from contaminated soil and waste.

1.4 TOXICITY ASSESSMENT

This section summarizes the potential toxicological effects of the COPCs on exposed populations. Many of the toxicological effect summaries and nearly all of the toxicity values included in this section (except lead and a few others) were obtained from information drawn from http://risk.lsd.ornl.gov/tox/rap_toxp.htm. This website (DOE 1998a) is the Risk Assessment Information System (RAIS) prepared by the Toxicology and Risk Analysis Section (TARA) of Oak Ridge National Laboratory (ORNL) for DOE. This site is a compilation of toxicity values taken from EPA's most recent IRIS database (EPA 1998a) and the (Health Effects Assessment Summary Tables (HEAST) database (EPA 1998b). For those chemicals not profiled in the RAIS, a brief summary of information drawn from Agency for Toxic Substances and Disease Registry (ATSDR) or other library research sources is included in this section. Note that the last paragraph of each profile contains the toxicity values used in this BHHRA.

Complete toxicity profiles, if available from the RAIS, for the COPCs determined to be COCs that contribute greater than 10 percent of the total risk within a land use scenario are provided in Appendix E.

The toxicity information considered in the assessment of potential carcinogenic risks includes (1) a weight-of-evidence classification and (2) a slope factor. The weight-of-evidence classification qualitatively describes the likelihood that an agent is a human carcinogen, based on the available data from animal and human studies. A chemical may be placed in one of three groups to indicate its potential for carcinogenic effects: Group A, a known human carcinogen; Group B, a probable human carcinogen; and Group C, a possible human carcinogen. (The reader should note that Group B is divided into Subgroups B1 and B2. Assignment of a chemical to Subgroup B1 indicates that the judgment that the chemical is a probable human carcinogen is based on limited human data; assignment of a chemical to Subgroup B2 indicates that the judgment that the chemical is a probable human carcinogen is based on animal data because human data are lacking or inadequate.) Chemicals that cannot be classified as human carcinogens because of a lack of data are categorized in Group D, and those for which there is evidence of noncarcinogenicity in humans are categorized in Group E.

The slope factor for chemicals is defined as a plausible upperbound estimate of the probability of a response (i.e., development of cancer) per unit intake of a chemical over a lifetime (RAGS). Slope factors are specific for each chemical and route of exposure. Slope factors are currently available for ingestion and inhalation pathways. The slope factors used for oral and inhalation routes of exposure for the COPCs considered in this report are shown in Table 1.62.

Toxicity values used in risk calculations also include the chronic RfD which is used to estimate the potential for systemic toxicity or noncarcinogenic risk. The chronic RfD is defined as "an estimate of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime" (RAGS). RfD values are specific to the route of exposure. The RfDs used for oral and inhalation routes of exposure for the COPCs considered in this report are presented in Table 1.63.

For the dermal routes of exposure (i.e., dermal exposure to contaminated water during swimming or bathing or dermal contact with contaminated soil), it is necessary to consider the absorbed dose received by a receptor. This is reflected by the addition of an absorption coefficient in the equations used to calculate the chronic daily intake for these pathways. Because the chronic daily intake is expressed as an absorbed dose, it is necessary to use RfDs and slope factors that are also expressed in terms of absorbed dose. Currently, EPA has not produced lists of RfDs and slope factors based on absorbed dose. However, EPA has produced guidance concerning the estimation of absorbed dose RfDs and slope factors from administered dose RfDs and slope factors. This guidance is found in *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance* (EPA 1992b) and states that to convert an administered dose slope factor to an absorbed dose slope factor, the administered dose slope factor is divided by the gastrointestinal absorption efficiency of the contaminant. Alternatively, to convert an administered dose RfD to an absorbed dose RfD, the administered dose RfD is multiplied by the gastrointestinal absorption efficiency of the contaminant. The absorbed dose slope factors and RfDs and the information used in their derivation are presented in Tables 1.64 and 1.65, respectively.

EPA has adopted a Toxicity Equivalency Factor (TEF) methodology for carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and dioxins and furans on the Target Compound List as described in *Supplemental Guidance from RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance)* (EPA 1995a). These TEFs are based on the potency of each compound relative to that of benzo[a]pyrene (BaP) and 2,3,7,8-TCDD. The following exhibit lists the TEFs that were used to convert each cPAH concentration to an equivalent concentration of BaP and each dioxin and furan concentration to an equivalent concentration of 2,3,7,8-TCDD.

Exhibit 1.21. Toxicity equivalency factors[a] (TEFs) used for carcinogenic PAHs and dioxins/furans

Carcinogenic PAH	TEF	Dioxin/Furan	TEF
Benzo[a]pyrene	1.0	2,3,7,8-TCDD	1.0
Benz[a]anthracene	0.1	2,3,7,8-PeCDD	0.5
Benzo[b]fluoranthene	0.1	2,3,7,8-HxCDD	0.1
Benzo[k]fluoranthene	0.01	2,3,7,8-HpCDD	0.01
Chrysene	0.001	OCDD	0.001
Dibenz[a,h]anthracene	1.0	2,3,7,8-TCDF	0.1
Indeno[1,2,3-cd]pyrene	0.1	1,2,3,7,8-PeCDF	0.5
		2,3,4,7,8-PeCDF	0.05
		2,3,7,8-HxCDF	0.1
		2,3,7,8-HpCDF	0.01
		OCDF	0.001

[a] All TEFs taken from *Supplemental Guidance from RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance)* (EPA 1995a).

1.4.1 Inorganic Compounds

1.4.1.1 Aluminum (CAS 000742-90-05) (RAIS)

Aluminum is a silver-white flexible metal with a vast number of uses. It is poorly absorbed and efficiently eliminated by the human body; however, when absorption does occur, aluminum is distributed mainly in bone, liver, testes, kidneys, and brain.

Aluminum may be involved in Alzheimer's disease (dialysis dementia) and in Amyotrophic Lateral Sclerosis and Parkinsonism-Dementia Syndromes of Guam (Guam ALS-PD complex). Aluminum content of brain, muscle, and bone increases in Alzheimer's patients. Neurofibrillary tangles (NFTs) are found in patients suffering from aluminum encephalopathy and Alzheimer's disease. Symptoms of "dialysis dementia" include speech disorders, dementia, convulsions, and myoclonus. People of Guam and Rota have an unusually high incidence of neurodegenerative diseases. The volcanic soil in the region of Guam, where the high incidence of ALS-PD occurs, contains high levels of aluminum and manganese. Neurological effects have also been observed in rats orally exposed to aluminum compounds.

The respiratory system appears to be the primary target following inhalation exposure to aluminum. Alveolar proteinosis has been observed in guinea pigs, rats, and hamsters exposed to aluminum powders. Rats and guinea pigs exposed to aluminum chlorohydrate exhibited an increase in alveolar macrophages, increased relative lung weight, and multifocal granulomatous pneumonia.

No decrease in reproductive capacity, hormonal abnormalities, or testicular histopathology was observed in male rats exposed to aluminum in drinking water for 90 days.

However, male rats exposed to aluminum (as aluminum chloride) via gavage for 6 months exhibited decreased spermatozoa counts and sperm motility, and testicular histological and histochemical changes.

Male rats exposed to drinking water containing aluminum (as aluminum potassium sulfate) for a lifetime exhibited increases in unspecified malignant and nonmalignant tumors, and similarly exposed female mice exhibited an increased incidence of leukemia. Rats and guinea pigs exposed via inhalation to aluminum chlorohydrate developed lung granulomas, while granulomatous foci developed in similarly exposed male hamsters.

Subchronic and chronic RfDs and RfCs have not been officially released by EPA in IRIS or HEAST. In addition, EPA has not evaluated aluminum or its compounds for carcinogenicity, and a weight-of-evidence classification is currently not assigned. Therefore, toxicity values from IRIS or HEAST or values withdrawn from IRIS or HEAST are not available for use in the BHHRA. However, a chronic oral RfD for aluminum, 1.00 mg/(kg × day), was found in the RAIS. A chronic inhalation RfD was not found. However, because aluminum appears to have a whole body effect, a value of 1.00 mg/(kg × day) was used as the extrapolated inhalation RfD in the uncertainty discussion in Subsect. 1.6. Similarly, a chronic absorbed RfD was not found; however, a gastrointestinal absorption factor of 10 percent was estimated in the RAIS. Therefore, an absorbed dose RfD of 1.00E-1 mg/(kg × day) was used for dermal exposure.

1.4.1.2 Antimony (CAS 007440-36-0) (RAIS)

Antimony (Sb) is a naturally occurring metal that is used in various manufacturing processes. It exists in valence states of 3 and 5. Antimony is a common urban air pollutant. Exposure to antimony may be via inhalation, oral, and dermal routes.

Antimony is sparingly absorbed following ingestion or inhalation. Both gastrointestinal and pulmonary absorption are a function of compound solubility. Antimony is transported in the blood, its distribution varying among species and dependent on its valence state. Antimony is not metabolized but may bind to macromolecules and react covalently with sulfhydryl and phosphate groups. Excretion of antimony is primarily via the urine and feces and is also dependent upon valence state.

Acute oral exposure of humans and animals to high doses of antimony or antimony-containing compounds (antimonials) may cause gastrointestinal disorders (vomiting, diarrhea), respiratory difficulties, and death at extremely high doses. Subchronic and chronic oral exposure may affect hematologic parameters. Long-term exposure to high doses of antimony or antimonials has been shown to adversely affect longevity in animals. Limited data suggest that prenatal and postnatal exposure of rats to antimony interferes with vasomotor responses.

Acute inhalation exposure of humans may cause gastrointestinal disorders (probably due to ingestion of airborne antimony). Exposure of animals to high concentrations of antimony and antimonials (especially stibine gas) may result in pulmonary edema and death. Long-term occupational exposure of humans has resulted in electrocardiac disorders, respiratory disorders, and possibly increased mortality. Antimony levels for these occupational exposure evaluations ranged from 2.2 to 11.98 mg Sb/m^3. Based on limited data, occupational exposure of women to metallic antimony and several antimonials has reportedly caused alterations in the menstrual cycle and an increased incidence of spontaneous abortions. Reproductive dysfunction has been demonstrated in rats exposed to antimony trioxide.

No data were available indicating that dermal exposure of humans to antimony or its compounds results in adverse effects. However dermal application of high doses of antimony oxide (1,584 mg Sb/kg) resulted in the death of rabbits within one day. Eye irritation due to exposure to stibine gas and several antimony oxides has been reported for humans.

The primary target organ for acute oral exposure to antimony appears to be the gastrointestinal tract (irritation, diarrhea, vomiting) and targets for long-term exposure are the blood (hematological disorders) and liver (mild hepatotoxicity). Inhalation exposure to antimony affects the respiratory tract (pneumoconiosis, restrictive airway disorders), with secondary targets being the cardiovascular system (altered blood pressure and electrocardiograms) and kidneys (histological changes). Only limited evidence exists for reproductive disorders due to antimony exposure.

Although some data indicate that long-term exposure of rats to antimony trioxide and trisulfide increased the incidence of lung tumors, the U.S. EPA has not evaluated antimony or antimonials for carcinogenicity and a Weight-of-Evidence classification is currently unavailable.

The EPA has calculated subchronic and chronic oral RfDs of 4.00E-4 mg/(kg × day) based on decreased longevity and alteration of blood chemistry in rats chronically exposed to potassium antimony tartrate in drinking water. A chronic absorbed RfD of 8.00E-6 was calculated from the oral dose assuming a gastrointestinal absorption factor of 2 percent. A chronic inhalation RfD was not found. However, because antimony appears to have whole body effects, the chronic oral RfD [4.00E-4 mg/(kg × day)] will be used as a surrogate for the inhalation RfD in the uncertainty discussion in Subsect. 1.6. Although some data indicate that long-term exposure of rats to antimony trioxide and trisulfide increased the incidence of lung tumors, the EPA has not evaluated antimony or antimonials for carcinogenicity, and a weight-of-evidence classification is currently unavailable.

1.4.1.3 Arsenic (CAS 007440-38-2) (RAIS)

The toxicity of inorganic arsenic (As) depends on its valence state (-3, +3, or +5), and also on the physical and chemical properties of the compound in which it occurs. Trivalent (As+3) compounds are generally more toxic than pentavalent (As+5) compounds, and the more water soluble compounds are usually more toxic and more likely to have systemic effects than the less soluble compounds, which are more likely to cause chronic pulmonary effects if inhaled. One of the most toxic inorganic arsenic compounds is arsine gas (AsH_3). It should be noted that laboratory animals are generally less sensitive than humans to the toxic effects of inorganic arsenic. In addition, in rodents the critical effects appear to be immunosuppression and hepato-renal dysfunction, whereas in humans the skin, vascular system, and peripheral nervous system are the primary target organs.

Water soluble inorganic arsenic compounds are absorbed through the G.I. tract (>90%) and lungs; distributed primarily to the liver, kidney, lung, spleen, aorta, and skin; and excreted mainly in the urine at rates as high as 80% in 61 hr following oral dosing. Pentavalent arsenic is reduced to the trivalent form and then methylated in the liver to less toxic methylarsinic acids.

Symptoms of acute inorganic arsenic poisoning in humans are nausea, anorexia, vomiting, epigastric and abdominal pain, and diarrhea. Dermatitis (exfoliative erythroderma), muscle cramps, cardiac abnormalities, hepatotoxicity, bone marrow suppression and hematologic abnormalities (anemia), vascular lesions, and peripheral neuropathy (motor dysfunction, paresthesia) have also been reported.

Oral doses as low as 20-60 g/kg/day have been reported to cause toxic effects in some individuals. Severe exposures can result in acute encephalopathy, congestive heart failure, stupor, convulsions, paralysis, coma, and death. The acute lethal dose to humans has been estimated to be about 0.6 mg/kg/day. General symptoms of chronic arsenic poisoning in humans are weakness, general debility and lassitude, loss of appetite and energy, loss of hair, hoarseness of voice, loss of weight, and mental disorders. Primary target organs are the skin (hyperpigmentation and hyperkeratosis), nervous system (peripheral neuropathy) and vascular system. Anemia, leukopenia, hepatomegaly, and portal hypertension have also been reported. In addition, possible reproductive effects include a high male to female birth ratio.

In animals, acute oral exposures can cause gastrointestinal and neurological effects. Oral LD_{50} values range from about 10 to 300 mg/kg. Low subchronic doses can result in immunosuppression, and hepato-renal effects. Chronic exposures have also resulted in mild hyperkeratosis and bile duct enlargement with hyperplasia, focal necrosis, and fibrosis. Reduction in litter size, high male/female birth ratios, and fetotoxicity without significant fetal abnormalities occur following oral exposures; however, parenteral dosing has resulted in exencephaly, encephaloceles, skeletal defects, and urogenital system abnormalities.

Acute inhalation exposures to inorganic arsenic can damage mucous membranes, cause rhinitis, pharyngitis and laryngitis, and result in nasal septum perforation. Chronic inhalation exposures, such as that occurring in the workplace, can lead to rhino-pharyno-laryngitis, tracheobronchitis; dermatitis, hyperpigmentation, and hyperkeratosis; leukopenia; peripheral nerve dysfunction as indicated by abnormal nerve conduction velocities; and peripheral vascular disorders as indicated by Raynaud's syndrome and increased vasospastic reactivity in fingers exposed to low temperatures. Higher rates of cardiovascular disease have also been reported in some arsenic-exposed workers. Possible reproductive effects include a high frequency of spontaneous abortions and reduced birth weights. Arsine gas (AsH_3), at concentrations as low as 3-10 ppm for several hours, can cause toxic effects. Hemolysis, hemoglobinuria, jaundice, hemolytic anemia, and necrosis of the renal tubules have been reported in exposed workers.

Animal studies have shown that inorganic arsenic, by intratracheal instillation, can cause pulmonary inflammation and hyperplasia, lung lesions, and immunosuppression. Long-term inhalation exposures have resulted in altered conditioned reflexes and central nervous system (CNS) damage. Reductions in fetal weight and in the number of live fetuses, and increases in fetal abnormalities because of retarded osteogenesis have been observed following inhalation exposures.

Epidemiological studies have revealed an association between arsenic concentrations in drinking water and increased incidences of skin cancers (including squamous cell carcinomas and multiple basal cell carcinomas), as well as cancers of the liver, bladder, respiratory and gastrointestinal tracts. Occupational exposure studies have shown a clear correlation between exposure to arsenic and lung cancer mortality. EPA has placed inorganic arsenic in weight-of-evidence group A, human carcinogen. A drinking water unit risk of 5E-5$(ug/L)^{-1}$ has been proposed; derived from drinking water unit risks for females and males that are equivalent to slope factors of 1.0E-3 $(ug/kg/day)^{-1}$ (females) and 2.0E-3 $(ug/kg/day)^{-1}$ (males). For inhalation exposures, a unit risk of 4.3E-3 $(ug/m^3)^{-1}$ and a slope factor of 5.0E+1 $(mg/kg/day)^{-1}$ have been derived.

The RfD for chronic and subchronic oral exposures [3.00E-4 mg/(kg × day)] is based on a no-observed-adverse-effects level (NOAEL) of 0.0008 mg/(kg × day) and lowest-observed-adverse-effects level (LOAEL) of 0.014 mg/(kg × day) for hyperpigmentation, keratosis, and possible vascular complications in a human population consuming arsenic-contaminated drinking water. No subchronic and chronic RfCs have been derived for arsenic. However, because arsenic appears to have whole body effects, the oral RfD [3.00E-4 mg/(kg × day)] is used as a surrogate for the inhalation RfD in the uncertainty discussion in Subsect. 1.6. In addition, an absorbed dose RfD of 1.23E-4 mg/(kg × day) was calculated by assuming a gastrointestinal absorption factor of 41 percent.

The EPA has placed inorganic arsenic in weight-of-evidence classification Group A, human carcinogen. Cancer slope factors for arsenic are available. The values used in the BHHRA are 1.50, 5.00E+1, and 3.66 $[mg/(kg \times day)]^{-1}$ for the oral, inhalation, and dermal exposure routes, respectively. The slope factor for the dermal exposure route was calculated by assuming a gastrointestinal absorption factor of 41 percent.

1.4.1.4 Barium (CAS 007440-39-3) (RAIS)

The soluble salts of barium, an alkaline earth metal, are toxic in mammalian systems. They are absorbed rapidly from the gastrointestinal tract and are deposited in the muscles, lungs, and bone. Barium is excreted primarily in the feces.

At low doses, barium acts as a muscle stimulant and at higher doses affects the nervous system eventually leading to paralysis. Acute and subchronic oral doses of barium cause vomiting and diarrhea, followed by decreased heart rate and elevated blood pressure. Higher doses result in cardiac irregularities, weakness, tremors, anxiety, and dyspnea. A drop in serum potassium may account for some of the symptoms. Death can occur from cardiac and respiratory failure. Acute doses around 0.8 grams can be fatal to humans.

Subchronic and chronic oral or inhalation exposure primarily affects the cardiovascular system resulting in elevated blood pressure. A lowest-observed-adverse-effect level (LOAEL) of 0.51 mg barium/kg/day based on increased blood pressure was observed in chronic oral rat studies (Perry et al. 1983), whereas human studies identified a no-observed-adverse-effect level (NOAEL) of 0.21 mg barium/kg/day. The human data were used by the EPA to calculate a chronic and subchronic oral RfD of 0.07 mg/kg/day. In the Wones et al. study, human volunteers were given barium up to 10 mg/L in drinking water for 10 weeks. No clinically significant effects were observed. An epidemiological study was conducted by Brenniman and Levy in which human populations ingesting 2 to 10 mg/L of barium in drinking water were compared to a population ingesting 0 to 0.2 mg/L. No significant individual differences were seen; however, a significantly higher mortality rate from all combined cardiovascular diseases was observed with the higher barium level in the 65+ age group. The average barium concentration was 7.3 mg/L, which corresponds to a dose of 0.20 mg/kg/day. Confidence in the oral RfD is rated medium by the EPA.

Subchronic and chronic inhalation exposure of human populations to barium-containing dust can result in a benign pneumoconiosis called "baritosis." This condition is often accompanied by an elevated blood pressure but does not result in a change in pulmonary function. Exposure to an air concentration of 5.2 mg barium carbonate/m3 for 4 hours/day for 6 months has been reported to result in elevated blood pressure and decreased body weight gain in rats. Reproduction and developmental effects were also observed. Increased fetal mortality was seen after untreated females were mated with males exposed to 5.2 mg/m^3 of barium carbonate. Similar results were obtained with female rats treated with 13.4 mg barium carbonate/m^3. The NOAEL for developmental effects was 1.15 mg/m^3 (equivalent to 0.8 mg barium/m^3). An inhalation reference concentration (RfC) of 0.005 mg/m^3 for subchronic and 0.0005 mg/m^3 for chronic exposure was calculated by the EPA based on the NOAEL for developmental effects. These effects have not been substantiated in humans or other animal systems.

Barium has not been evaluated by the EPA for evidence of human carcinogenic potential. No slope factors were used in this BHHRA for barium.

Subchronic or chronic oral or inhalation exposure primarily affects the cardiovascular system resulting in elevated blood pressure. A LOAEL of 0.51 mg barium/(kg × day) based on increased blood pressure was observed in chronic oral rat studies, whereas human studies identified a NOAEL of 0.21 mg/(kg × day). The human data were used by the EPA to calculate a chronic and subchronic oral RfD of 7.00E-2 mg/(kg × day). EPA also has released an inhalation RfD of 1.43E-4 mg/(kg × day). A gastrointestinal absorption factor of 7 percent was used to calculate an absorbed dose RfD of 4.90E-3 mg/(kg × day).

1.4.1.5 Beryllium (CAS 007440-41-7) (RAIS)

Beryllium is present in the earth's crust, in emissions from coal combustion, in surface water and soil, and in house dust, food, drinking water, and cigarette smoke. However, the highest risk for exposure occurs among workers employed in beryllium manufacturing, fabricating, or reclamation industries. Workers encounter dusts and fumes of many different beryllium compounds; the current occupational standard for worker exposure to beryllium is 2 g/m^3 during an 8-hour workshift.

Inhaled beryllium is absorbed slowly and localizes mainly in the lungs, bone, liver and kidneys. Ingested beryllium undergoes limited absorption and localizes in liver, kidneys, lungs, stomach, spleen and the large and small intestines. Significant absorption of beryllium or its compounds through intact skin is unlikely because of its chemical properties. Beryllium per se is not biotransformed, but soluble salts may be converted to less soluble compounds in the lung. Most orally administered beryllium passes through the gastrointestinal tract unabsorbed and is excreted in the feces, whereas inhaled water-soluble beryllium salts are excreted mainly by the kidneys.

Limited data indicate that the oral toxicity of beryllium is low. No adverse effects were noted in mice given 5 ppm beryllium in the drinking water in a lifetime bioassay. The dose (converted to 0.54 mg/kg bw/day) was the no-adverse-effect level (NOAEL) used in the calculation of the chronic oral RfD for beryllium of 0.005 mg/kg/day.

In contrast, the toxicity of inhaled beryllium is well-documented. Humans inhaling "massive" doses of beryllium compounds (such as the water soluble sulfate, fluoride, chloride, and oxide) may develop acute berylliosis. ATSDR estimated that, based on existing data, the disease could develop at levels ranging from approximately 2-1000 g Be/m^3. This disease usually develops shortly after exposure and is characterized by rhinitis, pharyngitis, and/or tracheobronchitis, and may progress to severe pulmonary symptoms. The severity of acute beryllium toxicity correlates with exposure levels, and the disease is now rarely observed in the United States because of improved industrial hygiene.

Humans inhaling beryllium may also develop chronic berylliosis which, in contrast to acute berylliosis, is highly variable in onset, is more likely to be fatal, and can develop a few months to >=20 years after exposure. Chronic beryllium disease is a systemic disease that primarily affects the lungs and is characterized by the development of non-caseating granulomas. The disease most likely results from a hypersensitivity response to beryllium as evidenced by positive patch tests and positive lymphocyte transformation tests in exposed individuals. Granulomas may also appear in the skin, liver, spleen, lymph nodes, myocardium, skeletal muscles, kidney, bone, and salivary glands.

Epidemiologic studies have suggested that beryllium and its compounds could be human carcinogens. In a study that covered 15 regions of the U.S., Berg and Burbank (1972) found a significant correlation between cancers of the breast, bone and uterus and the concentration and detection frequency of beryllium in drinking water. However, imperfect analytical and sampling methods used in the study prompted the EPA to conclude that these results are not proof of cause and effect relationships between cancer and beryllium in drinking water. Studies in workers exposed to beryllium, mostly via inhalation, have shown significant increases in observed over expected lung cancer incidences. The EPA, in evaluating the total database for the association of lung cancer with occupational exposure to beryllium, noted several limitations, but concluded that the results must be considered to be at least suggestive of a carcinogenic risk to humans. In laboratory studies, beryllium sulfate caused increased incidences of pulmonary tumors in rats and rhesus monkeys.

Based on sufficient evidence for animals and inadequate evidence for humans, beryllium has been placed in the EPA weight-of-evidence classification B2, probable human carcinogen. For inhalation exposure, the unit risk value is 2.4E-3 $(g/m^3)^{-1}$, and the slope factor is 8.4 $[mg/(kg \times day)]^{-1}$. For oral exposure, the unit risk value is 1.2E-4 $(g/L)^{-1}$ and the slope factor is 4.3 $[mg/(kg \times day)]^{-1}$.

An oral RfD of 5.00E-3 mg/(kg × day)was used in this BHHRA. A gastrointestinal absorption factor of 1 percent was used to calculate an absorbed dose RfD of 5.0E-5 mg/(kg × day). No inhalation RfD is used in this BHHRA. An oral, inhalation and absorbed dose slope factor of 4.3E+0, 8.4E+0, and 4.3E+2 $[mg/(kg \times day)]^{-1}$was used in this BHHRA, respectively. A gastrointestinal absorption factor of 1 percent was used to calculate an absorbed dose slope factor.

1.4.1.6 Bromide CAS (024959-67-9)

Information on the toxicity of bromide (also known as bromide ion) was not found in the available literature. When information becomes available, it will be included in this report.

Neither slope factors nor RfDs for any route of exposure were found for bromide. Therefore, neither carcinogenicity nor systemic toxicity because of bromide exposure is included in the BHHRA.

1.4.1.7 Cadmium (CAS 007440-43-9) (RAIS)

Cadmium is a naturally occurring metal that is used in various chemical forms in metallurgical and other industrial processes, and in the production of pigments. Environmental exposure can occur via the diet and drinking water.

Cadmium is absorbed more efficiently by the lungs (30 to 60%) than by the gastrointestinal tract, the latter being a saturable process. Cadmium is transported in the blood and widely distributed in the body but accumulates primarily in the liver and kidneys. Cadmium burden (especially in the kidneys and liver) tends to increase in a linear fashion up to about 50 or 60 years of age after which the body burden remains somewhat constant. Metabolic transformations of cadmium are limited to its binding to protein and nonprotein sulfhydryl groups, and various macromolecules, such as metallothionein, which is especially important in the kidneys and liver. Cadmium is excreted primarily in the urine.

Acute oral exposure to 20-30 g have caused fatalities in humans. Exposure to lower amounts may cause gastrointestinal irritation, vomiting, abdominal pain, and diarrhea. An asymptomatic period of one-half to one hour may precede the onset of clinical signs. Oral LD_{50} values in animals range from 63 to 1125 mg/kg, depending on the cadmium compound. Longer term exposure to cadmium primarily affects the kidneys, resulting in tubular proteinosis although other conditions such as "itai-itai" disease may involve the skeletal system. Cadmium involvement in hypertension is not fully understood.

Inhalation exposure to cadmium and cadmium compounds may result in effects including headache, chest pains, muscular weakness, pulmonary edema, and death. The 1-minute and 10-minute lethal concentration of cadmium for humans has been estimated to be about 2,500 and 250 mg/m^3, respectively. An 8-hour TWA (time-weighted-average) exposure level of 5 mg/m^3 has been estimated for lethal effects of inhalation exposure to cadmium, and exposure to 1 mg/m^3 is considered to be immediately dangerous to human health. Renal toxicity (tubular proteinosis) may also result from inhalation exposure to cadmium.

Chronic oral RfDs of 5E-4 and 1E-3 mg/kg/day have been established for cadmium exposure via drinking water and food, respectively. Both values reflect incorporation of an uncertainty factor of 10. The

RfDs are based on an extensive data base regarding toxicokinetics and toxicity in both human and animals, the critical effect being renal tubular proteinuria. Confidence in the RfD and data base is high.

Inhalation RfC values are currently not available.

The target organ for cadmium toxicity via oral exposure is the kidney. For inhalation exposure, both the lungs and kidneys are target organs for cadmium-induced toxicity.

There is limited evidence from epidemiologic studies for cadmium-related respiratory tract cancer. An inhalation unit risk of 1.8E-3 $(g/m^3)^{-1}$ and an inhalation slope factor of 6.1E+0 $(mg/kg/day)^{-1}$ are based on respiratory tract cancer associated with occupational exposure. Based on limited evidence from multiple occupational exposure studies and adequate animal data, cadmium is placed in weight-of-evidence group B1 - probable human carcinogen.

Cadmium has two variations of toxicity values. The first variation is termed cadmium-water. An oral RfD of 5.00E-4 mg/(kg × day)was used in this BHHRA for cadmium-water. A gastrointestinal absorption factor of 1 percent was used to calculate an absorbed dose RfD of 5.0E-6 mg/(kg × day) for cadmium water. An inhalation RfD of 5.71E-05 mg/(kg× day)is used in this BHHRA for cadmium-water. The only slope factor available for cadmium-water was for inhalation, 6.1E+00. Cadmium-water is used for exposure to water.

The second variation is termed cadmium-diet. Cadmium-diet is used for exposure to soil and food. An oral RfD of 1.00E-3 mg/(kg × day)was used in this BHHRA for cadmium-diet. A gastrointestinal absorption factor of 1 percent was used to calculate an absorbed dose RfD of 1.0E-5 mg/(kg × day) for cadmium-diet. An inhalation RfD of 5.71E-05 mg/(kg × day) is used in this BHHRA for cadmium-diet. The only slope factor available for cadmium-diet was for inhalation, 6.1E+00 $[mg/(kg \times day)]^{-1}$.

1.4.1.8 Chromium III (CAS 16065-83-1) and Chromium VI (CAS 18540-29-9) (RAIS)

Elemental chromium (Cr) does not occur in nature, but is present in ores, primarily chromite ($FeOCr_2O_3$). Only two of the several oxidation states of chromium, Cr(III) and Cr(VI), are reviewed in this report based on their predominance and stability in the ambient environment and their toxicity in humans and animals.

Chromium plays a role in glucose and cholesterol metabolism and is thus an essential element to man and animals. Non-occupational exposure to the metal occurs via the ingestion of chromium-containing food and water, whereas occupational exposure occurs via inhalation. Workers in the chromate industry have been exposed to estimated chromium levels of 10-50 g/m^3 for Cr(III) and 5-1000 g/m^3 for Cr(VI); however, improvements in the newer chrome-plating plants have reduced the Cr(VI) concentrations 10- to 40-fold.

Chromium(III) is poorly absorbed, regardless of the route of exposure, whereas chromium(VI) is more readily absorbed. Humans and animals localize chromium in the lung, liver, kidney, spleen, adrenals, plasma, bone marrow, and red blood cells (RBCs). There is no evidence that chromium is biotransformed, but Cr(VI) does undergo enzymatic reduction, resulting in the formation of reactive intermediates and Cr(III). The main routes for the excretion of chromium are via the kidneys/urine and the bile/feces.

Animal studies show that Cr(VI) is generally more toxic than Cr(III), but neither oxidation state is very toxic by the oral route. In long-term studies, rats were not adversely affected by ~1.9 g/kg/day of chromic oxide [Cr(III)] (diet), 2.4 mg/kg/day of Cr(III) as chromic chloride (drinking water), or 2.4 mg/kg/day of Cr(VI) as potassium dichromate (drinking water).

The respiratory and dermal toxicity of chromium are well-documented. Workers exposed to chromium have developed nasal irritation (at <0.01 mg/m^3, acute exposure), nasal ulcers, perforation of the nasal septum (at ~2 g/m^3, subchronic or chronic exposure) and hypersensitivity reactions and "chrome holes" of the skin. Among the general population, contact dermatitis has been associated with the use of bleaches and detergents.

Compounds of both Cr(VI) and Cr(III) have induced developmental effects in experimental animals that include neural tube defects, malformations, and fetal deaths.

The subchronic and chronic oral RfD value is 1 mg/(kg x day) for Cr(III). The subchronic and chronic oral RfD for Cr (VI) are 0.02 and 0.005 mg/(kg x day), respectively. The subchronic and chronic oral RfD values for Cr(VI) and Cr(III) are derived from no-observed-adverse-effect levels (NOAELs) of 1.47 g/kg Cr(III)/day and 25 ppm of potassium dichromate (Cr[VI]) in drinking water, respectively. The inhalation RfC values for both Cr(III) and Cr(VI) are currently under review by an EPA workgroup.

The inhalation of chromium compounds has been associated with the development of cancer in workers in the chromate industry. The relative risk for developing lung cancer has been calculated to be as much as 30 times that of controls. There is also evidence for an increased risk of developing nasal, pharyngeal, and gastrointestinal carcinomas. Quantitative epidemiological data were obtained by Mancuso and Hueper, who observed an increase in deaths (18.2%; $p<0.01$) from respiratory cancer among chromate workers compared with 1.2% deaths among controls. In a follow-up study, conducted when more than 50% of the cohort had died, the observed incidence for lung cancer deaths had increased to approximately 60% . The workers were exposed to 1-8 mg/m^3/year total chromium. Mancuso observed a dose response for total chromium exposure and attributed the lung cancer deaths to exposure to insoluble [Cr(III)], soluble [Cr(VI)], and total chromium. The results of inhalation studies in animals have been equivocal or negative.

Based on sufficient evidence for humans and animals, Cr(VI) has been placed in the EPA weight-of-evidence classification A, human carcinogen. For inhalation exposure, the unit risk value is 1.2E-2 $(g/m^3)^{-1}$ and the slope factor is 4.1E+01 $[mg/(kg \times day)]^{-1}$.

For estimation of risk from exposure to chromium, the toxicity values associated with chromium VI were used. Chromium III values were not used because most analytical results were not specific for this ionic species. The uncertainty in using chromium III versus chromium VI in the risk assessment is discussed in Subsect. 1.6.

An inhalation cancer slope factors for chromium of 4.1E+01 was used in this BHHRA. The oral and dermal RfDs used in the BHHRA are 5.00E-3, and 1.00E-4 mg/(kg × day), respectively. The dermal route RfD is based on the oral RfD and a gastrointestinal absorption factor of 2 percent.

1.4.1.9 Cobalt (CAS 007440-48-4) (ATSDR)

Cobalt is a steel-gray, shiny, hard metal that occurs naturally in soil. Cobalt and cobalt-containing compounds are used widely in industry, and cobalt undergoes environmental redistribution through industrial processes, such as the burning of coal and oil and exhaust from cars. Cobalt is a component of Vitamin B_{12}.

Acute exposure to cobalt salts can lead to histological changes in the kidneys, lungs, liver, and adrenal glands. Cobalt is a sensitizer, and many occurrences of cobalt hypersensitivity have been documented in occupationally-exposed individuals. The effects observed among cobalt-exposed workers include allergic dermatitis, eczema, and changes in white blood cells. Chronic inhalation exposure has produced hard-metal pneumoconiosis and other lung diseases in humans, as well as lung damage in experimental animals. Some evidence in humans suggests an association between high levels of cobalt exposure and cardiomyopathy (ATSDR 1990).

When cobalt metal was tested in vitro, a weak mutagenic response was noted, probably due to cobalt complexes that formed. Cobalt has been reported to be genotoxic in other test systems but antimutagenic in bacteria. Adverse teratogenic and reproductive effects have been observed experimentally in animals; however, teratogenic or reproductive effects have not been reported in humans following oral, dermal, or inhalation exposure to cobalt (Angerer et al. 1988, ATSDR 1990).

An oral RfD of 6.00E-2 mg/(kg × day)was used in this BHHRA. A gastrointestinal absorption factor of 80 percent was used to calculate an absorbed dose RfD of 4.8E-2 mg/(kg × day). No inhalation RfD is used in this BHHRA.

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1.4.1.10 Copper (CAS 007440-50-8) (RAIS)

Copper occurs naturally in elemental form and as a component of many minerals. Because of its high electrical and thermal conductivity, it is widely used in the manufacture of electrical equipment. Common copper salts, such as the sulfate, carbonate, cyanide, oxide, and sulfide are used as fungicides, as components of ceramics and pyrotechnics, for electroplating, and for numerous other industrial applications. Copper can be absorbed by the oral, inhalation, and dermal routes of exposure. It is an essential nutrient that is normally present in a wide variety of tissues.

In humans, ingestion of gram quantities of copper salts may cause gastrointestinal, hepatic, and renal effects with symptoms such as severe abdominal pain, vomiting, diarrhea, hemolysis, hepatic necrosis, hematuria, proteinuria, hypotension, tachycardia, convulsions, coma, and death. Gastrointestinal disturbances and liver toxicity have also resulted from long-term exposure to drinking water containing 2.2-7.8 mg Cu/L. The chronic toxicity of copper has been characterized in patients with Wilson's disease, a genetic disorder causing copper accumulation in tissues. The clinical manifestations of Wilson's disease include cirrhosis of the liver, hemolytic anemia, neurologic abnormalities, and corneal opacities. In animal studies, oral exposure to copper caused hepatic and renal accumulation of copper, liver and kidney necrosis at doses of >=100 mg/kg/day; and hematological effects at doses of 40 mg/kg/day.

Acute inhalation exposure to copper dust or fumes at concentrations of 0.075-0.12 mg Cu/m^3 may cause metal fume fever with symptoms such as cough, chills and muscle ache. Among the reported effects in workers exposed to copper dust are gastrointestinal disturbances, headache, vertigo, drowsiness, and hepatomegaly.

Vineyard workers chronically exposed to Bordeaux mixture (copper sulfate and lime) exhibit degenerative changes of the lungs and liver. Dermal exposure to copper may cause contact dermatitis in some individuals.

Oral or intravenous administration of copper sulfate increased fetal mortality and developmental abnormalities in experimental animals. Evidence also indicates that copper compounds are spermicidal.

Oral and absorbed dose RfDs used in this BHHRA are 4.00E-02 mg/(kg × day) and 1.20E-02 mg/(kg × day), respectively. EPA established an action level of 1300 ug/L for drinking water (56 FR 26460). Data were insufficient to derive a RfC for copper.

No suitable bioassays or epidemiological studies are available to assess the carcinogenicity of copper. Therefore, U.S. EPA has placed copper in weight-of-evidence group D, not classifiable as to human carcinogenicity.

1.4.1.11 Iron (CAS 007439-89-6)

Iron is one of the most abundant metals in the environment and is used in many industrial processes. It is an essential element in the human diet. More than 80 percent of the iron present in the body is involved in the support of red blood cell production. In addition, it is also an essential component of myoglobin and various enzymes. Iron deficiency is the most common cause of anemia (Goodman and Gilman 1985). Exposure to excessive levels of iron may cause gastrointestinal damage and dysfunction and enlargement of the liver and pancreas (Goodman and Gilman 1985).

No cancer slope factors for iron were found. Therefore, carcinogenicity due to exposure to iron is not included in the BHHRA. The oral RfD used in the BHHRA is 3.00E-1 mg/(kg × day) and is taken from RAIS. The dermal route RfD used in the BHHRA, based on the oral RfD and a gastrointestinal absorption factor of 15 percent, is 4.50E-2 mg/(kg × day). An inhalation RfD for iron is not available, and based on the localized effects on the gastrointestinal tract as discussed previously, it would not be appropriate to extrapolate an inhalation RfD from the oral RfD.

REFERENCE:

Goodman, L.S. and A. Gilman. 1985. *The Pharmacologic Bases of Therapeutics*. 7th ed. New York, New York: MacMillan Publishing Co.

1.4.1.12 Lead (CAS 007439-92-1) (RAIS)

Lead occurs naturally as a sulfide in galena. It is a soft, bluish-white, silvery gray, malleable metal with a melting point of 327.5C. Elemental lead reacts with hot boiling acids and is attacked by pure water. The solubility of lead salts in water varies from insoluble to soluble depending on the type of salt.

Lead is a natural element that is persistent in water and soil. Most of the lead in environmental media is of anthropogenic sources. The mean concentration is 3.9 ug/L in surface water and 0.005 ug/L in sea water. River sediments contain about 20,000 ug/g and coastal sediments about 100,000 ug/g. Soil content varies with the location, ranging up to 30 ug/g in rural areas, 3000 ug/g in urban areas, and 20,000 ug/g near point sources. Human exposure occurs primarily through diet, air, drinking water, and ingestion of dirt and paint chips.

The efficiency of lead absorption depends on the route of exposure, age, and nutritional status. Adult humans absorb about 10-15% of ingested lead, whereas children may absorb up to 50%, depending on whether lead is in the diet, dirt, or paint chips. More than 90% of lead particles deposited in the respiratory tract are absorbed into systemic circulation. Inorganic lead is not efficiently absorbed through the skin; consequently, this route does not contribute considerably to the total body lead burden.

Lead absorbed into the body is distributed to three major compartments: blood, soft tissue, and bone. The largest compartment is the bone, which contains about 95% of the total body lead burden in adults and about 73% in children. The half-life of bone lead is more than 20 years. The concentration of blood lead changes rapidly with exposure, and its half-life of only 25-28 days is considerably shorter than that of bone lead. Blood lead is in equilibrium with lead in bone and soft tissue. The soft tissues that take up lead are liver, kidneys, brain, and muscle. Lead is not metabolized in the body, but it may be conjugated with glutathione and excreted primarily in the urine. Exposure to lead is evidenced by elevated blood lead levels.

The systemic toxic effects of lead in humans have been well-documented by the EPA and ATSDR, who extensively reviewed and evaluated data reported in the literature up to 1991. The evidence shows that lead is a multitargeted toxicant, causing effects in the gastrointestinal tract, hematopoietic system, cardiovascular system, central and peripheral nervous systems, kidneys, immune system, and reproductive system. Overt symptoms of subencephalopathic central nervous system (CNS) effects and peripheral nerve damage occur at blood lead levels of 40-60 ug/dL, and nonovert symptoms, such as peripheral nerve dysfunction, occur at levels of 30-50 ug/dL in adults; no clear threshold is evident. Cognitive and neuropsychological deficits are not usually the focus of studies in adults, but there is some evidence of neuropsychological impairment and cognitive deficits in lead workers with blood levels of 41-80 ug/dL.

Although similar effects occur in adults and children, children are more sensitive to lead exposure than are adults. Irreversible brain damage occurs at blood lead levels greater than or equal to 100 ug/dL in adults and at 80-100 ug/dL in children; death can occur at the same blood levels in children. Children who survive these high levels of exposure suffer permanent severe mental retardation.

As discussed previously, neuropsychological impairment and cognitive (IQ) deficits are sensitive indicators of lead exposure; both neuropsychological impairment and IQ deficits have been the subject of cross-sectional and longitudinal studies in children. One of the early studies reported IQ score deficits of four points at blood lead levels of 30-50 ug/dL and one to two points at levels of 15-30 ug/dL among 75 black children of low socioeconomic status.

Very detailed longitudinal studies have been conducted on children (starting at the time of birth) living in Port Pirie, Australia, Cincinnati, Ohio, and Boston, Massachusetts. Various measures of cognitive performance have been assessed in these children. Studies of the Port Pirie children up to 7 years of age revealed IQ deficits in 2-year-old children of 1.6 points for each 10-ug/dL increase in blood lead, deficits of 7.2 points in 4-year-old children, and deficits of 4.4 to 5.3 points in 7-year-old children as blood lead increased from 10-30 ug/dL. No significant neurobehavioral deficits were noted for children, 5 years or younger, who lived in the Cincinnati, Ohio, area. In 6.5-year-old children, performance IQ was reduced by 7 points in children whose lifetime blood level exceeded 20 ug/dL.

Children living in the Boston, Massachusetts, area have been studied up to the age of 10 years. Cognitive performance scores were negatively correlated with blood lead in the younger children in the high lead group (greater than or equal to 10 ug/dL), and improvements were noted in some children at 57 months as their blood lead levels became lower. However, measures of IQ and academic performance in 10-year-old children showed a 5.8-point deficit in IQ and an 8.9-point deficit in academic performance as blood lead increased by 10 ug/dL within the range of 1-25 ug/dL. Because of the large database on subclinical neurotoxic effects of lead in children, only a few of the studies have been included. However, EPA concluded that there is no clear threshold for neurotoxic effects of lead in children.

In adults, the cardiovascular system is a very sensitive target for lead. Hypertension (elevated blood pressure) is linked to lead exposure in occupationally exposed subjects and in the general population. Three large population-based studies have been conducted to study the relationship between blood lead levels and high blood pressure. The British Regional Heart Study (BRHS), the NHANES II study, and Welsh Heart Programme comprise the major studies for the general population. The BRHS study showed that systolic pressure greater than 160 mm Hg and diastolic pressure greater than 100 mm Hg were associated with blood lead levels greater than 37 ug/dL. An analysis of 9933 subjects in the NHANES study showed positive correlations between blood pressure and blood lead among 12-74-year-old males but not females, 40-59-year-old white males with blood levels ranging from 7-34 ug/dL, and males and females greater than 20 years old. In addition, left ventricular hypertrophy was also positively associated with blood lead. The Welsh study did not show an association among men and women with blood lead of 12.4 and 9.6 ug/dL, respectively. Other smaller studies showed both positive and negative results. The EPA concluded that increased blood pressure is positively correlated with blood lead levels in middle-aged men, possibly at concentrations as low as 7 ug/dL. In addition, the EPA estimated that systolic pressure is increased by 1.5-3.0 mm Hg in males and 1.0-2.0 mm Hg in females for every doubling of blood lead concentration.

The hematopoietic system is a target for lead as evidenced by frank anemia occurring at blood lead levels of 80 ug/dL in adults and 70 ug/dL in children. The anemia is due primarily to reduced heme synthesis, which is observed in adults having blood levels of 50 ug/dL and in children having blood levels of 40 ug/dL. Reduced heme synthesis is caused by inhibition of key enzymes involved in the synthesis of heme. Inhibition of erythrocyte -aminolevulinic acid dehydrase (ALAD) activity (catalyzes formation of porphobilinogen from -aminolevulinic acid) has been detected in adults and children having blood levels of less than 10 ug/dL. ALAD activity is the most sensitive measure of lead exposure, but erythrocyte zinc protoporphyrin is the most reliable indicator of lead exposure because it is a measure of the toxicologically active fraction of bone lead. The activity of another erythrocyte enzyme, pyrimidine-5-nucleotidase, is also inhibited by lead exposure. Inhibition has been observed at levels below 5 ug/dL; no clear threshold is evident.

Other organs or systems affected by exposure to lead are the kidneys, immune system, reproductive system, gastrointestinal tract, and liver. These effects usually occur at high blood levels, or the blood levels at which they occur have not been sufficiently documented.

The EPA has not developed an RfD for lead because it appears that lead is a nonthreshold toxicant, and it is not appropriate to develop RfDs for these types of toxicants. Instead the EPA has developed the Integrated Exposure Uptake Biokinetic Model to estimate the percentage of the population of children up to 6 years of age with blood lead levels above a critical value, 10 ug/dL. The model determines the contribution of lead intake from multimedia sources (diet, soil and dirt, air, and drinking water) on the concentration of lead in the blood. Site-specific concentrations of lead in various media are used when available; otherwise default values are assumed. The EPA has established a screening level of 400 ppm (ug/g) for lead in soil.

Inorganic lead and lead compounds have been evaluated for carcinogenicity by the EPA. The data from human studies are inadequate for evaluating the potential carcinogenicity of lead. Data from animal studies, however, are sufficient based on numerous studies showing that lead induces renal tumors in experimental animals. A few studies have shown evidence for induction of tumors at other sites (cerebral gliomas; testicular, adrenal, prostate, pituitary, and thyroid tumors). A slope factor was not derived for inorganic lead or lead compounds.

As noted previously, neither slope factors nor RfDs for lead are available from the EPA. However, KyDEP has provided provisional RfDs for oral, dermal, and inhalation toxicity; they are 1.0E-7, 1.5E-8, and 2.86e-4 mg/(kg x day), respectively. A gastrointestinal absorption factor of 15 percent can be derived from the oral and dermal RfDs. In addition, three classes of benchmarks are available and are used in the BHHRA. These are the benchmarks applied by the Integrated Exposure Uptake Biokinetic Model (10 μg/dL); the EPA screening values of 400 mg/kg and 15 μg/l for soil and water, respectively [Office of Solid Waste and Emergency Response (OSWER) Dir. No. 9344.4-12]; and the Commonwealth of Kentucky screening values of 20 mg/kg and 4 μg/l for soil and water, respectively (KDEP 1995). The results of the model and a comparison of environmental concentrations to the screening values are discussed in Subsect. 1.5.6.

1.4.1.13 Manganese (CAS 007439-96-5) (RAIS)

Manganese is an essential trace element in humans that can elicit a variety of serious toxic responses upon prolonged exposure to elevated concentrations either orally or by inhalation. The central nervous system is the primary target. Initial symptoms are headache, insomnia, disorientation, anxiety, lethargy, and memory loss. These symptoms progress with continued exposure and eventually include motor disturbances, tremors, and difficulty in walking, symptoms similar to those seen with Parkinsonism. These motor difficulties are often irreversible. Based on human epidemiological studies, 0.8 mg/kg/day for drinking water exposure and 0.34 mg/m^3 in air for inhalation exposure have been estimated as LOAELs for central nervous system effects.

Effects on reproduction (decreased fertility, impotence) have been observed in humans with inhalation exposure and in animals with oral exposure at the same or similar doses that initiate the central nervous system effects. An increased incidence of coughs, colds, dyspnea during exercise, bronchitis, and altered lung ventilatory parameters have also been seen in humans and animals with inhalation exposure. A possible effect on the immune system may account for some of these respiratory symptoms.

Because of the greater bioavailability of manganese from water, separate RfD for water and diet were calculated. A chronic and subchronic RfD for drinking water of 0.005 mg/kg/day has been calculated by EPA from a human NOAEL of 0.005 mg/kg/day; the NOAEL was determined from an epidemiological study of human populations exposed for a lifetime to manganese concentrations in drinking water ranging from 3.6-2300 μg/L. A chronic and subchronic RfD of 0.14 mg/kg/day for dietary exposure has been calculated by EPA from a human NOAEL of 0.14 mg/kg/day, which was determined from a series of epidemiological studies. Large populations with different concentrations of manganese in their diets were examined. No adverse effects that were attributable to manganese were seen in any of these groups. For both the drinking water and dietary values, the RfD was derived from these studies without uncertainty factors since manganese is essential in human nutrition and the exposure of the most sensitive groups was included in the populations examined. EPA indicates that the chronic RfD values are pending change.

A RfC of 0.05 $\mu g/m^3$ (EPA 1995a) for chronic inhalation exposure was calculated from a human LOAEL of 0.05 mg/m^3 for impairment of neurobehavioral function from an epidemiological study by Roels et al. The study population was occupationally exposed to airborne manganese dust with a median concentration of 0.948 mg/m^3 for 0.2 to 17.7 years with a mean duration of 5.3 years. Neurological examinations, psychomotor tests, lung function tests, blood tests, and urine tests were used to determine the possible effects of exposure. The LOAEL was derived from an occupational-lifetime integrated respirable dust concentration of manganese dioxide expressed as mg $manganese/m^3 \times$ years. Confidence in the inhalation RfC is rated medium by the EPA.

Some conflicting data exist on possible carcinogenesis following injections of manganese chloride and manganese sulfate in mice. However, the EPA weight-of-evidence classification is: D, not classifiable as to human carcinogenicity based on no evidence in humans and inadequate evidence in animals.

As noted previously, no cancer slope factors for manganese are available. Therefore, carcinogenicity from exposure to manganese is not included in the BHHRA. The oral RfDs used in the BHHRA are 4.6E-2 and 1.40E-1 mg/(kg $\times$ day) for the exposure through environmental media and diet, respectively. The dermal

530416

route RfD based on the oral RfD for exposure to environmental media and diet and a gastrointestinal absorption factor of 4 percent is 1.87E-3 and 5.6E-03 mg/(kg × day), respectively. The manganese RfD for inhalation exposure used in the BHHRA is 1.43E-5 mg/(kg × day) for environmental media and diet.

1.4.1.14 Mercury (CAS 007439-97-6) (RAIS)

Mercury is a naturally occurring element existing in multiple forms and in various oxidation states. It is used in a wide variety of products and processes. In the environment, mercury may undergo transformations among its various forms and among its oxidation states. Exposure to mercury may occur in both occupational and environmental settings, the latter primarily involving dietary exposure.

Absorption, distribution, metabolism, and excretion of mercury is dependent upon its form and oxidation state. Organic mercurials are more readily absorbed than are inorganic forms. An oxidation-reduction cycle is involved in the metabolism of mercury and mercury compounds by both animals and humans. The urine and feces are primary excretory routes. The elimination half-life is 35 to 90 days for elemental mercury and mercury vapor and about 40 days for inorganic salts.

Ingestion of mercury metal is usually without effect. Ingestion of inorganic salts may cause severe gastrointestinal irritation, renal failure, and death with acute lethal doses in humans ranging from 1 to 4 g. Mercuric (divalent) salts are usually more toxic than are mercurous (monovalent) salts. Mercury is also known to induce hypersensitivity reactions such as contact dermatitis and acrodynia (pink disease). Inhalation of mercury vapor may cause irritation of the respiratory tract, renal disorders, central nervous system effects characterized by neurobehavioral changes, peripheral nervous system toxicity, renal toxicity (immunologic glomerular disease), and death.

Toxicity resulting from subchronic and chronic exposure to mercury and mercury compounds usually involves the kidneys and/or nervous system, the specific target and effect being dependent on the form of mercury. Organic mercury, especially methyl mercury, rapidly enters the central nervous system resulting in behavioral and neuromotor disorders. The developing central nervous system is especially sensitive to this effect, as documented by the epidemiologic studies in Japan and Iraq where ingestion of methyl mercury-contaminated food resulted in severe toxicity and death in adults and severe central nervous system effects in infants. Blood mercury levels of <10 µg/dL and 300 µg/dL corresponded to mild effects and death, respectively. Teratogenic effects due to organic or inorganic mercury exposure do not appear to be well documented for humans or animals, although some evidence exists for mercury-induced menstrual cycle disturbances and spontaneous abortions.

A subchronic and chronic oral RfD of 0.0001 mg/kg/day for methyl mercury is based on a benchmark dose of 1.1 µg/kg/day relative to neurologic developmental abnormalities in human infants. A subchronic and chronic oral RfD of 0.0003 mg/(kg x day) for mercuric chloride is based on immunologic glomerulonephritis. A Lowest Observed Adverse Effect Level (LOAEL) of 0.63 mg Hg/kg/day for mercuric chloride was identified. No Observed Adverse Effect Levels (NOAELs) were not available for oral exposure to inorganic mercury or methyl mercury. A subchronic and chronic inhalation RfC of 0.0003 mg Hg/m^3 for inorganic mercury is based on neurological disorders (increased frequency of intention tremors) following long-term occupational exposure to mercury vapor. The LOAELs for subchronic and chronic inhalation exposures to inorganic mercury are 0.32 and 0.03 mg Hg/m^3, respectively. NOAELs were unavailable. An inhalation RfC for methyl mercury has not been determined.

No data were available regarding the carcinogenicity of mercury in humans or animals. EPA has placed inorganic mercury in weight-of-evidence classification D, not classifiable as to human carcinogenicity. Weight-of-evidence classifications of C (possible human carcinogen) have been assigned to mercuric chloride and methyl mercury by EPA based upon limited evidence of carcinogenicity in rodents. No slope factors have been calculated.

The oral RfD used in this BHHRA is 3.0E-4 mg/(kg × day). The dermal route RfD based on the oral RfD and a gastrointestinal absorption factor of 7 percent is 2.1E-5 mg/(kg × day). The RfD for inhalation exposure used in the BHHRA is 8.57E-5 mg/(kg × day).

1.4.1.15 Nickel (CAS 007440-02-0 for soluble nickel salts) (RAIS)

Nickel is a naturally occurring element that may exist in various mineral forms. It is used in a wide variety of applications including metallurgical processes and electrical components, such as batteries. Some evidence suggests that nickel may be an essential trace element for mammals.

The absorption of nickel is dependent on its physicochemical form, with water soluble forms being more readily absorbed. The metabolism of nickel involves conversion to various chemical forms and binding to various ligands. Nickel is excreted in the urine and feces with relative amounts for each route being dependent on the route of exposure and chemical form. Most nickel enters the body via food and water consumption, although inhalation exposure in occupational settings is a primary route for nickel-induced toxicity.

In large doses (>0.5 g), some forms of nickel may be acutely toxic to humans when taken orally. Oral LD_{50} values for rats range from 67 mg nickel/kg (nickel sulfate hexahydrate) to >9000 mg nickel/kg (nickel powder). Toxic effects of oral exposure to nickel usually involve the kidneys with some evidence from animal studies showing a possible developmental/reproductive toxicity effect.

Inhalation exposure to some nickel compounds will cause toxic effects in the respiratory tract and immune system. Inhalation LC_{50} values for animals range from 0.97 mg nickel/m^3 for rats (6-hour exposure) to 15 mg nickel/m^3 for guinea pigs (time not specified). Acute inhalation exposure of humans to nickel may produce headache, nausea, respiratory disorders, and death. Asthmatic conditions have also been documented for inhalation exposure to nickel. Soluble nickel compounds tend to be more toxic than insoluble compounds. In addition, nickel carbonyl is known to be extremely toxic to humans upon acute inhalation exposure.

Data on nickel-induced reproductive/developmental effects in humans following inhalation exposure are equivocal. No clinical evidence of developmental or reproductive toxicity were reported for women working in a nickel refinery, but Chashschin et al. reported possible reproductive and developmental effects in humans of occupational exposure to nickel (0.13-0.2 mg nickel/m^3). Although not validated by quantitative epidemiologic data or statistical analyses, the authors reported an apparently abnormal increase in spontaneous and threatening abortions (16-17% in nickel-exposed workers vs 8-9% in nonexposed workers), and an increased incidence of non-specified structural malformations (17% vs 6%) was reported also. Furthermore, sensitivity reactions to nickel are well documented and usually involve contact dermatitis reactions resulting from contact with nickel-containing items such as cooking utensils, jewelry, coins, etc.

A chronic and subchronic oral RfD of 0.02 mg/kg/day for soluble nickel salts is based on changes in organ and body weights of rats receiving dietary nickel sulfate hexahydrate (5 mg/kg/day) for 2 years. A NOAEL and LOAEL of 5 mg/kg/day and 50 mg/kg/day, respectively, were reported in the key study. An uncertainty factor of 300 reflects interspecies extrapolation uncertainty, protection of sensitive populations, and a modifying factor of 3 for a database deficient in reproductive/developmental studies. An inhalation RfC for soluble nickel salts is under review by the RfD/RfC Work Group and currently is not available.

The primary target organs for nickel-induced systemic toxicity are the lungs and upper respiratory tract for inhalation exposure and the kidneys for oral exposure. Other target organs include the cardiovascular system, immune system, and the blood.

Epidemiologic studies have shown that occupational inhalation exposure to nickel dust (primarily nickel subsulfate) at refineries has resulted in increased incidences of pulmonary and nasal cancer. Inhalation studies using rats have also shown nickel subsulfate or nickel carbonyl to be carcinogenic. Based on these data, the EPA has classified nickel subsulfate and nickel refinery dust in weight-of-evidence group A, human carcinogen. Carcinogenicity slope factors of 1.7E+0 and 8.4E-01 $(mg/kg/day)^{-1}$ and unit risks of 4.8E-04 $(\mu g/m3)^{-1}$ and 2.4E-04 $(\mu g/m3)^{-1}$ have been calculated for nickel subsulfide and nickel refinery dust, respectively. Based on an increased incidence of pulmonary carcinomas and malignant tumors in animals exposed to nickel carbonyl by inhalation or by intravenous injection, this compound had been placed in weight-of-evidence group B2, probable human carcinogen. No unit risk values were available for nickel carbonyl. Recent analyses of epidemiologic data, however, indicate that definitive identification of a specific nickel compound as the causative agent is not yet possible.

No cancer slope factors for soluble nickel salts were found. Therefore, carcinogenicity due to exposure to soluble nickel salts is not included in the BHHRA. The oral RfD used in the BHHRA is 2.00E-2 mg/(kg × day). The dermal route RfD used in the BHHRA, based on the oral RfD and a gastrointestinal absorption factor of 27 percent, is 5.4E-3 mg/(kg × day). An inhalation RfD for soluble nickel salts was not found; however, based on potential whole body effects discussed previously, the oral RfD of 2.00E-2 mg/(kg × day) is used as the surrogate inhalation RfD in the uncertainty discussion in Subsect. 1.6.

1.4.1.16 Nitrate, Nitrate-Nitrite (CAS 14797-55-8) also Nitrate as Nitrogen (CAS 007727-37-9 (RAIS)

Nitrates are produced by natural biological and physical oxidations and therefore are ubiquitous in the environment. Most of the excess nitrates in the environment originate from inorganic chemicals manufactured for agriculture. Organic molecules containing nitrate groups are manufactured primarily for explosives or for their pharmacological effects. Exposure to inorganic nitrates is primarily through food and drinking water, whereas exposure to organic nitrates can occur orally, dermally, or by respiration. The primary toxic effects of the inorganic nitrate ion (NO_3-) result from its reduction to nitrite (NO_2-) by microorganisms in the upper gastrointestinal tract. Nitrite ions can also be produced with organic nitrate exposure; however, the primary effect of organic nitrate intake is thought to be dependent on the production of an active nitric oxide (NO-) radical. Organic nitrates are metabolized in the liver resulting in an increase in blood nitrites. Nitrates and nitrites are excreted primarily in the urine as nitrates.

The primary toxic effect of inorganic nitrates is the oxidation of the iron in hemoglobin by excess nitrites forming methemoglobin. Infants less than 6 months old comprise the most sensitive population. Epidemiological studies have shown that baby formula made with drinking water containing nitrate nitrogen levels over 10 mg/L can result in methemoglobinemia, especially in infants less than 2 months of age. No cases of methemoglobinemia were reported with drinking water nitrate nitrogen levels of 10 mg/L or less. A secondary target for inorganic nitrate toxicity is the cardiovascular system. Nitrate intake can also result in a vasodilatory effect, which can complicate the anoxia resulting from methemoglobinemia. Decreased motor activity was reported in mice given up to 2000 mg nitrite/L in drinking water, and persistent changes in electroencephalogram (EEG) recordings were observed in rats exposed to 100 to 2000 mg nitrite/L in drinking water. However, exposure of rats to 3000 mg nitrite/L in drinking water for 2 years did not result in any gross or microscopic changes in brain tissue. The data indicate that these central nervous system effects are not related to methemoglobin levels.

The importance of the primary and secondary targets are reversed with organic nitrates, several of which have long been used for their vasodilatory effects in the treatment of angina pectoris in humans. Large doses of organic nitrates, however, can also produce methemoglobinemia. Epidemiological studies have shown that chronic or subchronic exposure to organic nitrates results in the development of tolerance to the cardiovascular effects of these compounds. This apparent biocompensation has caused serious cardiac problems in munitions workers exposed to organic nitrates when they are suddenly removed from the source of exposure.

An epidemiological study correlated the number of congenital malformations of the central nervous system and musculoskeletal system of babies with the amount of inorganic nitrate in the mother's drinking water. Other studies, however, do not support these associations, and the presence of unidentified teratogenic factors in the environment could not be ruled out. Inorganic nitrate and nitrite have been tested for teratogenicity in rats, guinea pigs, mice, hamsters, and rabbits. No teratogenic responses were reported; however, fetotoxicity attributed to maternal methemoglobinemia was observed at high doses (4000 mg nitrate/L in drinking water).

A RfD of 1.60 mg/kg/day (nitrate nitrogen) for chronic oral exposure was calculated from a NOAEL of 10 mg/L and a LOAEL of 11-20 mg/L in drinking water, based on clinical signs of methemoglobinemia in 0-3-month-old infants. It is important to note, however, that the effect was documented in the most sensitive human population so no uncertainty or modifying factors were used.

The possible carcinogenicity of nitrate depends on the conversion of nitrate to nitrite and the reaction of nitrite with secondary amines, amides, and carbamates to form N-nitroso compounds that are carcinogenic. Experiments with rats have shown that when given both components, nitrite and heptamethyleneimine, in drinking water, an increase in the incidence of tumors occurs. Human epidemiological studies, however, have yielded conflicting evidence. Positive correlations between the concentration of nitrate in drinking water and the incidence of stomach cancer were reported in Columbia and Denmark. However, studies in the United Kingdom and other countries have failed to show any correlation between nitrate levels and cancer incidence. Nitrate has not been classified as to its carcinogenicity by the EPA, although it is under review.

The oral RfD used in this BHHRA is 1.6E+0 mg/(kg × day). The dermal route RfD based on the oral RfD and a gastrointestinal absorption factor of 50 percent is 8.0E-1 mg/(kg × day). The RfD for inhalation exposure has not been determined.

1.4.1.17 Orthophosphate (CAS 0014265-44-2)

Information on the toxicity of orthophosphate (also known as monohydrogen phosphate ion, HPO4–, inorganic phosphate, Pi, and $HO_4P^{-}_2$) was not found in the available literature. When information becomes available, it will be included in this report.

Neither slope factors nor RfDs for any route of exposure were found for phosphate. Therefore, neither carcinogenicity nor systemic toxicity because of phosphate exposure is included in the BHHRA.

1.4.1.18 Selenium (CAS 007782-49-2) (RAIS)

Selenium is an essential trace element important in many biochemical and physiological processes including the biosynthesis of coenzyme Q (a component of mitochondrial electron transport systems), regulation of ion fluxes across membranes, maintenance of the integrity of keratins, stimulation of antibody synthesis, and activation of glutathione peroxidase (an enzyme involved in preventing oxidative damage to cells). Recommended human dietary allowances (average daily intake) for selenium are as follows: infants up to 1 year, 10-15 g; children 1-10 years, 20-30 g; adult males 11-51+ years, 40-70 g; adult females 11-51+ years, 45-55 g; pregnant or lactating women, 65-75 g. There appears to be a relatively narrow range between levels of selenium intake resulting in deficiency and those causing toxicity.

Selenium occurs in several valence states: -2 (hydrogen selenide, sodium selenide, dimethyl selenium, trimethyl selenium, and selenoamino acids such as selenomethionine; 0 (elemental selenium); +4 (selenium dioxide, selenious acid, and sodium selenite); and +6 (selenic acid and sodium selenate). Toxicity of selenium varies with valence state and water solubility of the compound in which it occurs. The latter can affect gastrointestinal absorption rates.

Gastrointestinal absorption in animals and humans for various selenium compounds ranges from about 44% to 95% of the ingested dose. Respiratory tract absorption rates of 97% and 94% for aerosols of selenious acid have been reported for dogs and rats, respectively. Selenium is found in all tissues of the body; highest concentrations occur in the kidney, liver, spleen, and pancreas. Excretion is primarily via the urine (0-15 g/L); however, excretory products can also be found in the feces, sweat, and in expired air.

In humans, acute oral exposures can result in excessive salivation, garlic odor to the breath, shallow breathing, diarrhea, pulmonary edema, and death. Other reported signs and symptoms of acute selenosis include tachycardia, nausea, vomiting, abdominal pain, abnormal liver function, muscle aches and pains, irritability, chills, and tremors. Acute toxic effects observed in animals include pulmonary congestion, hemorrhages and edema, convulsions, altered blood chemistry (increased hemoglobin and hematocrit); liver congestion; and congestion and hemorrhage of the kidneys.

General signs and symptoms of chronic selenosis in humans include loss of hair and nails, acropachia (clubbing of the fingers), skin lesions (redness, swelling, blistering, and ulcerations), tooth decay (mottling, erosion and pitting), and nervous system abnormalities attributed to polyneuritis (peripheral anesthesia, acroparaethesia, pain in the extremities, hyperreflexia of the tendon, numbness, convulsions, paralysis, motor disturbances, and hemiplegia). In domesticated animals, subchronic and chronic oral exposures can result in loss of hair, malformed hooves, rough hair coat, and nervous system abnormalities (impaired vision and paralysis). Damage to the liver and kidneys and impaired immune responses have been reported to occur in rodents following subchronic and/or chronic oral exposures.

Selenium is teratogenic in birds and possibly also in domesticated animals (pigs, sheep, and cattle), but evidence of teratogenicity in humans and laboratory animals is lacking. However, adverse reproductive and developmental effects (decreased rates of conception, increased rates of fetal resorption, and reduced fetal body weights) have been reported for domesticated and laboratory animals.

The RfD for chronic oral exposures is 0.005 mg/kg/day for both selenium and selenious acid. The subchronic RfDs for these compounds are the same as the chronic RfDs.

In humans, inhalation of selenium or selenium compounds primarily affects the respiratory system. Dusts of elemental selenium and selenium dioxide can cause irritation of the skin and mucous membranes of the nose and throat, coughing, nosebleed, loss of sense of smell, dyspnea, bronchial spasms, bronchitis, and chemical pneumonia. Other signs and symptoms following acute inhalation exposures include lacrimation, irritation and redness of the eyes, gastrointestinal distress (nausea and vomiting), depressed blood pressure, elevated pulse rate, headaches, dizziness, and malaise. In animals, acute inhalation exposures also result in severe respiratory effects including edema, hemorrhage, and interstitial pneumonitis as well as in splenic damage (congestion, fissuring red pulp, and increased polymorphonuclear leukocytes) and liver congestion and mild central atrophy. Information on toxicity of selenium in humans and animals following chronic inhalation exposures is not available, and subchronic and chronic inhalation Reference Concentrations have not been derived.

Epidemiologic studies in humans havation between chronic oral exposures to selenium and an increased incidence of death due to neoplasms. Some studies have indicated that selenium may have anti-neoplastic properties. In studies on laboratory animals, selenites or selenates have not been found to be carcinogenic; however, selenium sulfide produced a significant increase in the incidence of hepatocellular carcinomas in male and female rats and in female mice and a significant increase in alveolar/bronchiolar carcinomas and adenomas in female mice following chronic oral exposures. EPA has placed selenium and selenious acid in Group D, not classifiable as to carcinogenicity in humans, while selenium sulfide is placed in Group B2, probable human carcinogen. Quantitative data are, however, insufficient to derive a slope factor for selenium sulfide. Pertinent data regarding the potential carcinogenicity of selenium by the inhalation route in humans or animals were not located in the available literature.

The oral RfD used in this BHHRA is 5.0E-3 mg/(kg × day). The dermal route RfD based on the oral RfD and a gastrointestinal absorption factor of 44 percent is 2.2E-3 mg/(kg × day). The RfD for inhalation exposure has not been determined.

1.4.1.19 Silver (CAS 007440-22-4) (RAIS)

Silver is a relatively rare metal that occurs naturally in the earth's crust and is released to the environment from various industrial sources. Human exposure to silver and silver compounds can occur orally, dermally, or by inhalation. Silver is found in most tissues, but has no known physiologic function.

In humans, accidental or intentional ingestion of large doses of silver nitrate has produced corrosive damage of the gastrointestinal tract, abdominal pain, diarrhea, vomiting, shock, convulsions, and death. Respiratory irritation was noted following acute inhalation exposure to silver or silver compounds. Silver nitrate solutions are highly irritating to the skin, mucous membranes, and eyes.

Ingestion, inhalation, or dermal absorption of silver may cause argyria, the most common indicator of long-term exposure to silver or silver compounds in humans. Argyria is a gray or blue-gray, permanent discoloration of the skin and mucous membranes that is not a toxic effect per se, but is considered cosmetically disfiguring. Chronic inhalation exposure of workers to silver oxide and silver nitrate dusts resulted in upper and lower respiratory irritation, deposition of granular silver-containing deposits in the eyes, impaired night vision, and abdominal pain. Mild allergic responses have been attributed to dermal contact with silver.

In long-term oral studies with experimental animals, silver compounds have produced slight thickening of the basement membranes of the renal glomeruli, growth depression, shortened lifespan, and granular silver-containing deposits in skin, eyes, and internal organs. Hypoactivity was seen in rats subchronically exposed to silver nitrate in drinking water.

A RfD of 0.005 mg/kg/day for subchronic and chronic exposure was calculated from a LOAEL of 0.014 mg/kg/day for argyria observed in patients receiving i.v. injections of silver arsphenamine. Data are presently insufficient to derive a RfC for silver.

Data adequate for evaluating the carcinogenicity of silver to humans or animals by ingestion, inhalation, or other routes of exposure were not found. Based on U.S. EPA guidelines, silver is placed in weight-of-evidence group D, not classifiable as to human carcinogenicity.

The oral RfD used in this BHHRA is 5.0E-3 mg/(kg × day). The dermal route RfD based on the oral RfD and a gastrointestinal absorption factor of 18 percent is 9.0E-4 mg/(kg × day). The RfD for inhalation exposure has not been determined.

1.4.1.20 Tetraoxo-sulfate (1-)

Information on the toxicity of tetraoxo-sulfate (1-) was not found in the available literature. When information becomes available, it will be included in this report.

Neither slope factors nor RfDs for any route of exposure were found for tetraxo-sulfate (1-). Therefore, neither carcinogenicity nor systemic toxicity because of tetraoxo-sulfate (1-) exposure is included in the BHHRA.

1.4.1.21 Thallium (CAS 007440-28-0) (RAIS)

This report is an update of the Toxicity Summary for Thallium (CAS Registry No. 7440-28-0). The original summary for this chemical was submitted in 1991. The update was performed by incorporating any new human health toxicity data published since the original submittal of the report. Pertinent pharmacokinetic, toxicologic, carcinogenic, and epidemiologic data were obtained through on-line searches of the TOXLINE database from 1991 through 1994. In addition, any changes to EPA-approved toxicity values (reference doses, reference concentrations, or cancer slope factors) from the IRIS (current as of December 1994) and/or the Health Effects Assessment Summary Tables, Annual FY-94 and July Supplement No. 1, for this chemical were incorporated in this update.

Thallium, a naturally occurring elemental metal, is commonly found in minerals and as thallium salts. It can also be released into the environment from industrial sources. Atmospheric thallium contaminates surface soils by deposition allowing for the exposure of humans by oral, dermal, or inhalation routes. The most common nonoccupational sources of thallium exposure are contaminated food crops and tobacco. Although normally present in the urine of humans, elevated urine thallium concentrations have been associated with adverse health effects.

The primary targets of thallium toxicity are the nervous, integumentary, and reproductive systems. In humans, acute exposures produce paresthesia, retrobulbar neuritis, ataxia, delirium, tremors, and hallucinations. This implies central, peripheral, and autonomic nervous system involvement. Human and animal chronic exposures result in alterations of the brain, spinal cord, and peripheral nerves. In both humans and animals, alopecia is the most common indicator of long-term thallium poisoning.

An increased incidence of congenital malformations was found in children of parents exposed to thallium through the consumption of home-grown fruits and vegetables. However, a causal relationship between these effects and thallium exposure could not be confirmed. In animal studies, thallium compounds produced testicular effects in male rats and slight fetotoxicity and significant impairment of learning ability in the offspring of treated female rats.

Reference doses (RfDs) have been calculated for subchronic and chronic oral exposure to several thallium compounds. The values, derived from a single study where thallium treatment increased AST and LDH activities in rats, are based on NOAELs ranging from 0.23 to 0.28 mg/kg/day. The subchronic RfDs are 8.00E-04 (thallium sulfate, chloride, and carbonate) or 9.00E-04 mg/kg/day (thallium nitrate and acetate), and the chronic RfDs are 8.00E-05 (thallium sulfate, chloride, and carbonate) or 9.00E-05 mg/kg/day (thallium nitrate and acetate).

Data suitable for evaluating the carcinogenicity of thallium to humans or animals by ingestion, inhalation, or other routes of exposure were not found. Thallium sulfate, selenite, nitrate, chloride, carbonate, and acetate have been placed in EPA's weight-of evidence Group D, not classifiable as to human carcinogenicity based on inadequate human and animal data.

Neither slope factors nor chronic RfDs for any route of exposure were found for thallium. Therefore, neither carcinogenicity nor systemic toxicity due to thallium exposure is included in the BHHRA. A gastrointestinal absorption factor of 15% is available for thallium-soluble salts.

1.4.1.22 Uranium (metal and soluble salts) (CAS 007440-61-1) (see radionuclide section, also)

Uranium is a hard, silvery white amphoteric metal and is a radioactive element. In its natural state it consists of three isotopes: uranium-234, uranium-235, and uranium-238. More than 100 uranium minerals exist; those of commercial importance are the oxides and oxygenous salts. The processing of uranium ore generally involves extraction then leaching either by an acid or a carbonate method. In addition, the metal may be obtained from its halides by fused salt electrolysis. The primary use of natural uranium is in nuclear energy as a fuel for nuclear reactors, in plutonium production, and as feeds for gaseous diffusion plants; it is also a source of radium salts. Uranium compounds are used in staining glass, glazing ceramics, and enameling; in photographic processes; for alloying steels; and as a catalyst for chemical reactions, radiation shielding, and aircraft counterweights (Sittig 1981).

The primary route of exposure to uranium metals and salts is through dermal contact. Uranium soluble compounds act as a poison to cause kidney damage under acute exposure and pneumoconiosis or pronounced blood changes under chronic exposure conditions. Furthermore, it is difficult to separate the toxic chemical effects of uranium and its compounds from their radiation effects. The chronic radiation effects are similar to those produced by ionizing radiation. Reports now confirm that carcinogenicity is related to dose and exposure time. Cancer of the lung, osteosarcoma, and lymphoma have all been reported (Sittig 1985). An EPA weight-of-evidence classification for uranium metal was not located in the available literature.

The oral and dermal RfD for chronic exposures is 3.0E-3 and 2.55E-3 mg/(kg x day), respectively for uranium. A gastrointestinal absorption factor of 85 percent was used.

REFERENCE:

Sittig, M. 1985. *Handbook of Toxic and Hazardous Chemicals and Carcinogens*, Noyes Publications, Park Ridge, NJ.

1.4.1.23 Vanadium (CAS 007440-62-2 for metal) (RAIS)

Vanadium is a metallic element that occurs in six oxidation states and numerous inorganic compounds. Some of the more important compounds are vanadium pentoxide (V_2O_5), sodium metavanadate ($NaVO_3$), sodium orthovanadate (Na_3VO_4), vanadyl sulfate ($VOSO_4$), and ammonium vanadate (NH_4VO_3). Vanadium is used primarily as an alloying agent in steels and non-ferrous metals. Vanadium compounds are also used as catalysts and in chemical, ceramic or specialty applications.

Vanadium compounds are poorly absorbed through the gastrointestinal system (0.5-2% of dietary amount), but slightly more readily absorbed through the lungs (20-25%). Absorbed vanadium is widely distributed in the body, but short-term localization occurs primarily in bone, kidneys, and liver. In the body, vanadium can undergo changes in oxidation state (interconversion of vanadyl (+4) and vanadate (+5) forms) and it can also bind with blood protein (transferin) (Harris et al., 1984). Vanadium is excreted primarily in the feces following oral exposures and primarily in the urine following inhalation exposures.

The toxicity of vanadium depends on its physico-chemical state; particularly on its valence state and solubility. Based on acute toxicity, pentavalent NH_4VO_3 has been reported to be more than twice as toxic as trivalent VCl_3 and more than 6 times as toxic as divalent VI_2. Pentavalent V_2O_5 has been reported to be more than 5 times as toxic as trivalent V_2O_3. In animals, acutely toxic oral doses cause vasoconstriction, diffuse desquamative enteritis, congestion and fatty degeneration of the liver, congestion and focal hemorrhages in the lungs and adrenal cortex. Minimal effects seen after subchronic oral exposures to animals include diarrhea, altered renal function, and decreases in erythrocyte counts, hemogloblin, and hematocrit. In humans, intestinal cramps and diarrhea may occur following subchronic oral exposures. These studies indicate that for subchronic and chronic oral exposures the primary targets are the digestive system, kidneys, and blood.

Reference Doses (RfD) for chronic oral exposures are: 0.007 mg/kg/day for vanadium; 0.009 mg/kg/day for vanadium pentoxide; 0.02 mg/kg/day for vanadyl sulfate; and 0.001 mg/kg/day for sodium metavanadate. The subchronic RfDs for these compounds are the same as the chronic RfDs, except for sodium metavanadate, which is 0.01 mg/kg/day.

Inhalation exposures to vanadium and vanadium compounds result primarily in adverse effects to the respiratory system. In laboratory studies, minimal effects (throat irritation and coughing) occurred after an 8-hr exposure to 0.1 mg V/m^3. In studies on workers occupationally exposed to vanadium, the most common reported symptoms were: irritation of the respiratory tract, conjunctivitis, dermatitis, cough, bronchospasm, pulmonary congestion, and bronchitis. Quantitative data are; however, insufficient to derive a subchronic or chronic inhalation RfC for vanadium or vanadium compounds.

There is little evidence that vanadium or vanadium compounds are reproductive toxins or teratogens. There is also no evidence that any vanadium compound is carcinogenic; however, very few adequate studies are available for evaluation. Vanadium has not been classified as to carcinogenicity by the U.S. EPA.

The oral RfD used in this BHHRA is 7.0E-3 mg/(kg × day). The dermal route RfD based on the oral RfD and a gastrointestinal absorption factor of 1 percent is 7.0E-5 mg/(kg × day). The RfD for inhalation exposure has not been determined.

1.4.1.24 Zinc (CAS 007440-66-6 for metal) (RAIS)

Zinc is used primarily in galvanized metals and metal alloys, but zinc compounds also have wide commercial applications as chemical intermediates, catalysts, pigments, vulcanization activators and accelerators in the rubber industry, UV stabilizers, and supplements in animal feeds and fertilizers. They are also used in rayon manufacture, smoke bombs, soldering fluxes, mordants for printing and dyeing, wood preservatives, mildew inhibitors, deodorants, antiseptics, and astringents. In addition, zinc phosphide is used as a rodenticide.

Zinc is an essential element with recommended daily allowances ranging from 5 mg for infants to 15 mg for adult males.

Gastrointestinal absorption of zinc is variable (20-80%) and depends on the chemical compound as well as on zinc levels in the body and dietary concentrations of other nutrients. In individuals with normal zinc levels in the body, gastrointestinal absorption is 20-30%. Information on pulmonary absorption is limited and complicated by the potential for gastrointestinal absorption due to mucociliary clearance from the respiratory tract and subsequent swallowing. Zinc is present in all tissues with the highest concentrations in the prostate, kidney, liver, heart, and pancreas. Zinc is a vital component of many metalloenzymes such as carbonic anhydrase, which regulates CO_2 exchange. Homeostatic mechanisms involving metallothionein in the mucosal cells of the gastrointestinal tract regulate zinc absorption and excretion.

In humans, acutely toxic oral doses of zinc cause nausea, vomiting, diarrhea, and abdominal cramps and in some cases gastric bleeding. Ingestion of zinc chloride can cause burning in the mouth and throat, vomiting, pharyngitis, esophagitis, hypocalcemia, and elevated amylase activity indicative of pancreatitis. Zinc phosphide, which releases phosphine gas under acidic conditions in the stomach, can cause vomiting, anorexia, abdominal pain, lethargy, hypotension, cardiac arrhythmias, circulatory collapse, pulmonary edema, seizures, renal damage, leukopenia, and coma and death in days to weeks. The estimated fatal dose is 40 mg/kg. Animals dosed orally with zinc compounds develop pancreatitis, gastrointestinal and hepatic lesions, and diffuse nephrosis.

Gastrointestinal upset has also been reported in individuals taking daily dietary zinc supplements for up to 6 weeks. There is also limited evidence that the human immune system may be impaired by subchronic exposures. In animals, gastrointestinal and hepatic lesions; pancreatic lesions; anemia; and diffuse nephrosis have been observed following subchronic oral exposures.

Chronic oral exposures to zinc have resulted in hypochromic microcytic anemia associated with hypoceruloplasminemia, hypocupremia, and neutropenia in some individuals. Anemia and pancreatitis were the major adverse effects observed in chronic animal studies. Teratogenic effects have not been seen in animals exposed to zinc; however, high oral doses can affect reproduction and fetal growth.

The reference dose for chronic oral exposure to zinc is under review by EPA; the currently accepted RfD for both subchronic and chronic exposures is 0.2 mg/kg/day based on clinical data demonstrating zinc-induced copper deficiency and anemia in patients taking zinc sulfate for the treatment of sickle cell anemia. The chronic oral RfD for zinc phosphide is 0.0003 mg/kg/day, and the subchronic RfD is 0.003 mg/kg/day.

Under occupational exposure conditions, inhalation of zinc compounds (mainly zinc oxide fumes) can result in a condition identified as "metal fume fever", which is characterized by nasal passage irritation, cough, rales, headache, altered taste, fever, weakness, hyperpnea, sweating, pains in the legs and chest, leukocytosis, reduced lung volume, and decreased diffusing capacity of carbon monoxide. Inhalation of zinc chloride can result in nose and throat irritation, dyspnea, cough, chest pain, headache, fever, nausea and vomiting, and respiratory disorders such as pneumonitis and pulmonary fibrosis. Pulmonary inflammation and changes in lung function have also been observed in inhalation studies on animals.

Although "metal fume fever" occurs in occupationally exposed workers, it is primarily an acute and reversible effect that is unlikely to occur under chronic exposure conditions when zinc air concentrations are less than 8-12 mg/m^3. Gastrointestinal distress, as well as enzyme changes indicative of liver dysfunction, have also been reported in workers occupationally exposed to zinc; however, it is unclear as to what extent these effects might have been caused by pulmonary clearance, and subsequent gastrointestinal absorption. Consequently, there are no clearly defined toxic effects that can be identified as resulting specifically from pulmonary absorption following chronic low level inhalation exposures. Animal data for chronic inhalation exposures are not available.

An inhalation reference concentration has not been derived for zinc or zinc compounds.

No case studies or epidemiologic evidence has been presented to suggest that zinc is carcinogenic in humans by the oral or inhalation route. In animal studies, zinc sulfate in drinking water or zinc oleate in the diet of mice for a period of one year did not result in a statistically significant increase in hepatomas, malignant lymphomas, or lung adenomas; however, in a 3-year, 5-generation study on tumor-resistant and tumor-susceptible strains of mice, exposure to zinc in drinking water resulted in increased frequencies of tumors from the F0 to the F4 generation in the tumor-resistant strain (from 0.8 to 25.7%, vs. 0.0004% in the controls), and higher tumor frequencies in two tumor-susceptible strains (43.4% and 32.4% vs. 15% in the controls).

Zinc is placed in weight-of-evidence Group D, not classifiable as to human carcinogenicity due to inadequate evidence in humans and animals.

The oral RfD used in this BHHRA is 3.0E-1 mg/(kg × day). The dermal route RfD based on the oral RfD and a gastrointestinal absorption factor of 20 percent is 6.0E-2 mg/(kg × day). The RfD for inhalation exposure has not been determined.

1.4.2 Organic Compounds

1.4.2.1 1,1,2-Trichloroethane (CAS 000079-00-5) (RAIS)

1,1,2-Trichloroethane (CAS Reg. No. 79-00-5), also known as vinyl trichloride, is a nonflammable liquid that is used in the manufacture of 1,1-dichloroethene; as a solvent for fats, waxes, resins, and alkaloids; and in organic synthesis.

1,1,2-Trichloroethane is released to the environment as a result of anthropogenic activity. The chemical has been identified in the United States at 45 of 1177 hazardous waste sites on the National Priorities List. Based on release patterns of related chemicals, it is estimated that 70-90% of the total release is to air, 10-30% to land, and a few percent to water. Removal of 1,1,2-trichloroethane from the atmosphere is thought to occur by reaction with photochemically produced hydroxyl radicals (estimated half-life 49 days) and from washout by precipitation; however, most of the 1,1,2-trichloroethane removed by washout is expected to reenter the atmosphere by volatilization. If released to soil, 1,1,2-trichloroethane is expected to partially leach into groundwater and to partially volatilize. In surface water, volatilization is the primary removal process.

1,1,2-Trichloroethane is rapidly absorbed, widely distributed in organs and tissues, and extensively metabolized. Major metabolites include chloroacetic acid, S-carboxymethylcysteine, and thiodiacetic acid. 1,1,2-Trichloroethane and/or its metabolites are primarily excreted through the lungs and urine.

Very limited human data were available to evaluate the toxicity of 1,1,2-trichloroethane. The chemical exerts a narcotic action at "low" concentrations and is irritating to the eyes and mucous membranes of the respiratory tract. When in contact with skin, 1,1,2-trichloroethane may cause cracking and erythema.

The oral LD_{50} for mice (378-491 mg/kg) indicates that in animals the acute oral toxicity of 1,1,2-trichloroethane is moderate. 1,1,2-Trichloroethane is a central nervous system depressant, inducing sedation in mice at oral doses of 378 mg/kg and drowsiness, incoordination, and narcosis in dogs at 289 mg/kg. Male and female CD-1 mice ingesting 384 mg/kg in drinking water for 90 days exhibited alterations in serum enzyme and hepatic microsomal enzyme activities, indicating adverse liver effects. In addition, depressed immune function in both sexes and decreased hemoglobin and hematocrit values in females were noted. Decreased survival was reported in female $B6C3F_1$ mice exposed to 195 or 390 mg/kg/day for 78 weeks.

Bonnet et al. (1980) reported an inhalation LC_{50} of 1654 ppm for rats exposed to 1,1,2-trichloroethane for 6 hours, while another study found that a single 7-hour exposure to 250 or 500 ppm resulted in the death of more than half of the exposed female rats, with surviving animals exhibiting marked liver and kidney damage. As noted previously, 1,1,2-trichloroethane is a central nervous system depressant inducing narcosis; death results from respiratory arrest. In mice, a concentration of 3750 ppm for 30 minutes produced central nervous system depression and significantly increased liver enzyme activity within 18 minutes and death in half the animals within 10 hours. No adverse effects were observed in rats, guinea pigs, and rabbits exposed to 15 ppm for 7 hours/day, 5 days/week for 6 months, but female rats exposed to 30 ppm (16 exposures; 7 hours/day, 5 days/week) exhibited minor hepatic effects. Repeated topical applications of 0.1 mL 1,1,2-trichloroethane produced erythema, edema, fissuring, and scaling of rabbit and guinea pig skin.

An oral reference dose of 0.04 mg/kg/day for subchronic exposure and 0.004 mg/kg/day for chronic exposure to 1,1,2-trichloroethane was calculated based on a no observed adverse effects level (NOAEL) of 3.9 mg/kg/day and a lowest observed adverse effects level (LOAEL) of 44 mg/kg/day from a 90-day drinking water study with mice. Clinical chemistry alterations indicative of liver damage were identified as critical effects. An inhalation reference concentration for 1,1,2-trichloroethane is under review by EPA.

No epidemiologic studies or case reports addressing the carcinogenicity of 1,1,2-trichloroethane in humans were available. In a rodent bioassay, 1,1,2-trichloroethane was administered by gavage to Osborne-Mendel rats (46 or 92 mg/kg/day) and B6C3F_1 mice (195 or 390 mg/kg/day), 5 days/week for 78 weeks. No effects on tumor development were noted in rats. Treated mice had significantly ($p<0.01$) increased incidences of hepatocellular carcinomas. The tumor incidences in treated males were 37% and 76% in the low- and high-dose groups, respectively, compared with 10% in vehicle controls, and 33% and 89% in females, respectively, compared to no observed tumors in vehicle controls. An increased incidence of adrenal pheochromocytomas was also observed in male and female mice. In a cancer initiation/promotion study with rats, 1,1,2-trichloroethane did not exhibit tumor initiating or promoting activity.

Based on EPA guidelines, 1,1,2-trichloroethane was assigned to weight-of-evidence group C, possible human carcinogen. For oral exposure, the slope factor is 5.7E-2 $(mg/kg/day)^{-1}$ and the unit risk for drinking water is 1.6E-6 $(\mu g/L)^{-1}$. The inhalation slope factor and unit risk are 5.7E-2 $(mg/kg/day)^{-1}$ and 1.6E-5 $(\mu g/m3)^{-1}$, respectively.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for 1,1,2-trichloroethane are 5.70E-2, 7.04E-2, and 5.70E-2 $[mg/(kg \times day)]^{-1}$, respectively. The oral and dermal RfDs used in the BHHRA are 4.00E-3 and 3.24E-3 mg/(kg x day). An inhalation RfD was not found, and based on the localized effects discussed above, it would not be appropriate to extrapolate an inhalation RfD from the oral RfD. Both the dermal cancer slope factor and the dermal RfD were derived from their respective oral toxicity value using a gastrointestinal absorption factor of 81 percent.

1.4.2.2 1,1-Dichloroethene (CAS 000075-35-4) (RAIS)

1,1-Dichloroethene (CAS No. 75-35-4), also known as 1,1-dichloroethene and vinylidine chloride, is a colorless liquid that is used primarily in the production of polyvinylidine chloride (PVC) copolymers and as an intermediate for synthesis of organic chemicals. The major application for PVC copolymers is the production of flexible films for food packaging such as Saran® wrap.

1,1-Dichloroethene does not occur naturally but is found in the environment because of releases associated with its production and transport and with the production of its polymers. Because of its high volatility, releases to the atmosphere are the greatest source of ambient 1,1-dichloroethene. Smaller amounts are released to surface waters and soils. Loss of 1,1-dichloroethene from water and soils is primarily because of volatilization. In the atmosphere, reaction with photochemically generated hydroxyl radicals is expected to be the predominant removal mechanism. Human exposure to 1,1-dichloroethene is potentially highest in workplace settings and in the vicinity of hazardous waste sites where the compound may contaminate environmental media.

The primary effect of acute exposure to high concentrations (approximately 4000 ppm) of 1,1-dichloroethene vapor in humans is CNS depression which may progress to unconsciousness. Occupational exposure has been reported to cause liver dysfunction in workers. 1,1-Dichloroethene is irritating when applied to the skin and prolonged contact can cause first degree burns. Direct contact with the eyes may cause conjunctivitis and transient corneal injury.

In experimental animals, the liver and kidneys are target organs for the toxic effects of 1,1-dichloroethene. Subchronic oral exposure for 90 days to 1,1-dichloroethene in drinking water produced slight hepatotoxic effects at 200 ppm, and chronic oral exposure to drinking water for 2 years produced hepatocellular changes in males at >=100 ppm and in females at >=50 ppm. Gavage administration of 10 mg/kg/day, 5 days/week for 2 years produced chronic inflammation of the kidney in male and female rats and liver necrosis in male and female mice. Exposure by inhalation to 55 ppm 1,1-dichloroethene, 6 hours/day, 5 days/week for up to 1 year produced fatty liver changes in rats and focal degeneration and necrosis in mice.

In a three-generation study, no treatment-related effects on reproduction or neonatal development were seen in male and female Sprague-Dawley rats administered up to 200 ppm of 1,1-dichloroethene in the drinking water. However, inhalation exposure during gestation produced increased resorptions and minor skeletal alterations in rodents at concentrations that caused maternal toxicity. These effects were reported in rats and mice at >=15 ppm and in rats and rabbits at >=80 ppm and >=160 ppm, respectively.

An oral RfD of 9E-3 mg/kg/day was derived for chronic exposure and subchronic exposure to 1,1-dichloroethene, based on liver lesions seen in rats in a 2-year drinking water study. The oral RfD is currently under review and may be subject to change. An inhalation RfC for 1,1-dichloroethene is under review.

An epidemiology study using a small cohort found no association between the occurrence of cancer or cancer mortality and exposure to 1,1-dichloroethene. Oral carcinogenicity bioassays (drinking water or gavage exposures) with experimental animals gave generally negative results. In one inhalation study, statistically significant increases in renal adenocarcinomas were noted in male Swiss mice exposed to 25 ppm for 12 months. Also observed were statistically significant increases in mammary gland carcinomas in females and lung tumors in both sexes. Results of other inhalation studies with rats, mice, and hamsters have been negative.

Based on EPA guidelines, 1,1-dichloroethene was assigned to weight-of-evidence group C, possible human carcinogen. For oral exposure, the slope factor is 6E-1 $[mg/(kg \times day)]^{-1}$ and the unit risk is 1.7E-5 $(ug/L)^{-1}$. The inhalation slope factor and unit risk are 1.2E+0 $[mg/(kg \times day)]^{-1}$ and 5.0E-5 $(ug/m^3)^{-1}$, respectively.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for 1,1-dichloroethene are 6.00E-1, 1.20E+0, and 6.00E-1 $[mg/(kg \times day)]^{-1}$, respectively. The oral and dermal RfDs used in the BHHRA are 9.00E-3 and 9.00E-3 mg/(kg x day). An inhalation RfD was not found, and based on the localized effects discussed above, it would not be appropriate to extrapolate an inhalation RfD from the oral RfD. Both the dermal cancer slope factor and the dermal RfD were derived from their respective oral toxicity value using a gastrointestinal absorption factor of 100 percent.

1.4.2.3 *Cis*- and *trans*-1,2-Dichloroethene (CAS 000156-59-2 and CAS 000156-60-5) (RAIS)

1,2-Dichloroethene exists in two isomeric forms, cis-1,2-dichloroethene and trans-1,2-dichloroethene, that are colorless, volatile liquids with a slightly acrid odor. Although not used extensively in industry, 1,2-dichloroethene is used in the production of other chlorinated solvents and as a solvent for dyes, perfumes, and lacquers. Humans are exposed to 1,2-dichloroethene primarily by inhalation, but exposure can also occur by oral and dermal routes.

Limited information exists on the absorption, distribution, and excretion of 1,2-dichloroethene in either humans or animals. In vitro studies have shown that the mixed function oxidases will metabolize 1,2-dichloroethene; the final metabolic products are dependent on the initial isomer of 1,2-dichloroethene.

Information on the toxicity of 1,2-dichloroethene in humans and animals is limited. Workers exposed to 1,2-dichloroethene have been reported to suffer from drowsiness, dizziness, nausea, fatigue, and eye irritation. Acute and subchronic oral and inhalation animal studies of trans-1,2-dichloroethene and acute inhalation animal studies of cis-1,2-dichloroethene suggest that the liver is the primary target organ. The toxicity is expressed in increased activities of liver associated enzymes, fatty degeneration, and necrosis. Secondary target organs include the central nervous system and lung.

Based on an unpublished study describing decreased hemoglobin and hematocrits in rats treated by gavage for 90 days, EPA assigned a subchronic and chronic oral RfD for cis-1,2-dichloroethene of 1.00E-01 mg/kg/day and 1.00E-02 mg/kg/day, respectively. The RfDs were derived from a NOAEL/LOAEL of 32 mg/kg/day. An inhalation reference concentration (RfC) for cis-1,2-dichloroethene has not been derived.

Subchronic and chronic RfDs of 2.00E-01 mg/kg/day and 2.00E-02 mg/kg/day, respectively, for trans-1,2-dichloroethene have been calculated. The RfDs were derived from a LOAEL of 175 mg/kg/day that was based on increased serum alkaline phosphatase activity in mice that received trans-1,2-dichloroethene in their drinking water. An RfC for trans-1,2-dichloroethene has not been derived.

No information was available concerning the chronic, developmental, or reproductive toxicity of cis-1,2-dichloroethene or trans-1,2-dichloroethene. No cancer bioassays or epidemiological studies were available to assess the carcinogenicity of 1,2-dichloroethene. EPA has placed both cis-1,2-dichloroethene and trans-1,2-dichloroethene in weight-of-evidence group D, not classifiable as to human carcinogenicity, based on the lack of human or animal carcinogenicity data and on essentially negative mutagenicity data. Oral and inhalation slope factors have not been calculated for these isomers.

No cancer slope factors for *cis* or *trans*-1,2-dichloroethene were found; therefore, carcinogenicity from exposure could not be quantified in the BHHRA. The oral and dermal RfDs for *cis*-1,2-dichloroethene used in the BHHRA are 1.00E-2 and 1.00E-2, respectively. The oral and dermal RfDs for *trans*-1,2-dichloroethene used in the BHHRA are 2.00E-2 and 2.00E-2, respectively. An inhalation RfD was not found, and based on the localized effects discussed above, it would not be appropriate to extrapolate an inhalation RfD from the oral RfD. The dermal RfD for *trans*- and *cis*-1,2-dichloroethene was derived from the oral toxicity value using a gastrointestinal absorption factor of 100 percent.

1.4.2.4 1,2-Dichloroethane (CAS 000107-06-2) (RAIS)

1,2-Dichloroethane is used primarily in the manufacture of vinyl chloride, as well as in the synthesis of tetrachloroethene, trichloroethene, 1,1,1-trichloroethane, vinylidene chloride, aziridines, and ethylenediamines. It is added to gasoline as a lead-scavenging agent, and, in the past, has been used as a

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metal degreasing agent; a solvent; and a fumigant for grain, upholstery, and carpets. It has also been used in paints, coatings, adhesives, varnishes, finish removers, soaps, and scouring agents.

1,2-Dichloroethane is expected to be highly mobile in most soils, and consequently, contamination of groundwater is possible. Adsorption to soil particles is low, particularly for soils with a low organic carbon content. Volatilization from soils and surface waters may be an important transport process. Microbial biodegradation is not expected to be significant.

1,2-Dichloroethane is absorbed through the lungs, gastrointestinal system, and skin. It is distributed throughout the body but may be concentrated in adipose tissue. The compound can also accumulate in breast milk and may cross the placenta. Metabolism of 1,2-dichloroethane most likely involves conjugation with glutathione. Urinary metabolites are likely to include thiodiglycolic acid, chloroacetic acid, and N-acetyl-S-carboxymethyl-L-cysteine. Excretion occurs primarily through elimination of soluble urinary metabolites.

Bronchitis, hemorrhagic gastritis and colitis, hepatocellular damage, renal tubular necrosis, central nervous system depression, and histopathological changes in the brain have been reported in cases of acute oral poisoning of humans. Animal data indicate that short-term exposures may produce immune system deficiencies, and subchronic or chronic oral exposures may affect the liver or kidney. Subchronic or chronic oral reference doses for 1,2-dichloroethane have not been adopted by the EPA; however, a provisional RfD of 0.03 mg/kg/day has been calculated by the Superfund Health Risk Technical Support Center from a NOAEL of 26 mg/kg/day for rats tested in a subchronic gavage study. Use of this value in risk assessment reports for specific sites must be approved by the Support Center.

Acute inhalation exposures to 1,2-dichloroethane (75-125 ppm) can result in irritation of the eyes, nose and throat, dizziness, nausea, vomiting, increasing stupor, cyanosis, rapid pulse, delirium, anesthesia, partial paralysis, loss of tactile sense, degenerative changes in the myocardium, abnormal EEG, liver and kidney damage, pulmonary edema, and hemorrhages throughout the body. Short-term exposures to animals have resulted in central nervous system depression (inactivity or stupor, tremors, uncertain gait, narcosis); pulmonary congestion; renal tubular degeneration; fatty degeneration of the liver and, less commonly, necrosis and hemorrhage of the adrenal cortex; chronic splenitis; fatty infiltration of the myocardium; and immuno-deficiency. Chronic occupational exposure to 1,2-dichloroethane may result in central nervous systems effects including irritability, sleeplessness, and decreased heart rate; loss of appetite; nausea; vomiting; epigastric pain, as well as irritation of the mucous membranes; and liver and kidney impairment. Subchronic or chronic inhalation exposures to animals resulted in pathological lesions in the kidney, liver, heart, lungs, and testes. A subchronic or chronic inhalation reference concentration for 1,2-dichloroethane has not been adopted and verified by EPA; however, a provisional RfC of 0.005 mg/m^3 has been calculated by the Superfund Health Risk Technical Support Center from a LOAEL (gastrointestinal disturbances and liver and gallbladder disease) of 10 mg/m^3 for occupationally exposed workers. Use of this value in risk assessment reports for specific sites must be approved by the Support Center.

1,2-Dichloroethane is classified by EPA in Group B2 as a probable human carcinogen by both the oral and inhalation exposure routes, based on evidence for the induction of several types of tumors in rats and mice. Male rats treated by gavage with 1,2-dichloroethane exhibited increased incidences of fibromas of the subcutaneous tissue; hemangiosarcomas of the spleen, liver, pancreas, and adrenal gland; and squamous-cell carcinomas of the forestomach. Female rats treated by gavage developed mammary adenocarcinomas. Increased incidences of hepatocellular carcinomas and pulmonary adenomas were observed in male mice treated by gavage, and increased incidences of mammary adenocarcinomas, pulmonary adenocarcinomas, and endometrial polyps and sarcomas were observed in female mice. Mice treated by topical application of 1,2-dichloroethane exhibited an increased incidence of lung papillomas. The oral slope factor for

1,2-dichloroethane is 9.1E-2 $(ug/kg/day)^{-1}$, and the drinking water unit risk is 2.6E-6 $(ug/L)^{-1}$. The inhalation slope factor is 9.1E-2 $(ug/kg/day)^{-1}$, and the inhalation unit risk is 2.6E-5 $(ug/m^3)^{-1}$.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for 1,2-dichloroethane are 9.10E-2 $[mg/(kg \times day)]^{-1}$. The inhalation RfD used in the BHHRA is 2.86E-3 mg/(kg x day). Oral and dermal RfDs were not found. A gastrointestinal absorption factor of 100% was used to derive the dermal slope factor.

1.4.2.5 2,4-Dinitrotoluene (CAS 121-14-2) (RAIS)

2,4-Dinitrotoluene (2,4-DNT; 1-methyl-2,4-dinitrobenzene; CAS Reg. No. 121-14-2) is a yellow crystalline solid and one of six possible chemical forms of dinitrotoluene (DNT). Technical grade DNT (t-DNT) is typically composed of 78% 2,4-DNT, 19% 2,6-DNT, and small amounts of 3,4-DNT, 2,3-DNT, and 2,5-DNT. 2,4-DNT is primarily used as a chemical intermediate in the manufacture of polyurethanes but also serves as a component of military and commercial explosives, as an intermediate in dye processes.

The DNTs are absorbed through the gastrointestinal tract, respiratory tract, and skin in most species. The initial acute toxic effects of 2,4-DNT in humans include methemoglobinemia, cyanosis, and headache. Symptoms indicative of neurotoxicity are impaired reflexes, tremors, nystagmus, dizziness, and sleepiness. Subchronic and chronic oral toxicity studies with experimental animals indicate that the blood, liver, nervous system, and reproductive system are targets affected by 2,4-DNT. These effects were generally observed at doses of 5 mg/kg/day in rats and at 10 mg/kg/day in dogs. The most common hematological findings were methemoglobinemia, anemia, reticulocytosis, and an increase in Heinz bodies. Hepatotoxic effects included liver discoloration, and proliferative alterations of hepatocytes and bile duct epithelium. Neuromuscular effects, ranging from tremors and ataxia to convulsions, were more severe in dogs than in rodents. Reproductive effects consisted of decreased spermatogenesis, testicular atrophy, and ovarian dysfunction.

The major route of exposure to DNT in the occupational setting is by inhalation. Effects reported in workers exposed to t-DNT and/or 2,4-DNT included ischemic heart disease, hematological effects characterized by cyanosis, anemia, and leukocytosis, and neurological effects such as dizziness, insomnia, nausea, and tingling pains in extremities. The evidence for potential reproductive effects (reduction of sperm counts) in male workers exposed to a mixture of DNT isomers and diaminotoluene is equivocal.

An oral RfD of 2.00E-03 mg/kg/day has been calculated for chronic (EPA 1995a) and subchronic exposure to 2,4-DNT (EPA 1994), based on a NOAEL of 0.2 mg/kg/day derived from a chronic oral study with dogs conducted by Ellis et al. Data are inadequate for the calculation of an inhalation Reference Concentration (RfC).

An association between DNT exposure and increased risk of hepatobiliary cancer was found in a retrospective mortality study involving 4989 workers exposed to DNT (isomer composition not specified) and 7436 unexposed controls at an U.S. Army munitions facility. The carcinogenic activity of 2,4-DNT and t-DNT has been studied in several chronic bioassays and in less than lifetime studies. 2,4-DNT (containing small amounts of 2,6-DNT) induced an increased incidence of hepatocellular carcinomas and subcutaneous tumors in rats and renal tumors in male mice. In two rat studies t-DNT induced hepatocellular carcinomas. However, conclusions drawn from the isomer-specific carcinogenicity study by Leonard et al. and tumor-initiation/promotion assays by Popp and Leonard suggest that 2,6- rather than 2,4-DNT is the primary hepatocarcinogen in t-DNT. Although EPA has not evaluated pure 2,4-DNT for evidence of human carcinogenic potential, the dinitrotoluene mixture (containing 2,4-DNT and 2,6-DNT) was classified as a B2 chemical carcinogen, probable human carcinogen. A slope factor of 6.8E-1 $(mg/kg/day)^{-1}$ was calculated for oral exposure to the dinitrotoluene mixture. The drinking water unit risk is 1.9E-5 $(\mu g/L)^{-1}$.

The oral and dermal cancer slope factors used in the BHHRA are 6.80E-1 and 8.0E-1 [mg/(kg × day)]$^{-1}$, respectively. An inhalation cancer slope factor was not found. The oral and dermal RfDs used in the BHHRA are 2.00E-3 and 1.70E-3 mg/(kg × day), respectively. A inhalation RfD was not found. When calculating the dermal route RfD and slope factor from the oral value, a gastrointestinal absorption factor of 85 percent was used.

1.4.2.6 2,6-Dinitrotoluene (CAS 606-20-2) (RAIS)

2,6-Dinitrotoluene (2,6-DNT; 2-methyl-1,3-dinitrobenzene; CAS Reg. No. 606-20-2) is a pale yellow crystalline solid and one of six possible chemical forms of dinitrotoluene (DNT). Technical grade DNT (t-DNT) is typically composed of 78% 2,4-DNT, 19% 2,6-DNT, and small amounts of 3,4-DNT, 2,3-DNT, and 2,5-DNT (Dunlap 1978). DNT is primarily used as a chemical intermediate in the manufacture of polyurethanes. It is also used as a component of military and commercial explosives, as an intermediate in dye processes, and as a propellant additive.

The DNTs are absorbed through the gastrointestinal tract, respiratory tract, and skin in most species. Human data regarding potential health effects of 2,6-DNT are very limited. A significant increase in the death rate due to ischemic heart disease has been associated with occupational exposure to t-DNT. The evidence for potential reproductive effects (reduction of sperm counts) in male workers exposed to a mixture of DNT isomers is equivocal.

Oral subchronic toxicity studies with rats, mice, and dogs indicate that the blood, liver, and reproductive system are targets affected by 2,6-DNT in all three species. These effects were generally observed at doses of 35 mg/kg/day in rats, 51 mg/kg/day in mice, and 20 mg/kg/day in dogs. The primary hematologic effect in all three species was methemoglobinemia with sequelae such as Heinz bodies, reticulocytosis, anemia, and extramedullary hematopoiesis. Also seen in all three species was bile duct hyperplasia, decreased spermatogenesis and testicular atrophy. In addition, dogs exhibited neurotoxic effects (incoordination, weakness, tremors, and paralysis) as well as inflammatory and degenerative kidney changes.

According to EPA, available data are inadequate for the calculation of a RfD or RfC for 2,6-DNT. In a 1-year carcinogenesis bioassay, 2,6-D.T. at oral doses of 7 and 14 mg/kg/day, respectively, produced hepatocellular carcinomas in 85% and 100% of male rats. t-D.T., containing about 76% 2,4-D.T. and 19% 2,6-D.T., also yielded a positive hepatocarcinogenic response . In another study on the effects of t-D.T., dietary doses of 14 mg/kg/day induced hepatocellular carcinomas in rats. Initiating and promoting activities of 2,6-D.T. in rat liver have been reported. Although EPA has not evaluated 2,6-D.T. for evidence of human carcinogenic potential, the dinitrotoluene mixture (containing 2,4- and 2,6-D.T.) has been classified as a B2 carcinogen, probable human carcinogen. A slope factor of 6.8E-1 (mg/kg/day)$^{-1}$ was calculated for oral exposure to dinitrotoluene mixture. The drinking water unit risk is 1.9E-5 (μg/L)$^{-1}$.

The oral and dermal cancer slope factors used in the BHHRA are 6.80E-1 and 8.0E-1 [mg/(kg × day)]$^{-1}$, respectively. An inhalation cancer slope factor was not found. The oral and dermal RfDs used in the BHHRA are 1.00E-3 and 8.50E-4 mg/(kg × day), respectively. A inhalation RfD was not found. When calculating the dermal route RfD and slope factor from the oral value, a gastrointestinal absorption factor of 85 percent was used.

1.4.2.7 2-Hexanone (methyl butyl ketone) (CAS 000059-17-86) (ATSDR)

2-Hexanone, also known as methyl n-butyl ketone, is a flammable, colorless liquid with a pungent acetone-like odor. It is known to occur in nature in very low concentrations [Hazardous Substances Database (HSDB) 1993]. 2-Hexanone has been used as a solvent for lacquers, dye printing, ink and paint thinners, resins, oils, fats and waxes (HSDB 1993, Klaassen et al. 1986). 2-Hexanone is no longer made in the United States, and its uses have been restricted because of its harmful health effects (ATSDR 1990). 2-Hexanone is a waste product of wood pulping, coal gasification, and oil shale operations (ATSDR 1990). 2-Hexanone is very soluble in water and is mobile in water and soil. Biodegradation may occur slowly in water and soil, but bioconcentration is not expected (ATSDR 1990).

Inhalation, ingestion, and dermal absorption are possible routes of exposure. The most common effect of 2-hexanone is weight loss, or in the case of developing animals, decreased weight gain. Neurological effects have been observed in humans that were occupationally exposed to 2-hexanone and animal studies have shown neurological effects as well as possible hematological and reproductive effects (ATSDR 1990). 2-Hexanone applied to the eyes of rabbits resulted in moderate corneal necrosis, and when applied to skin, it caused irritation (ATSDR 1990).

Neither slope factors nor RfDs for any route of exposure were found for 2-hexanone. Therefore, neither carcinogenicity nor systemic toxicity due to 2-hexanone exposure is included in the BHHRA.

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Klaassen, C.D., M.O. Amdur, and J. Doull, (eds). 1986. *Casarett and Doull's Toxicology: The Basic Science of Poisons.* 3rd edition. New York: Macmillan Publishing Company.

1.4.2.8 2-Methylnaphthalene (CAS 000091-57-6) (see toxicity profile for polycyclic aromatic hydrocarbons)

Neither slope factors nor RfDs for any route of exposure were found for 2-methylnaphthalene. Therefore, neither carcinogenicity nor systemic toxicity because of 2-methylnaphthalene exposure is included in the BHHRA.

1.4.2.9 Acenaphthene (CAS 83-32-9) (RAIS) (see toxicity profile for polyaromatic hydrocarbons)

Acenaphthene, also known as 1,2-dihydroacenaphthylene or 1,8-ethylenenaphthalene, is a tricyclic aromatic hydrocarbon that occurs in coal tar. It is used as a dye intermediate, in the manufacture of some plastics, and as an insecticide and fungicide. Acenaphthene has been detected in cigarette smoke, automobile exhausts, and urban air; in effluents from petrochemical, pesticide, and wood preservative industries; and in soils, groundwater, and surface waters at hazardous waste sites.

No absorption data are available for acenaphthene; however, by analogy to structurally-related polycyclic aromatic hydrocarbons (PAHs), it would be expected to be absorbed from the gastrointestinal tract and lungs. The anhydride of naphthalic acid was identified as a urinary metabolite in rats treated orally with acenaphthene.

Although a large body of literature exists on the toxicity and carcinogenicity of PAHs, primarily benzo[a]pyrene, toxicity data for acenaphthene are limited. Acenaphthene is irritating to the skin and mucous membranes of humans and animals. Acute toxicity data for animals include oral LD_{50}s of 10 g/kg for rats and 2.1 g/kg for mice and an intraperitoneal LD_{50} of 600 mg/kg for rats. Oral exposure of rats to daily 2-g doses of acenaphthene for 32 days produced peripheral blood changes, mild liver and kidney damage, and pulmonary effects. Subchronic oral exposure to acenaphthene at doses of > 350 mg/kg for 90 days produced increased liver weights, hepatocellular hypertrophy, and increased cholesterol levels in mice. Reproductive effects included decreased ovary weights at doses of > 350 mg/kg and decreased ovarian and uterine activity as well as smaller and fewer corpora lutea at 700 mg/kg/day. Adverse effects on the blood, lungs, and glandular tissues were reported in rats exposed daily to 12 mg/m^3 of acenaphthene for 5 months.

A RfD of 6E-1 mg/kg/day for subchronic oral exposure and 6.E-2 mg/kg/day for chronic oral exposure to acenaphthene was calculated from a NOAEL of 175 mg/kg/day from a 90-day gavage study with mice. The critical effect was hepatotoxicity. Data were insufficient to derive an inhalation RfC for acenaphthene.

No oral bioassays were available to assess the carcinogenicity of acenaphthene. A limited inhalation study in which rats were exposed to 12 mg/m^3 acenaphthene for 5 months and observed an additional 8 months provided no evidence of carcinogenicity. The EPA has not assigned a weight-of-evidence classification for carcinogenicity to acenaphthene.

No cancer slope factors were used in the BHHRA for acenaphthene. The oral and dermal RfDs used in the BHHRA are 6.00E-2 and 1.86E-2 mg/(kg × day), respectively. An inhalation RfD was not found. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 31 percent was used.

1.4.2.10 Acenaphthylene (CAS 000208-96-8) (see toxicity profile for polyaromatic hydrocarbons)

Neither slope factors nor RfDs for any route of exposure were found for acenaphthylene.. Therefore, neither carcinogenicity nor systemic toxicity due to acenaphthylene exposure is included in the BHHRA.

1.4.2.11 Anthracene (CAS 000120-12-7) (RAIS) (see toxicity profile for polyaromatic hydrocarbons)

Anthracene, also referred to as paranaphthalene or green oil, is a polycyclic aromatic hydrocarbon (PAH) derived from coal tar and is primarily used as an intermediate in the production of dyes. It has also been used in the production of smoke screens. Anthracene is ubiquitous in the environment as a product of incomplete combustion of fossil fuels. Although a large body of literature exists on the toxicity and carcinogenicity of a number of PAHs, toxicity data for anthracene are limited.

Evidence indicates that anthracene is absorbed following oral and dermal exposure. Targets for anthracene toxicity are the skin, hematopoietic system, lymphoid system, and gastrointestinal tract. Adverse dermatologic effects have been observed in humans and animals in conjunction with acute and subchronic exposure to anthracene. In humans, anthracene may cause acute dermatitis with symptoms of burning, itching, and edema. Prolonged dermal exposure produces pigmentation, cornification of skin surface layers, and telangiectasis. Anthracene is photosensitizing, potentiating skin damage elicited by exposure to ultraviolet (UV) radiation. Hematologic toxicity was observed in patients receiving intraperitoneal injections of anthracene-containing chemotherapeutic agents and in rats exposed to anthracene by oral gavage and by inhalation. Mice receiving subcutaneous injections of anthracene exhibited adverse lymphoid effects. Long-term use of anthracene-containing laxatives produced melanosis of the colon and rectum. Human exposure to anthracene has also been associated with headache, nausea, loss of appetite, inflammation of the gastrointestinal tract, slow reactions, and weakness.

A RfD of 3 mg/kg/day for subchronic oral exposure and 0.3 mg/kg/day for chronic oral exposure to anthracene was calculated from a no-observed-adverse-effect level (NOAEL) of 1000 mg/kg/day derived from a 90-day gavage study with mice. Data were insufficient to derive an inhalation Reference Concentration (RfC) for anthracene.

Carcinogenicity bioassays with anthracene generally gave negative results. Studies involving oral administration or intrapulmonary implantation in rats or implantation into the brain of rabbits provided no evidence of carcinogenicity. Negative results were also obtained when anthracene was tested in mice by skin application and in mouse-skin initiation assays. However, skin application of anthracene followed by exposure to UV radiation or visible light induced a high incidence of skin tumors in mice.

Based on no human data and inadequate data from animal bioassays, U.S. EPA has placed anthracene in weight-of-evidence group D, not classifiable as to human carcinogenicity.

No cancer slope factors were used in the BHHRA for anthracene. The oral and dermal RfDs used in the BHHRA are 3.00E-1 and 2.28E-1 mg/(kg × day), respectively. An inhalation RfD was not found. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 76 percent was used.

1.4.2.12 Aroclor 1254, 1260, 1262 (CAS 011097-69-1, 011096-82-5, and 37324-23-5)

Aroclor 1254. Aroclor® 1254 is a PCB mixture containing approximately 21% $C_{12}H_6Cl_4$, 48% $C_{12}H_5Cl_5$, 23% $C_{12}H_4Cl_6$, and 6% $C_{12}H_3Cl_7$ with an average chlorine content of 54%. PCBs are inert, thermally and physically stable, and have dielectric properties. In the environment, the behavior of PCB mixtures is directly correlated to the degree of chlorination. Aroclor® is strongly sorbed to soil and remains immobile when leached with water; however, the mixture is highly mobile in the presence of organic solvents. PCBs are resistant to chemical degradation by oxidation or hydrolysis. However, biodegradation, especially of lower chlorinated PCBs, can occur. PCBs have high bioconcentration factors, and because of lipophilicity, especially of highly chlorinated congeners, tend to accumulate in the fat of fish, birds, mammals, and humans.

PCBs are absorbed after oral, inhalation, or dermal exposure and are stored in adipose tissue. The location of the chlorine atoms on the phenyl rings is an important factor in PCB metabolism and excretion. The major route of PCB excretion is in the urine and feces; however, more important is the elimination in human milk. Metabolites are predominately found in urine and bile, while small amounts of the parent compound are found in the feces. Biliary excretion appears to be the source of fecal excretion.

Accidental human poisonings and data from occupational exposure to PCBs suggest initial dermal and mucosal disturbances followed by systemic effects that may manifest themselves several years post-exposure. Initial effects are enlargement and hypersecretion of the Meibomian gland of the eye, swelling of the eyelids, pigmentation of the fingernails and mucous membranes, fatigue, and nausea. These effects were followed by hyperkeratosis, darkening of the skin, acneform eruptions, edema of the arms and legs, neurological symptoms, such as headache and limb numbness, and liver disturbance.

Hepatotoxicity is a prominent effect of Aroclor® 1254 that has been well characterized. Effects included hepatic microsomal enzyme induction, increased serum levels of liver-related enzymes indicative of hepatocellular damage, liver enlargement, lipid deposition, fibrosis, and necrosis. Groups of 16 adults (11.1 +/-4.1 years at study initiation) female rhesus monkeys ingested gelatin capsules containing 0, 0.005, 0.02, 0.04, or 0.08 mg/kg/day Aroclor® 1254 daily for more than 5 years.

Increases in the incidence of inflamed and/or prominent Meibomian glands; increased incidences of ocular exudate; changes in finger and/or toe nails; decreases in IgG and IgM antibody levels; decreases in the percent of helper T-lymphocytes; increases in suppressor T-lymphocyte count; a decrease in helper/suppressor ratio; and decreases in reticulocyte count, serum cholesterol, total bilirubin, and alpha-1+ alpha-2-globulins were observed in treated monkeys. A chronic oral RfD of 2E-05 mg/kg/day for Aroclor® 1254 was calculated from a lowest-observed-adverse-effect level (LOAEL) of 0.0005 mg/kg/day derived from the above study. The subchronic oral RfD is 5E-05 mg/kg/day.

Data are suggestive but not conclusive concerning the carcinogenicity of PCBs in humans. The EPA has not determined a weight-of-evidence classification or slope factor for Aroclor® 1254 specifically. However, hepatocellular carcinomas in three strains of rats and two strains of mice have led the EPA to classify PCBs as group B2, probable human carcinogen.

Aroclor 1260. Aroclor® 1260 is a PCB mixture containing approximately 38% $C_{12}H_4Cl_6$, 41% $C_{12}H_3Cl_7$, 8% $C_{12}H_2Cl_8$, and 12% $C_{12}H_5Cl_5$ with an average chlorine content of 60%. PCBs are inert, thermally and physically stable, and have dielectric properties. In the environment, the behavior of PCB mixtures is directly correlated to the degree of chlorination. Aroclor® is strongly sorbed to soil and remains immobile when leached with water; however, the mixture is highly mobile in the presence of organic solvents. PCBs are resistant to chemical degradation by oxidation or hydrolysis. However, biodegradation, especially of lower chlorinated PCBs, can occur. PCBs have high bioconcentration factors, and due to lipophilicity, especially of highly chlorinated congeners, tend to accumulate in the fat of fish, birds, mammals, and humans.

The use of PCBs in the United States was limited to closed systems in 1974, and in February, 1977, the U.S. Environmental Protection Agency (EPA) issued final regulations prohibiting PCB discharge into waterways.

PCBs are absorbed after oral, inhalation, or dermal exposure and are stored in adipose tissue. The location of the chlorine atoms on the phenyl rings is an important factor in PCB metabolism and excretion. The major route of PCB excretion is in the urine and feces; however, of more importance is elimination in human milk. Metabolites are predominately found in urine and bile, while small amounts of parent compound are found in the feces. Biliary excretion appears to be the source of fecal excretion.

Accidental human poisonings and data from occupational exposure to PCBs suggest initial dermal and mucosal disturbances followed by systemic effects that may manifest themselves several years post-exposure. Initial effects are enlargement and hypersecretion of the Meibomian gland of the eye, swelling of the eyelids, pigmentation of the fingernails and mucous membranes, fatigue, and nausea. These effects were followed by hyperkeratosis, darkening of the skin, acneform eruptions, edema of the arms and legs, neurological symptoms, such as headache and limb numbness, and liver disturbance.

Hepatotoxicity is a prominent effect of PCBs, including Aroclor® 1260, that has been well characterized. Effects include hepatic microsomal enzyme induction, increased serum levels of liver-related enzymes (indicative of hepatocellular damage), liver enlargement, lipid deposition, fibrosis, and necrosis. Chloracne and Immune function disorders have been observed in humans and several animal species after PCB exposure. Reproductive and developmental effects, including low-birth weight, and decreased gestational time, and decreased reproductive capacity, have been observed in human and animal species. No RfD or RfC have been verified for Aroclor® 1260.

Data are suggestive but not conclusive concerning the carcinogenicity of PCBs in humans. The EPA has not determined a weight-of-evidence classification or slope factor for Aroclor® 1260 specifically. However, hepatocellular carcinomas in three strains of rats and two strains of mice have led the EPA to classify PCBs as group B2, probable human carcinogen.

Aroclor 1262. Aroclor 1262 is also known as chlorodiphenyl (62% Cl), chlorobiphenyl, chloro 1,1-biphenyl, polychlorinated polyphenyls, polychlorobiphenyl, Arochlor 1262, PCB-1262, and PCB 1262.

Toxicity Values. The oral, dermal, and inhalation cancer slope factors used in the BHHRA for all Aroclors are 2.00E+0, 2.22E+0, and 2.00E+0 $[mg/(kg \times day)]^{-1}$, respectively. The oral and dermal RfDs used in the BHHRA for Aroclor 1254 are 2.00E-5 and 1.80E-5, respectively. No inhalation RfD was used. The dermal RfD and slope factor was derived using a gastrointestinal absorption factor of 90 percent.

1.4.2.13 Benz[a]anthracene (CAS 000056-55-3) (RAIS) (see toxicity profile for polycyclic aromatic hydrocarbons)

Benz[a]anthracene, along with a number of other polycyclic aromatic hydrocarbons, are natural products produced by the incomplete combustion of organic material. The arrangement of the aromatic rings in the benz[a]anthracene molecule gives it a "bay region" often correlated with carcinogenic properties. In general, the bay-region polycyclic aromatic hydrocarbons and some of their metabolites are known to react with cellular macromolecules, including deoxyribonucleic acid (DNA), which may account for both their toxicity and carcinogenicity. The inducible mixed-function oxidase enzymes oxidize benz[a]anthracene to form metabolites with increased water solubility that can be efficiently excreted in the urine. A minor product of this oxidation, a bay-region diol epoxide, reacts readily with DNA and has been shown to be highly carcinogenic.

The toxic effects of benz[a]anthracene and similar polycyclic aromatic hydrocarbons are primarily directed toward tissues that contain proliferating cells. Animal studies indicate that exposure to bay-region polycyclic aromatic hydrocarbons can damage the hematopoietic system leading to progressive anemia as well as agranulocytosis. The lymphoid system can also be affected resulting in lymphopenia. Toxic effects have been observed in the rapidly dividing cells of the intestinal epithelium, spermatogonia and resting spermatocytes in the testis and primary oocytes of the ovary. Most of these effects have occurred following both oral and parenteral exposure. Epithelial proliferation and cell hyperplasia in the respiratory tract have been reported following subchronic inhalation exposure. However, because of the lack of quantitative data, neither a reference dose nor a reference concentration have been derived.

The primary concern with benz[a]anthracene exposure is its potential carcinogenicity. There is no unequivocal, direct evidence of the carcinogenicity of the compound to humans, however, benz[a]anthracene and other known carcinogenic polycyclic aromatic hydrocarbons are components of coal tar, soot, coke oven emissions and tobacco smoke. There is adequate evidence of its carcinogenic properties in animals. Oral exposures of mice to benz[a]anthracene have resulted in hepatomas, pulmonary adenomas and forestomach papillomas. The EPA weight-of-evidence classification is: B2, probable human carcinogen, for both oral and inhalation exposure based on adequate animal evidence and no human evidence. A slope factor has not been derived specifically for benz[a]anthracene by the EPA. However, an oral slope factor of 7.3 $(mg/kg/day)^{-1}$ has been calculated for benzo[a]pyrene based on the incidence of stomach tumors in mice treated with benzo[a]pyrene. A drinking water unit risk of 2.1E-4 $(g/L)^{-1}$ has also been calculated for benzo[a]pyrene. An inhalation slope factor of 6.1 $(mg/kg/day)^{-1}$ was calculated for benzo[a]pyrene based on the incidence of respiratory tumors in golden hamsters treated with benzo[a]pyrene. An inhalation unit risk of 1.7E-3 $(g/m3)^{-1}$ has also been calculated for benzo[a]pyrene.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for benz[*a*]anthracene are 7.30E-1, 2.35E+0, and 3.10E-1 $[mg/(kg \times day)]^{-1}$, respectively. These were derived from the values for benzo[*a*]pyrene using the relative potency factors recommended by EPA. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for

530438

benz[*a*]anthracene were found; therefore, noncancer effects due to exposure to benz[*a*]anthracene could not be estimated in the BHHRA.

1.4.2.14 Benzo[a]pyrene (CAS 000050-32-8) (RAIS) (see toxicity profile for polycyclic aromatic hydrocarbons)

Benzo[a]pyrene is a PAH that can be derived from coal tar. Benzo[a]pyrene occurs ubiquitously in products of incomplete combustion of fossil fuels and has been identified in ambient air, surface water, drinking water, waste water, and char-broiled foods. Benzo[a]pyrene is primarily released to the air and removed from the atmosphere by photochemical oxidation and dry deposition to land or water. Biodegradation is the most important transformation process in soil or sediment.

Benzo[a]pyrene is readily absorbed following inhalation, oral, and dermal routes of administration. Following inhalation exposure, benzo[a]pyrene is rapidly distributed to several tissues in rats. The metabolism of benzo[a]pyrene is complex and includes the formation of a proposed ultimate carcinogen, benzo[a]pyrene 7,8 diol-9,10-epoxide. The major route of excretion is hepatobiliary followed by elimination in the feces.

No data are available on the systemic (non-carcinogenic) effects of benzo[a]pyrene in humans. In mice, genetic differences appear to influence the toxicity of benzo[a]pyrene. Subchronic dietary administration of 120 mg/kg benzo[a]pyrene for up to 180 days resulted in decreased survival due to hematopoietic effects (bone narrow depression) in a "nonresponsive" strain of mice (i.e., a strain whose cytochrome P-450 mediated enzyme activity is not induced as a consequence of PAH exposure). No adverse effects were noted in "responsive" mice (i.e., a strain capable of inducing increased cytochrome P-450 mediated enzyme activity as a consequence of PAH exposure). Immunosuppression has been reported in mice administered daily intraperitoneal injections of 40 or 160 mg/kg of benzo[a]pyrene for 2 weeks, with more pronounced effects apparent in "nonresponsive" mice. In utero exposure to benzo[a]pyrene has produced adverse developmental/reproductive effects in mice. Dietary administration of doses as low as 10 mg/kg during gestation caused reduced fertility and reproductive capacity in offspring, and treatment by gavage with 120 mg/kg/day during gestation caused stillbirths, resorptions, and malformations. Similar effects have been reported in intraperitoneal injection studies. Neither a RfD nor a RfC has been derived for benzo[a]pyrene.

Numerous epidemiologic studies have shown a clear association between exposure to various mixtures of PAHs containing benzo[a]pyrene (e.g., coke oven emissions, roofing tar emissions, and cigarette smoke) and increased risk of lung cancer and other tumors. However, each of the mixtures also contained other potentially carcinogenic PAHs; therefore, it is not possible to evaluate the contribution of benzo[a]pyrene to the carcinogenicity of these mixtures. An extensive data base is available for the carcinogenicity of benzo[a]pyrene in experimental animals. Dietary administration of benzo[a]pyrene has produced papillomas and carcinomas of the forestomach in mice, and treatment by gavage has produced mammary tumors in rats and pulmonary adenomas in mice. Exposure by inhalation and intratracheal instillation has resulted in benign and malignant tumors of the respiratory and upper digestive tracts of hamsters. Numerous topical application studies have shown that benzo[a]pyrene induces skin tumors in several species, although mice appear to be the most sensitive species. Benzo[a]pyrene is a complete carcinogen and also an initiator of skin tumors. Benzo[a]pyrene has also been reported to induce tumors in animals when administered by other routes, such as intravenous, intraperitoneal, subcutaneous, intrapulmonary, and transplacental.

Based on United States Environmental Protection Agency (EPA) guidelines, benzo[a]pyrene was assigned to weight-of-evidence group B2, probable human carcinogen. For oral exposure, the slope factor and unit risk are 7.3E+0 $(mg/kg/day)^{-1}$ and 2.1E-4 $(ug/L)^{-1}$, respectively.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for benzo[*a*]pyrene are 7.30, 2.35E+1, and 3.10E+0 $[mg/(kg \times day)]^{-1}$, respectively. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for benzo[*a*]pyrene were found; therefore, noncancer effects due to exposure to benzo[*a*]pyrene could not be estimated in the BHHRA.

1.4.2.15 **Benzo[b]fluoranthene (CAS 000205-99-2) (RAIS)** (see toxicity profile for polycyclic aromatic hydrocarbons)

Benzo[b]fluoranthene, a crystalline solid with a chemical formula of $C_{20}H_{12}$ and a molecular weight of 252.32, is a polycyclic aromatic hydrocarbon (PAH) with one five-membered ring and four six-membered rings. There is no commercial production or known use of this compound. Benzo[b]fluoranthene is found in fossil fuels and occurs ubiquitously in products of incomplete combustion. It has been detected in mainstream cigarette smoke; urban air; gasoline engine exhaust; emissions from burning coal and from oil-fired heating; broiled and smoked food; oils and margarine; and in soils, groundwater, and surface waters at hazardous waste sites.

No absorption data were available for benzo[b]fluoranthene; however, by analogy to structurally-related PAHs, primarily benzo[a]pyrene, it would be expected to be absorbed from the gastrointestinal tract, lungs, and skin. Major metabolites of benzo[b]fluoranthene formed in vitro in rat liver include dihydrodiols and monohydroxy derivatives and monohydroxy derivatives in mouse epidermis.

No data were found concerning the acute, subchronic, chronic, developmental, or reproductive toxicity of benzo[b]fluoranthene. No data were available for the derivation of an oral RfD or inhalation reference concentration (RfC).

No long-term oral or inhalation bioassays were available to assess the carcinogenicity of benzo[b]fluoranthene. Benzo[b]fluoranthene was tested for carcinogenicity in dermal application, lung implantation, subcutaneous (s.c.) injection, and intraperitoneal (i.p.) injection studies. Dermal applications of 0.01-0.5% solutions of benzo[b]fluoranthene for life produced a high incidence of skin papillomas and carcinomas in mice. In initiation-promotion assays, the compound was active as an initiator of skin carcinogenesis in mice. Sarcomas and carcinomas of the lungs and thorax were seen in rats receiving single lung implants of 0.1-1 mg benzo[b]fluoranthene. Newborn mice receiving 0.5 umol benzo[b]fluoranthene via i.p. injection developed liver and lung tumors, and mice administered three s.c. injections of 0.6 mg benzo[b]fluoranthene developed injection site sarcomas.

Based on no human data and sufficient evidence for carcinogenicity in animals, EPA has assigned a weight-of-evidence classification of B2, probable human carcinogen, to benzo[b]fluoranthene.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for benzo[*b*]fluoranthene are 7.30E-1, 2.35E+0, and 3.10E-1 $[mg/(kg \times day)]^{-1}$, respectively. These were derived from the values for benzo[*a*]pyrene using the relative potency factors recommended by EPA. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for benzo[*b*]fluoranthene were found; therefore, noncancer effects due to exposure to benzo[*b*]fluoranthene could not be estimated in the BHHRA.

1.4.2.16 Benzo[g,h,i]perylene (CAS 000191-24-2) (RAIS) (see toxicity profile for polycyclic aromatic hydrocarbons)

Benzo[g,h,i]perylene, also known as 1,12-benzoperylene, is a polycyclic aromatic hydrocarbon (PAH) with six aromatic rings. There is no known commercial production or use of benzo[g,h,i]perylene. It occurs naturally in crude oils and is present ubiquitously in products of incomplete combustion and in coal tar.

No absorption data were available for benzo[g,h,i]perylene; however, by analogy to other PAHs, primarily benzo[a]pyrene, it would be expected to be absorbed from the gastrointestinal tract, lungs, and skin.

No human or animal data were available to evaluate the toxicity of benzo[g,h,i]perylene. Because of the lack of data, EPA has not derived an oral RfD or inhalation reference concentration (RfC).

No oral or inhalation bioassays were available to assess the carcinogenicity of benzo[g,h,i]perylene. Negative results were reported in dermal application studies and in initiation-promotion assays for skin tumorigenesis in mice. However, when benzo[g,h,i]perylene was administered simultaneously with benzo[a]pyrene to the skin of mice, an increased incidence of skin tumors was observed compared to the tumor incidence in mice treated with benzo[a]pyrene alone, indicating possible cocarcinogenic activity of benzo[g,h,i]perylene. Although a few pulmonary tumors were observed in Osborne-Mendel rats when benzo[g,h,i]perylene was administered as single lung implants of >=83 mg, the tumors may have been caused by impurities in the test compound. In subcutaneous injection studies, benzo[g,h,i]perylene did not produce injection site tumors in mice.

Based on no human data and inadequate data with experimental animals, the United States Environmental Protection Agency (EPA) has classified benzo[g,h,i]perylene in weight-of-evidence Group D, not classifiable as to human carcinogenicity.

Neither slope factors nor RfDs for any route of exposure were found for benzo[*g,h,i*]perylene. Therefore, neither carcinogenicity nor systemic toxicity due to benzo[*g,h,i*]perylene exposure is included in the BHHRA.

1.4.2.17 Benzo[k]fluoranthene (CAS 000207-08-9) (RAIS) (see toxicity profile for polycyclic aromatic hydrocarbons)

Benzo[k]fluoranthene, a crystalline solid with a chemical formula of $C_{20}H_{12}$ and a molecular weight of 252.32, is a polycyclic aromatic hydrocarbon (PAH) with one five-membered and four six-membered rings. There is no commercial production or known use of this compound. Benzo[k]fluoranthene is found in fossil fuels and occurs ubiquitously in products of incomplete combustion and in soils, groundwater, and surface waters at hazardous waste sites.

No absorption or excretion data were available for benzo[k]fluoranthene; however, by analogy to structurally-related PAHs, primarily benzo[a]pyrene, it would be expected to be absorbed from the gastrointestinal tract, lungs, and skin. Rat liver microsomes have been shown to metabolize benzo[k]fluoranthene to the dihydrodiol, 8,9-dihydro-8,9-dihydroxy benzo[k]fluoranthene.

No data were found concerning the acute, subchronic, chronic, developmental, or reproductive toxicity of benzo[k]fluoranthene. Because of a lack of toxicity data, an oral RfD or inhalation reference concentration (RfC) have not been derived.

No long-term oral or inhalation bioassays were available to assess the carcinogenicity of benzo[k]fluoranthene. Benzo[k]fluoranthene was tested for carcinogenicity in dermal application, subcutaneous (s.c.) injection, lung implantation, and intraperitoneal (i.p.) injection studies. Dermal applications of 0.5% solutions of benzo[k]fluoranthene for life produced only a few skin papillomas in mice, but in initiation-promotion assays, benzo[k]fluoranthene was active as an initiator of skin carcinogenesis. Injection site sarcomas developed in mice given three s.c. injections of 0.6 mg benzo[k]fluoranthene and dose-related increases of epidermoid carcinomas of the lungs were reported in rats receiving single lung implants of 0.16-4.15 mg benzo[k]fluoranthene. In a short-term assay, hepatic and lung tumors occurred in newborn mice receiving 2.1 umol benzo[k]fluoranthene via i.p. injection.

Based on no human data and sufficient evidence for carcinogenicity in animals, EPA has assigned a weight-of-evidence classification of B2, probable human carcinogen, to benzo[k]fluoranthene.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for benzo[*k*]fluoranthene are 7.30E-2, 2.35E-1, and 3.10E-2 $[mg/(kg \times day)]^{-1}$, respectively. These were derived from the values for benzo[*a*]pyrene using the relative potency factors recommended by EPA. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for benzo[*k*]fluoranthene were found; therefore, noncancer effects due to exposure to benzo[*k*]fluoranthene could not be estimated in the BHHRA.

1.4.2.18 Bis(2-ethylhexyl)phthalate (CAS 000127-81-17) (RAIS)

Bis(2-ethylhexyl)phthalate is a colorless oily liquid that is extensively used as a plasticizer in a wide variety of industrial, domestic and medical products. It is an environmental contaminant and has been detected in ground water, surface water, drinking water, air, soil, plants, fish and animals. It is rapidly absorbed from the gastrointestinal tract primarily as mono(2-ethylhexyl)phthalate. The diester can be absorbed through the skin and from the lungs. It is rapidly metabolized in the blood and tissues to the monoester, which can be excreted as a glucuronide conjugate or further hydrolyzed to phthalic acid and excreted.

Animal studies have indicated that the primary target organs are the liver and kidneys; however, higher doses are reported to result in testicular effects and decreased hemoglobin and packed cell volume. The primary intracellular effects of bis(2-ethylhexyl)phthalate in the liver and kidneys are an increase in the smooth endoplasmic reticulum and a proliferation in the number and size of peroxisomes. An epidemiological study reported no toxic effects from occupational exposure to air concentrations of bis(2-ethylhexyl)phthalate up to 0.16 mg/m^3.

Other studies on occupational exposures to mixtures of phthalate esters containing bis(2-ethylhexyl)phthalate have reported polyneuritis and sensory-motor polyneuropathy with decreased thrombocytes, leukocytes and hemoglobin in some exposed workers. Developmental toxicity studies with rats and mice have shown that bis(2-ethylhexyl)phthalate is fetotoxic and teratogenic when given orally during gestation. Oral exposure has also been shown to result in decreased sperm count in rats. A RfD of 0.02 mg/kg/day for both subchronic and chronic oral exposure was calculated from a lowest-observed-adverse-effect level (LOAEL) of 19 mg/kg/day based on increased relative liver weight in guinea pigs given 0, 19, or 64 mg bis(2-ethylhexyl) phthalate/kg/day for 12 months in their diet. A Reference Concentration (RfC) for inhalation exposure is not available.

Bis(2-ethylhexyl)phthalate is known to induce the proliferation of peroxisomes, which has been associated with carcinogenesis. Dose-dependent, statistically-significant increases in the incidences of hepatocellular carcinomas and combined carcinomas and adenomas were seen in mice and rats exposed to bis(2-ethylhexyl)phthalate in their diet for 103 weeks. An increased incidence of neoplastic nodules and hepatocellular carcinomas was also reported in rats.

Based on U.S. EPA guidelines, bis(2-ethylhexyl)phthalate was assigned to weight-of-evidence Group B2, probable human carcinogen, on the basis of an increased incidence of liver tumors in rats and mice. A carcinogenicity slope factor (q1*) of 0.014 $(mg/kg/day)^{-1}$ for oral exposure was based on the combined incidence of hepatocellular carcinomas and adenomas in male mice. A drinking water unit risk of 4.0E-7 $(g/L)^{-1}$ was calculated based on the q1*. A quantitative estimation of carcinogenic risk from inhalation exposure is not available.

The oral and dermal cancer slope factors used in the BHHRA for bis(2-ethylhexyl)phthalate are 1.40E-2 and 7.37E-2 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor was not found; however, based on the whole body effects discussed previously, the oral slope factor, 1.40E-2 $[mg/(kg \times day)]^{-1}$, is used as a surrogate inhalation slope factor in the uncertainty discussion in Subsect. 1.6. The oral and dermal RfDs used in the BHHRA are 2.00E-2 and 3.80E-3 mg/(kg × day), respectively. A inhalation RfD was not found; however, based on the whole body effects discussed previously, the oral RfD, 2.00E-2 mg/(kg × day), is used as a surrogate inhalation RfD in the uncertainty discussion in Subsect. 1.6. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 19 percent was used.

1.4.2.19 Bromodichloromethane (CAS 75-27-4)

Bromodichloromethane is also known as dichlorobromomethane, dichloromethylbromide, BDCM, dichloromonobromomethane, and monobromodichloromethane.

The oral and dermal cancer slope factors used in the BHHRA are 6.20E-2 and 6.33E-2 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor was not found. The oral and dermal RfDs used in the BHHRA are 2.00E-2 and 1.96E-2 mg/(kg × day), respectively. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 98 percent was used.

1.4.2.20 Butyl benzyl phthalate (CAS 85-68-7)

Butyl benzyl phthalte is also known as: BBP; n-Butyl Benzyl Phthalate; 1,2-Benzenedicarboxylic acid butyl phenylmethyl ester; Benzyl butyl phthalate; benzyl n-butyl phthalate; butyl phenylmethyl 1,2-benzenedicarboxylate; santicizer 160; palatinol bb; sicol 160; and unimoll bb.

No cancer slope factors were used in the BHHRA for butyl benzyl phthalate. The oral and dermal RfDs used in the BHHRA are 2.00E-1 and 1.22E-1 mg/(kg × day), respectively. An inhalation RfD was not found. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 61 percent was used.

1.4.2.21 Carbon Tetrachloride (CAS 000056-23-5) (RAIS)

Humans are sensitive to carbon tetrachloride intoxication by oral, inhalation and dermal routes. Oral and inhalation exposure to high concentrations of carbon tetrachloride results in acute central nervous system effects including dizziness, vertigo, headache, depression, confusion, incoordination and, in severe cases, respiratory failure, coma and death. Gastrointestinal problems including nausea, abdominal pain and diarrhea, often accompany these narcotic effects. Liver and kidney damage can appear after the acute symptoms subside. All symptoms can occur following a single oral or inhalation exposure. Milder narcotic effects followed by liver and kidney damage have been reported following dermal exposure. Although an inhalation exposure of about 1000 ppm for a few minutes to hours will cause the narcotic effects in 100% of the population, large variations in sensitivity are seen. Alcohol intake greatly increases human sensitivity to carbon tetrachloride; consequently, exposure to 250 ppm for 15 minutes can be life threatening to an alcoholic.

Subchronic and chronic exposure to doses as low as 10 ppm can result in liver and kidney damage. Lung damage has also been reported in animals and humans but is not route specific and is believed to be secondary to kidney damage. Prolonged exposure has been observed to cause visual effects in both humans and animals. Changes in the visual field, reduced corneal sensitivity, subnormal dark adaption, and changes in color perception have been reported in humans exposed by inhalation to a minimum concentration of 6.4 ppm, 1 hour/day for an average of 7.7 years. Increased hepatic enzyme activities indicative of liver damage have also been observed.

Maternal toxicity and fetotoxic effects have been reported in rats following oral or inhalation exposure to carbon tetrachloride during gestation. Repeated inhalation exposure of male rats to carbon tetrachloride concentrations of 200 ppm or greater has been reported to cause degeneration of the testicular germinal epithelium as well as severe liver and kidney damage.

A subchronic (RfDs) of 0.007 mg/kg/day has been calculated for oral exposure from a NOAEL of 0.71 mg/kg/day determined in a 12-week rat study. Significantly higher doses caused minimal liver damage. A dose of 7.1 mg/kg/day was considered a LOAEL. A chronic RfD of 0.0007 mg/kg/day was calculated by adding an additional uncertainty factor of 10 to account for the use of a subchronic study. Confidence in the oral RfD values is rated medium by EPA.

A chronic or subchronic RfC for inhalation exposure is currently under development by the EPA.

Although data for the carcinogenicity of carbon tetrachloride in humans are inconclusive, there is ample evidence in animals that the chemical can cause liver cancer. Hepatocellular carcinomas have been induced in hamsters, rats and mice after oral carbon tetrachloride treatment for 16 to 76 weeks. Liver tumors have also been demonstrated in rats following inhalation exposure, but the doses were not quantitatively established. The EPA weight-of-evidence classification for both oral and inhalation exposure is B2, probable human carcinogen based on adequate animal evidence. Carcinogenicity slope factors of 0.13 $(mg/kg/day)^{-1}$ for oral exposure and 0.053 $(mg/kg/day)^{-1}$ for inhalation exposure have been calculated from the oral exposure experiments with hamsters, rats and mice. A drinking water unit risk of 3.7 x 10-6 (g/L)-1 and an inhalation unit risk of 1.5 x 10-5 $(g/m3)^{-1}$ have also been calculated by U.S.EPA.

The oral and dermal cancer slope factors used in the BHHRA for carbon tetrachloride are 1.30E-1 and 2.00E-1 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor of 5.30E-2 $[mg/(kg \times day)]^{-1}$ is used. The oral and dermal RfDs used in the BHHRA are 7.00E-4 and 4.55E-4 mg/(kg × day), respectively. An inhalation RfD of 5.71E-4 mg/(kg × day) is used. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 65 percent was used.

1.4.2.22 Chloroform (CAS 67-66-3) (RAIS)

Chloroform is a colorless, volatile liquid that is widely used as a general solvent and as an intermediate in the production of refrigerants, plastics, and pharmaceuticals. Chloroform is rapidly absorbed from the lungs and the gastrointestinal tract, and to some extent through the skin. It is extensively metabolized in the body, with carbon dioxide as the major end product. The primary sites of metabolism are the liver and

530444

kidneys. Excretion of chloroform occurs primarily via the lungs, either as unchanged chloroform or as carbon dioxide.

Target organs for chloroform toxicity are the liver, kidneys, and central nervous system. Liver effects (hepatomegaly, fatty liver, and hepatitis) were observed in individuals occupationally exposed to chloroform. Several subchronic and chronic studies by the oral or inhalation routes of exposure documented hepatotoxic effects in rats, mice, and dogs. Renal effects were reported in rats and mice following oral and inhalation exposures, but evidence for chloroform-induced renal toxicity in humans is sparse. Chloroform is a central nervous system depressant, inducing narcosis and anesthesia at high concentrations. Lower concentrations may cause irritability, lassitude, depression, gastrointestinal symptoms, and frequent and burning urination.

Developmental toxicity studies with rodents indicate that inhaled and orally administered chloroform is toxic to dams and fetuses. Possible teratogenic effects were reported in rats and mice exposed to chloroform by inhalation. Chloroform may cause sperm abnormalities in mice and gonadal atrophy in rats.

A RfD of 0.01 mg/kg/day for subchronic and chronic oral exposure was calculated from a lowest-observed-adverse-effect level (LOAEL) of 15 mg/kg/day based on fatty cyst formation in the liver of dogs exposed to chloroform for 7.5 years. Development of an inhalation Reference Concentration (RfC) is presently under review.

Epidemiological studies indicate a possible relationship between exposure to chloroform present in chlorinated drinking water and cancer of the bladder, large intestine, and rectum. Chloroform is one of several contaminants present in drinking water, but it has not been identified as the sole or primary cause of the excess cancer rate. In animal carcinogenicity studies, positive results included increased incidences of renal epithelial tumors in male rats, hepatocellular carcinomas in male and female mice, and kidney tumors in male mice.

Based on U.S. EPA guidelines, chloroform was assigned to weight-of-evidence Group B2, probable human carcinogen, on the basis of an increased incidence of several tumor types in rats and in three strains of mice. The carcinogen slope factor (q1*) for chloroform is 6.1E-3 $(mg/kg/day)^{-1}$ for oral exposure and 8.1E-2 $(ug/m3)^{-1}$ for inhalation exposure. An inhalation unit risk of 2.3E-5 $(g/m3)^{-1}$ is based on hepatocellular carcinomas in mice in an oral gavage study.

The oral and dermal cancer slope factors used in the BHHRA for chloroform are 6.10E-3 and 3.05E-2 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor of 8.10E-2 $[mg/(kg \times day)]^{-1}$ is used. The oral and dermal RfDs used in the BHHRA are 1.00E-2 and 2.00E-3 mg/(kg × day), respectively. An inhalation RfD is not used. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 20 percent was used.

1.4.2.23 Chrysene (CAS 000218-01-9) (also see toxicity profile for polycyclic aromatic hydrocarbons)

Chrysene, a polycyclic aromatic hydrocarbon, is a ubiquitous environmental contaminant formed primarily by the incomplete combustion of organic compounds. Although present in coal and oil, the presence of chrysene in the environment is the result of anthropogenic activities such as coal combustion and gasification; gasoline exhaust; diesel and aircraft exhaust; and emissions from coke ovens, wood burning stoves, and waste incineration. Chrysene is not produced or used commercially, and its use is limited strictly to research applications.

Little information on the absorption, distribution, metabolism and excretion of chrysene in humans is available. Animal studies have shown that approximately 75% of the administered chrysene may be absorbed by oral, dermal, or inhalation routes. Following its absorption, chrysene is preferentially distributed to highly lipophilic regions of the body, most notably adipose and mammary tissue. Phase I metabolism of chrysene, whether in the lung, skin, or liver, is mediated by the mixed function oxidases. The metabolism results in the formation of 1,2-, 3,4-, and 5,6-dihydrodiols as well as the formation of 1-, 3-, and 4-phenol metabolites. Additional Phase I metabolism of chrysene 1,2-dihydrodiol forms chrysene 1,2-dihydrodiol-3,4-epoxide and 9-hydroxychrysene 1,2-diol-3,4-oxide. These metabolites were shown to have mutagenic and alkylating activity. Phase II metabolism of chrysene results in the formation of glucuronide and sulfate ester conjugates; however, glutathione conjugates of diol- and triol-epoxides are also formed. Hepatobiliary secretion with elimination in the feces is the predominant route of excretion.

Human or animal systemic, developmental, and reproductive health effects following exposure to chrysene were not identified. Because of the lack of systemic toxicity data, the RfD and the reference concentration (RfC) for chrysene have not been derived. Target organs have not been described, although chrysene may induce immunosuppression similar to certain other PAHs. Oral and inhalation carcinogenic bioassays were not identified. In mouse skin painting studies, chrysene was an initiator of papillomas and carcinomas. In addition, intraperitoneal injections of chrysene have induced liver adenomas and carcinomas in male CD-1 and BLU/Ha Swiss mice. Although oral and inhalation slope factors have not been derived, EPA has classified chrysene in weight-of-evidence Group B2, probable human carcinogen, based on the induction of liver tumors and skin papillomas and carcinomas following treatment and the mutagenicity and chromosomal abnormalities induced in in-vitro tests.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for chrysene are 7.30E-3, 2.35E-2, and 3.10E-3 $[mg/(kg \times day)]^{-1}$, respectively. These were derived from the values for benzo[*a*]pyrene using the relative potency factors recommended by EPA. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for chrysene were found; therefore, noncancer effects due to exposure to chrysene could not be estimated in the BHHRA.

1.4.2.24 **Dibenzo[a,h]anthracene (CAS 000053-70-3) (RAIS)** (see also toxicity profile for polycyclic aromatic hydrocarbons)

Dibenz[a,h]anthracene is a polycyclic aromatic hydrocarbon (PAH) with five aromatic rings. No commercial production or use of dibenz[a,h]anthracene is known. It occurs as a component of coal tars, shale oils, and soots and has been detected in gasoline engine exhaust, coke oven emissions, cigarette smoke, charcoal broiled meats, vegetation near heavily traveled roads, and surface water and soils near hazardous waste sites.

Dibenz[a,h]anthracene is poorly absorbed from the gastrointestinal tract and is primarily excreted via feces. Following absorption, dibenz[a,h]anthracene is distributed to various tissues, with highest accumulation in the liver and kidneys. Dibenz[a,h]anthracene is metabolized by mixed function oxidases to dihydrodiols. Epoxidation of the 3,4-dihydrodiol may lead to the formation of a diol-epoxide, the putative ultimate carcinogenic metabolite of dibenz[a,h]anthracene.

No human studies were available to evaluate the toxicity of dibenz[a,h]anthracene. In animals, depressed immune responses were observed in mice following single or multiple subcutaneous injections of dibenz[a,h]anthracene. Weekly subcutaneous. injections of 0.05% dibenz[a,h]anthracene for 40 weeks produced lymphoid tissue changes, decreased spleen weights, and liver and kidney lesions in mice. Weekly intramuscular injections of 20 mg/kg promoted the development of arteriosclerotic plaques in chickens.

The EPA has not derived an oral RfD or inhalation reference concentration (RfC) for dibenz[a,h]anthracene.

No epidemiologic studies or case reports addressing the carcinogenicity of dibenz[a,h]anthracene in humans were available. In animals, dibenz[a,h]anthracene has produced tumors by different routes of administration, having both local and systemic carcinogenic effects. After oral administration, dibenz[a,h]anthracene produced tumors at several sites. Male and female mice fed dibenz[a,h]anthracene (0.85 mg/day for males, 0.76 mg/day for females) in an aqueous olive oil emulsion developed pulmonary adenomatosis, alveologenic carcinomas of the lung, hemangio-endotheliomas of the pancreas and mesentery/abdominal lymph nodes, and mammary carcinomas (females) after 200 days. A single oral dose of 1.5 mg dibenz[a,h]anthracene in polyethylene glycol produced a low incidence of forestomach papillomas in mice. Mammary carcinomas developed in mice treated by gavage with a total dose of 15 mg over a 15-week period.

Carcinogenic as well as tumor-initiating activity of dibenz[a,h]anthracene has been demonstrated in topical application studies with mice. Repeated dermal application of 0.001 to 0.01% solutions produced a high incidence of skin papillomas and carcinomas in mice. In initiation-promotion assays, the compound was active as an initiator of skin carcinogenesis in mice. However, no skin tumors were observed in Syrian golden hamsters that received topical dibenz[a,h]anthracene applications over a 10-week period. Injection site sarcomas developed in mice injected subcutaneously with dibenz[a,h]anthracene. In newborn mice, a single subcutaneous injection of dibenz[a,h]anthracene induced local sarcomas and lung adenomas and three intraperitoneal injections induced a high incidence of pulmonary tumors. A number of earlier studies have also demonstrated the carcinogenicity of dibenz[a,h]anthracene when administered by various parenteral routes in several animal species.

Based on no human data and sufficient evidence for carcinogenicity in animals, EPA has assigned dibenz[a,h]anthracene a weight-of-evidence classification of B2, probable human carcinogen.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for dibenz[a,h]anthracene are 7.30, 2.35E+1, and 3.10E+0 $[mg/(kg \times day)]^{-1}$, respectively. These were derived from the values for benzo[a]pyrene using the relative potency factors recommended by EPA. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for dibenz[a,h]anthracene were found; therefore, noncancer effects because of exposure to dibenz[a,h]anthracene could not be estimated in the BHHRA.

1.4.2.25 Di-n-butyl phthalate (CAS 84-74-2)

Di-n-butyl phthalate is also known as: DBP; dibutyl phthalate; n-Butylphthalate; 1,2-Benzenedicarboxylic acid dibutyl ester; phthalic acid dibutyl ester; o-benzenedicarboxylic acid, dibutyl ester; benzene-o-dicarboxylic acid di-n-butyl ester; dibutyl 1,2-benzenedicarboxylate; celluflex dpb; elaol; hexaplas m/b; palatinol c; polycizer dbp; PX 104; staflex dbp; witcizer 300; benzenedicarboxylic acid, dibutyl ester; and dibutyl-o-Phthalate.

No cancer slope factors were used in the BHHRA for di-n-butyl phthalate. The oral and dermal RfDs used in the BHHRA are 1.00E-1 and 1.00E-1 mg/(kg × day), respectively. An inhalation RfD was not found. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 100 percent was used.

1.4.2.26 Di-n-octylphthalate (CAS 117-84-0)

Di-n-octylphthalate is also known as: bis(n-octyl) Phthalate, DNOP; Dinopol NOP; n-Dioctyl phthalate; 1,2-Benzenedicarboxylic acid dioctyl ester; n-Octyl phthalate; 1,2-Benzenedicarbonic acid, dioctyl ester;

benzenedicarboxylic acid, di-n-octyl ester; vinicizer 85; dioctyl o-benzenedicarboxylate; celluflex dop; polycizer 162; and PX-138.

There are no cancer slope factors used in the BHHRA for di-n-octylphthalate. The oral and dermal RfDs used in the BHHRA are 2.00E-2 and 1.80E-2 mg/(kg × day), respectively. An inhalation RfD is not used. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 90 percent was used.

1.4.2.27 Dibromochloromethane (CAS 124-48-1)

Dibromochloromethane is also known as chlorodibromomethane and CDBM.

The oral and dermal cancer slope factors used in the BHHRA for dibromochloromethane are 8.40E-02 and 1.4E-01 $[mg/(kg \times day)]^{-1}$, respectively. No inhalation slope factor is available. The oral and dermal RfDs used in the BHHRA are 2.00E-2 and 1.20E-2 mg/(kg × day), respectively. An inhalation RfD is not used. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 60 percent was used.

1.4.2.28 Fluoranthene (CAS 206-44-0) (RAIS)

Fluoranthene is a PAH that can be derived from coal tar. Occurring ubiquitously in products of incomplete combustion of fossil fuels, fluoranthene has been identified in ambient air, surface, drinking, and waste water, and in char-broiled foods. Currently, there is no commercial production or use of this compound.

Fluoranthene can be absorbed through the skin following dermal exposure and, by analogy to structurally-related PAHs, would be expected to be absorbed from the gastrointestinal tract and lungs. An in vitro study identified 2-methylfluoranthene and 3-methylfluoranthene and their dihydrodiols as metabolites of fluoranthene.

Although a large body of literature exists on the toxicity and carcinogenicity of PAHs, primarily benzo[a]pyrene, toxicity data for phenanthrene are very limited. No human data were available that addressed the toxicity of fluoranthene. Acute toxicity data for animals include an oral LD50 of 2000 mg/kg for rats; a dermal LD_{50} of 3180 mg/kg for rabbits and an intravenous LD_{50} of 100 mg/kg for mice. Subchronic oral exposure to fluoranthene at doses of greater than or equal to 250 mg/kg produced nephropathy, increased liver weights, and increased liver enzyme levels in rats. A single intraperitoneal injection of fluoranthene to pregnant rats caused an increased rate of embryo resorptions. Fluoranthene was photosensitizing, enhancing erythema elicited by ultraviolet radiation in guinea pig skin and was irritating to the eyes of rabbits.

A RfD of 4.00E-01 mg/kg/day for subchronic oral exposure and 4.00E-02 mg/kg/day for chronic oral exposure to fluoranthene was calculated from a NOAEL of 125 mg/kg/day and a LOAEL of 250 mg/kg/day derived from a 13-week gavage study with mice. The critical effects were nephropathy, increased liver weights, and changes in clinical and hematological parameters. Data were insufficient to derive an inhalation RfC for fluoranthene.

No oral or inhalation bioassays were available to assess the carcinogenicity of fluoranthene. Bioassays by other exposure routes generally gave negative results. Studies involving topical application to the skin of mice and subcutaneous injection in mice provided no evidence of carcinogenicity. Fluoranthene was also inactive in mouse skin initiation and promotion assays. However, fluoranthene has been shown to be active as a cocarcinogen when applied with benzo[a]pyrene to mice by skin application and was active as a complete carcinogen in a short-term lung tumor assay with newborn mice.

Based on no human data and inadequate data from animal bioassays, U.S. EPA has placed fluoranthene in weight-of-evidence group D, not classifiable as to human carcinogenicity.

The oral and dermal RfDs used in the BHHRA are 4.00E-2 and 1.24E-2 mg/(kg × day), respectively. An inhalation RfD is not used. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 31 percent was used. No cancer slope factors are available.

1.4.2.29 Fluorene (CAS 86-73-7)

Fluorene is also known as: 9H-Fluorene; o-Biphenylenemethane; diphenylenemethane; 2,2'-methylenebiphenyl; o-biphenylmethane; 2,3-benzindene; and alpha-diphenylenemethane-9H-fluorene.

No cancer slope factors were used in the BHHRA for fluorene. The oral and dermal RfDs used in the BHHRA are 4.00E-2 and 2.00E-2 mg/(kg × day), respectively. An inhalation RfD was not found. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 50 percent was used.

1.4.2.30 Indeno[1,2,3-cd]pyrene (CAS 000019-33-95) (RAIS) (see also toxicity profile for polyaromatic hydrocarbons)

Indeno[1,2,3-cd]pyrene, a crystalline solid with a chemical formula of $C_{22}H_{12}$ and a molecular weight of 276.3, is a PAH. There is no commercial production or known use of this compound. Indeno[1,2,3-cd]pyrene is found in fossil fuels and occurs ubiquitously in products of incomplete combustion and has been identified in soils, groundwater, and surface waters at hazardous waste sites.

No absorption data were available for indeno[1,2,3-cd]pyrene; however, by analogy to structurally-related PAHs, primarily benzo[a]pyrene, it would be expected to be absorbed from the gastrointestinal tract, lungs, and skin. In vivo metabolites identified in mouse skin include the trans-1,2-dihydrodiol and 8- and 9-hydroxy forms of indeno[1,2,3-cd]pyrene. Similar metabolites were formed in vitro in rat liver microsomes.

No data were found concerning the acute, subchronic, chronic, developmental, or reproductive toxicity of indeno[1,2,3-cd]pyrene. Because of a lack of toxicity data, an oral RfD or inhalation RfC has not been derived.

No long-term oral or inhalation bioassays were available to assess the carcinogenicity of indeno[1,2,3-cd]pyrene. The compound was tested for carcinogenicity in dermal application, lung implant, subcutaneous (s.c.) injection, and intraperitoneal (i.p.) injection studies. Dermal application of 0.1-0.5% solutions of indeno[1,2,3-cd]pyrene in acetone produced skin papillomas and carcinomas in mice. In initiation-promotion assays, indeno[1,2,3-cd]pyrene was active as an initiator of skin carcinogenesis. Dose-related increases of epidermoid carcinomas of the lungs were reported in rats receiving single lung implants of 0.16-4.15 mg indeno[1,2,3-cd]pyrene. Injection site sarcomas developed in mice given three s.c. injections of 0.6 mg indeno[1,2,3-cd]pyrene. The compound was not tumorigenic when newborn mice received 2.1 mol indeno[1,2,3-cd]pyrene via i.p. injection.

530449

Based on no human data and sufficient evidence for carcinogenicity in animals, the United Stated Environmental Protection Agency (EPA) has assigned a weight-of-evidence classification of B2, probable human carcinogen, to indeno[1,2,3-cd]pyrene.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for ideno[1,2,3-cd]pyrene are 7.30E-1, 2.35E+0, and 3.10E-1 $[mg/(kg \times day)]^{-1}$, respectively. These were derived from the values for benzo[a]pyrene using the relative potency factors recommended by EPA. The dermal slope factor was derived from the oral slope factor using a gastrointestinal absorption factor of 31 percent. No RfDs for ideno[1,2,3-cd]pyrene were found; therefore, noncancer effects due to exposure to ideno[1,2,3-cd]pyrene could not be estimated in the BHHRA.

1.4.2.31 Iodomethane (CAS 74-88-4)

Iodomethane is also known as methyl iodide, Halon 10001, monoiodomethane, methyl iodine, and N-methylindole.

Neither slope factors nor RfDs for any route of exposure were found for iodomethane. Therefore, neither carcinogenicity nor systemic toxicity due to iodomethane exposure is included in the BHHRA.

1.4.2.32 Methylene Chloride (CAS 75-09-2) (RAIS)

Methylene chloride (CH_2Cl_2, CAS No. 75-09-2), also known as dichloromethane is a colorless volatile liquid with a penetrating ether-like odor. In industry, methylene chloride is widely used as a solvent in paint removers, degreasing agents, and aerosol propellants; as a polyurethane foam-blowing agent; and as a process solvent in the pharmaceutical industry. The compound is also used as an extraction solvent for spice oleoresins, hops, and caffeine.

Methylene chloride is readily absorbed from the lungs, the gastrointestinal tract, and to some extent through the skin. Metabolism of methylene chloride produces CO2 and CO, which readily binds with blood hemoglobin to form carboxyhemoglobin (CO-Hb). The primary adverse health effects associated with methylene chloride exposure are CNS depression and mild liver effects. Neurological symptoms described in individuals occupationally exposed to methylene chloride included headaches, dizziness, nausea, memory loss, paresthesia, tingling hands and feet, and loss of consciousness. Major effects following acute inhalation exposure include fatigue, irritability, analgesia, narcosis, and death. CNS effects have also been demonstrated in animals following acute exposure to methylene chloride.

Impaired liver function has been associated with occupational exposure to methylene chloride. Liver effects have also been documented in a number of inhalation studies with laboratory animals. Subchronic exposure of rats, mice, dogs, and monkeys caused mild hepatic effects such as cytoplasmic vacuolization and fatty changes. Hepatocellular foci, fatty changes, and necrosis were reported following chronic inhalation exposure of rats and mice. Chronic oral exposure to methylene chloride via drinking water resulted in histopathological alterations of the liver in rats and mice. In addition, inhalation exposure of rats caused nonspecific degenerative and regenerative changes in the kidneys.

A subchronic and chronic oral RfD of 6E-2 mg/kg/day for methylene chloride has been calculated by U.S. EPA. This value is based on a NOAEL of 5.85 mg/kg/day derived from a chronic drinking water study with rats. This same study was adapted for the derivation of the subchronic and chronic RfC of 3E+0 mg/m^3 (NOAEL, 694.8 mg/m^3).

530450

Studies of workers exposed to methylene chloride have not recorded a significant increase in cancer cases above the number of cases expected for nonexposed workers. However, long-term inhalation studies with rats and mice demonstrated that methylene chloride causes cancer in laboratory animals. Mice exposed via inhalation to high concentrations of methylene chloride (2000 or 4000 ppm) exhibited a significant increase of malignant liver and lung tumors compared with nonexposed controls. Rats of both sexes exposed to concentrations of methylene chloride ranging from 500 to 4000 ppm showed increases of benign mammary tumors. An inhalation study with rats and hamsters revealed sarcomas of the salivary gland in male rats, but not in female rats or hamsters. Liver tumors observed in rats and mice that ingested methylene chloride in drinking water for 2 years provided suggestive evidence of carcinogenicity. Based on inadequate evidence of carcinogenicity in humans and on sufficient evidence in animals, U.S. EPA has placed methylene chloride in weight-of-evidence group B2, probable human carcinogen. A slope factor and unit risk of 7.5E-3 $(mg/kg/day)^{-1}$ and 2.1E-7 $(ug/L)^{-1}$, respectively, was derived for oral exposure to methylene chloride. The inhalation unit risk is 4.7E-7 $(ug/m3)^{-1}$.

The oral and dermal cancer slope factors used in the BHHRA are 7.50E-3 and 7.89E-3 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor of 1.65E-3 was used. The oral and dermal RfDs used in the BHHRA are 6.00E-2 and 5.70E-2 mg/(kg × day), respectively. An inhalation reference dose of 8.57E-01 was used. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 95 percent was used.

1.4.2.33 Naphthalene (CAS 91-20-3) (RAIS)

Naphthalene (CAS Reg. No. 91-20-3), a white solid with a characteristic odor of mothballs, is a polycyclic aromatic hydrocarbon composed of two fused benzene rings. The principal end use of naphthalene is as a raw material for the production of phthalic anhydride. It is also used as an intermediate for synthetic resins, celluloid, lampblack, smokeless powder, solvents, and lubricants. Naphthalene is used directly as a moth repellant, insecticide, anthelmintic, and intestinal antiseptic.

Naphthalene can be absorbed by the oral, inhalation, and dermal routes of exposure and can cross the placenta in amounts sufficient to cause fetal toxicity. The most commonly observed effect of naphthalene toxicity following acute oral or inhalation exposure in humans is hemolytic anemia associated with decreased hemoglobin and hematocrit values, increased reticulocyte counts, presence of Heinz bodies, and increased serum bilirubin levels. Hemolytic anemia has been observed in an infant dermally exposed to naphthalene and in infants whose mothers were exposed to naphthalene during pregnancy. Infants and individuals having a congenital deficiency of erythrocyte glucose-6-phosphate dehydrogenase are especially susceptible to naphthalene-induced hemolytic anemia.

Acute oral and subchronic inhalation exposure of humans to naphthalene has resulted in neurotoxic effects (confusion, lethargy, listlessness, vertigo), gastrointestinal distress, hepatic effects (jaundice, hepatomegaly, elevated serum enzyme levels), renal effects, and ocular effects (cataracts, optical atrophy). Cataracts have been reported in individuals occupationally exposed to naphthalene and in rabbits and rats exposed orally to naphthalene. A number of deaths have been reported following intentional ingestion of naphthalene-containing mothballs. The estimated lethal dose of naphthalene is 5-15 g for adults and 2-3 g for children. Naphthalene is a primary skin irritant and is acutely irritating to the eyes of humans.

Increased mortality, clinical signs of toxicity, kidney and thymus lesions, and signs of anemia were observed in rats treated by gavage with 400 mg/kg of naphthalene for 13 weeks. No adverse effects occurred at 50 mg/kg. Transient clinical signs of toxicity were seen in mice exposed by gavage to 53 mg/kg for 13 weeks. Subchronic oral exposure to 133 mg/kg/day for 90 days produced decreased spleen weights in female mice. Reduced numbers of pups/litter were observed when naphthalene was administered orally to pregnant mice. Negative results in a two-year feeding study with rats receiving 10-20 mg naphthalene/kg/day and equivocal results in a mouse lung tumor bioassay suggest that naphthalene is not a potential carcinogen.

A subchronic and chronic oral RfD of 4E-2 mg/kg/day for naphthalene has been calculated by U.S. EPA. These values are based on a NOEL of 50 mg/kg/day derived from a subchronic oral toxicity study with rats. The RfD is currently under review by U.S. EPA and may be subject to change. A RfC for chronic inhalation exposure has not been derived by U.S. EPA. Available cancer bioassays were insufficient to assess the carcinogenicity of naphthalene. Therefore, U.S. EPA has placed naphthalene in weight-of-evidence group D, not classifiable as to human carcinogenicity.

No cancer slope factors were used in the BHHRA for naphthalene. The oral and dermal RfDs used in the BHHRA are 3.57E-2 and 2.86E-2 mg/(kg × day), respectively. An inhalation RfD was not found. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 80 percent was used.

1.4.2.34 N-nitroso-di-n-propylamine (CAS 621-64-7)

N-nitroso-di-n-propylamine is also known as: n-nitrosodipropylamine; n-Nitroso-N-propyl-1-propanamine; dipropylnitrosamine; DPNA; NDPA; di-n-propylnitrosamine; nitrosodipropylamine; N-nitroso-n-dipropylamine; nitrous dipropylamide; and DPN.

The oral and dermal cancer slope factors used in the BHHRA are 7.0E+0 and 2.80E+1 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor was not found. No RfDs were used in the BHHRA. When calculating the dermal route cancer slope factor from the oral value, a gastrointestinal absorption factor of 25 percent was used.

1.4.2.35 N-nitrosodiphenylamine (CAS 84-74-2)

N-nitrosodiphenylamine is also known as: Diphenyl, N-Nitrosoamine; N-Nitroso-N-Phenylaniline; Diphenylnitrosamine; Redax; N-nitroso-N-phenylbenzenamine; Nitrosodiphenylamine; vulcatard; nitrous diphenylamide; N,N-diphenylnitrosamine; curetard a; delac j; naugard tjb; NDPHA; retarder j; TJB; vulcalent a; vulcatard a; vultrol and ; phenyl-N-nitrosoamine.

The oral and dermal cancer slope factors used in the BHHRA are 4.90E-3 and 1.96E-2 $[mg/(kg \times day)]^{-1}$, respectively. Oral and inhalation cancer slope factors were not found. No RfDs were found for N-nitrosodiphenylamine. When calculating the dermal route cancer slope factor from the oral value, a gastrointestinal absorption factor of 25 percent was used.

1.4.2.36 Phenanthrene (CAS 000085-01-8) (RAIS) (also see toxicity profile for polycyclic aromatic hydrocarbons)

Phenanthrene is a PAH that can be derived from coal tar. Currently, there is no commercial production or use of this compound. Phenanthrene is ubiquitous in the environment as a product of incomplete combustion of fossil fuels and wood and has been identified in ambient air, surface and drinking water, and in foods.

Phenanthrene is absorbed following oral and dermal exposure. Data from structurally related PAHs suggest that phenanthrene would be absorbed from the lungs. Metabolites of phenanthrene identified in in vivo and in vitro studies indicate that metabolism proceeds by epoxidation at the 1-2, 3-4, and 9-10 carbons, with dihydrodiols as the primary metabolites.

Although a large body of literature exists on the toxicity and carcinogenicity of PAHs, primarily benzo[a]pyrene, toxicity data for phenanthrene are very limited. No human data were available that addressed the toxicity of phenanthrene. Single intraperitoneal injections of phenanthrene produced slight hepatotoxicity in rats. Data regarding the subchronic, chronic, developmental, or reproductive toxicity in experimental animals by any route of exposure could not be located in the available literature.

Data were insufficient to derive an oral RfD or inhalation RfC for phenanthrene (U.S. EPA, 1988). The chemical is not currently listed in IRIS or HEAST.

No inhalation bioassays were available to assess the carcinogenicity of phenanthrene. A single oral dose of phenanthrene did not induce mammary tumors in rats and a single subcutaneous injection did not result in treatment-related increases in tumor incidence in mice. Neonate mice administered intraperitoneal or subcutaneous injections of phenanthrene also did not develop tumors. No skin tumors were reported in two skin painting assays with mice. Phenanthrene was also tested in several mouse skin initiation-promotion assays. It was active as an initiator in one study, inactive as an initiator in four others, and inactive as a promoter in one study.

Based on no human data and inadequate data from animal bioassays, U.S. EPA has placed phenanthrene in weight-of-evidence group D, not classifiable as to human carcinogenicity.

Neither slope factors nor RfDs for any route of exposure were found for phenanthrene. Therefore, neither carcinogenicity nor systemic toxicity due to phenanthrene exposure is included in the BHHRA.

1.4.2.37 Polychlorinated biphenyl (CAS 27323-18-8) (See Section 1.4.2.10)

1.4.2.38 Polycyclic Aromatic Hydrocarbons

Polycyclic aromatic hydrocarbons are a group of chemicals that are formed during the incomplete burning of wood and fuel, including coal, oil, gas, and other organic substances (ATSDR 1989). In any medium, PAHs most often exist as complex mixtures of compounds. Exposure to PAHs may occur via inhalation, ingestion, and dermal contact. Based on toxicity, these compounds have been divided into two main groups: carcinogenic PAHs and noncarcinogenic PAHs.

Carcinogenic Polycyclic Aromatic Hydrocarbons. Based on available data, benzo[a]pyrene is one of the most potent of the carcinogenic PAHs. Other PAHs considered to be carcinogenic are benz[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene.

The arrangement of aromatic rings in the benzo[a]pyrene molecule and other PAHs gives it a "bay-region" that is often correlated with carcinogenic properties. In general, bay-region PAHs and some of their metabolites are known to react with cellular macromolecules, including DNA, which may account for the toxicity and carcinogenicity of these compounds (Francis 1992). The primary toxicological concern with exposure to this group of PAHs is carcinogenicity. No case reports or epidemiological studies concerning the significance of human exposure to individual PAHs are available. Coal tar and other materials known to be carcinogenic to humans, however, contain PAHs (Francis 1985). Lung and skin cancers in humans have been associated with chronic exposure by inhalation and dermal contact, respectively, to mixtures of compounds including carcinogenic PAHs (ATSDR 1989). Several individual PAHs administered to several animal species by various routes have been found to be carcinogenic at both local and systemic sites. Long-term experimental studies resulted in tumors in the liver, mammary gland, respiratory and gastrointestinal tracts, and skin (ATSDR 1989). Carcinogenic PAHs are also reported to be mutagenic in a variety of test systems.

Reproductive effects in mice fed benzo[a]pyrene and adverse effects in their offspring, including birth defects and decreased body weight, have been reported, although reproductive toxicity associated with PAH exposure has not been demonstrated in humans (ATSDR 1989). Toxic effects have also been observed in rapidly dividing cells of the intestinal epithelium, testes, and ovaries (oocytes). Animal studies also indicate that exposure to bay-region PAHs can damage the hematopoietic system, leading to progressive anemia as well as agranulocytosis. The lymphoid system can also be affected, resulting in lymphopenia.

As indicated previously, available data indicate that not all of the carcinogenic PAHs are as potent as benzo[a]pyrene (ICF-Clement 1988, EPA 1992). In recent guidance published by the EPA (1993), it is recommended that a series of relative potency values (orders of magnitude) be used for the risk assessment of oral exposure to PAHs, with carcinogenic potency being compared to that of benzo[a]pyrene.

Noncarcinogenic Polycyclic Aromatic Hydrocarbons. Polycyclic aromatic hydrocarbons not considered to be carcinogenic include acenaphthene, acenaphthylene, anthracene, benzo[g,h,i]perylene, fluoranthene, fluorene, methylnaphthalene, naphthalene, phenanthrene, and pyrene.

Polycyclic aromatic hydrocarbons are toxic to the skin. For example, naphthalene is a primary skin irritant and causes erythema and dermatitis on repeated contact (Sittig 1985), and acenaphthene is irritating to the skin and mucous membranes of humans and animals (Faust 1994). Other noncarcinogenic effects of PAHs have been observed in animals; however, of these, only effects of the blood and blood-forming system and of the skin have also been reported in humans (ATSDR 1989). Animal studies indicate that PAHs may adversely affect the gastrointestinal tract, liver, kidneys, lungs, hematopoietic system, and may suppress the immune system after both short- and long-term exposure. Oral exposure of animals to acenaphthene caused reproductive effects, including decreased ovary weights, decreased ovarian and uterine activity, and fewer and smaller corpora lutea (Faust 1991, 1994). Mutagenic and carcinogenic effects of the noncarcinogenic PAHs have not been reported.

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530454

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1.4.2.39 Pyrene (CAS 129-00-0) (RAIS)

Pyrene, also referred to as benzo[d,e,f]phenanthrene and -pyrene, is a PAH that can be derived from coal tar. Currently, there is no commercial production or use of this compound. Pyrene is ubiquitous in the environment as a product of incomplete combustion of fossil fuels and has been identified in surface and drinking water, numerous foods, and in ambient air.

Although a large body of literature exists on the toxicity and carcinogenicity of PAHs, toxicity data for pyrene are limited. No human data were available that addressed the toxicity of pyrene. Subchronic oral exposure to pyrene produced nephropathy, decreased kidney weights, increased liver weights, and slight hematological changes in mice and produced fatty livers in rats. A single intraperitoneal injection of pyrene produced swelling and congestion of the liver and increased serum AST and bilirubin levels in rats. No data were available concerning the toxic effects of inhalation exposure to pyrene or data regarding teratogenicity or other reproductive effects by any route of exposure.

A RfD of 3E-1 mg/(kg x day) for subchronic and 3.00E-2 mg/(kg x day) for chronic oral exposure to pyrene was calculated from a NOAEL of 75 mg/kg/day in a 13-week gavage study with mice. Data were insufficient to derive an inhalation RfC for pyrene.

No oral or inhalation bioassays were available to assess the carcinogenicity of pyrene. Studies involving other routes of exposure (intratracheal, dermal, and subcutaneous) generally gave negative results. Intratracheal administration of pyrene in combination with Fe_2O_3 particles did not induce tumors in hamsters. Skin painting assays evaluating complete carcinogenesis in mice; or initiating; or promoting capacity have been negative or inconclusive. Mice injected subcutaneously with pyrene did not develop tumors, but there is evidence that pyrene enhances the tumorigenicity of topically applied benzo[a]pyrene.

Based on no human data and inadequate data from animal bioassays, U.S. EPA has placed pyrene in weight-of-evidence group D, not classifiable as to human carcinogenicity.

No cancer slope factors were used in the BHHRA. The oral and dermal RfDs used in the BHHRA are 3.00E-2 and 9.30E-3 mg/(kg × day), respectively. An inhalation reference dose was not used. When calculating the dermal route RfD from the oral value, a gastrointestinal absorption factor of 31 percent was used.

1.4.2.40 Tetrachloroethene (CAS 127-18-4) (RAIS)

Tetrachloroethene (CAS No. 127-18-4) is a halogenated aliphatic hydrocarbon with a vapor pressure of 17.8 mm Hg at 25C. The chemical is used primarily as a solvent in industry and, less frequently, in commercial dry-cleaning operations. Occupational exposure to tetrachloroethene occurs via inhalation, resulting in systemic effects, and via dermal contact, resulting in local effects. Exposure to the general population can occur through contaminated air, food and water.

The respiratory tract is the primary route of entry for tetrachloroethene. The chemical is rapidly absorbed by this route and reaches an equilibrium in the blood within 3 hours after the initiation of exposure. Tetrachloroethene is also significantly absorbed by the gastrointestinal (g.i.) tract, but not through the skin. The chemical accumulates in tissues with high lipid content, where the half-life is estimated to be 55 hours, and has been identified in perirenal fat, brain, liver, placentofetal tissue, and amniotic fluid. The proposed first step for the biotransformation of tetrachloroethene is the formation of an epoxide thought to be responsible for the carcinogenic potential of the chemical. Tetrachloroethene is excreted mainly unchanged through the lungs, regardless of route of administration. The urine and feces comprise secondary routes of excretion. The major urinary metabolite of tetrachloroethene, trichloroacetic acid, is formed via the cytochrome P-450 system.

The main targets of tetrachloroethene toxicity are the liver and kidney by both oral and inhalation exposure, and the central nervous system by inhalation exposure. Acute exposure to high concentrations of the chemical (estimated to be greater than 1500 ppm for a 30-minute exposure) may be fatal to humans. Chronic exposure causes respiratory tract irritation, headache, nausea, sleeplessness, abdominal pains, constipation, cirrhosis of the liver, hepatitis, and nephritis in humans; and microscopic changes in renal tubular cells, squamous metaplasia of the nasal epithelium, necrosis of the liver, and congestion of the lungs in animals.

Some epidemiology studies have found an association between inhalation exposure to tetrachloroethene and an increased risk for spontaneous abortion, idiopathic infertility, and sperm abnormalities among dry-cleaning workers, but others have not found similar effects. The adverse effects in humans are supported in part by the results of animal studies in which tetrachloroethene induced fetotoxicity (but did not cause malformations) in the offspring of treated dams.

Reference doses for subchronic and chronic oral exposure to tetrachloroethene are 1E-1 mg/kg/day and 1E-2 mg/kg/day, respectively. These values are based on hepatotoxicity observed in mice given 100 mg tetrachloroethene/kg body weight for 6 weeks and a no-observed-adverse effect level (NOAEL) of 20 mg/kg.

Epidemiology studies of dry cleaning and laundry workers have demonstrated excesses in mortality due to various types of cancer, including liver cancer, but the data are regarded as inconclusive because of various confounding factors. The tenuous finding of an excess of liver tumors in humans is strengthened by the results of carcinogenicity bioassays in which tetrachloroethene, administered either orally or by inhalation, induced hepatocellular tumors in mice. The chemical also induced mononuclear cell leukemia and renal tubular cell tumors in rats. Tetrachloroethene was negative for tumor initiation in a dermal study and for tumor induction in a pulmonary tumor assay.

Although U.S. EPA's Science Advisory Board recommended a weight-of-evidence classification of C-B2 continuum © = possible human carcinogen; B2 = probable human carcinogen), the agency has not adopted a current position on the weight-of-evidence classification. In an earlier evaluation, tetrachloroethene was assigned to weight-of-evidence Group B2, probable human carcinogen, based on sufficient evidence from oral and inhalation studies for carcinogenicity in animals and no or inadequate evidence for carcinogenicity to humans. The unit risk and slope factor values for tetrachloroethene have been withdrawn from IRIS and HEAST. The upper bound risk estimates from the 1985 Health Assessment Document as amended by inhalation values from the 1987 addendum have not yet been verified by the IRIS-CRAVE Workgroup. For oral exposure, the slope factor is 5.2E-2 $(mg/kg/day)^{-1}$; the unit risk is 1.5E-6 $(\mu g/L)^{-1}$. For inhalation exposure, the slope factor is 2.0E-3 $(mg/kg/day)^{-1}$; the unit risk ranges from 2.9E-7 to 9.5E-7 $(\mu g/m3)^{-1}$ with a geometric mean of 5.8E-7 $(\mu g/m3)^{-1}$. When the Agency makes a decision about weight-of-evidence, the CRAVE-IRIS verification will be completed and the information put on IRIS.

The oral and dermal cancer slope factors used in the BHHRA for tetrachloroethene are 5.20E-2 and 5.2E-2 $[mg/(kg \times day)]^{-1}$, respectively. An inhalation cancer slope factor of 2.00E-3 $[mg/(kg \times day)]^{-1}$ is used. The oral and dermal RfDs used in the BHHRA are 1.00E-2 and 1.00E-2 mg/(kg × day), respectively. No inhalation RfD was available. When calculating the dermal route cancer slope factor from the oral value, a gastrointestinal absorption factor of 100 percent was used.

1.4.2.41 Toluene (CAS 108-88-3) (RAIS)

Toluene is a colorless liquid widely used as raw material in the production of organic compounds and as a solvent. It is readily absorbed from the gastrointestinal and respiratory tracts and, to a lesser degree, through the skin. Toluene is distributed throughout the body, with accumulation in tissues with high lipid content. It is metabolized in the liver, primarily to hippuric acid and benzoyl glucuronide, compounds that are rapidly excreted in the urine.

In humans and animals, the primary effect associated with inhalation exposure to toluene is CNS depression. Short-term exposure of humans to 100-1500 ppm has elicited CNS effects such as fatigue, confusion, incoordination, and impairments in reaction time, perception, and motor control and function. Exposure to concentrations ranging from 10,000-30,000 ppm has resulted in narcosis and deaths. Prolonged abuse of toluene or solvent mixtures containing toluene has led to permanent CNS effects. Exposure to high concentrations of toluene (1500 ppm) has produced hearing loss in rats. Hepatomegaly and impaired liver and kidney function have been reported in some humans chronically exposed to toluene. Toluene vapors may cause eye irritation, and prolonged or repeated dermal contact may produce drying of skin and dermatitis.

In experimental animals, subchronic inhalation exposure to 2500 ppm toluene resulted in increased liver and kidney weights (rats and mice), increased heart weights (rats), increased lung weights, and centrilobular hypertrophy of the liver (mice). Chronic inhalation exposure to 600 or 1200 ppm for 2 years produced degeneration of olfactory and respiratory epithelia of rats and minimal hyperplasia of bronchial epithelia in mice.

Subchronic oral administration of toluene at doses ranging from 312 to 5000 mg/kg/day produced clinical signs of neurotoxicity at 2500 mg/kg in rats and mice. Other effects observed at higher doses in rats included increased relative liver, kidney, and heart weights (females only) and necrosis of the brain and hemorrhage of the urinary bladder.

Equivocal evidence shows that exposure to toluene in utero causes an increased risk of CNS abnormalities and developmental delay in humans. Animal studies, in which toluene was administered by inhalation, showed that exposure results in fetotoxicity and delayed skeletal development but does not cause internal or external malformations in rats. An oral study noted an increased incidence of embryonic deaths, cleft palate, and maternal toxicity in mice administered 1 mL/kg toluene during gestation.

An oral RfD of 2 mg/kg/day for subchronic exposure (EPA, 1993) and 0.2 mg/kg/day for chronic exposure to toluene was calculated based on a NOAEL of 223 mg/kg/day and a LOAEL of 446 mg/kg/day from a 13-week subchronic gavage study in rats. Increased liver and kidney weights in males were identified as the critical effects. A subchronic and chronic inhalation RfC of 0.4 mg/m^3 was calculated based on results of a battery of neurological tests with occupationally exposed female subjects.

An increased incidence of hemolymphoreticular neoplasms was reported in rats exposed to 500 mg/kg of toluene by gavage for 2 years; however, results from two long-term inhalation studies indicate that toluene is not carcinogenic at concentrations up to 1200 ppm. Based on U.S. Environmental Protection Agency

(EPA) guidelines, toluene was assigned to weight-of-evidence group D, not classifiable as to human carcinogenicity.

No cancer slope factors were used in the BHHRA for toluene. The oral and dermal RfDs used in the BHHRA are 2.00E-1 and 1.60E-1 mg/(kg × day), respectively. An inhalation RfD of 1.14E-1 mg/(kg × day) was used. When calculating the dermal route cancer slope factor from the oral value, a gastrointestinal absorption factor of 80 percent was used.

1.4.2.42 Trichloroethene (CAS 000079-01-6) (RAIS)

Trichloroethene (TCE) is an industrial solvent used primarily in metal degreasing and cleaning operations. TCE can be absorbed through the lungs, mucous membranes, gastrointestinal tract, and the skin. TCE is extensively metabolized in humans to trichloroacetic acid and trichloroethanol, as well as to several minor metabolites, with most of the absorbed dose excreted in urine.

Human and animal data indicate that exposure to TCE can result in toxic effects on a number of organs and systems, including the liver, kidney, blood, skin, immune system, reproductive system, nervous system, and cardiovascular system. In humans, acute inhalation exposure to TCE causes central nervous system symptoms such as headache, dizziness, nausea, and unconsciousness. Among the reported effects from occupational exposure studies are fatigue, light-headedness, sleepiness, vision distortion, abnormal reflexes, tremors, ataxia, nystagmus, increased respiration, as well as neurobehavioral or psychological changes. Cardiovascular effects include tachycardia, extrasystoles, EKG abnormalities, and precordial pain. The use of TCE as an anesthetic has been associated with cardiac arrhythmias.

Cases of severe liver and kidney damage, including necrosis, have been reported in humans following acute exposure to TCE, but these effects generally are not associated with long-term occupational exposures. In animals, TCE has produced liver enlargement with hepatic biochemical and/or histological changes and kidney enlargement, renal tubular alterations and/or toxic nephropathy. Also observed in animals were hematological effects and immunosuppression. Inhalation studies with rats indicate that TCE is a developmental toxicant causing skeletal ossification anomalies and other effects consistent with delayed maturation. TCE may cause dermatitis and dermographism.

RfDs and Reference Concentrations (RfCs) for subchronic and chronic oral and inhalation exposure to TCE are presently under review by EPA.

Epidemiologic studies have been inadequate to determine if a correlation exists between exposure to TCE and increased cancer risk. Chronic oral exposure to TCE increased the incidences of hepatocellular carcinomas in mice and renal adenocarcinomas and leukemia in rats. Chronic inhalation exposure induced lung and liver tumors in mice and testicular Leydig cell tumors in rats. Although U.S. EPA's Science Advisory Board recommended a weight-of-evidence classification of C-B2 continuum © = possible human carcinogen; B2 = probable human carcinogen), the agency has not adopted a current position on the weight-of-evidence classification. In an earlier evaluation, TCE was assigned to weight-of-evidence Group B2, probable human carcinogen, based on tumorigenic responses in rats and mice for both oral and inhalation exposure and on inadequate data in humans. Carcinogen slope factors are 1.1E-2 $(mg/kg/day)^{-1}$ and 6.0E-3 $(mg/kg/day)^{-1}$ for oral and inhalation exposure, respectively. The corresponding unit risks are 3.2E-7 $(\mu g/L)^{-1}$ and 1.7E-6 $(\mu g/m3)^{-1}$, respectively.

The oral, dermal, and inhalation cancer slope factors used in the BHHRA for trichloroethene are 1.10E-2, 7.33E-2, and 6.00E-3 $[mg/(kg \times day)]^{-1}$, respectively. The oral and dermal RfDs used in the BHHRA are 6.00E-3 and 9.00E-4 mg/(kg × day), respectively. An inhalation RfD was not found for

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trichloroethene; however, based on the effects discussed previously, an inhalation RfD extrapolated from the oral RfD [6.00E-3 mg/(kg × day)] will be used in the uncertainty discussion in Subsect. 1.6. When calculating both the dermal route cancer slope factor and dermal route RfD from their respective oral values, a gastrointestinal absorption factor of 15 percent was used.

1.4.2.43 Vinyl Chloride (CAS 75-01-4) (RAIS)

Vinyl chloride (CAS Reg. No. 75-01-4), a colorless gas, is a halogenated aliphatic hydrocarbon with the empirical formula of C_2H_3Cl. It is used primarily as an intermediate in the manufacture of polyvinyl chloride (PVC); limited quantities are used as a refrigerant and as an intermediate in the production of chlorinated compounds.

Vinyl chloride is rapidly absorbed from the gastrointestinal tract and lungs. Metabolism of vinyl chloride occurs primarily in the liver via oxidation by hepatic microsomal enzymes to polar compounds which can be conjugated with glutathione and/or cysteine. These covalently bound metabolites are then excreted in the urine.

In humans and animals, vinyl chloride is a CNS depressant, inducing narcosis and anesthesia at high concentrations. Nonneoplastic toxic effects observed in workers exposed by inhalation to vinyl chloride include hepatotoxicity, acroosteolysis and scleroderma, and Raynaud's syndrome, a vascular disorder of the extremities. Also reported were abnormalities of CNS function, high blood pressure, and occasional pulmonary effects. The evidence for potential developmental effects in humans (increased fetal loss and birth defects) is equivocal. Occupational exposure to vinyl chloride has been associated with reduced sexual function in both sexes and gynecological effects in women.

For the oral route of exposure, the primary target organ of vinyl chloride toxicity in animals is the liver. Chronic oral administration of 1.7-14.1 mg/kg/day of vinyl chloride induced dose-related increases in nonneoplastic lesions of the liver of rats. In addition to the CNS, target organs for inhalation exposure include the liver, kidneys, lungs, spleen, and testes. Subchronic inhalation studies with rodents documented hepatic effects at concentrations as low as 50 ppm and degenerative changes of the liver and kidneys at ≥500 ppm. Exposure to higher concentrations caused proliferative changes in the lungs of mice, extensive liver and kidney damage in rats and guinea pigs, cerebral and cerebellar nephrosis in rats, and degeneration of the spleen in guinea pigs. Subchronic exposure of rats to 100 ppm vinyl chloride produced significantly decreased testes weights and testicular regeneration. Evidence of developmental toxicity was seen in rats exposed to vinyl chloride during the first trimester of gestation.

Neither an oral RfD nor an inhalation reference concentration (RfC) have been derived for vinyl chloride.

The carcinogenicity of vinyl chloride in humans has been demonstrated in a number of epidemiological studies and case reports, many of which associated occupational exposure to vinyl chloride to the development of angiosarcomas of the liver. In addition to liver cancer, exposure to vinyl chloride also has been linked to an increased risk of lung, brain, hematopoietic, and digestive tract cancers. Vinyl chloride has been shown to be carcinogenic in numerous animal studies. Inhalation exposure to vinyl chloride induced an increased incidence of liver angiosarcomas; kidney nephroblastomas; and lung, brain, and forestomach tumors in rodents. Oral administration of vinyl chloride induced liver, lung, and kidney tumors in rodents. Angiosarcomas observed in offspring of rats exposed by inhalation during gestation indicates that vinyl chloride has the potential to initiate cancer in utero.

EPA has classified vinyl chloride as a Group A chemical, human carcinogen. A slope factor of 1.9E+0 $(mg/kg/day)^{-1}$ and a drinking water unit risk of 5.4E-5 $(\mu g/L)^{-1}$ was calculated for oral exposure to vinyl chloride. For inhalation exposure, the slope factor and inhalation unit risk are 3.0E-1 $(mg/kg/day)^{-1}$ and 8.4E-5 $(\mu g/m3)^{-1}$, respectively. The oral slope factor and inhalation unit risk are currently under review and may be subject to change.

An oral slope factor of 1.9E+0 $[mg/(kg \times day)]^{-1}$ was calculated for vinyl chloride. For inhalation exposure, the slope factor is 3.0E-1 $[mg/(kg \times day)]^{-1}$. A gastrointestinal absorption factor of 100 percent was used to derive an absorbed dose slope factor of 1.90E+0. No RfDs were available.

1.4.3 Radionuclides

Radionuclides are unstable atoms of chemical elements that will emit charged particles or energy or both to achieve a more stable state. These charged particles are termed "alpha and beta radiation"; energy is termed "neutral gamma rays." Interaction of these charged particles (and gamma rays) with matter will produce ionization events, or radiation, which may cause living cell tissue damage. Because the deposition of energy by ionizing radiation is a random process, sufficient energy may be deposited (in a critical volume) within a cell and result in cell modification or death. In addition, ionizing radiation has sufficient energy that interactions with matter will produce an ejected electron and a positively charged ion (known as free radicals) that are highly reactive and may combine with other elements, or compounds within a cell, to produce toxins or otherwise disrupt the overall chemical balance of the cell. These free radicals can also react with deoxyribonucleic acid (DNA), causing genetic damage, cancer induction, or even cell death.

Radionuclides are characterized by the type and energy level of the radiation emitted. Radiation emissions fall into two major categories: particulate (electrons, alpha particles, beta particles, and protons) or electromagnetic radiation (gamma and x-rays). Therefore, all radionuclides are classified by the EPA as Group A carcinogens based on their property of emitting ionizing radiation and on the extensive weight of evidence provided by epidemiological studies of humans with cancers induced by high doses of radiation. Alpha particles are emitted at a characteristic energy level for differing radionuclides. The alpha particle has a charge of +2 and a comparably large size. Alpha particles have the ability to react (and/or ionize) with other molecules, but they have very little penetrating power and lack the ability to pass through a piece of paper or human skin. However, alpha-emitting radionuclides are of concern when there is a potential for inhalation or ingestion of the radionuclide. Alpha particles are directly ionizing and deposit their energy in dense concentrations [termed high linear energy transfer (high LET)], resulting in short paths of highly localized ionization reactions. The probability of cell damage increases as a result of the increase in ionization events occurring in smaller areas; this may also be the reason for increased cancer incidence caused by inhalation of radon gas. In addition, the cancer incidence in smokers may be attributed, in part, to the naturally occurring alpha emitter, polonium-210, in common tobacco products.

Beta emissions generally refer to beta negative particle emissions. Radionuclides with an excess of neutrons achieve stability by beta decay. Beta radiation, like alpha radiation, is directly ionizing but, unlike alpha activity, beta particles deposit their energy along a longer track length (low-LET), resulting in more space between ionization events. Beta-emitting radionuclides can cause injury to the skin and superficial body tissue but are most destructive when inhaled or ingested. Many beta emitters are similar chemically to naturally occurring essential nutrients and will therefore tend to accumulate in certain specific tissues. For example, strontium-90 is chemically similar to calcium and, as a result, accumulates in the bones, where it causes continuous exposure. The health effects of beta particle emissions depend upon the target organ. Those seeking the bones would cause a prolonged exposure to the bone marrow and affect blood cell formation, possibly resulting in leukemia, other blood disorders, or bone cancers. Those seeking the liver would result in liver diseases or cancer, while those seeking the thyroid would cause thyroid and metabolic disorders. In addition, beta radiation may lead to damage of genetic material (DNA), causing hereditary defects.

Gamma emissions are the energy that has been released from transformations of the atomic nucleus. Gamma emitters and x-rays behave similarly but differ in their origin: gamma emissions originate in nuclear transformations, and x-rays result from changes in the orbiting electron structure. Radionuclides that emit gamma radiation can induce internal and external effects. Gamma rays have high penetrating ability in living tissue and are capable of reaching all internal body organs. Without such sufficient shielding as lead, concrete, or steel, gamma radiation can penetrate the body from the outside and does not require ingestion or inhalation to penetrate sensitive organs. Gamma rays are characterized as low-LET radiation, as is beta radiation; however, the behavior of beta radiation differs from that of gamma radiation in that beta particles deposit most of their energy in the medium through which they pass, while gamma rays often escape the medium because of higher energies, thereby creating difficulties in determining actual internal exposure. For this reason, direct whole-body measurements are necessary to detect gamma radiation, while urine/fecal analyses are usually effective in detecting beta radiation.

People receive gamma radiation continuously from naturally occurring radioactive decay processes going on in the earth's surface, from radiation naturally occurring inside their bodies, from the atmosphere as fallout from nuclear testing or explosions, and from space or cosmic sources. Cesium-137 (from nuclear fallout) decays to barium-137, the highest contributor to fallout-induced gamma radiation. Beta radiation from the soil is a less penetrating form of radiation but has many contributing sources. Potassium-40, cesium-137, lead-214, and bismuth-214 are among the most common environmental beta emitters. Tritium is also a beta emitter but contributes little to the soil beta radiation because of the low energy of its emission and its low concentration in the atmosphere. Alpha radiation is also emitted by the soil but is not measurable more than a few centimeters from the ground surface. The majority of alpha emissions are attributable to radon-222 and radon-220 and their decay products. This contributes to what is called background exposure to radiation.

The general health effects of radiation can be divided into stochastic and nonstochastic effects. Stochastic effects are those in which the probability of an effect is related to dose, and nonstochastic effects are those in which, above a threshold, the severity of an effect is related to dose. The risk of development of cancer from exposure to radiation is a stochastic effect. Therefore, in this assessment, the risk of developing cancer from exposure to radiation is actually a probability that is related to dose.

Radiation can damage cells in different ways. It can cause damage to DNA within the cell, and the cell either may not be able to recover from this type of damage or may survive but function abnormally. If an abnormally functioning cell divides and reproduces, a tumor or mutation in the tissue may develop. The rapidly dividing cells that line the intestines and stomach and the blood cells in bone marrow are extremely sensitive to this damage. Organ damage results from the damage caused to the individual cells. This type of damage has been reported with doses of 10 to 500 rads (0.1 to 5.0 gray, in SI units). Acute radiation sickness is seen only after doses of >50 rads (0.5 gray) which is a dose rate usually achieved only in a nuclear accident.

When the radiation-damaged cells are reproductive cells, genetic damage can occur in the offspring of the person exposed. The developing fetus is especially sensitive to radiation. The type of malformation that may occur is related to the stage of fetal development and the cells that are differentiating at the time of exposure. Radiation damage to children exposed in the womb is related to the dose the pregnant mother receives. Mental retardation is a possible effect of fetal radiation exposure.

The most widely studied population that has had known exposure to radiation is the atomic bomb survivors of Hiroshima and Nagasaki, Japan. Data indicate an increase in the rate of leukemia and cancers in this population. However, the rate at which cancer incidence is significantly affected by low radiation exposures, such as results of exposure to natural background and industrially contaminated sites, is still undergoing study and is uncertain. In studies conducted to determine the rate of cancer and leukemia increase, as well as genetic defects, several radionuclides must be considered.

1.4.3.1 Actinium-228 (CAS 014331-83-0) (See previous discussion on radionuclides)

Actinium occurs naturally in association with uranium minerals. It only appears in relationship with decay chains. There are 30 isotopes of actinium all of which are radioactive. Actinium-228 (also called mesothorium 2) is a beta decay daughter of radon-228 via francium-228, and radium-228. Actinium-228 is a beta emitter (decay energy = 2.127 MeV to Thorium-228. Actinium-228 has a half-life of 6.15 hours.

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for are 1.62E-12 risk/pCi, 3.27E-11 risk/pCi, and 3.28E-06 (risk × g)/(pCi × yr), respectively. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity is not quantified in the BHHRA.

1.4.3.2 Americium-241 (CAS 014596-10-2) (see previous discussion on radionuclides)

Americium was first discovered in 1944 at the Metallurgical Laboratory, the forerunner of Argonne National Laboratory. The isotope is named after America because europium, a similar rare-earth element, was named after the continent of its discovery. Americium-241 is used in high-precision devices and smoke detectors. It decays via alpha-particle emission to neptunium-237.

Few data exist on the distribution of americium in humans, although measurable amounts have been distributed world-wide as part of nuclear weapons testing [International Commission on Radiological Protection (ICRP) 1989]. The limited data gathered from experimental animals suggest that "americium behaves like plutonium with regard to initial partition between liver and skeleton" (ICRP 1989). For dosimetry purposes, all isotopes of americium are assumed "uniformly distributed over bone surface at all times following their deposition to the skeleton" (ICRP 1989).

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for are 3.28E-10 risk/pCi, 3.85E-08 risk/pCi, and 4.59E-09 (risk × g)/(pCi × yr), respectively. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity due to exposure to americium is not quantified in the BHHRA.

REFERENCE:

ICRP (International Commission on Radiological Protection). 1989. *Age-dependent Doses to Members of the Public from Intake of Radionuclides: Part 1,* ICRP Publication No. 56, Pergamon Press, Inc., New York, NY.

1.4.3.3 Cesium-137 (CAS 010045-97-3) (see previous discussion on radionuclides)

Cesium occurs in nature as Cesium-133 in the aluminosilicates, pollucite (a hydrated silicate of aluminum and cesium) and lepidolite; in the borate, rhodizite; and in other sources (Budavari 1989, Klaassen 1986). Cesium-137 is one of the artificial isotopes of cesium and is one of the principle radionuclides present in reactor effluent under normal operations. Cesium-137 may also be produced in nuclear and thermonuclear explosions, through which it would be a primary contributor to human exposure through fallout radiation, assimilation through the food chain, or beta dose to the skin (Bodavari 1989, Klaassen 1986). In addition, Cesium-137, along with strontium-90, is one of the most important fission products that was widely distributed in near-surface soils because of historical weapons testing. Measurable concentrations still exist today, almost exclusively in the upper 15 cm of soil; these concentrations decrease roughly exponentially with depth.

Cesium-137 may also have important roles in medical treatments (a teletherapy source or intercavity or interstitial radiation source in treatment of malignancies) and as an encapsulated energy source (Budavari 1989, Casarett 1968). Cesium-137 decays to and reaches radioactive equilibrium with its daughter product, Barium-137m (Budavari 1989, Casarett 1968). Barium-137m is a very short-lived gamma emitter that can contribute to external gamma exposure (Budavari 1989).

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for cesium-137 are 3.16E-11 risk/pCi, 1.91E-11 risk/pCi, and 2.09E-06 [(risk × g)/(pCi × yr)], respectively. For cesium-137, the cancer slope factor used in the BHHRA includes risks posed by short-lived decay products in addition to that posed by the parent radionuclide. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity because of exposure to cesium is not quantified in the BHHRA.

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Budavari, S., M. J. O'Neill, A. Smith, and P. E. Heckelman (eds.). 1989. *The Merk Index: An Encyclopedia of Chemicals, Drugs, Biologicals, 11th ed.*, Merk and Company, Inc., Rahway, NJ.

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1.4.3.4 Lead-210 (CAS 014255-04-0), Lead-212 (CAS 015092-94-1), and Lead-214 (CAS 015067-28-4)
(see previous discussion on radionuclides)

Lead isotopes are the end products of each of the three series of naturally occurring radioactive elements: uranium series, actinium series, and thorium series. Natural lead contains a mixture of lead-204, 206, 207, and 208. Seventeen other isotopes of lead, all of which are radioactive, are also recognized.

Lead-210is a decay daughter of radon-222, has a half-life of 8,140 days, is a beta emitter (decay energy = 0.064 MeV to Bismuth-210), and is an alpha emitter (1.9E-06% decay rate; decay energy = 3.792 MeV to Mercury-206). Little information regarding the toxicity of lead-210 is in the available literature.

Lead-212 is a daughter of Radon-220, has a half-life of 10.6 hours, and is a beta emitter. Little information regarding the toxicity of lead-212 is available in the present literature; however, given its close relationship to radon-220, it would be expected to have very similar toxic effects (Adams and Lowder 1964). No EPA weight-of-evidence classification was definitively given in the available literature.

Lead-214 is also called radium B. Lead 214 is a daughter of Astatine-222 beta decay, has a half-life of 26.8 minutes, and is a beta emitter (decay energy = 1.024 MeV to Bismuth-214). Little information regarding the toxicity of lead-214 is in the available literature.

530463

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for lead-210 are 1.01E-09 risk/pCi, 3.86E-09 risk/pCi, and 1.45E-10 [(risk × g)/(pCi × yr)], respectively. The slope factors for lead-210 include ingrowth of daughters. Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for lead-212 are 1.80E-11 risk/pCi, 3.85E-11 risk/pCi, and 3.00E-07 [(risk × g)/(pCi × yr)], respectively. Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for lead-214 are 2.94E-13 risk/pCi, 6.23E-12 risk/pCi, and 7.09E-07 [(risk × g)/(pCi × yr)], respectively. Oral, dermal, and inhalation RfDs are not available for these elements; therefore, systemic toxicity is not quantified in the BHHRA.

REFERENCE:

Adams, J. A. S., and W. M. Lowder. 1964. *The Natural Radiation Environment,* William Marsh Rice University by the University of Chicago Press.

1.4.3.5 Neptunium-237 (CAS 013994-20-2) (see previous discussion on radionuclides)

Specific literary information for neptunium-237 is limited. However, available literature states that during neutron bombardment, neptunium-237 breaks down to plutonium-238, which produces small masses of high capacity energy that is useful for satellites and spacecraft (Moskalev et al. 1979).

The most common route of neptunium-237 exposure is inhalation of aerosols. According to studies conducted on rats, acute effects include injury to the liver and kidney and circulation disorders. Long-term effects include osteosarcomas and lung cancer. Extremely high doses cause immediate or premature death by destruction of the lungs (Moskalev et al. 1979).

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for neptunium-237 are 3.00E-10 risk/pCi, 3.45E-08 risk/pCi, and 4.62E-07 [(risk × g)/(pCi × yr)], respectively. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity due to exposure to neptunium is not quantified in the BHHRA.

REFERENCE:

Moskalev, Y. I., L. A. Buldakov, A. K. Zhuravleva et al. 1979. *Toxicological and Radiobiology of Neptunium-237*, ORNL-tr-4936, Moscow Atomizdat Publishers.

1.4.3.6 Plutonium-239 (CAS 015117-48-3) (see previous discussion on radionuclides)

Plutonium is a predominantly man-made radioactive metal that is produced from nuclear reactions with uranium. Plutonium-238 has been used as a nuclear power source for satellites and in thermoelectric generation systems in spacecraft, cardiac pacemakers, and other power sources (Harley 1980, NEA/OECD 1981). Plutonium-239 is mostly associated with nuclear weapons production and testing. It is generated in irradiated uranium fuel when neutrons are captured by uranium-238 nuclei. Commerce and the military principally use plutonium-238 and plutonium-239 because of their ease of production and long radioactive half-lives (86 and 24,000 years, respectively). Both plutonium-238 and plutonium-239 are artificial, alpha-emitting isotopes of plutonium; plutonium-238 decays to radioactive uranium-234 via alphas of 5.5 MeV, and plutonium-239 decays to radioactive uranium-235 via alphas of 5.1 MeV.

Atmospheric testing of nuclear weapons has been the main source of plutonium dispersion in the environment, while accidents and routine releases from weapons production facilities are the primary sources

530464

of localized contamination. Plutonium released to the atmosphere reaches the earth's surface through wet and dry deposition to the soil and surface water. Once in these media, plutonium can sorb to soil and sediment particles or bioaccumulate in terrestrial and aquatic food chains.

Because of the low solubility of plutonium isotopes, inhalation of contaminated dust particles is considered to be the most harmful means of human exposure. Plutonium that has been inhaled may be absorbed through the lungs and deposited in other body tissues. Subsequent translocation of some of the plutonium from the lungs to tissues and organs distant from the site of entry results in radiation damage to these tissues as well as to the lung. Liver and bone are the primary sites of plutonium deposition (ICRP 1986). The assumed biological retention half-lives of plutonium isotopes accumulated in the liver and bone of the human body are 20 and 50 years, respectively (ICRP 1986). Therefore, after a single exposure, plutonium isotopes reside in the body for a long time, resulting in prolonged exposure of body organs to alpha radiation (EPA 1977). The permissible health levels for plutonium are the lowest of all the radioactive elements. This is occasioned by the concentration of plutonium directly on bone surfaces rather than the more uniform bone distribution shown by other heavy elements. This increases the possibility of damage from equivalent activities of plutonium and has led to adoption of extremely low permissible levels.

Inhaled plutonium-238 is solubilized and subsequently translocated from the lung to the bone and liver (Gillett et al. 1988). Inhaled plutonium-239 dioxide is insoluble and retained primarily in the lungs and associated lymph nodes. In laboratory tests with plutonium and animals, the pattern of nonmalignant toxicity among the species tested was similar (i.e., radiation pneumonitis and pulmonary fibrosis occurred in the higher radiation dose groups in all species tested); however, species differences in the induction of cancer were apparent. With the exception of Syrian hamsters, cancer developed in animals in the lower exposure groups or in animals that survived initial radiation damage to the lungs (ATSDR 1990).

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for plutonium-239 are 3.16E-10 risk/pCi, 2.78E-08 risk/pCi, and 1.26E-11 [(risk × g)/(pCi × yr)], respectively. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity is not quantified in the BHHRA.

REFERENCES:

ATSDR (Agency for Toxic Substances and Disease Registry). 1990. *Toxicological Profile for Plutonium,* U.S. Department of Health and Human Services, Public Health Service, Atlanta, GA.

EPA (U.S. Environmental Protection Agency). 1977. *Proposed Guidance on Dose Limits for Persons Exposed to Transuranium Elements in the General Environment*, EPA520/4-77-016, Washington, D.C.

Gillet, N., B. Muggenberg, J. Mewhinney, et al. 1988. Primary Liver Tumors in Beagle Dogs Exposed by Inhalation to Aerosols of Plutonium-238 Dioxide, *American Journal of Pathology* 133:265–276.

Harley, J. 1980. Plutonium in the Environment—A Review, *J. Radiat. Res.* 21:83–104.

ICRP (International Commission on Radiological Protection). 1986. *The Metabolism of Plutonium and Related Elements*, ICRP Publication 48, Pergamon Press, Oxford.

NEA/OECD (Nuclear Energy Agency/Organization of Economic Cooperation and Development. 1981. *The Environmental and Biological Behavior of Plutonium and Some Other Transuranium Elements*, Nuclear Energy Agency, Paris.

530465

1.4.3.7 Potassium-40 (CAS 013966-00-2) (see previous discussion on radionuclides)

Of the three naturally occurring potassium isotopes, only K-40 is unstable, having a half-life of 1.3×10^9 years. The potassium content of soils of arable lands is controlled by use of fertilizers. It is estimated that about 3000 ci of K-40 is added annually to the soils of the United States in the form of fertilizer.

A person who weighs 70 kg contains about 140 g of potassium, most of which is located in muscle. The isotope delivers a dose of about 15 mrem/year to bone. Because of its relative abundance and energetic beta emission (1.3 MeV), K-40 is easily the predominant radioactive component in normal foods and human tissues. It is important to recognize that the potassium content of the body is under strict homeostatic control and is not influenced by variations in environmental levels. For this reason, the dose from K-40 within the body is constant (Eisenbud 1987). EPA has not yet derived a weight-of-evidence classification for K-40.

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for potassium-40 are 1.25E-11 risk/pCi, 7.46E-12 risk/pCi, and 6.11E-07 [(risk × g)/(pCi × yr)], respectively. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity is not quantified in the BHHRA.

REFERENCE:

Eisenbud, M. *1987. Environmental Radioactivity from Natural, Industrial, and Military Sources, 3rd edition,* Academic Press, Harcourt Brace Jovanovich, Publishers.

1.4.3.8 Technetium-99 (CAS 014133-76-7) (see previous discussion on radionuclides)

Technetium is a radioactive element that occurs in a number of isotopic forms. Technetium is found in some extraterrestrial material (i.e., stars); however, no appreciable amounts have been found in nature due to the relatively short half-lives of its radioactive isotopes (Kutegov et al. 1968). While no isotopes of technetium are stable, the existence of three technetium isotopes is well established. Two common forms of technetium, technetium-97 and technetium-98, have half-lives of 2.6×10^6 and 1.5×10^6 years, respectively. The third isotope, technetium-99, has a half-life of 2.12×10^5 years. None, however, possesses a half-life sufficiently long to allow technetium to occur naturally (Boyd 1959). Technetium is made artificially for industrial use, and natural technetium, particularly technetium-99, has been identified and isolated from the spontaneous fission of uranium, as well as other fissionable material or via the irradiation of molybdenum (Venugopal and Luckey 1978, Clarke and Podbielski 1988).

Technetium is an emitter of beta particles of low specific activity (Boyd 1959). It does not release nuclear energy at a rate sufficient to make the element attractive for the conventional applications of radioactivity (Boyd 1959). Technetium-99 is the only long-lived isotope that is readily available and is the isotope on which most of the chemistry of technetium is based. Although gamma radiation has not been associated with technetium-99, the secondary X rays may become important with larger amounts of the element.

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for technetium-99 are 1.40E-12 risk/pCi, 2.89E-12 risk/pCi, and 6.19E-13 [(risk × g)/(pCi × yr)], respectively. A dermal cancer slope factor was not calculated because this route of exposure is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity due to exposure to technetium-99 is not quantified in the BHHRA.

530467

REFERENCES:

Boyd, G.E. 1959. Technetium and Promethium. *J. Chem. Ed.* 36(1):3-14.

Clarke, M.J. and L. Podbielski. 1988. **In:** *Handbook on Toxicity of Inorganic Compounds*, Seiler et al. (eds), New York: Marcel Dekker.

Kutegov, K.V., O.N. Pavlov, and V.P. Shvedov. 1968. Technetium. **In:** *Advan. Inorganic Chem. Radiochem.*, 1-90. Vol. 11.

Seiler, H.G., H. Sigel, and A. Sigel, eds. 1988. *Handbook on Toxicity of Inorganic Compounds*. New York: Marcel Dekker, Inc.

Venugopal, B. and T.D. Luckey. 1978. *Metal Toxicity in Mammals, Vol 2, Chemical Toxicity of Metals and Metalloids*. New York: Plenum Press

1.4.3.9 Thorium-228 (CAS 014274-82-9), Thorium-230 (CAS 014269-63-7), and Thorium-234 (CAS 015065-10-8) (see previous discussion on radionuclides)

Thorium is a naturally occurring, radioactive metal. Small amounts of thorium are present in all rocks, soil, above-ground and underground water, plants, and animals. These small amounts of thorium contribute to the weak background radiation for such substances. Soil commonly contains an average of about 6 ppm of soil. Rocks in some underground mines may also contain thorium in a more concentrated form. After these rocks are mined, thorium is usually concentrated and changes into thorium dioxide or other chemical forms. Thorium-bearing rock that has had most of the thorium removed from it is called "depleted" ore or tailings (ATSDR 1990).

Thorium is a metallic element of the actinide series. It exists in several isotopic forms. The isotope thorium-232 is a naturally occurring element that is radioactive. It decays through the emission of a series of alpha and beta particles, gamma radiation, and the formation of daughter products, finally yielding the stable isotope of lead, lead-208. Isotopes thorium-234 and thorium-230 are produced during the decay of naturally occurring uranium-238, the isotope thorium-228 during the decay of thorium-232, and the isotopes thorium-231 and thorium-227 during the decay of uranium-235. Of these naturally produced isotopes of thorium, only thorium-232, thorium-230, and thorium-228 have long enough half-lives to be environmentally significant. More than 99.99 percent of natural thorium is thorium-232; the rest is thorium-230 and thorium-228 (ATSDR 1990).

Thorium is used to make ceramics, lantern mantles, and metals used in the aerospace industry and in nuclear reactions. Thorium can also be used as a fuel for generating nuclear energy. More than 30 years ago, thorium oxides were used in hospitals to make certain kinds of diagnostic X-ray photographs (ATSDR 1990).

Because thorium is found almost everywhere, most people in the United States eat some thorium with their food every day. Normally, little of the thorium in lakes, rivers, and oceans gets into the fish or seafood used commercially. More thorium may be found near uncontrolled hazardous waste sites that contain thorium which might not have been disposed of properly. Consequently, people living near one of these sites may be exposed to slightly more thorium as a result of inhaling windblown dust containing thorium or eating food grown in soil contaminated with thorium. Larger-than-normal amounts of thorium might also enter the environment through accidental releases from thorium processing plants (ATSDR 1990).

Breathing dust contaminated with thorium is the primary pathway for thorium exposure to the body. A large portion of this dustborne thorium will be eliminated by normal bodily functions (urine/feces);

however, a small amount of thorium will be taken up by the blood and subsequently transmitted to the bones. Breathing thorium dust may cause an increased chance of developing lung disease and cancer of the lung or pancreas many years after being exposed. Changes in genetic material have also been shown to occur in workers who breathed thorium dust. Liver diseases and effects on the blood have been found in people injected with thorium to take special X rays. Many types of cancer have been shown to occur in these people many years after thorium was injected in their bodies. Since thorium is radioactive and may be stored in bone for a long time, bone cancer is also a potential concern for people exposed to thorium. Animal studies have shown that breathing in thorium may result in lung damage. Other studies in animals suggest drinking massive amounts of thorium can cause death from metal poisoning. The presence of large amounts of thorium in the environment could result in exposure to more hazardous radioactive decay products of thorium, such as radium and thoron, which is an isotope of radon. Thorium is not known to cause birth defects or to affect childbearing abilities (ATSDR 1990).

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for thorium-228 are 2.31E-10 risk/pCi, 9.68E-08 risk/pCi, and 6.20E-06 [(risk × g)/(pCi × yr)], respectively. The slope factors for thorium-228 include ingrowth of daughters. Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for thorium-230 are 3.75E-11 risk/pCi, 1.72E-08 risk/pCi, and 4.40E-11 [(risk × g)/(pCi × yr)], respectively. Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for thorium-234 are 1.93E-11 risk/pCi, 1.90E-11 risk/pCi, and 3.50E-09 [(risk × g)/(pCi × yr)], respectively. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for these elements; therefore, systemic toxicity due to exposure to thorium is not quantified in the BHHRA.

REFERENCE:

ATSDR (Agency for Toxic Substances and Disease Registry). 1990. *Toxicological Profile for Thorium*, TP-90-25, United States Department of Health and Human Services, Public Health Service, Atlanta, GA.

1.4.3.10 Uranium (CAS 7440-62-2 for metal, CAS 013966-29-5 for U-234, CAS 15117-96-1 for U-235, and CAS 07440-61-1 for U-238) (see previous discussion on radionuclides)

Uranium is a mildly radioactive element that occurs widely in the earth's crust. It is found in all soils, most rocks, and, in lesser concentrations, in water, vegetation, and animals, including humans. Uranium emits a low level of alpha particles and a much lower level of gamma rays. Alpha particles are unable to penetrate skin but can travel short distances in the body if ingested or inhaled. Consequently, uranium represents a significant carcinogenic hazard only when taken into the body, where alpha particle energy is absorbed by small volumes of tissue. Although the penetrating (gamma) radiation of uranium is not considered to be significant (ATSDR 1989), one of its daughter radionuclides is a strong gamma emitter. Therefore, gamma radiation may be a concern in areas containing uranium.

Natural uranium contains the uranium isotopes uranium-238 (which averages 99.27 percent of total uranium mass), uranium-235 (0.72 percent), and uranium-234 (0.0056 percent), each of which undergoes radioactive decay. Natural uranium, therefore, contains the radionuclide daughter products from the decay of uranium-238 and uranium-235 (Bowen 1979, ATSDR 1989).

Uranium is a radioactive element, but it is also a metallic element. Toxicological effects from the ingestion of uranium are the result of the action of uranium as a metal and its radioactive properties. The primary toxic chemical effect of uranium is seen in kidney damage. Studies in rabbits, mice, and dogs showed effects on the kidney to be dose-related. Fetal skeletal abnormalities and fetal death were found in pregnant mice exposed to 6 mg/kg or uranyl acetate dihydrate.

The primary human exposure studies to uranium have been studies of uranium miners or uranium factory workers. These studies have shown an increase in lung cancer deaths among these workers, which may be attributable to the decay of uranium into radon and its daughters. These workers are exposed to high levels of uranium dust and fumes and other radioactive elements in confined conditions (ATSDR 1989).

Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for uranium-234 are 4.44E-11 risk/pCi, 1.40E-08 risk/pCi, and 2.14E-11 [(risk × g)/(pCi × yr)], respectively. Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for uranium-235 are 4.70E-11 risk/pCi, 1.30E-08 risk/pCi, and 2.65E-07 [(risk × g)/(pCi × yr)], respectively. The slope factors for uranium-235 include ingrowth of daughters. Oral, inhalation, and external exposure cancer slope factors used in the BHHRA for uranium-238 are 6.20E-11 risk/pCi, 1.24E-08 risk/pCi, and 6.57E-08 [(risk × g)/(pCi × yr)], respectively. The slope factors for uranium-238 include ingrowth of daughters. A dermal cancer slope factor was not calculated because this route of exposure is not considered significant for radionuclides and is not evaluated in the BHHRA. Oral, dermal, and inhalation RfDs are not available for this element; therefore, systemic toxicity due to exposure to neptunium is not quantified in the BHHRA.

REFERENCES:

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. *Draft Toxicological Profile for Uranium and Compounds*. Prepared by Syracuse Research Corporation. Prepared for ATSDR.

Bowen, H.J.M. 1979. *Environmental Chemistry of the Elements*. Academic Press: London.

1.4.4 Chemicals for Which No EPA Toxicity Values are Available

Oral RfD values exist for all of the inorganic COPCs included in the WAG 6 BHHRA except bromide, orthophosphate, tetraxo-sulfate (1-), and thallium. Oral RfDs exist for all of the organic COPCs included in the WAG BHHRA except 1,2-dichloroethane, 2-hexanone, 2-methylnaphthalene, acenaphthylene, Aroclor 1260, Aroclor 1262, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoroanthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, iodomethane, n-nitroso-di-n-propylamine, phenanthrene, PCB, and vinyl chloride. It should be noted that the reference dose for lead is not approved by the EPA. EPA currently recommends a lead uptake/biokinetic model to provide an alternative measure for lead. Results of this model are discussed in Subsect. 1.5.6 and presented in App. G.

All the inorganic COPCs, except barium, cadmium, lead, manganese, and mercury lack inhalation RfD values. In addition, only 1,2-dichloroethane, carbon tetrachloride, methylene chloride, and toluene of the organic COPCs, have inhalation RfD values. EPA is currently developing inhalation RfD values for several of these compounds and recommends that, until these values have been verified, the noncarcinogenic effects of inhalation of substances without EPA-derived RfC values be evaluated qualitatively.

Absorbed dose RfD values exist for all of the inorganic COPCs included in the WAG 6 BHHRA except bromide, orthophosphate, tetraxo-sulfate (1-), and thallium. Absorbed dose RfDs exist for all of the organic COPCs included in the WAG 6 BHHRA except 1,2-dichloroethane, 2-hexanone, 2-methylnaphthalene, acenaphthylene, Aroclor 1260, Aroclor 1262, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoroanthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, iodomethane, n-nitroso-di-n-propylamine, phenanthrene, PCB, and vinyl chloride.

Oral slope factors for inorganic compounds are only available for arsenic and beryllium. Oral slope factors do not currently exist for 22 of the 24 inorganic COPCs included in this assessment.

EPA-approved inhalation slope factors are available for only a few of the COPCs. Inorganic COPCs with inhalation slope factors are arsenic, beryllium, cadmium, and chromium. Organic COPCs with approved inhalation slope factors are 1,1,2-trichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, Aroclor 1254, Aroclor 1260, Aroclor 1262, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoroanthene, benzo[k]fluoranthene, carbon tetrachloride, chloroform, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, methylene chloride, PCB, tetrachloroethene, trichloroethene, and vinyl chloride.

Twenty-nine COPCs have absorbed dose slope factors: 2 are inorganics (arsenic and beryllium) and 27 are organic compounds (these are identical to those analytes having oral slope factors). All sixteen radionuclide COPCs have oral, inhalation, and external exposure slope factors.

1.4.5 Uncertainties Related to Toxicity Information

Standard EPA RfDs and slope factors were used to estimate potential noncarcinogenic and carcinogenic health effects from exposure to chemical contaminants detected at WAG 6. Considerable uncertainty is associated with the methodology applied to derive slope factors and RfDs. EPA working groups review all relevant human and animal studies for each compound and select the studies pertinent to the derivation of the specific RfD and slope factor. These studies often involve data from experimental studies in animals, high exposure levels, and exposures under acute or occupational conditions. Extrapolation of these data to humans under low-dose, chronic conditions introduces uncertainties. The magnitude of these uncertainties is addressed by applying uncertainty factors to the dose response data for each applicable uncertainty. These factors are incorporated to provide a margin of safety for use in human health assessments.

The dose-response relationship between cancer and ionizing radiation has been evaluated in many reports. Derivation of risk factors is extrapolated from the cancer risk established using the Japanese Atomic Bomb Survivors database and a relative risk projection model. EPA methodology for estimating radionuclide carcinogenic risks is currently being re-evaluated.

1.4.6 Summary of Toxicity Assessment

A breakdown of the COPCs and their available toxicity information by sector and the WAG 6 area as a whole is provided in the following subsections. This summary is also presented in Table 1.19. In this table, chemicals and compounds marked with an asterisk lack toxicity information.

WAG 6. RGA groundwater at WAG 6 contains 49 COPCs. 14 are organic compounds of which all have toxicity information; 23 are inorganic compounds of which 4 have no toxicity information; and 12 are radionuclides of which all have toxicity information.

McNairy groundwater at WAG 6 contains 46 COPCs. 12 are organic compounds of which all have toxicity information; 19 are inorganic compounds of which 3 have no toxicity information; and 15 are radionuclides of which all have toxicity information.

Subsurface soil at WAG 6 contains 66 COPCs. 39 are organic compounds of which 6 have no toxicity information; 19 are inorganic compounds of which 1 has no toxicity information; and 8 are radionuclides all of which have toxicity information.

Surface soil at WAG 6 contains 43 COPCs. 23 are organic compounds of which 4 have no toxicity information; 13 are inorganic compounds, with one having no toxicity information; and 5 radionuclides all with toxicity information.

Sector 1 (Central). Subsurface soil at Sector 1 contains 9 COPCs. 2 are organic compounds, both having toxicity information; 5 are inorganic compounds of which 1 has no toxicity information; and 2 are radionuclides all of which have toxicity information.

Surface soil at Sector 1 contains 1 COPC. 1 is an organic compound having toxicity information; none are inorganic compounds; and none are radionuclides.

Sector 2 (Northeast).Subsurface soil at Sector 2 contains 39 COPCs. 22 are organic compounds of which 2 have no toxicity information; 13 are inorganic compounds of which 1 has no toxicity information; and 4 are radionuclides all of which have toxicity information.

Surface soil at Sector 2 contains 19 COPCs. 14 are organic compounds of which 2 have no toxicity information; 3 are inorganic compounds, with all having toxicity information; and 2 radionuclides all with toxicity information.

Sector 3 (East).Subsurface soil at Sector 3 contains 35 COPCs. 20 are organic compounds of which 2 have no toxicity information; 11 are inorganic compounds of which 1 has no toxicity information; and 4 are radionuclides all of which have toxicity information.

Surface soil at Sector 3 contains 24 COPCs. 17 are organic compounds of which 2 have no toxicity information; 4 are inorganic compounds, with one having no toxicity information; and 4 are radionuclides all with toxicity information.

Sector 4 (Southeast). Subsurface soil at Sector 4 contains 48 COPCs. 28 are organic compounds of which 2 have no toxicity information; 16 are inorganic compounds of which 1 has no toxicity information; and 4 are radionuclides all of which have toxicity information.

Surface soil at Sector 4 contains 18 COPCs. 10 are organic compounds of which 1 has no toxicity information; 4 are inorganic compounds, with all having toxicity information; and 0 radionuclides.

Sector 5 (Southwest). Subsurface soil at Sector 5 contains 49 COPCs. 29 are organic compounds of which 5 have no toxicity information; 16 are inorganic compounds of which 1 has no toxicity information; and 4 are radionuclides all of which have toxicity information.

Surface soil at Sector 5 contains 30 COPCs. 19 are organic compounds of which 3 have no toxicity information; 8 are inorganic compounds, with one having no toxicity information; and 3 radionuclides all with toxicity information.

Sector 6 (West). Subsurface soil at Sector 6 contains 38 COPCs. 22 are organic compounds of which 3 have no toxicity information; 11 are inorganic compounds all having toxicity information; and 5 are radionuclides all of which have toxicity information.

Surface soil at Sector 6 contains 35 COPCs. 21 are organic compounds of which 3 have no toxicity information; 9 are inorganic compounds, with all having toxicity information; and 5 radionuclides all with toxicity information.

Sector 7 (Northwest). Subsurface soil at Sector 7 contains 29 COPCs. 12 are organic compounds of which 1 has no toxicity information; 14 are inorganic compounds of which 1 has no toxicity information; and 3 are radionuclides all of which have toxicity information.

Surface soil at Sector 7 contains 15 COPCs. 7 are organic compounds of which all have toxicity information; 7 are inorganic compounds, with all having toxicity information; and 1 radionuclide with toxicity information.

Sector 8 (Far North/Northwest). Subsurface soil at Sector 8 contains 44 COPCs. 20 are organic compounds of which 2 have no toxicity information; 16 are inorganic compounds of which 1 has no toxicity information; and 8 are radionuclides all of which have toxicity information.

Surface soil at Sector 8 contains 24 COPCs. 15 are organic compounds of which 2 have no toxicity information; 6 are inorganic compounds, with one having no toxicity information; and 3 radionuclides all with toxicity information.

Sector 9 (Far East/Northeast). Subsurface soil at Sector 9 contains 31 COPCs. 16 are organic compounds of which 2 have no toxicity information; 12 are inorganic compounds of which 1 has no toxicity information; and 3 are radionuclides all of which have toxicity information.

Surface soil at Sector 9 contains 16 COPCs. 10 are organic compounds of which 1 has no toxicity information; 4 are inorganic compounds, all having toxicity information; and 2 radionuclides all with toxicity information.

1.5 RISK CHARACTERIZATION

Risk characterization is the final step in the risk assessment process. In this step, the information from the exposure and toxicity assessments is integrated to quantitatively estimate both carcinogenic health risks and noncarcinogenic hazard potential. For this assessment, risk is defined as the lifetime probability of excess cancer incidence for carcinogens and the estimate of daily intake exceeding intake that may lead to toxic effects for noncarcinogens.

1.5.1 Determination of Potential for Noncancer Effects

In this risk assessment, the numeric estimate of the potential for noncancer effects posed by a single chemical within one pathway of exposure is derived as the ratio of the chronic daily intake of a chemical from a single pathway to the appropriate RfD. This ratio is also referred to as a hazard quotient (HQ). This value is calculated as shown in the following equation:

$$\mathbf{HQ} = \frac{\mathbf{CDI}}{\mathbf{RfD}}$$

where:

HQ is the hazard quotient, dimensionless
CDI is the chronic daily intake of a particular chemical, mg/(kg × day)
RfD is the chronic reference dose for a particular chemical and pathway, mg/(kg × day)

Care was taken when performing this calculation to ensure that the proper RfD was used for each chronic daily intake. For chronic daily intakes that reflect ingestion, the RfD used was that for administered dose. For chronic daily intakes that reflect absorption, as in dermal contact, the RfD used was that for absorbed dose. Finally, for chronic daily intakes that reflect inhalation exposure, the RfD used was that for inhalation. Similarly, the RfD appropriate for the duration of exposure was used. For all adult exposures, the period of exposure was greater than 7 years; therefore, the chronic RfD was used. For all exposures to

530472

children, regardless of duration, the chronic RfD was used (RAGS, Methods Document). Generally, only chronic RfDs were used for adults because this assessment only considered lifetime exposures.

If several chemicals may reach a receptor through a common pathway, guidance (RAGS, Methods Document) recommends adding the HQs of all chemicals reaching the receptor through the common pathway to calculate a pathway hazard index (HI). This can be represented by the following equation:

$$\textbf{Pathway HI} = \textbf{HQ}_1 + \textbf{HQ}_2 + \textbf{HQ}_3 + ... + \textbf{HQ}_n$$

where:
Pathway HI is the sum of the individual chemical HQs, dimensionless
HQ_1 to HQ_n are the individual chemical hazard quotients relevant to the pathway, dimensionless

Similarly, guidance (RAGS, Methods Document) recommends summing the pathway HIs for all pathways relevant to an individual receptor to develop a total HI. The total HI is not an estimate of the systemic toxicity posed by all contaminants that may reach the receptor but can be used to estimate if a toxic effect may result if all contaminants reaching the receptor have additive effects over all pathways. This can be represented as in the following equation:

$$\textbf{Total HI} = \textbf{HI}_1 + \textbf{HI}_2 + \textbf{HI}_3 + ... + \textbf{HI}_n$$

where:
Total HI is the sum of all pathways relevant to a single receptor, dimensionless
HI_1 to HI_n are the individual pathway HIs

Note that the HQ, the pathway HI, and the total HI do not define a dose-response relationship. That is, the magnitude of the HQ or HI does not represent a statistical probability of incurring an adverse effect. If the HQ is less than 1, the estimated exposure to a substance may be judged to be below a level that could present a toxic effect. If the HQ is greater than 1, a toxic effect may or may not result depending on the assumptions used to develop the CDI and assumptions used in deriving the RfD. Similarly, if the pathway HI is less than 1, then the estimated exposure to multiple chemicals contributing to the pathway HI should not be expected to present a toxic effect. If the pathway HI is greater than 1, then exposure may or may not result in a toxic effect depending on what assumptions were used to develop the pathway and how the chemicals included in the pathway interact. Finally, if the total HI is less than 1, then the estimated exposure to multiple chemicals over multiple pathways should not be expected to result in a toxic effect. If the total HI is greater than 1, then a toxic effect may or may not result depending on the rigor used to develop the conceptual site model for all pathways and the interaction between pathways and individual chemicals.

After summing within and over pathways, the risk was further evaluated if the sum was greater than 1. In this evaluation, chemicals with similar effects were segregated to determine if the HQs of these chemicals also summed to a value greater than 1. This evaluation was performed because the belief is that (RAGS) if the sum of the HQs of chemicals with common effects is greater than 1, then there is greater confidence in stating that exposure to several chemicals within a pathway or over several pathways may lead to a toxic effect. This and other uncertainties related to this method of determining the potential for systemic toxicity are discussed in more detail in Subsect. 1.6.

1.5.2 Determination of Excess Lifetime Cancer Risk

Estimates of the potential for cancer induction are measured by calculating estimates of ELCR. Generally, ELCR can be defined as the incremental increase in the probability that a receptor may develop cancer if the receptor is exposed to chemicals or radionuclides or both. Remember that ELCRs developed using the following procedures are specific for the conceptual site model used to define the routes and magnitude of exposure. The magnitude of the ELCRs could vary markedly if the exposure assumptions used to develop the conceptual site model are varied.

1.5.2.1 Chemical excess cancer risk

The numeric estimate of the ELCR resulting from exposure to a single chemical carcinogen is derived by multiplying the CDI through a particular pathway by the slope factor appropriate to that pathway. The resulting value is referred to as a chemical-specific ELCR. This value is calculated as shown in the following equation:

$$\textbf{Chemical-specific ELCR} = \textbf{CDI} \times \textbf{SF}$$

where:

Chemical specific ELCR is an estimate of the excess lifetime probability of developing cancer which results because of exposure to the specific chemical, dimensionless
CDI is the chronic daily intake of the chemical [mg/(kg × day)]
SF is the slope factor for the specific chemical $[(mg/(kg \times day)]^{-1}$

As with the calculation used to derive HQs, care was taken when performing this calculation to ensure that the proper slope factor was used for each CDI. For CDIs that reflect ingestion, the slope factor was that for an administered dose. For CDIs that reflect absorption, the slope factor was that for absorbed dose. Finally, for CDIs that reflect inhalation exposure, the slope factor was that for inhalation.

If several chemicals may reach a receptor through a common pathway, guidance (RAGS, Methods Document) recommends adding the chemical specific ELCRs of all chemicals reaching the receptor through the common pathway to calculate a pathway ELCR. This can be represented by the following equation:

$$\textbf{Pathway ELCR} = \textbf{ELCR}_1 + \textbf{ELCR}_2 + \textbf{ELCR}_3 + ... + \textbf{ELCR}_n$$

where:

Pathway ELCR is the sum of the chemical-specific ELCRs, dimensionless
$ELCR_1$ to $ELCR_n$ are the chemical-specific ELCRs relevant to the pathway; dimensionless

Similarly, guidance (RAGS, Methods Document) recommends combining the pathway ELCRs for all pathways relevant to an individual receptor to develop a total ELCR. The total ELCR is not an actuarial estimate of an individual developing cancer but can be used to estimate the total ELCR which may result if all contaminants reaching the receptor have additive effects over all pathways. This can be represented as in the following equation:

$$\textbf{Total ELCR} = \textbf{ELCR}_{P1} + \textbf{ELCR}_{P2} + \textbf{ELCR}_{P3} + ... + \textbf{ELCR}_{Pn}$$

where:

Total ELCR is the sum of all pathways relevant to a single receptor, dimensionless
$ELCR_{P1}$ to $ELCR_{P2}$ is the individual pathway ELCRs

Unlike the HQ, the pathway HI, and the total HI, the chemical-specific ELCR, the pathway ELCR, and total ELCR define a dose-response relationship. That is, the ELCRs do represent a statistical probability of the increased risk of developing cancer that exists in receptors exposed under the assumptions used in the calculation of the CDI. However, like pathway HI and total HI, additional evaluation of the risk characterization should be performed if the total ELCR exceeds 1×10^{-4}. If the total ELCR exceeds 1×10^{-4}, then chemicals contributing to the ELCR should be segregated by common effect. This analysis is performed to decrease the uncertainty in the risk presentation and raise the confidence of any subsequent risk

530474

management decision. This and other uncertainties related to this method of calculating ELCR are discussed in more detail in Subsect. 1.6.

1.5.2.2 Radionuclide excess cancer risk

Calculation of cancer risk because of exposure to radionuclides through ingestion or inhalation is conceptually similar to calculation of risks for chemical carcinogens. In performing this calculation, ELCR because of exposure to a particular radionuclide within a specific pathway is calculated by multiplying the intake of the radionuclide by the route-specific cancer slope factor. This can be represented by the following equation:

$$\textbf{Radionuclide-specific ELCR} = \textbf{CDI} \times \textbf{SF}$$

where:

Radionuclide specific ELCR is an estimate of the excess lifetime probability of developing cancer which results because of exposure to the specific radionuclide, dimensionless
CDI is the ingestion and inhalation chronic daily intake of the radionuclide, pCi
SF is the ingestion and inhalation slope factor for the specific radionuclide, risk/pCi
(Note: For external exposure, the units for CDI and SF are pCi-year/g and risk-g/pCi-year, respectively.)

As with the calculation used to derive chemical-specific ELCRs, care was taken when performing this calculation to ensure that the proper slope factor was used for each CDI. For CDIs that reflect ingestion, the slope factor was that for ingestion. Similarly, for CDIs which reflect inhalation exposure, the slope factor was that for inhalation.

Both the pathway ELCR for radionuclides and the total ELCR from exposure to multiple radionuclides within a pathway and over multiple pathways, respectively, are calculated as illustrated for chemical carcinogens in Subsect. 1.5.2. These equations will not be presented in this risk assessment. The uncertainties related to this method of determining ELCR from exposure to radionuclides is discussed in detail in Subsect. 1.6.

In this risk assessment, ELCRs because of exposure to chemicals and radionuclides were summed within pathways and over all pathways to indicate the potential health risk to a receptor that may be exposed to radionuclides and chemicals over all pathways. The uncertainties associated with combining radionuclide and chemical ELCRs are discussed in detail in Subsect. 1.6.

1.5.3 Risk Characterization for Current Land use Scenarios at Current Concentrations

This subsection presents the risk for current land use (i.e., industrial) at the WAG 6 area and each sector. Exhibits and discussion in this subsection provide the total HI or ELCR for the WAG 6 area and each sector and list the major exposure routes and constituents contributing to the total HI or ELCR. This subsection does not select either land use scenarios of concern, pathways of concern, or COCs. The selection of land use scenarios of concern, pathways of concern, and COCs is in Subsects. 1.5.7.1, 1.5.7.2, and 1.5.7.3, respectively.

The information summarized in the exhibits and discussion in this subsection is presented in full in Tables 1.66 and 1.67. Table 1.66 presents the systemic toxicity for each SWMU for the current industrial worker. Table 1.67 presents the ELCR for the WAG 6 area and each sector for the current industrial worker. In each table, the risk for each contaminant within each pathway, the risk for each contaminant across all pathways, the risk from each pathway, and the total risk across all pathways are presented for the WAG. The program used to calculate the risk values is Program 10 described in App. D of this volume.

1.5.3.1 Systemic toxicity

Exhibit 1.22 summarizes the hazard indices for exposure routes for the current industrial worker over all locations. As shown in this exhibit, the total scenario hazard index (i.e., Location Total in Exhibit 1.22) is greater than 1 for the WAG 6 area and Sectors 5, 6, 7, and 9. The scenario total hazard indices for the WAG 6 area and Sector 7 are very large because of the presence of lead at concentrations greater than background. However, even if hazard from lead is not considered, the total location HI is greater than 1. (See

Exhibit 1.22. Exposure route summary for the current use scenario–systemic toxicity[a]

Scenario and Location	Exposure Routes for Soil			Location Total
	Incidental Ingestion	Dermal Contact	Inhalation of Vapors/Particles	
Current industrial worker				
WAG 6 Area	39.1	1,120	<0.1	**1,160 [b]**
% of Total	3%	97%	<1%	
Sector 1	NA	NA	NA	**NV**
% of Total	NV	NV	NV	
Sector 2	<0.1	0.4	NV	**0.4**
% of Total	1%	99%	NV	
Sector 3	<0.1	0.3	<0.1	**0.3**
% of Total	2%	98%	<1%	
Sector 4	<0.1	1.0	<0.1	**1.0**
% of Total	1%	99%	<1%	
Sector 5	<0.1	1.7	<0.1	**1.8**
% of Total	2%	98%	<1%	
Sector 6	<0.1	1.2	<0.1	**1.2**
% of Total	5%	95%	<1%	
Sector 7	63.7	1,830	<0.1	**1,890 [b]**
% of Total	3%	97%	<1%	
Sector 8	<0.1	1.0	<0.1	**1.0**
% of Total	<1%	99%	<1%	
Sector 9	<0.1	1.3	NV	**1.3**
% of Total	1%	99%	NV	

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of hazard indices. Three significant digits are used here when the hazard index is greater than 0.1 to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of three significant digits, when the exposure route's value is greater than 0.1, allows the reader to sum the route values and check the location total.

[b] These very large values are the result of the retention of lead as a COPC at a value only slightly greater than background (42 mg/kg versus 36 mg/kg) and the use of a provisional reference dose provided in comments by KDEP. The scenario totals without lead are 1.84 and 1.64 for the WAG 6 area and Sector 7, respectively.

footnote b.) For each location, the driving exposure route is dermal contact with soil, which accounts for more than 95% of the total hazard index. Also, for each location, the inhalation exposure route contributes insignificantly to the location total hazard index.

Exhibit 1.23 summarizes the contaminants contributing more than 1% of the total systemic toxicity for the current industrial worker over all locations for those locations where the total systemic toxicity for the location exceeds 1. As shown in this exhibit, in each case, metals are the primary driving contaminants; however, PCBs and PAHs are minor contributors for Sector 6. Note, when contribution from lead is considered (Sector 7 and the WAG 6 area), it contributes more than 99% of the total hazard.

Exhibit 1.23. Driving contaminants' summary for current use scenario-systemic toxicity

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Current industrial worker		
WAG 6 Area	lead (>99%) [a]	**1,160**
Sector 1	HI < 1	**NV**
Sector 2	HI < 1	**0.4**
Sector 3	HI < 1	**0.3**
Sector 4	HI < 1	**1.0**
Sector 5	iron (47%); chromium (26%); antimony (22%); uranium (3%)	**1.8**
Sector 6	chromium (22%); antimony (22%); arsenic (20%); PCB (13%); aluminum (13%); pyrene (2%); fluoranthene (1%)	**1.2**
Sector 7	lead (>99%)[b]	**1,890**
Sector 8	HI < 1	**1.0**
Sector 9	antimony (58%); aluminum (23%); chromium (17%); uranium (2%)	**1.3**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.
HI<1 indicates that total scenario hazard index is less than 1; therefore, analytes are not listed.

[a] Without lead as a COPC, the location total hazard index is 1.84. The contaminants contributing more than 1% of this value are: iron (29%); vanadium (23%); antimony (17%); chromium (14%); aluminum (7%); arsenic (5%); PCBs (2%); uranium (1%); and cadmium (1%).

[b] Without lead as a COPC, the location total hazard index is 1.64. The contaminants contributing more than 1% of this value are: iron (36%); vanadium (30%); chromium (26%); and antimony (6%).

1.5.3.2 Excess lifetime cancer risk

Exhibit 1.24 summarizes the excess cancer risks for exposure routes for the current industrial worker over all locations. As shown in this exhibit, in each case, except Sector 1 (Central Sector) where the C-400 building covers the site, the total ELCR is greater than 1×10^{-6}. The sector with the greatest value for ELCR is Sector 6, and that with the smallest is Sector 4. Over all locations, except Sector 9, the exposure route contributing most to ELCR is dermal contact with soil (range from 82 to 98%). For Sector 9, the driving exposure route is external exposure to ionizing radiation. Finally, over all locations, the inhalation of vapors and particulates emitted from soil exposure route contributes insignificantly to the location total (<1%).

Exhibit 1.25 summarizes the contaminants contributing more than 1% of the total ELCR for the current industrial worker over all locations. As shown in this exhibit, the driving contaminants over the WAG 6 area

530477

Exhibit 1.24. Exposure route summary for the current use scenario–excess lifetime cancer risk[a]

Scenario and Location	Exposure Routes for Soil				Location Total
	Incidental Ingestion	Dermal Contact	Inhalation of Vapors/ Particles	External Exposure	
Current industrial worker					
WAG 6 Area	9.6×10^{-6}	3.2×10^{-4}	1.9×10^{-8}	8.0×10^{-6}	**3.3×10^{-4}**
% of Total	3%	95%	<1%	2%	
Sector 1	NA	NA	NA	NA	**NV**
% of Total	NV	NV	NV	NV	
Sector 2	6.3×10^{-7}	1.4×10^{-5}	1.5×10^{-8}	1.6×10^{-6}	**1.7×10^{-5}**
% of Total	4%	86%	<1%	10%	
Sector 3	6.4×10^{-6}	7.0×10^{-5}	1.3×10^{-8}	8.8×10^{-6}	**8.5×10^{-5}**
% of Total	8%	82%	<1%	10%	
Sector 4	1.5×10^{-7}	3.5×10^{-6}	1.6×10^{-8}	NV	**3.7×10^{-6}**
% of Total	4%	96%	<1%	NV	
Sector 5	1.0×10^{-5}	3.8×10^{-4}	2.1×10^{-8}	6.4×10^{-6}	**4.0×10^{-4}**
% of Total	3%	96%	<1%	2%	
Sector 6	3.9×10^{-5}	1.1×10^{-3}	3.1×10^{-8}	1.4×10^{-5}	**1.1×10^{-3}**
% of Total	3%	95%	<1%	1%	
Sector 7	9.3×10^{-7}	1.2×10^{-4}	1.5×10^{-8}	9.6×10^{-7}	**1.2×10^{-4}**
% of Total	<1%	98%	<1%	<1%	
Sector 8	1.1×10^{-6}	2.4×10^{-4}	2.1×10^{-8}	2.9×10^{-6}	**2.4×10^{-4}**
% of Total	<1%	98%	<1%	1%	
Sector 9	2.4×10^{-7}	1.7×10^{-6}	1.0×10^{-8}	3.2×10^{-6}	**5.2×10^{-6}**
% of Total	5%	33%	<1%	62%	

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of ELCRs. Two significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of two significant digits allows the reader to sum the route values and check the location total.

and for most sectors are PAHs and beryllium. Polychlorinated biphenyls (as a class) are the only other organic compounds which drive ELCR, and arsenic is the only other inorganic compound that drives ELCR. Radionuclides (cesium-137 and uranium-238) tend to be minor contributors to the total ELCR at all locations except Sector 9. In Sector 9, which has a small location total ELCR (5.2×10^{-6}), uranium isotopes contribute 65% of the total ELCR.

1.5.4 Risk Characterization for Potential Future Land Use Scenarios at Current Concentrations

This subsection presents exhibits and text which summarize hazard and risk for future land uses (i.e., industrial, recreational, residential, and excavation) for the WAG 6 area and each sector. The exhibits in this subsection relate the total hazard index or ELCR at each location and list the exposure routes and COPCs contributing most to total hazard index or ELCR. This subsection does not select land use scenarios,

Exhibit 1.25. Driving contaminants' summary for current use scenario–excess lifetime cancer risk

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Current industrial worker		
WAG 6 Area	PAHs (64%); beryllium (28%); arsenic (5%); cesium-137 (1%)	**3.3 × 10^{-4}**
Sector 1	ELCR < 1 × 10^{-6}	**NV**
Sector 2	PAHs (88%); uranium-238 (9%); uranium-235 (1%); PCBs (1%)	**1.7 × 10^{-5}**
Sector 3	PAHs (53%); PCBs (37%); cesium-137 (6%); uranium-238 (3%); neptunium-237 (1%)	**8.5 × 10^{-5}**
Sector 4	PAHs (95%); PCBs (5%)	**3.7 × 10^{-6}**
Sector 5	PAHs (68%); beryllium (31%); uranium-238 (1%)	**4.0 × 10^{-4}**
Sector 6	PAHs (86%); beryllium (9%); arsenic (3%)	**1.1 × 10^{-3}**
Sector 7	beryllium (85%); PAHs (14%)	**1.2 × 10^{-4}**
Sector 8	beryllium (93%); PAHs (5%)	**2.4 × 10^{-4}**
Sector 9	uranium-238 (53%); PAHs (34%); uranium-235 (12%)	**5.2 × 10^{-6}**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.

pathways, or COCs. The selection of land use scenarios, pathways, and COCs is discussed in Subsects. 1.5.7.1, 1.5.7.2, and 1.5.7.3, respectively.

Complete presentations of the information summarized in this subsection are given in Tables 1.68 through 1.75. Table 1.68 presents the systemic toxicity for each location for future industrial worker at current concentrations. Tables 1.69a and 1.69b present the risk summaries for systemic toxicity for each sector for future adult and child rural residents at current concentrations, respectively. Tables 1.70a, 1.70b, and 1.70c present the risk summaries for systemic toxicity for each location for adult, child, and teen recreational users at current concentrations, respectively. Table 1.71 presents the risk summaries for systemic toxicity for each location for the future excavation worker at current concentrations. Table 1.72 presents the ELCR for each location for future industrial worker at current concentrations. Table 1.73 presents the risk summaries for ELCR for each location for future adult and child rural residents at current concentrations. Table 1.74 presents the risk summaries for ELCR for each location for adult, child, and teen recreational users at current concentrations. Finally, Table 1.75 presents the risk summaries for ELCR for each location for the future excavation worker at current concentrations. In each table, the risk for each contaminant within each pathway, the risk for each contaminant across all pathways, the risk from each pathway, and the total risk across all pathways are presented. The program used to calculate the risk values in these tables is Program 10 described in App. D of this volume.

1.5.4.1 Systemic toxicity

Future Onsite Industrial Worker at Current Concentrations. Exhibit 1.26 summarizes the hazard indices for exposure routes for the future industrial worker over all locations. As shown in this exhibit, the total hazard indices for exposure to water drawn from within the WAG 6 area from either the RGA or the McNairy Formation are greater than 1,000. This result is because of the presence of lead in the water. However, as discussed in footnote c, even if lead is not included in the calculation, the location total hazard index remains greater than 1. For both water sources, the driving exposure route is ingestion of groundwater.

Exhibit 1.26. Exposure route summary for future use scenario–systemic toxicity[a] for the future industrial worker

Scenario and Location	Exposure Routes for Water[b]			Exposure Routes for Soil			Location Total
	Ingestion	Dermal Contact	Inhalation Vapors	Incidental Ingestion	Dermal Contact	Inhalation Vapors/ Particles	
Future industrial worker							
WAG 6 RGA	3,230	83.5	0.6	NA	NA	NA	**3,230 [c]**
% of Total	98%	3%	<1%	NV	NV	NV	
WAG 6 McNairy	11,200	272	<0.1	NA	NA	NA	**11,500 [c]**
% of Total	98%	2%	<1%	NV	NV	NV	
WAG 6 Soil	NA	NA	NA	39.1	1,120	<0.1	**1,160 [c]**
% of Total	NV	NV	NV	3%	97%	<1%	
Sector 1	NA	NA	NA	NA	NA	NA	**NV**
% of Total	NV	NV	NV	NV	NV	NV	
Sector 2	NA	NA	NA	<0.1	0.4	<0.1	**0.4**
% of Total	NV	NV	NV	1%	99%	<1%	
Sector 3	NA	NA	NA	<0.1	0.3	<0.1	**0.3**
% of Total	NV	NV	NV	2%	98%	<1%	
Sector 4	NA	NA	NA	<0.1	1.0	<0.1	**1.0**
% of Total	NV	NV	NV	1%	99%	<1%	
Sector 5	NA	NA	NA	<0.1	1.7	<0.1	**1.8**
% of Total	NV	NV	NV	2%	98%	<1%	
Sector 6	NA	NA	NA	<0.1	1.2	<0.1	**1.2**
% of Total	NV	NV	NV	5%	95%	<1%	
Sector 7	NA	NA	NA	63.7	1,830	<0.1	**1,890[c]**
% of Total	NV	NV	NV	3%	97%	<1%	
Sector 8	NA	NA	NA	<0.1	1.0	<0.1	**1.0**
% of Total	NV	NV	NV	<1%	99%	<1%	
Sector 9	NA	NA	NA	<0.1	1.3	NV	**1.3**
% of Total	NV	NV	NV	1%	99%	NV	

Notes: For water exposure routes, NA indicates that a separate sector value was not calculated. As noted elsewhere, risk from water use was evaluated on an area basis only.
For soil exposure routes, NA indicates that the scenario is not applicable for the location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of hazard indices. Three significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of three significant digits, when the exposure route's value is greater than 0.1, allows the reader to sum the route values and check the location total.

[b] Risks from groundwater use were calculated on an area basis because all locations are contiguous. In addition, risks for use of water from the RGA were calculated separately from those for water from the McNairy Formation.

[c] The very large values reported result from the retention of lead as a COPC. For water, lead was retained because a background screen was not performed. For soil, lead was retained as a COPC for the WAG 6 area and Sector 7, but the maximum detected concentration of lead was only slightly greater than the surface soil background concentration (42 mg/kg versus 36 mg/kg, respectively). Without lead retained as a COPC, the location total hazard indices for RGA groundwater, McNairy Formation groundwater, the WAG 6 area (soil), and Sector 7 (soil) are 37.7, 20.6, 1.84, and 1.64, respectively.

The results for exposure to soil presented in this exhibit match those for the current industrial worker. (See Exhibit 1.22.) As with the current industrial worker, the total scenario hazard index is greater than 1 for the WAG 6 area, and Sectors 5, 6, 7, and 9. The scenario totals for the WAG 6 area and Sector 7 are very large because of the presence of lead at concentrations greater than background. However, even if hazard from lead is not considered, the total location hazard index is greater than 1. (See footnote c.) For each location, the driving exposure route is dermal contact with soil, which accounts for more than 95% of the total hazard index. Also for each location, the inhalation exposure route contributes insignificantly to the location total hazard.

Exhibit 1.27 summarizes the contaminants contributing more than 1% of the total systemic toxicity for the future industrial worker over all locations for those locations where the total hazard index for the location exceeds 1. As shown in this exhibit, in each case, for both groundwater and soil, metals are the primary driving contaminants; however, PCBs and PAHs are minor contaminants in Sector 6, and, if the contribution from lead is not considered, the organic compound trichloroethene becomes the driving contaminant for RGA groundwater. (See footnote a.)

Exhibit 1.27. Driving contaminants' summary for future use scenario-systemic toxicity for the future industrial worker

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future industrial worker		
WAG 6 RGA	lead (99%)[a]	**3,320**
WAG 6 McNairy	lead (>99%)[b]	**11,500**
WAG 6 Area	lead (>99%)[c]	**1,160**
Sector 1	HI < 1	**NV**
Sector 2	HI < 1	**0.4**
Sector 3	HI < 1	**0.3**
Sector 4	HI < 1	**1.0**
Sector 5	iron (47%); chromium (26%); antimony (22%); uranium (3%)	**1.8**
Sector 6	chromium (22%); antimony (22%); arsenic (20%); PCB (13%); aluminum (13%); pyrene (2%); fluoranthene (1%)	**1.2**
Sector 7	lead (>99%)[d]	**1,890**
Sector 8	HI < 1	**1.0**
Sector 9	antimony (58%); aluminum (23%); chromium (17%); uranium (2%)	**1.3**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.
HI<1 indicates that total scenario hazard index is less than 1; therefore, analytes are not listed.

[a] Without lead as a COPC, the location total hazard index for WAG 6 RGA is 37.7. The contaminants contributing more than 1% to this value are trichloroethene (49%); iron (34%); carbon tetrachloride (5%); arsenic (3%); manganese (1%); and *cis*-1,2-dichloroethene (1%).

[b] Without lead as a COPC, the location total hazard index for WAG 6 McNairy is 20.6. The contaminants contributing more than 1% to this value are arsenic (42%); iron (35%); vanadium (9%); aluminum (4%); chromium (3%); manganese (2%); di-n-octylphthalate (1%); and zinc (1%).

[c] Without lead as a COPC, location total hazard index for the WAG 6 area is 1.84. The contaminants contributing more than 1% of this value are: iron (29%); vanadium (23%); antimony (17%); chromium (14%); aluminum (7%); arsenic (5%); PCBs (2%); uranium (1%); and cadmium (1%).

[d] Without lead as a COPC, the location total hazard index is 1.64. The contaminants contributing more than 1% of this value are: iron (36%); vanadium (30%); chromium (26%); and antimony (6%).

Future Onsite Rural Resident at Current Concentrations. Exhibit 1.28 summarizes the hazard indices for exposure routes for the future child onsite rural resident over all locations taken from Table 1.71b. (Although results for the future adult onsite rural resident were calculated and are presented in Table 1.71a, these results are not summarized here because the child is the most sensitive receptor for systemic toxicity for this scenario.) As shown in Exhibit 1.28, the total hazard indices for exposure to water drawn from within the WAG 6 area from either the RGA or the McNairy Formation are greater than 10,000. This result is because of the presence of lead in the water. However, as discussed in footnote c, even if lead is not included in the calculation, the location total hazard index remains greater than 1. For both water sources, the driving exposure routes are ingestion of groundwater (59%) and consumption of vegetables irrigated with groundwater (40%).

For exposure to soil, the hazard indices for all locations are markedly larger than 1. For all locations, the exposure route of greatest importance is consumption of vegetables grown in the location's soil, and the exposure route with the second greatest impact upon the total hazard indices is dermal contact with soil. As with groundwater, two locations, the WAG 6 area and Sector 7, have very large hazard indices because of the presence of lead in the list of COPCs. However, even if hazard from lead is not considered, the total location hazard indices for these areas are greater than 1. (See footnote c.) As with the results for the industrial worker, the inhalation exposure route contributes insignificantly to the location total hazard index in each case.

Exhibit 1.29 summarizes the contaminants contributing more than 1% of the total systemic toxicity for the future child onsite rural resident over all locations for those locations where the total hazard index for the location exceeds 1. As shown in this exhibit, in each case except Sector 6, for both groundwater and soil, metals are the primary driving contaminants. For Sector 6, PCBs are the driving contaminants. Additionally, if the contribution from lead to hazard from RGA groundwater use is not considered, the organic compound trichloroethene becomes the driving contaminant. (See footnote a.)

Future Onsite Recreational User at Current Concentrations. Exhibit 1.30 summarizes the hazard indices for exposure routes for the future teen onsite recreational user taken from Table 1.72c. (Although results for the future child and future adult onsite recreational users were calculated and are presented in Tables 1.72a and 1.72b, respectively, these results are not summarized here because the teen is the most sensitive receptor for systemic toxicity for this scenario.) As shown in Exhibit 1.30, the total scenario hazard index is greater than 1 for the WAG 6 area only, and this value is primarily because of the hazard contributed by consumption of deer (i.e., venison). However, as noted in footnote b, if contribution from lead over the WAG 6 area is not considered, then the total location hazard index for the WAG 6 area is less than 1.

Exhibit 1.31 summarizes the contaminants contributing more than 1% of the total systemic toxicity for the future teen recreational user over all locations for those locations where the total hazard index for the location exceeds 1. As discussed earlier, the only location where total hazard index exceeds 1 is for the WAG 6 area, and the driving contaminants is lead. If contribution from lead is removed, then the total hazard index is less than 1 and driving contaminants are not chosen.

Future Onsite Excavation worker. Exhibit 1.32 summarizes the hazard indices for exposure routes for the future excavation worker over all locations. As shown in this exhibit, the total scenario hazard indices are greater than 1 for the WAG 6 area and all sectors. As with other scenarios, the scenario total hazard indices for the WAG 6 area and Sectors 3, 4, 5, 7, 8, and 9 are very large because of the presence of lead at concentrations slightly greater than background. However, even if hazard from lead is not considered, the total location hazard index is greater than 1 at all locations except Sector 3. (See footnote b.) For Sector 3, the location total falls to 0.7. For each location, the driving exposure route is dermal contact with soil, which accounts for approximately 75% of the total hazard index. Also, for each location, the inhalation exposure route contributes insignificantly to the location total hazard index.

Exhibit 1.28. Exposure route summary for the future use scenario– systemic toxicity[a] for the future child onsite rural resident

Scenario and Location	Exposure Routes for Water[b]				Exposure Routes for Soil				Location Total
	Ingestion	Dermal Contact	Inhalation Vapors	Ingestion of Vegetables	Incidental Ingestion	Dermal Contact	Inhalation Vapors/ Particles	Ingestion of Vegetables	
Future child onsite rural resident									
WAG 6 RGA	21,900	224	53.2	14,800	NA	NA	NA	NA	**36,900[c]**
% of Total	59%	<1%	<1%	40%	NV	NV	NV	NV	
WAG 6 McNairy	75,600	728	0.1	51,000	NA	NA	NA	NA	**127,000[c]**
% of Total	59%	<1%	<1%	40%	NV	NV	NV	NV	
WAG 6 Soil	NA	NA	NA	NA	1,060	6,570	<0.1	71,600	**79,300[c]**
% of Total	NV	NV	NV	NV	1%	8%	<1%	90%	
Sector 1	NA	NA	NA	NA	NA	NA	NA	NA	**NV**
% of Total	NV	NV	NV	NV	NV	NV	NV	NV	
Sector 2	NA	NA	NA	NA	0.1	2.5	NV	8.1	**10.6**
% of Total	NV	NV	NV	NV	1%	23%	NV	76%	
Sector 3	NA	NA	NA	NA	0.2	1.9	<0.1	11.2	**13.3**
% of Total	NV	NV	NV	NV	1%	14%	<1%	84%	
Sector 4	NA	NA	NA	NA	0.3	5.7	<0.1	18.8	**24.8**
% of Total	NV	NV	NV	NV	1%	23%	<1%	76%	
Sector 5	NA	NA	NA	NA	1.1	10.0	<0.1	74.4	**85.5**
% of Total	NV	NV	NV	NV	1%	12%	<1%	87%	
Sector 6	NA	NA	NA	NA	1.59	6.8	<0.1	110	**119.0**
% of Total	NV	NV	NV	NV	1%	6%	<1%	93%	
Sector 7	NA	NA	NA	NA	1,720	10,700	<0.1	117,000	**129,000[c]**
% of Total	NV	NV	NV	NV	1%	8%	<1%	90%	
Sector 8	NA	NA	NA	NA	0.2	5.8	<0.1	12.8	**18.8**
% of Total	NV	NV	NV	NV	<1%	31%	<1%	68%	
Sector 9	NA	NA	NA	NA	0.4	7.6	NV	28.8	**36.8**
% of Total	NV	NV	NV	NV	1%	21%	NV	78%	

Notes: For water exposure routes, NA indicates that a separate sector value was not calculated. As noted elsewhere, risk from water use was evaluated on an area basis only.
For soil exposure routes, NA indicates that the scenario is not applicable for the location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of hazard indices. Three significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of three significant digits, when the exposure route's value is greater than 0.1, allows the reader to sum the route values and check the location total.

[b] Risks from groundwater use were calculated on an area basis because all locations are contiguous. In addition, risks from use of water drawn from the RGA were calculated separately from those for water drawn from the McNairy Formation.

[c] The very large values reported here are because of the retention of lead as a COPC. For water, lead was retained because a background screen was not performed. For soil, lead was retained as a COPC for the WAG 6 area and Sector 7, but the maximum detected concentration of lead was only slightly greater than the surface soil background concentration (42 mg/kg versus 36 mg/kg, respectively). Without lead retained as a COPC, the location total hazard indices for RGA groundwater, McNairy Formation groundwater, the WAG 6 area (soil), and Sector 7 (soil) are 475, 224, 89.6, and 53.6, respectively.

Exhibit 1.29. Driving contaminants' summary for future use scenario-systemic toxicity for the future child onsite rural resident

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future child onsite rural resident		
WAG 6 RGA	lead (99%)[a]	**36,900[a]**
WAG 6 McNairy	lead (>99%)[b]	**127,000[b]**
WAG 6 Area	lead (>99%)[c]	**79,300[c]**
Sector 1	HI < 1	**NA**
Sector 2	chromium (55%); uranium (40%); zinc (4%)	**10.6**
Sector 3	uranium (63%); chromium (31%); cadmium (5%)	**13.3**
Sector 4	aluminum (59%); chromium (29%); antimony (9%); cadmium (2%)	**24.8**
Sector 5	iron (66%); uranium (18%); chromium (8%); antimony (7%)	**85.5**
Sector 6	PCBs (38%); arsenic (36%); uranium (9%); aluminum (6%); antimony (3%); chromium (3%); cadmium (1%); pyrene (1%)	**119**
Sector 7	lead (>99%)[d]	**129,000[d]**
Sector 8	chromium (44%); antimony (29%); uranium (23%); cadmium (3%); beryllium (2%)	**18.8**
Sector 9	aluminum (39%); antimony (31%); uranium (22%); chromium (9%)	**36.8**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.
HI<1 indicates that total scenario hazard index is less than 1; therefore, analytes are not listed.

[a] Without lead as a COPC, the location total hazard index for WAG 6 RGA is 475. The contaminants contributing more than 1% to this value are trichloroethene (46%); iron (30%); carbon tetrachloride (14%); arsenic (2%); *cis*-1,2-dichloroethene (1%), aluminum (1%); and manganese (1%).

[b] Without lead as a COPC, the location total hazard index for WAG 6 McNairy is 224. The contaminants contributing more than 1% to this value are arsenic (44%); iron (36%); vanadium (8%); aluminum (4%); chromium (3%); zinc (2%); and manganese (1%).

[c] Without lead as a COPC, location total hazard index for the WAG 6 area is 89.6. The contaminants contributing more than 1% of this value are iron (40%); arsenic (19%); uranium (9%); PCBs (9%); aluminum (7%); antimony (5%); vanadium (5%); and chromium (4%).

[d] Without lead as a COPC, the location total hazard index is 53.6. The contaminants contributing more than 1% of this value are iron (75%); chromium (12%); vanadium (9%); and antimony (6%).

Exhibit 1.33 summarizes the contaminants contributing more than 1% of the total systemic toxicity for the future excavation worker over all locations. As shown in this exhibit, in each case, metals are the primary driving contaminants, and when lead is a COPC, it contributes more than 99% of the total value. If the contribution from lead as a COPC is removed, then metals remain the driving contaminants for all locations except the WAG 6 area as a whole. For the WAG 6 area, the driving contaminant after contribution from lead is removed, is trichloroethene which accounts for 50% of the location total. (See footnote a.) For Sector 4, after removing the contribution from lead as a COPC, metals remain the driving contaminants; however, contributions from trichloroethene and *trans*-1,2-dichloroethene gain in importance.

Exhibit 1.30. Exposure route summary for the future use scenario–systemic toxicity[a] for the future teen recreational user

Scenario and Location	Exposure Routes for Soil: Consumption of Deer	Consumption of Rabbit	Consumption of Quail	Location Total
Future teen recreational user				
WAG 6 Area	3.0	0.6	<0.1	**3.6[b]**
% of Total	83%	16%	<1%	
Sector 1	NA	NA	NA	**NV**
% of Total	NV	NV	NV	
Sector 2	<0.1	<0.1	<0.1	**<0.1**
% of Total	14%	73%	13%	
Sector 3	<0.1	<0.1	<0.1	**<0.1**
% of Total	6%	35%	59%	
Sector 4	<0.1	<0.1	<0.1	**<0.1**
% of Total	15%	81%	5%	
Sector 5	<0.1	<0.1	<0.1	**<0.1**
% of Total	12%	68%	20%	
Sector 6	<0.1	<0.1	<0.1	**<0.1**
% of Total	<1%	55%	36%	
Sector 7	<0.1	0.3	<0.1	**0.4**
% of Total	16%	87%	<1%	
Sector 8	<0.1	<0.1	<0.1	**<0.1**
% of Total	14%	48%	38%	
Sector 9	<0.1	<0.1	<0.1	**<0.1**
% of Total	10%	33%	57%	

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of hazard indices. Three significant digits are used here when the hazard index is greater than 0.1 to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of three significant digits, when the exposure route's value is greater than 0.1, allows the reader to sum the route values and check the location total.

[b] The magnitude of this value is primarily the result of the retention of lead as a COPC at a value only slightly greater than background (42 mg/kg versus 36 mg/kg) and the use of a provisional reference dose provided in comments by KDEP. The scenario total without lead is 0.1 for the WAG 6 area.

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Exhibit 1.31. Driving contaminants' summary for future use scenario-systemic toxicity for the future teen recreational user

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future teen recreational user		
WAG 6 Area	lead (97%); iron (2%)	**3.6[a]**
Sector 1	NA	**NV**
Sector 2	HI<1	**<0.1**
Sector 3	HI<1	**<0.1**
Sector 4	HI<1	**<0.1**
Sector 5	HI<1	**<0.1**
Sector 6	HI<1	**<0.1**
Sector 7	HI<1	**0.4**
Sector 8	HI<1	**<0.1**
Sector 9	HI<1	**<0.1**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.
HI<1 indicates that total scenario hazard index is less than 1; therefore, analytes are not listed.

[a] Without lead as a COPC, the scenario location total is less than 0.1; therefore, analytes would not be listed if contribution from lead is not included.

Exhibit 1.32. Exposure route summary for future use scenario–systemic toxicity[a] for the future excavation worker

Scenario and Location	Exposure Routes for Soil			Location Total
	Incidental Ingestion	Dermal Contact	Inhalation of Vapors/Particles	
Future excavation worker				
WAG 6 Area	203	609	<0.1	**812[b]**
% of Total	25%	75%	<1%	
Sector 1	0.2	1.5	<0.1	**1.7**
% of Total	14%	86%	<1%	
Sector 2	0.1	1.1	<0.1	**1.2**
% of Total	11%	89%	<1%	
Sector 3	198	592	<0.1	**790[b]**
% of Total	25%	75%	<1%	
Sector 4	192	575	<0.1	**767[b]**
% of Total	25%	75%	<1%	
Sector 5	193	877	<0.1	**770[b]**
% of Total	25%	75%	<1%	
Sector 6	0.7	1.5	<0.1	**2.1**
% of Total	31%	69%	<1%	
Sector 7	216	647	<0.1	**863[b]**
% of Total	25%	75%	<1%	

Exhibit 1.32. (continued)

Scenario and Location	Exposure Routes for Soil			Location Total
	Incidental Ingestion	Dermal Contact	Inhalation of Vapors/Particles	
Sector 8	470	1,400	<0.1	**1,870[b]**
% of Total	25%	75%	<1%	
Sector 9	417	1,250	<0.1	**1,660[b]**
% of Total	25%	75%	<1%	

Notes:

[a] Current convention is to use one significant digit for presentation of hazard indices. Three significant digits are used here when the hazard index is greater than 0.1 to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of three significant digits, when the exposure route's value is greater than 0.1, allows the reader to sum the route values and check the location total.

[b] These very large values are the result of the retention of lead as a COPC at values only slightly greater than background and the use of a provisional reference dose provided in comments by KDEP. For example, the maximum detected concentration of lead in subsurface soil for the WAG 6 area was 87.5 mg/kg versus a subsurface background concentration of 23.0 mg/kg. Similarly, the maximum detected concentrations of lead in subsurface soils in Sectors 3, 4, 5, 7, 8, and 9 were 24.5, 24.5, 28.8, 42.0, 87.5, and 29.6 mg/kg, respectively, versus the subsurface background of 23.0 mg/kg. The scenario totals without lead are WAG 6 area (3.3), Sector 3 (0.7), Sector 4 (1.6), Sector 5 (1.6), Sector 7 (1.7), Sector 8 (4.4), and Sector 9 (2.7).

Exhibit 1.33. Driving contaminants' summary for future use scenario–systemic toxicity for the future excavation worker

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Current industrial worker		
WAG 6 Area	lead (>99%) [a]	**812[a]**
Sector 1	iron (45%); antimony (34%); chromium (21%)	**1.7**
Sector 2	vanadium (28%); antimony (20%); manganese (16%); chromium (14%); aluminum (10%); uranium (5%); arsenic (5%); barium (2%)	**1.2**
Sector 3	lead (>99%)[b]	**790[b]**
Sector 4	lead (>99%)[c]	**767[c]**
Sector 5	lead (>99%)[d]	**770[d]**
Sector 6	arsenic (50%); vanadium (16%); chromium (9%); antimony (8%); aluminum (7%); uranium (4%); PCBs (4%); barium (1%)	**2.1**
Sector 7	lead (>99%)[e]	**863[e]**
Sector 8	lead (>99%)[f]	**1,870[f]**
Sector 9	lead (>99%)[g]	**1,660[g]**

Notes:

[a] Without lead as a COPC, the location total hazard index is 3.3. The contaminants contributing more than 1% of this value are trichloroethene (50%); iron (14%); vanadium (10%); manganese (6%); chromium (5%); aluminum (3%); antimony (3%); arsenic (2%); and nickel (2%)

[b] Without lead as a COPC, the location total hazard index is 0.7. Therefore, drivers are not listed.

Exhibit 1.33. (continued)

[c] Without lead as a COPC, the location total hazard index is 1.6. The contaminants contributing more than 1% of this value are iron (29%); vanadium (20%); manganese (12%); chromium (10%); aluminum (7%); antimony (6%); arsenic (5%); trichloroethene (4%); PCBs (2%); barium (1%); and *trans*-1,2-dichloroethene (1%).

[d] Without lead as a COPC, the location total hazard index is 1.6. The contaminants contributing more than 1% of this value are iron (30%); vanadium (18%); antimony (15%); manganese (11%); chromium (9%); aluminum (7%); arsenic (5%); and barium (1%).

[e] Without lead as a COPC, the location total hazard index is 1.7. The contaminants contributing more than 1% of this value are iron (29%); vanadium (22%); manganese (12%); antimony (12%); aluminum (7%); arsenic (4%); and uranium (1%).

[f] Without lead as a COPC, the location total hazard index is 4.43. The contaminants contributing more than 1% of this value are nickel (30%); uranium (17%); iron (15%); chromium (12%); copper (8%); manganese (7%); antimony (6%); aluminum (3%); and arsenic (3%).

[g] Without lead as a COPC, the location total hazard index is 2.74. The contaminants contributing more than 1% of this value are iron (24%); vanadium (19%); antimony (18%); manganese (18%); chromium (7%); arsenic (6%); aluminum (5%); and uranium (1%).

1.5.4.2 Excess lifetime cancer risk

Future Onsite Industrial Worker at Current Concentrations. Exhibit 1.34 summarizes the hazard indices for exposure routes for the future industrial worker over all locations. As shown in this exhibit, the total hazard indices for exposure to water drawn from within the WAG 6 area from either the RGA or the McNairy Formation are greater than 1×10^{-4}. For both water sources, the driving exposure route is ingestion of groundwater.

The results for exposure to soil presented in this exhibit match those for the current industrial worker. (See Exhibit 1.24.) As with the current industrial worker, in each case, except the Sector 1 (Central Sector) where the C-400 building covers the site, the total ELCR is greater than 1×10^{-6}. The sector with the greatest value for ELCR is Sector 6, and that with the smallest is Sector 4. Over all locations, except Sector 9, the exposure route contributing most to ELCR is dermal contact with soil (range from 82 to 98%). For Sector 9, the driving exposure route is external exposure to ionizing radiation. Finally, over all locations, the inhalation of vapors and particulates emitted from soil exposure route contributes insignificantly to the location total (<1%).

Exhibit 1.35 summarizes the contaminants contributing more than 1% of the total ELCR for the future industrial worker over all locations. For both groundwater sources, trichloroethene and its breakdown products contribute to ELCR. However, the contributions of these chemicals is much greater for RGA water than for McNairy Formation water. For both water sources, lead-210 contributes significantly to the risk.

Results for ELCR for exposure to soil in Exhibit 1.35 match those in Exhibit 1.25. As noted earlier, the driving contaminants over the WAG 6 area and for most sectors are PAHs and beryllium. Polychlorinated biphenyls (as a class) are the only other organic compounds which drive ELCR, and arsenic is the only other inorganic compound that drives ELCR. Radionuclides (cesium-137 and uranium-238) tend to be minor contributors to the total ELCR at all locations except Sector 9. In Sector 9, which has a small location total ELCR (5.2×10^{-6}), uranium isotopes contribute 65% of the total ELCR.

Exhibit 1.34. Exposure route summary for future use scenario—excess lifetime cancer risk[a] for the future industrial worker

Scenario and Location	Exposure Routes for Water[b]			Exposure Routes for Soil				Location Total
	Ingestion	Dermal Contact	Inhalation Vapors	Incidental Ingestion	Dermal Contact	Inhalation Vapors/ Particles	External Exposure	
Future industrial worker								
WAG 6 RGA	2.3×10^{-3}	2.1×10^{-4}	2.0×10^{-4}	NA	NA	NA	NA	**2.7×10^{-3}**
% of Total	85%	8%	7%	NV	NV	NV	NV	
WAG 6 McNairy	4.4×10^{-3}	6.4×10^{-5}	2.6×10^{-5}	NA	NA	NA	NA	**5.8×10^{-3}**
% of Total	98%	1%	<1%	NV	NV	NV	NV	
WAG 6 Soil	NA	NA	NA	9.6×10^{-6}	3.2×10^{-4}	1.9×10^{-8}	8.0×10^{-6}	**3.3×10^{-4}**
% of Total	NV	NV	NV	3%	95%	<1%	2%	
Sector 1	NA	NA	NA	NA	NA	NA	NA	**NV**
% of Total	NV	NV	NV	NV	NV	NV	NV	
Sector 2	NA	NA	NA	6.3×10^{-7}	1.4×10^{-5}	1.5×10^{-8}	1.6×10^{-6}	**1.7×10^{-5}**
% of Total	NV	NV	NV	4%	86%	<1%	10%	
Sector 3	NA	NA	NA	6.4×10^{-6}	7.0×10^{-5}	1.3×10^{-8}	8.8×10^{-6}	**8.5×10^{-5}**
% of Total	NV	NV	NV	8%	82%	<1%	10%	
Sector 4	NA	NA	NA	1.5×10^{-7}	3.5×10^{-6}	1.6×10^{-8}	NV	**3.7×10^{-6}**
% of Total	NV	NV	NV	4%	96%	<1%	NV	
Sector 5	NA	NA	NA	1.0×10^{-5}	3.8×10^{-4}	2.1×10^{-8}	6.4×10^{-6}	**4.0×10^{-4}**
% of Total	NV	NV	NV	3%	96%	<1%	2%	
Sector 6	NA	NA	NA	3.9×10^{-5}	1.1×10^{-3}	3.1×10^{-8}	1.4×10^{-5}	**1.1×10^{-3}**
% of Total	NV	NV	NV	3%	95%	<1%	1%	
Sector 7	NA	NA	NA	9.3×10^{-7}	1.2×10^{-4}	1.5×10^{-8}	9.6×10^{-7}	**1.2×10^{-4}**
% of Total	NV	NV	NV	<1%	98%	<1%	<1%	
Sector 8	NA	NA	NA	1.1×10^{-6}	2.4×10^{-4}	2.1×10^{-8}	2.9×10^{-6}	**2.4×10^{-4}**
% of Total	NV	NV	NV	<1%	98%	<1%	1%	
Sector 9	NA	NA	NA	2.4×10^{-7}	1.7×10^{-6}	1.0×10^{-8}	3.2×10^{-6}	**5.2×10^{-6}**
% of Total	NV	NV	NV	5%	33%	<1%	62%	

Notes: For water exposure routes, NA indicates that a separate sector value was not calculated. As noted elsewhere, risk from water use was evaluated on an area basis only.
For soil exposure routes, NA indicates that the scenario is not applicable for the location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of ELCRs. Two significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of two significant digits allows the reader to sum the route values and check the location total.

[b] Risks from groundwater use were calculated on an area basis because all locations are contiguous. In addition, risks from use of water drawn from the RGA were calculated separately from those for water drawn from the McNairy Formation.

Exhibit 1.35. Driving contaminants' summary for future use scenario-excess lifetime cancer risk for the future industrial worker

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future industrial worker		
WAG 6 RGA	vinyl chloride (37%); lead-210 (24%); trichloroethene (20%); beryllium (8%); arsenic (6%); carbon tetrachloride (2%); 1,1-dichloroethene (1%)	**2.7×10^{-3}**
WAG 6 McNairy	lead-210 (59%); arsenic (31%); beryllium (4%); vinyl chloride (2%); thorium-234 (2%)	**4.5×10^{-3}**
WAG 6 Area	PAHs (64%); beryllium (28%); arsenic (5%); cesium-137 (1%)	**3.3×10^{-4}**
Sector 1	NA	**NV**
Sector 2	PAHs (88%); uranium-238 (9%); uranium-235 (1%); PCBs (1%)	**1.7×10^{-5}**
Sector 3	PAHs (53%); PCBs (37%); cesium-137 (6%); uranium-238 (3%); neptunium-237 (1%)	**8.5×10^{-5}**
Sector 4	PAHs (95%); PCBs (5%)	**3.7×10^{-6}**
Sector 5	PAHs (68%); beryllium (31%); uranium-238 (1%)	**4.0×10^{-4}**
Sector 6	PAHs (86%); beryllium (9%); arsenic (3%)	**1.1×10^{-3}**
Sector 7	beryllium (85%); PAHs (14%)	**1.2×10^{-4}**
Sector 8	beryllium (93%); PAHs (5%)	**2.4×10^{-4}**
Sector 9	uranium-238 (53%); PAHs (34%); uranium-235 (12%)	**5.2×10^{-6}**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.

Future Onsite Rural Resident at Current Concentrations. Exhibit 1.36 summarizes the ELCRs for a future onsite rural resident. As shown in this exhibit, the total ELCRs for use of water drawn from either the RGA or the McNairy Formation exceeds 1×10^{-4}. The exposure routes contributing the greatest for both water sources are ingestion of vegetables irrigated with groundwater and ingestion of water; however, for the RGA, inhalation of vapors during household use of water and during showering also contribute significantly to the total ELCR.

For exposure to soil, the ELCRs for all locations are larger than 1×10^{-4}. For all locations, the primary driving exposure route is consumption of vegetables grown in the location's soil. For all but Sector 9, the secondary driving exposure route is dermal contact with soil. For Sector 9, the secondary driving pathway is external exposure to ionizing radiation emitted by contaminants in surface soil.

Exhibit 1.37 summarizes the contaminants contributing more than 1% of the total ELCR for the future onsite rural resident over all locations. As shown in this exhibit, the lists of driving contaminants in water drawn from both the RGA and McNairy Formation are similar, but the order of importance changes. In RGA water, trichloroethene and its breakdown products, as a group, contribute 43% of the location total ELCR. However, in McNairy Formation water, these contaminants contribute only 9% of the total ELCR. Technetium-99, another site-related contaminant, contributes 45% of the total ELCR for RGA water but 10% of the total ELCR for McNairy Formation water. The importance of metals also varies between RGA water and McNairy Formation water. In RGA water, metals only contribute 4% of the total while for the McNairy Formation water the contribution is 36%. Finally, the contribution from lead-210 varies markedly between the RGA and the McNairy Formation. For the RGA, the contribution from lead-210 is only 6%; however, for the McNairy Formation, the contribution from lead-210 is 43%. It should be noted that the contribution

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Exhibit 1.36. Exposure route summary for the future use scenario—excess lifetime cancer risk[a] for the future onsite rural resident

Scenario and Location	Exposure Routes for Water[b]				Exposure Routes for Soil					Location Total
	Ingestion	Dermal Contact	Inhalation Vapors	Ingestion of Vegetables	Incidental Ingestion	Dermal Contact	Inhalation Vapors/ Particles	Ingestion of Vegetables	External Exposure	
Future onsite rural resident										
WAG 6 RGA	1.1×10^{-2}	5.4×10^{-4}	6.7×10^{-3}	4.5×10^{-2}	NA	NA	NA	NA	NA	**6.4×10^{-2}**
% of Total	17%	<1%	9%	69%	NV	NV	NV	NV	NV	
WAG 6 McNairy	2.0×10^{-2}	1.6×10^{-4}	7.6×10^{-4}	1.4×10^{-2}	NA	NA	NA	NA	NA	**3.5×10^{-2}**
% of Total	57%	<1%	2%	40%	NV	NV	NV	NV	NV	
WAG 6 Soil	NA	NA	NA	NA	9.7×10^{-5}	9.4×10^{-4}	6.0×10^{-8}	1.2×10^{-2}	5.4×10^{-5}	**1.3×10^{-2}**
% of Total	NV	NV	NV	NV	<1%	7%	<1%	92%	<1%	
Sector 1	NA	NA	NA	NA	NA	NA	NA	NA	NA	**NV**
% of Total	NV	NV	NV	NV	NV	NV	NV	NV	NV	
Sector 2	NA	NA	NA	NA	6.0×10^{-6}	4.2×10^{-5}	4.9×10^{-8}	7.5×10^{-4}	1.1×10^{-5}	**8.1×10^{-4}**
% of Total	NV	NV	NV	NV	<1%	5%	<1%	93%	1%	
Sector 3	NA	NA	NA	NA	6.5×10^{-5}	2.1×10^{-4}	4.3×10^{-8}	7.9×10^{-3}	5.9×10^{-5}	**8.2×10^{-3}**
% of Total	NV	NV	NV	NV	<1%	3%	<1%	96%	<1%	
Sector 4	NA	NA	NA	NA	1.5×10^{-6}	1.0×10^{-5}	5.6×10^{-8}	1.8×10^{-4}	NV	**1.9×10^{-4}**
% of Total	NV	NV	NV	NV	<1%	5%	<1%	94%	NV	
Sector 5	NA	NA	NA	NA	1.0×10^{-4}	1.1×10^{-3}	6.6×10^{-8}	1.2×10^{-2}	4.3×10^{-5}	**1.4×10^{-2}**
% of Total	NV	NV	NV	NV	<1%	8%	<1%	91%	<1%	
Sector 6	NA	NA	NA	NA	4.0×10^{-4}	3.2×10^{-3}	9.5×10^{-8}	4.7×10^{-2}	9.4×10^{-5}	**5.0×10^{-2}**
% of Total	NV	NV	NV	NV	<1%	6%	<1%	93%	<1%	
Sector 7	NA	NA	NA	NA	9.2×10^{-6}	3.6×10^{-4}	5.1×10^{-8}	1.1×10^{-3}	6.5×10^{-6}	**1.5×10^{-3}**
% of Total	NV	NV	NV	NV	<1%	24%	<1%	75%	<1%	
Sector 8	NA	NA	NA	NA	1.1×10^{-5}	7.0×10^{-4}	7.0×10^{-8}	1.3×10^{-3}	1.9×10^{-5}	**2.1×10^{-3}**
% of Total	NV	NV	NV	NV	<1%	34%	<1%	65%	<1%	
Sector 9	NA	NA	NA	NA	1.6×10^{-6}	5.1×10^{-6}	3.2×10^{-8}	2.4×10^{-4}	2.2×10^{-5}	**2.7×10^{-4}**
% of Total	NV	NV	NV	NV	<1%	2%	<1%	89%	8%	

Exhibit 1.36. (Continued)

Notes: For water exposure routes, NA indicates that a separate sector value was not calculated. As noted elsewhere, risk from water use was evaluated on an area basis only.
For soil exposure routes, NA indicates that the scenario is not applicable for the location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of ELCRs. Two significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of two significant digits allows the reader to sum the route values and check the location total.

[b] Risks from groundwater use were calculated on an area basis because all locations are contiguous. In addition, risks from use of water drawn from the RGA were calculated separately from those for water drawn from the McNairy Formation.

from lead-210 to the ELCR for both the RGA and McNairy Formation water use is suspect. The values are based on the analysis of a single sample from each aquifer.

For soil, the primary contaminants driving total ELCR over all locations are PAHs, PCBs, uranium-238, arsenic, and beryllium. In general, as a group, over all locations, PAHs are the contaminant that contributes most to ELCR. Specifically, this group of compounds contributes most to ELCR in assessment of the WAG 6 area and Sectors 2, 4, 5, 6, and 7. (Additionally, as seen in Table 1.73, this effect is primarily through consumption of vegetables exposure route.) Alternatively,

Exhibit 1.37. Driving contaminants' summary for future use scenario-excess lifetime cancer risk for the future onsite rural resident

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future onsite rural resident		
WAG 6 RGA	technetium-99 (45%); vinyl chloride (30%); trichloroethene (12%); lead-210 (6%); beryllium (2%); arsenic (2%); 1,1-dichloroethene (1%)	**6.4×10^{-2}**
WAG 6 McNairy	lead-210 (43%); arsenic (33%); technetium-99 (10%); vinyl chloride (6%); beryllium (3%); 1,1-dichloroethene (3%); thorium-234 (1%)	**3.5×10^{-2}**
WAG 6 Area	PAHs (77%); arsenic (14%); beryllium (4%); PCBs (2%); uranium-238 (1%)	**1.3×10^{-2}**
Sector 1	NA	**NV**
Sector 2	PAHs (84%); uranium-238 (11%); PCBs (5%)	**8.1×10^{-4}**
Sector 3	PCBs (72%); PAHs (25%); uranium-238 (2%)	**8.2×10^{-3}**
Sector 4	PAHs (83%); PCBs (17%)	**1.9×10^{-4}**
Sector 5	PAHs (92%); beryllium (5%); uranium-238 (2%)	**1.4×10^{-2}**
Sector 6	PAHs (88%); arsenic (9%); beryllium (1%); PCBs (1%)	**5.0×10^{-2}**
Sector 7	PAHs (55%); beryllium (41%); uranium-238 (4%)	**1.5×10^{-3}**
Sector 8	beryllium (63%); PAHs (29%); uranium-238 (4%); neptunium-237 (3%)	**2.1×10^{-3}**
Sector 9	uranium-238 (63%); PAHs (31%); PCBs (2%); uranium-235 (4%)	**2.7×10^{-4}**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.
HI<1 indicates that total scenario hazard index is less than 1; therefore, analytes are not listed.

the primary contaminant contributing to total ELCR in Sector 3 is PCBs as a group, the primary contaminant contributing to total ELCR in Sector 8 is beryllium, and the primary contaminant contributing to total ELCR in the assessment of Sector 9 is uranium-238. In general, over all locations, the significance of the contributions from radionuclides to ELCR pales in comparison to that from organic compounds (i.e., PAHs and PCBs) and inorganic chemicals.

Future Onsite Recreational User at Current Concentrations. Exhibit 1.38 summarizes the ELCRs for exposure routes for the future onsite recreational user. As shown in this exhibit, the total scenario ELCR is greater than 1×10^{-4} for the WAG 6 area only, and this value is primarily because of the risk contributed by consumption of deer (i.e., venison). However, scenario total ELCR exceeds 1×10^{-6} for Sectors 3, 5, 6, and 8, and the driving exposure route is consumption of rabbit. The difference between the WAG 6 area result and the sector results is primarily because of the

Exhibit 1.38. Exposure route summary for the future use scenario—excess lifetime cancer risk[a] for the future recreational user

Scenario and Location	Exposure Routes for Soil			Location Total
	Consumption of Deer	Consumption of Rabbit	Consumption of Quail	
Future recreational user				
WAG 6 Area	7.4×10^{-5}	2.3×10^{-5}	9.7×10^{-6}	**1.1×10^{-4}**
% of Total	69%	22%	9%	
Sector 1	NA	NA	NA	**NV**
% of Total	NV	NV	NV	
Sector 2	4.2×10^{-8}	3.6×10^{-7}	6.3×10^{-8}	**2.7×10^{-7}**
% of Total	9%	78%	14%	
Sector 3	5.8×10^{-7}	5.1×10^{-6}	2.8×10^{-7}	**5.9×10^{-6}**
% of Total	10%	86%	5%	
Sector 4	1.3×10^{-8}	1.2×10^{-7}	2.3×10^{-8}	**1.5×10^{-7}**
% of Total	9%	76%	15%	
Sector 5	2.4×10^{-6}	2.1×10^{-5}	2.2×10^{-6}	**2.3×10^{-5}**
% of Total	9%	82%	9%	
Sector 6	3.0×10^{-6}	2.6×10^{-5}	3.1×10^{-6}	**3.2×10^{-5}**
% of Total	9%	81%	10%	
Sector 7	4.3×10^{-8}	3.8×10^{-7}	8.8×10^{-8}	**5.4×10^{-9}**
% of Total	9%	74%	17%	
Sector 8	1.5×10^{-7}	8.4×10^{-7}	2.9×10^{-7}	**1.3×10^{-6}**
% of Total	12%	65%	23%	
Sector 9	2.6×10^{-8}	1.4×10^{-7}	1.0×10^{-7}	**2.7×10^{-7}**
% of Total	10%	53%	38%	

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.

[a] Current convention is to use one significant digit for presentation of ELCRs. Two significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of two significant digits allows the reader to sum the route values and check the location total.

incorporation of the range of the animal in the calculation of contaminant dose to the animal. For the sector risk assessments, the area of the sector makes up only a small portion of the range of a deer in western Kentucky (i.e., 494 acres versus average sector area of approximately 1.8 acres), but for the WAG 6 area risk assessment, the size of the WAG 6 area makes up a much larger portion of a deer's range (i.e., 494 acres versus WAG 6 area size of 17). This effect is more pronounced for the rabbit which has an average range in western Kentucky of 3.6 acres versus the average sector area of approximately 1.8 acres.

Exhibit 1.39 presents the contaminants driving ELCR for those locations where total scenario risk exceeds 1×10^{-6}. In each case, except Sector 3, the contaminant contributing the most to total ELCR is PAHs as a group. For Sector 3, the contaminant contributing the most to total ELCR is PCBs as a group.

Exhibit 1.39. Driving contaminants' summary for future use scenario-excess lifetime cancer risk for the future recreational user

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future recreational user		
WAG 6 Area	PAHs (96%); PCBs (3%)	**1.1×10^{-4}**
Sector 1	NA	**NV**
Sector 2	ELCR < 1×10^{-6}	**4.7×10^{-7}**
Sector 3	PCBs (84%); PAHs (16%)	**5.9×10^{-6}**
Sector 4	ELCR < 1×10^{-6}	**1.5×10^{-7}**
Sector 5	PAHs (99%)	**2.5×10^{-5}**
Sector 6	PAHs (98%); PCBs (1%)	**3.2×10^{-5}**
Sector 7	ELCR < 1×10^{-6}	**5.1×10^{-7}**
Sector 8	PAHs (95%); uranium-238 (3%); beryllium (3%)	**1.3×10^{-6}**
Sector 9	ELCR < 1×10^{-6}	**2.5×10^{-7}**

Notes: NA indicates that the scenario is not applicable for this location.
NV indicates that a value is not available.
ELCR < 1×10^{-6} indicates that total scenario ELCR is less than 1×10^{-6}; therefore, analytes are not listed.

Future Onsite Excavation worker. Exhibit 1.40 summarizes the ELCRs for exposure routes for the future excavation worker over all locations. As shown in this exhibit, the total scenario ELCRs are greater than 1×10^{-4} for the WAG 6 area and all sectors. For most sectors, the exposure route contributing most to total ELCR is dermal contact. However, for the WAG 6 area and Sector 4, the exposure route contributing most to total scenario ELCR is inhalation of vapors and particulates emitted from soil. This exposure route is also an important contributor to total risk for Sector 5. This result is unique because for all other scenarios assessed, the inhalation exposure route contributes insignificantly to the location total risk. Sector 1 is also unique in that external exposure to ionizing radiation emitted from contaminants in soil is the driving exposure route. This is the only location and only scenario where external exposure is the driving exposure route.

Exhibit 1.41 lists the contaminants contributing more than 1% of the total ELCR for each location. Contaminants appearing in the list over all locations (excluding Sector 1) are beryllium and PAHs. Of these, beryllium is seen to be the contaminant contributing most to location total ELCR for Sectors 2, 3, 5, 7, 8, and 9; PAHs, as a group, are the primary driving contaminants for Sector 6. For the WAG 6 area and Sector 4, the contaminant contributing most to total ELCR is vinyl chloride. This contaminant is also an important contributor to ELCR for Sector 5. For Sector 1, which is the area below the C-400 Building, the primary contaminant is cesium-137. This contaminant is also an important contributor to total risk for Sectors 3, 8, and 9. Finally, the lists for Sectors 2 and 7 contain one unique contaminant, n-nitroso-di-n-propylamine.

Exhibit 1.40. Exposure route summary for future use scenario—excess lifetime cancer risk[a] for the future excavation worker

Scenario and Location	Exposure Routes for Soil				Location Total
	Incidental Ingestion	Dermal Contact	Inhalation of Vapors/Particles	External Exposure	
Future excavation worker					
WAG 6 Area	4.0×10^{-5}	1.9×10^{-4}	2.3×10^{-3}	6.1×10^{-6}	**2.6×10^{-3}**
% of Total	2%	7%	91%	<1%	
Sector 1	1.2×10^{-7}	3.3×10^{-9}	1.1×10^{-8}	1.9×10^{-6}	**2.0×10^{-6}**
% of Total	6%	<1%	<1%	93%	
Sector 2	2.7×10^{-5}	1.3×10^{-4}	1.4×10^{-8}	3.3×10^{-6}	**1.6×10^{-4}**
% of Total	17%	81%	<1%	2%	
Sector 3	1.7×10^{-5}	9.8×10^{-5}	3.0×10^{-8}	2.4×10^{-6}	**1.2×10^{-4}**
% of Total	15%	83%	<1%	2%	
Sector 4	2.0×10^{-5}	1.2×10^{-4}	2.2×10^{-4}	2.1×10^{-6}	**3.6×10^{-4}**
% of Total	6%	32%	62%	<1%	
Sector 5	2.7×10^{-5}	1.4×10^{-4}	6.3×10^{-5}	2.4×10^{-6}	**2.3×10^{-4}**
% of Total	12%	60%	27%	1%	
Sector 6	1.6×10^{-4}	3.8×10^{-4}	5.8×10^{-8}	8.2×10^{-6}	**5.5×10^{-4}**
% of Total	29%	69%	<1%	2%	
Sector 7	1.7×10^{-5}	1.2×10^{-4}	8.8×10^{-9}	1.6×10^{-6}	**1.3×10^{-4}**
% of Total	13%	86%	<1%	1%	
Sector 8	6.1×10^{-5}	1.0×10^{-4}	8.4×10^{-8}	6.4×10^{-5}	**2.3×10^{-4}**
% of Total	27%	45%	<1%	28%	
Sector 9	1.8×10^{-5}	1.3×10^{-4}	1.2×10^{-8}	3.6×10^{-6}	**1.5×10^{-4}**
% of Total	12%	85%	<1%	2%	

Notes:

[a] Current convention is to use one significant digit for presentation of ELCRs. Two significant digits are used here to enable the reader to match the numbers reported in the exhibit with those in its associated risk characterization table. Additionally, use of two significant digits allows the reader to sum the route values and check the location total.

1.5.5 Risk Characterization for Potential Future Land Use Scenarios at Future Modeled Concentrations

This subsection discusses the potential future risks to a future resident using RGA groundwater contaminated by migration of chemicals from sources within the WAG 6 area. As discussed in Subsect.1.2.3.2 of this BHHRA, the point of exposure to which contaminants were modeled was the PGDP security fence boundary. Information about the methods used in the model is in Sect.5 of Vol. 1 of this report. Complete modeling results are in App. C of this volume.

Exhibit 1.41. Driving contaminants' summary for future use scenario–excess lifetime cancer risk for the future excavation worker

Scenario and Location	Driving Contaminants Over All Exposure Routes	Location Total
Future excavation worker		
WAG 6 Area	vinyl chloride (91%); beryllium (3%); PAHs (2%); trichloroethene (2%);	**2.6×10^{-3}**
Sector 1	cesium -137 (83%); neptunium-237 (17%)	**2.0×10^{-6}**
Sector 2	beryllium (44%); PAHs (35%); n-nitroso-di-n-propylamine (10%); arsenic (6%); uranium-238 (3%)	**1.6×10^{-4}**
Sector 3	beryllium (61%); PAHs (21%); arsenic (12%); PCBs (2%); cesium-137 (1%)	**1.2×10^{-4}**
Sector 4	vinyl chloride (61%); beryllium (22%); PAHs (11%); arsenic (3%); 1,1-dichloroethene (1%)	**3.6×10^{-4}**
Sector 5	beryllium (34%); vinyl chloride (27%); PAHs (21%); n-nitroso-di-n-propylamine (10%); arsenic (6%)	**2.3×10^{-4}**
Sector 6	PAHs (52%); arsenic (31%); beryllium (14%); uranium-238 (1%)	**5.5×10^{-4}**
Sector 7	beryllium (62%); n-nitroso-di-n-propylamine (15%); PAHs (12%); arsenic (8%); PCBs (1%)	**1.3×10^{-4}**
Sector 8	beryllium (38%); uranium-238 (22%); cesium-137 (10%); arsenic (8%); technetium-99 (7%); PAHs (6%); neptunium-237 (5%); uranium-234 (3%)	**2.3×10^{-4}**
Sector 9	beryllium (74%); arsenic (18%); PAHs (4%); uranium-238 (2%); cesium-137 (1%)	**1.5×10^{-4}**

Exhibit 1.42 presents the chemical-specific hazard indices for household use of water by a rural resident from exposure to the maximum modeled concentrations of contaminants in the RGA at the point of exposure. As shown in Exhibit 1.42, there are 4 chemicals which have chemical-specific HIs at the maximum modeled concentration that exceed 1. These chemicals and their sources are presented in the following bullets.

- Sector 4–trichloroethene
- Sector 5–trichloroethene
- Sector 7–antimony
- Sector 8– 2,4-dinitrotoluene
- RGA– iron

Note: The trichloroethene source in the RGA was not modeled because it was assumed *a priori* that the modeling results would have yielded a hazard estimate at the point of exposure that would exceed 1.

Exhibit 1.43 presents the chemical-specific ELCRs for household use of water by a rural resident from exposure to maximum modeled concentrations of contaminants in the RGA at the point of exposure. As shown in Exhibit 1.43, there are 9 organic compounds which have chemical-specific ELCRs at the maximum modeled concentration that exceed 1×10^{-6}. These chemicals and their sources are presented in the following bullets.

- Sector 2–n-nitroso-di-n-propylamine
- Sector 3–trichloroethene
- Sector 4–1,1-dichloroethene; carbon tetrachloride; tetrachloroethene; trichloroethene; and vinyl chloride
- Sector 5–trichloroethene and vinyl chloride
- Sector 6–1,2-dichloroethene, *trans*-1,2-dichloroethene, and trichloroethene

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Exhibit 1.42. Estimated hazard quotients for a resident from exposure to maximum modeled concentrations from sources within the WAG 6 area

Contaminant[a]	Source[b]	Maximum Concentration[c]	Systemic Toxicity[d]	HI[e]
Organic Chemicals (mg/l)				
1,1-Dichloroethene	Southeast Sector	4.14E-03	1.34E-02	<0.10
1,2-Dichloroethene	West Sector	7.64E-02	1.36E-02	0.56
2,4-Dinitrotoluene	Far North Sector	1.07E-01	3.00E-03	3.57
Carbon tetrachloride	Southeast Sector	4.87E-04	2.03E-04	0.24
N-Nitroso-di-n-propylamine	Northeast Sector	2.17E-02	NV	NT
Tetrachloroethene	Southeast Sector	6.44E-04	9.87E-03	NT
trans-1,2-Dichloroethene	West Sector	7.64E-02	3.02E-02	0.25
Trichloroethene	East Sector	2.91E-02	7.86E-03	0.37
	Southeast Sector	5.00E+00		63.6
	Southwest Sector	2.53E-01		3.22
	West Sector	9.58E-03		0.12
	Northwest Sector	4.92E-03		<0.10
Vinyl chloride	Southeast Sector	1.14E-03	NV	NT
	Southwest Sector	8.04E-04		NT
Inorganic Chemicals (mg/l)				
Antimony	Northwest Sector	5.73E-03	5.64E-04	1.02
Copper	Far North Sector	1.50E-01	6.02E-02	0.25
Iron	RGA	8.18E+01	4.49E-01	18.2
Manganese	RGA	5.71E-01	6.81E-02	0.84

[a] Only contaminants which have a maximum modeled contaminant concentration over all sources that exceed either the cancer or systemic toxicity RBC are listed.

[b] Maximum modeled concentration reported for sources within a sector. Only sectors which contain a source of the contaminant are listed.

[c] Maximum modeled contaminant concentration for source.

[d] All residential use risk-based concentrations were taken from Table 2 in Appendix 1 of *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant* (1996b). All systemic toxicity RBCs are based on chronic exposure by a child aged 1 to 7 and integrate exposure through ingestion of water, inhalation of vapors emitted by water (showering and household use), and dermal contact with water (showering). Target HI for all systemic toxicity RBCs is 0.1 because more than 5 contaminants are present. "NV" indicates an RBC for the endpoint is not available because toxicity information is lacking.

[e] Value calculated by dividing the maximum contaminant concentration by the RBC and multiplying by the target HI of 0.1. "NT" indicates that the contaminant is not a systemic toxicant or does not have a systemic toxicity based RBC because a reference dose for the systemic toxicity endpoint is lacking.

- Sector 7–trichloroethene
- Sector 8–2,4-dinitrotoluene

Note: The trichloroethene and technetium-99 sources in the RGA were not modeled because it was assumed *a priori* that the modeling results would have yielded an ELCR exceeding 1×10^{-6} at the point of exposure.

Exhibit 1.43. Estimated excess cancer risks for a resident from exposure to maximum modeled concentrations from sources within the WAG 6 area

Contaminant[a]	Source[b]	Maximum Concentration[c]	Cancer[d]	ELCR[e]
Organic Chemicals (mg/l)				
1,1-Dichloroethene	Southeast Sector	4.14E-03	1.62E-06	2.56×10^{-4}
1,2-Dichloroethene	West Sector	7.64E-02	NV	NC
2,4-Dinitrotoluene	Far North Sector	1.07E-01	7.69E-06	1.34×10^{-3}
Carbon tetrachloride	Southeast Sector	4.87E-04	2.07E-05	2.31×10^{-6}
N-Nitroso-di-n-propylamine	Northeast Sector	2.17E-02	7.39E-07	2.94×10^{-3}
Tetrachloroethene	Southeast Sector	6.44E-04	5.91E-05	1.09×10^{-6}
trans-1,2-Dichloroethene	West Sector	7.64E-02	NV	NC
Trichloroethene	East Sector	2.91E-02	2.01E-04	1.45×10^{-5}
	Southeast Sector	5.00E+00		2.49×10^{-3}
	Southwest Sector	2.53E-01		1.26×10^{-4}
	West Sector	9.58E-03		4.77×10^{-6}
	Northwest Sector	4.92E-03		2.45×10^{-6}
Vinyl chloride	Southeast Sector	1.14E-03	2.04E-06	5.59×10^{-5}
	Southwest Sector	8.04E-04		3.94×10^{-5}
Inorganic Chemicals (mg/l)				
Antimony	Northwest Sector	5.73E-03	NV	NC
Copper	Far North Sector	1.50E-01	NV	NC
Iron	RGA	8.18E+01	NV	NC
Manganese	RGA	5.71E-01	NV	NC

[a] Only contaminants which have a maximum modeled contaminant concentration over all sources that exceed either the cancer or systemic toxicity RBC are listed.

[b] Maximum modeled concentration reported for sources within a sector. Only sectors which contain a source of the contaminant are listed.

[c] Maximum modeled contaminant concentration for source.

[d] All residential use risk-based concentrations were taken from Table 2 in Appendix 1 of *Methods for Conducting Human Health Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant* (1996b). Cancer RBCs are based on a 40-year exposure. The cancer RBCs integrate exposure through ingestion of water, inhalation of vapors emitted by water (showering and household use), and dermal contact with water (showering). Target risk for cancer RBCs is 1×10^{-7} because more than 5 contaminants are present. "NV" indicates an RBC for the endpoint is not available because toxicity information is lacking.

[e] Value calculated by dividing the maximum contaminant concentration by the RBC and multiplying by the target risk of 1×10^{-7}.
"NC" indicates that the contaminant is not a carcinogen or does not have a cancer-based RBC because a cancer endpoint toxicity value is lacking.

As shown in Exhibit 1.16 and discussed in Subsect. 1.2.3.2, a single receptor may be exposed to the maximum modeled concentration of more than one chemical in a lifetime. Specifically, as discussed in Subsect. 1.2.3.2, the organic compounds 1,1-dichloroethene; 1,2-dichloroethene; 2,4-dinitrotoluene; n-nitroso-di-n-propylamine; *trans*-1,2-dichloroethene; trichloroethene; and vinyl chloride have transport times that may allow a single receptor to be exposed to the maximum modeled concentration of each within a lifetime. If such exposure occurred, then the total risk to the receptor could be the sum of the risks from the maximum modeled concentrations over all sources for each. These values are 68.0 for systemic toxicity and 7.1×10^{-3} for ELCR.

1.5.6 Risk Characterization for Lead

Unlike the other analytes included in this risk assessment, the risks from exposure to lead were also estimated using a biokinetic model and through comparison of detected concentrations to KDEP and EPA screening values. This procedure was followed to address the uncertainty in the provisional reference dose provided by KDEP, to meet the requirements of the Region 4 EPA in their guidance, and to be consistent with agreements in the Methods Document.

The model used was EPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead. The complete results of the modeling are in App. G of this volume. The results of this model indicate lead concentrations in both RGA and McNairy Formation groundwater drawn from below the WAG 6 area may result in an unacceptable percentage of children having blood lead levels exceeding the concentration at which toxic effects may become apparent.

The KDEP and EPA screening values used in comparisons were taken from KDEP 1995 and EPA 1995a, respectively. The KDEP values are 20 mg/kg and 4 μg/L for soil and water, respectively. The EPA values are 400 mg/kg and 15 μg/L for soil and water, respectively. Exhibit 1.44 presents the comparison between the representative concentrations of lead in groundwater, surface soil, and subsurface soil and the screening values. This exhibit shows that the lead concentrations in groundwater drawn from the RGA and McNairy Formation exceed the screening values from both regulatory agencies. However, the exhibit also shows that the lead concentration in soil does not exceed the regulatory screening values at any location.

1.5.7 Identification of Land Use Scenarios, Pathways, Media, and Contaminants of Concern

This subsection identifies the land use scenarios of concern, pathways of concern (POCs), media of concern, and contaminants of concern (COCs) for each location. This subsection evaluates all land use scenarios to identify those land use scenarios, contaminants, and pathways that should be considered when choosing appropriate remedial actions. Subsect. 1.8 presents remedial goal options for each location and land use combination using the information compiled here.

To determine land use scenarios of concern, risk characterization results for total systemic toxicity (total HI) and total risk (total ELCR) for each land use scenario at each location are compared to benchmarks of 1 and 1×10^{-6} for HI and ELCR, respectively. Land use scenarios with total HIs exceeding the benchmark of 1 are deemed land use scenarios of concern for systemic toxicity. Land use scenarios with total ELCR exceeding the benchmark of 1×10^{-6} are deemed land use scenarios of concern for ELCR. To determine COCs, the chemical-specific HI and ELCR contributed by each COPC over all pathways within a land use scenario of concern are compared to benchmarks of 0.1 and 1×10^{-6} for chemical-specific HI and ELCR, respectively. COPCs with chemical-specific HIs or ELCRs that exceed these benchmarks are deemed COCs for that land use scenario of concern. To determine POCs, the exposure route HI and ELCR over all COPCs within the land use scenarios of concern are compared to benchmarks of 0.1 and 1×10^{-6} for exposure route HI and ELCR, respectively. Exposure routes with exposure route HIs and ELCRs that exceed these benchmarks are deemed POCs for that land use scenario of concern. Media of concern are determined by examining the POCs and selecting any medium that appears in a POC as a medium of concern.

Exhibit 1.44. Comparison of representative concentrations[a] of lead against regulatory screening values

Location	Representative Concentration	KDEP Screening Value	Exceed?	EPA Screening Value	Exceed?
Groundwater (µg/L)[b]					
WAG 6 RGA	32.7	4	Yes	15	Yes
WAG 6 McNairy	114	4	Yes	15	Yes
Surface Soil (mg/kg)[c]					
WAG 6 Area	7.98	20	No	400	No
Sector 1	–	20	–	400	–
Sector 2	–	20	–	400	–
Sector 3	–	20	–	400	–
Sector 4	–	20	–	400	–
Sector 5	–	20	–	400	–
Sector 6	–	20	–	400	–
Sector 7	13.0	20	No	400	No
Sector 8	–	20	–	400	–
Sector 9	–	20	–	400	–
Subsurface Soil (mg/kg)[d]					
WAG 6 Area	5.84	20	No	400	No
Sector 1	–	20	–	400	–
Sector 2	–	20	–	400	–
Sector 3	5.70	20	No	400	No
Sector 4	5.53	20	No	400	No
Sector 5	5.54	20	No	400	No
Sector 6	–	20	–	400	–
Sector 7	6.22	20	No	400	No
Sector 8	13.5	20	No	400	No
Sector 9	12.0	20	No	400	No

Notes: – indicates that lead was not a COPC for that location. Therefore, a representative concentration is not available.

[a] By definition (EPA 1992a), the representative concentration or the representative exposure concentration is the average contaminant concentration within an area. However, as shown in Subsect. 1.2.3.1, this value is actually the lesser of the maximum detected concentration and the upper 95% confidence level on the mean concentration.

[b] As discussed elsewhere, groundwater was evaluated on an area basis because all locations are contiguous.

[c] Surface soil is soil collected from 0 to 1 foot below ground surface.

[d] Subsurface soil is soil collected from 0 to 16 feet below ground surface.

1.5.7.1 Land use scenarios of concern

As noted previously, if the total HI or total risk for a land use scenario exceeds 1 or 1×10^{-6}, respectively, then that land use scenario is a land use scenario of concern for the location. Exhibit 1.45 presents the land uses of concern for each location. Note, in this exhibit the future land uses are ordered from the most likely to the least likely. Additionally, the results presented here include contributions from lead.

Exhibit 1.45. Selection of land uses of concern

Scenario	Location (Sector Number)									
	WAG 6	1	2	3	4	5	6	7	8	9
Results for systemic toxicity[a]										
Current Industrial Worker	X[d]	NA	–	–	–	X	X	X[d]	–	X
Future Industrial Worker										
Exposure to Soil	X[d]	NA	–	–	–	X	X	X[d]	–	X
Exposure to Water[b]	X[d]									
Future Excavation Worker	X[d]	X	X	X[e]	X[d]	X[d]	X	X[d]	X[d]	X[d]
Future Recreational User	X[e]	NA	–	–	–	–	–	–	–	–
Future On Site Resident										
Exposure to Soil	X[d]	NA	X	X	X	X	X	X[d]	X	X
Exposure to Water[b]	X[d]									
Future Off Site Resident Exposure to Water[c]	X	–	–	–	X	X	–	X	X	–
Results for excess lifetime cancer risk										
Current Industrial Worker	X	NA	X	X	X	X	X	X	X	X
Future Industrial Worker										
Exposure to Soil	X	NA	X	X	X	X	X	X	X	X
Exposure to Water[b]	X									
Future Excavation Worker	X	X	X	X	X	X	X	X	X	X
Future Recreational User	X	NA	–	X	–	X	X	–	X	–
Future On Site Resident										
Exposure to Soil	X	NA	X	X	X	X	X	X	X	X
Exposure to Water[b]	X									
Future Off Site Resident Exposure to Water[c]	X	NA	X	X	X	X	X	X	X	–

Notes: Scenarios where risk exceeded the benchmark levels are marked with an X.
Scenarios where risk did not exceed a benchmark level are marked with a –.
NA indicates that the scenario/land use combination is not appropriate.

[a] For the future recreational user, the future teen recreational user results are used. For the future onsite resident, the results for exposure to a child are used.

[b] In the BHHRA, the risk from exposure to water was assessed on a WAG 6 area basis; therefore, these risks are not summed with those from exposure to soil. Additionally, the BHHRA assessed risks from use of water drawn from the RGA separately from use of water drawn from the McNairy Formation. The value reported here is for use of water from the RGA.

[c] Based on results of contaminant transport modeling, X indicates that the location contains a source of unacceptable offsite contamination.

[d] Even if contribution from lead is not considered, these remain of concern.

[e] If contribution from lead is not considered, then the total HI falls below 1, and the scenario is not of concern.

As shown in Exhibit 1.45, all scenarios assessed are a land use scenario of concern for the WAG 6 area for both systemic toxicity and ELCR. A possible exception is the future recreational user which has a total hazard index which falls below 1 if contribution from lead is not considered. However, the list of land use

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scenarios of concern does change by sector. Land use scenarios which are of concern for all sectors are the current and future industrial worker (ELCR only), excavation worker (both systemic toxicity and ELCR), and the future on site rural resident (both systemic toxicity and ELCR). The future recreational user scenario is not a land use of concern for any sector for systemic toxicity but is of concern for Sectors 3, 5, 6, and 8 for ELCR. The WAG 6 area and all Sectors except 1 and 9 are also sources of off site contamination which makes the off site future resident a scenario of concern for these areas.

1.5.7.2 Contaminants of concern

Only those contaminants whose chemical-specific ELCRs summed over all pathways within a land use scenario of concern are greater than or equal to 1×10^{-6} or whose HQs summed over all pathways are greater than or equal to 0.1 are COCs. The COCs in soil across all land use scenarios for systemic toxicity are summarized in Exhibit 1.46. In this exhibit, those contaminants which are a COC within a scenario of concern and have a chemical-specific HI greater than 1 are marked with a solid cell. Those contaminants which are a COC within a scenario of concern and have a chemical-specific HI between 0.1 and 1 are marked with an "X." Those contaminants which are not a COC within a scenario are not marked (i.e., cell left blank). Similar information for COCs in soil for ELCR is shown in Exhibit 1.47. In this exhibit, all COCs in soil across all land use scenarios for ELCR are summarized. As with systemic toxicity COCs, in Exhibit 1.47 those contaminants which are a COC within a scenario of concern and have a chemical-specific ELCR greater than 1×10^{-4} are marked with a solid cell. Those contaminants which are a COC within a scenario of concern and have a chemical-specific ELCR between 1×10^{-6} and 1×10^{-4} are marked with an "X." Those contaminants which are not a COC within a scenario are not marked (i.e., cell left blank). Finally, Exhibits 1.48 and 1.49 present the COCs in water over all land use scenarios. The markings used in these exhibits are the same as those used in Exhibits 1.46 and 1.47, respectively.

As shown in Exhibit 1.46, there is a total of 21 COCs for systemic toxicity in soil over all WAG 6 locations. Of these, 14 are inorganic chemicals and 7 are organic compounds. Exhibit 1.47 shows that there is a total of 18 COCs for ELCR in soil over all WAG 6 locations. Of these, 2 are inorganic chemicals, 9 are organic compounds, and 7 are radionuclides. Over both systemic toxicity and ELCR (i.e., combining results from Exhibits 1.46 and 1.47), there is a total of 32 COCs in soil over all WAG 6 locations. Of these, 14 are inorganic chemicals, 11 are organic compounds, and 8 are radionuclides.

Combining the results from Exhibits 1.46 and 1.47 and considering the magnitude of the chemical-specific HIs and ELCRs, the following COCs can be considered "priority COCs" in soil for the current use and most likely future use scenarios (i.e., industrial use):

- **Inorganic chemicals**–beryllium, lead
- **Organic compounds**–PAHs
- **Radionuclides**–none

Each of these COCs presents either a chemical-specific HI or ELCR to the industrial worker at one or more locations within WAG 6 that exceeds 1 or *1×10^{-4}, respectively.*

Similarly, the following COCs can be considered to be "priority COCs" for the next most likely activity at WAG 6 locations (i.e., excavation worker):

- **Inorganic chemicals**–arsenic, beryllium, lead
- **Organic compounds**–PAHs, trichloroethene, vinyl chloride
- **Radionuclides**–none

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Exhibit 1.46. Contaminants of concern for systemic toxicity in soil across all locations

Chemicals of Potential Concern[a]	WAG 6 Area						Sector 1 Central						Sector 2 Northeast						Sector 3 East					
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural
Aluminum	X	X	X		■										X						X			
Antimony	X	X	X		■	■			X						X									
Arsenic	X	X			■																			
Beryllium					X																			
Cadmium					X																		X	
Chromium	X	X	X		■				X						X		■				X		■	
Copper						X																		
Iron	X	X	X		■	■			X															
Lead	■	■	■	■	■																■			
Manganese			X			X									X						X			
Nickel																								
Uranium					■												■						■	
Vanadium	X	X	X		■										X									
Zinc					X												X							
1,2-Dichloroethene						X																		
2,4-Dinitrotoluene						■																		
Carbon tetrachloride						X																		
PAHs					X																			
PCBs					■																			
trans-1,2-Dichloroethene						X																		
Trichloroethene			■			■																		X

Chemicals of Potential Concern[a]	Sector 4 Southeast						Sector 5 Southwest						Sector 6 West					
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural
Aluminum			X		■				X				X	X	X		■	
Antimony			X		■		X	X	X		■		X	X	X		■	
Arsenic													X	X	■		■	
Beryllium											X						X	
Cadmium					X						X						■	
Chromium			X		■		X	X	X		■		X	X	X		■	
Copper																		
Iron			X				X	X	X		■							
Lead			■						■									
Manganese			X						X									
Nickel																		
Uranium											■						■	
Vanadium			X						X						X			
Zinc											X						X	
1,2-Dichloroethene																		X
2,4-Dinitrotoluene																		
Carbon tetrachloride						X												
PAHs											X							
PCBs													X	X			■	
trans-1,2-Dichloroethene																		X
Trichloroethene						■						■						X

Chemicals of Potential Concern[a]	Sector 7 Northwest						Sector 8 Far North						Sector 9 Far East					
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural
Aluminum			X						X				X	X	X		■	
Antimony	X	X	X		■	■			X		■		X	X	X		■	
Arsenic									X						X			
Beryllium					X						X							
Cadmium					X						X							
Chromium	X	X	X		■				X		■		X	X	X		■	
Copper									X			X						
Iron	X	X	X		■				X						X			
Lead	■	■	■		■				■						■			
Manganese			X						X						X			
Nickel									■									
Uranium									X		■						■	
Vanadium	X	X	X		■										X			
Zinc																		
1,2-Dichloroethene																		
2,4-Dinitrotoluene												■						
Carbon tetrachloride																		
PAHs																		
PCBs																		
trans-1,2-Dichloroethene																		
Trichloroethene																		

Notes: X indicates that the chemical of potential concern is a contaminant of concern, and chemical-specific HI is between 0.1 and 1 for the scenario.
Solid cell indicates that the chemical of potential concern is a chemical of concern, and chemical-specific HI is greater than 1 for the scenario.
Blank cell indicates that the chemical of potential concern is not a chemical of concern for the scenario.
Only chemicals of potential concern which have a chemical-specific HI greater than 1 for one or more land use scenarios of concern are listed.

Exhibit 1.47. Contaminants of concern for ELCR in soil across all locations

Locations and Scenarios / Chemicals of Potential Concern[a]	WAG 6 Area						Sector 1 Central						Sector 2 Northeast						Sector 3 East						Sector 4 Southeast					
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural
Arsenic	X	X	X		■										X						X						X			
Beryllium	X	X	X		■										X						X						X			
1,1-Dichloroethene			X			■																					X			■
2,4-Dinitrotoluene						■																								
Carbon tetrachloride						X																								X
N-nitroso-di-n-propylamine			X			■									X			■												
PAHs	■	■	X	■	■								X	X	X		■		X	X	X		■		X	X	X		■	
PCBs	X	X	X	X	■												X		X	X	X	X	■				X		X	
Tetrachloroethene						X																								X
Trichloroethene			X			■																		X			X			■
Vinyl chloride			■			X																					■			X
Cesium-137	X	X	X		X				X										X	X	X		X				X			
Neptunium-237	X	X	X		X																		X							
Plutonium-239																														
Technetium-99																														
Uranium-234					X										X															
Uranium-235					X												X						X							
Uranium-238	X	X	X		■								X	X	X		X		X	X			X							

Locations and Scenarios / Chemicals of Potential Concern[a]	Sector 5 Southwest						Sector 6 West						Sector 7 Northwest						Sector 8 Far North						Sector 9 Far East					
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural
Arsenic			X				X	X	■		■				X						X						X			
Beryllium	■	■	X		■		■	■	X		■		■	■	X		■		■	■	X		■				■			
1,1-Dichloroethene																														
2,4-Dinitrotoluene																								■						
Carbon tetrachloride																														
N-nitroso-di-n-propylamine			X												X															
PAHs	■	■	X	X	■		■	■	■	X	■		X	X	X		■		X	X	X	X	■		X	X	X		X	
PCBs					X		X	X	X		■				X														X	
Tetrachloroethene																														
Trichloroethene						■						X						X												
Vinyl chloride			X			X																								
Cesium-137			X				X	X	X		X										X						X			
Neptunium-237					X		X	X	X		■								X	X	X		X							
Plutonium-239											■										X									
Technetium-99											■										X									
Uranium-234									X		■										X									
Uranium-235					X						X										X		X						X	
Uranium-238	X	X			■		X	X	X		■		X	X	X		X		X	X	X		X		X	X	X		■	

Notes: X indicates that the chemical of potential concern is a contaminant of concern, and chemical-specific ELCR is between 1×10^{-6} and 1×10^{-4} for the scenario.
Solid cell indicates that the chemical of potential concern is a chemical of concern, and chemical-specific ELCR is greater than 1×10^{-4} for the scenario.
Blank cell indicates that the chemical of potential concern is not a chemical of concern for the scenario.

[a] Only chemicals of potential concern which have a chemical-specific ELCR greater than 1×10^{-6} for one or more land use scenarios of concern are listed.

Each of these COCs presents either a chemical-specific HI or ELCR to the excavation worker at one or more locations in WAG 6 that exceeds 1 or 1×10^{-4}, respectively.

Finally, the following chemicals are priority COCs for offsite use of groundwater (i.e., rural residential use in the home):

- **Inorganic chemicals**–antimony, copper, iron, manganese
- **Organic compounds**–1,1-dichloroethene; 2,4-dinitrotoluene; carbon tetrachloride; n-nitroso-di-n-propylamine; tetrachloroethene; trichloroethene; vinyl chloride
- **Radionuclides**–none

Each of these are COCs that may migrate to an offsite location and present a chemical-specific HI or ELCR to the rural resident that is greater than 0.1 or 1×10^{-6}, respectively.

As shown in Exhibit 1.48, there is a total of 31 COCs for systemic toxicity in water over both the RGA and McNairy Formation for WAG 6. Of these, 19 are inorganic chemicals and 12 are organic compounds. Exhibit 1.49 shows that there is a total of 29 COCs for ELCR in water over both the RGA and McNairy Formation for WAG 6. Of these, 2 are inorganic chemicals, 12 are organic compounds, and 15 are radionuclides. Over both systemic toxicity and ELCR (i.e., combining results from Exhibits 1.48 and 1.49), there is a total of 52 COCs in water over both the RGA and McNairy Formation for WAG 6 locations. Of these, 19 are inorganic chemicals, 18 are organic compounds, and 15 are radionuclides.

Combining the results from Exhibits 1.48 and 1.49 and considering the magnitude of the chemical-specific HIs and ELCRs, the following COCs can be considered "priority COCs" in water at WAG 6 over both water sources for the most likely future use (i.e., industrial use):

- **Inorganic chemicals**–arsenic, beryllium, iron, lead, vanadium
- **Organic compounds**–trichloroethene, vinyl chloride
- **Radionuclides**–lead-210

Each of these COCs presents either a chemical-specific HI or ELCR to the future industrial worker through water use that exceeds 1 or 1×10^{-4}, respectively.

The following chemicals are priority COCs for offsite use of groundwater (i.e., rural residential use in the home). These chemicals match those presented earlier for soil and are all COCs that may migrate from a source in WAG 6 to an offsite location and present a chemical-specific HI or ELCR to the rural resident that is greater than 0.1 or 1×10^{-6}, respectively.

- **Inorganic chemicals**–antimony, copper, iron, manganese
- **Organic compounds**–1,1-dichloroethene; 2,4-dinitrotoluene; carbon tetrachloride; n-nitroso-di-n-propylamine; tetrachloroethene; trichloroethene; vinyl chloride
- **Radionuclides**–technetium-99

1.5.7.3 Pathways of concern

Only those pathways with a pathway HI for adults or children greater than 0.1 or a pathway ELCR greater than 1×10^{-6} over all contaminants within a land use scenario of concern are POCs. The POCs for each land use scenario of concern are presented in the Exhibit 1.50. As shown in this exhibit all exposure routes evaluated are a pathway of concern for at least one scenario.

530505

Exhibit 1.48. Contaminants of concern for systemic toxicity in water across all locations

Chemicals of Potential Concern[a] \ Location and Scenarios	WAG 6 Area RGA			WAG 6 Area McNairy Formation	
	Future Industrial Worker	Future Onsite Rural Resident	Future Offsite Rural Resident	Future Industrial Worker	Future Onsite Rural Resident
Aluminum	X			X	■
Antimony	X	■	■		
Arsenic	X	■		■	■
Barium		X			X
Beryllium		X			X
Cadmium		X			X
Chromium	X	■		X	■
Cobalt		X			X
Copper		X	X		
Iron	■	■	■	■	■
Lead	■	■		■	■
Manganese	X	■	X	X	■
Nickel		■			X
Nitrate	X	■			
Selenium					X
Silver		X			
Uranium		X			
Vanadium	X	■		■	■
Zinc		X		X	■
1,1-Dichloroethene		X			X
1,2-Dichloroethene			X		
1,2-Dichloroethane					X
2,4-Dinitrotoluene			■		
Carbon tetrachloride	X	■	X		
Chloroform		X			X
Di-n-octylphthalate		X		X	X
Tetrachloroethene		X			X
Toluene		X			
Trichloroethene	■	■	■		X
cis-1,2-Dichloroethene	X	■			X
trans-1,2-Dichloroethene		X	X		

Notes: X indicates that the chemical of potential concern is a contaminant of concern, and chemical-specific HI is between 0.1 and 1 for the scenario.
Solid cell indicates that the chemical of potential concern is a chemical of concern, and chemical-specific HI is greater than 1 for the scenario.
Blank cell indicates that the chemical of potential concern is not a chemical of concern for the scenario.

[a] Only chemicals of potential concern which have a chemical-specific HI greater than 1 for one or more land use scenarios of concern are listed.

Exhibit 1.49. Contaminants of concern for ELCR in water across all locations

Chemicals of Potential Concern[a] \ Location and Scenarios	WAG 6 Area RGA			WAG 6 Area McNairy Formation	
	Future Industrial Worker	Future Onsite Rural Resident	Future Offsite Rural Resident	Future Industrial Worker	Future Onsite Rural Resident
Arsenic	■	■		■	■
Beryllium	■	■		■	■
1,1-Dichloroethene	X	■	■	X	■
1,2-Dichloroethane					X
2,4-Dinitrotoluene			■		
Bis(2-ethylhexyl)phthalate					X
Bromodichloromethane		X		X	X
Carbon tetrachloride	X	■	X		
Chloroform	X	X		X	X
Dibromochloromethane				X	X
N-nitroso-di-n-propylamine	X	■	■		
Tetrachloroethene	X	X	X	X	X
Trichloroethene	■	■	■	X	X
Vinyl chloride	■	■	X	■	■
Actinium-228					X
Americium-241	X	X			
Cesium-137	X	X		X	X
Lead-210	■	■		■	■
Lead-212				X	X
Neptunium-237	X	■		X	X
Plutonium-239				X	X
Potassium-40				X	X
Technetium-99	X	■	X[b]	X	■
Thorium-228	X	X		X	X
Thorium-230		X			X
Thorium-234				X	■
Uranium-234		X			X
Uranium-235				X	X
Uranium-238	X	X			X

Notes: X indicates that the chemical of potential concern is a contaminant of concern, and chemical-specific ELCR is between 1×10^{-6} and 1×10^{-4} for the scenario.

Solid cell indicates that the chemical of potential concern is a chemical of concern, and chemical-specific ELCR is greater than 1×10^{-4} for the scenario.

Blank cell indicates that the chemical of potential concern is not a chemical of concern for the scenario.

[a] Only chemicals of potential concern which have a chemical-specific ELCR greater than 1×10^{-6} for one or more land use scenarios of concern are listed.

[b] The technetium-99 source in the RGA was not modeled to the offsite location because it was determined *a priori* that technetium-99 was a contaminant of concern for offsite users.

530508

Exhibit 1.50.Pathways of concern across all locations and uses

Locations and Scenarios / Exposure Route[a]	WAG 6 Area						Sector 1 Central					Sector 2 Northeast				
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Future Offsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural
Systemic Toxicity																
Incidental Ingestion of Soil	■	■	■		■				X					X		X
Dermal Contact with Soil	■	■	■		■				■					■		■
Inhalation of Particulates or Vapors-Soil																
Consumption of Biota-Soil				■	■											■
Ingestion of Water		■			■	■										
Dermal Contact with Water		■			■	■										
Inhalation of Vapors-Water		X			■	■										
Consumption of Biota-Water					■											
ELCR																
Incidental Ingestion of Soil	X	X	X		X									X		X
Dermal Contact with Soil	■	■	■		■							X	X	■		X
Inhalation of Particulates or Vapors-Soil			■													
Consumption of Biota-Soil				■	■											■
External Exposure-Soil	X	X	X		X				X			X	X	X		X
Ingestion of Water		■			■	■										
Dermal Contact with Water		■			■	■										
Inhalation of Vapors-Water		■			■	■										
Consumption of Biota-Water					■											

Locations and Scenarios / Exposure Route[a]	Sector 3 East					Sector 4 Southeast					Sector 5 Southwest				
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural
Systemic Toxicity															
Incidental Ingestion of Soil			■		X			■		X			■		■
Dermal Contact with Soil			■		■			■		■	■	■	■		■
Inhalation of Particulates or Vapors-Soil															
Consumption of Biota-Soil					■					■					■
Ingestion of Water															
Dermal Contact with Water															
Inhalation of Vapors-Water															
Consumption of Biota-Water															
ELCR															
Incidental Ingestion of Soil	X	X	X		X			X		X	X	X	X		■
Dermal Contact with Soil	X	X	X		■	X	X	■		X	■	■	■		■
Inhalation of Particulates or Vapors-Soil								■					X		
Consumption of Biota-Soil				X	■					■				X	■
External Exposure-Soil	X	X	X		X			X			X	X	X		X
Ingestion of Water															
Dermal Contact with Water															
Inhalation of Vapors-Water															
Consumption of Biota-Water															

Locations and Scenarios / Exposure Route[a]	Sector 6 West					Sector 7 Northwest					Sector 8 Far North					Sector 9 Far East				
	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural	Current Industrial Worker	Future Industrial Worker	Future Excavation Worker	Future Recreational User	Future Onsite Rural
Systemic Toxicity																				
Incidental Ingestion of Soil			X		■	■	■	■		■			■		X			■		X
Dermal Contact with Soil	■	■	■		■	■	■	■		■			■		■	■	■	■		■
Inhalation of Particulates or Vapors-Soil																				
Consumption of Biota-Soil					■					■					■					■
Ingestion of Water																				
Dermal Contact with Water																				
Inhalation of Vapors-Water																				
Consumption of Biota-Water																				
ELCR																				
Incidental Ingestion of Soil	X	X	■		■			X		X	X	X	X		X			X		X
Dermal Contact with Soil	■	■	■		■	■	■	■		■	■	■	■		■	X	X	■		X
Inhalation of Particulates or Vapors-Soil																				
Consumption of Biota-Soil				X	■					■				X	■					■
External Exposure-Soil	X	X	X		X			X		X	X	X	X		X	X	X	X		X
Ingestion of Water																				
Dermal Contact with Water																				
Inhalation of Vapors-Water																				
Consumption of Biota-Water																				

Notes: X indicates that the exposure route is a pathway of concern (POC). If under systemic toxicity, X indicates that the pathway-specific HI is between 0.1 and 1; if under ELCR, X indicates that the pathway-specific ELCR is between 1×10^{-6} and 1×10^{-4}.

Solid cell indicates that the exposure route is a POC. If under systemic toxicity, this mark indicates that the pathway-specific HI is greater than 1; if under ELCR, this mark indicates that the pathway-specific ELCR is greater than 1×10^{-4}.

Blank cell indicates that the exposure route is not a POC for the scenario or is not applicable to the scenario.

[a] All exposure routes listed; biota routes are combined.

1.5.7.4 Media of concern

Media of concern are those media which appear in at least one pathway of concern. As noted in Subsect. 1.5.7.3, each exposure route included in the assessment was of concern for at least one scenario. Therefore, surface soil, subsurface soil, and groundwater are media of concern for WAG 6.

1.5.8 Summary of Risk Characterization

Tables 1.76 to 1.85 present summaries of the risk characterizations for WAG 6 and its sectors. Each of these tables present land use scenarios of concern, COCs, and POCs. Along with this information, each table lists the risk posed to a receptor under each land use scenario of concern, the percent of risk each pathway of concern contributes to the total risk, and the percent of risk each COC contributes to the total risk.

Note, the tables which summarize the results for systemic toxicity do not include contributions from lead. The contribution from lead was not included in the calculations which generated these tables because the determination was made that to do so would make the contributions from the other COCs appear meaningless. Given the uncertainty in the provisional lead reference dose, it was believed that this was inappropriate.

In addition to the summary tables, App. F of this volume provides a more detailed summary of the risk assessment. In this appendix, the COPCs, chronic daily intakes, slope factors, RfDs, ELCRs, HIs, toxic effects, cancer classification, and total risk by pathway, land use, and SWMU are tabulated. These tables allow for a direct check of the risk calculations discussed in this section. In addition, if additional toxicity information becomes available, these tables will allow for easy recalculation of risk for each COPC, pathway, and land use scenario at each SWMU. Please note, the information in the tables in App. F was used to construct the risk characterization and summary tables presented earlier in this subsection.

1.6 UNCERTAINTY IN THE RISK ASSESSMENT

Uncertainties are associated with each of the steps of the risk assessment process. The potential effect of the uncertainties on the final risk characterization must be considered when interpreting the results of the risk characterization because a number of assumptions are made during the risk assessment. Types of uncertainties that must be considered can be divided into four broad categories. These are uncertainties associated with data, the exposure assessment, the toxicity assessment, and the risk characterization. Specific uncertainties in each of these broad categories are discussed in the following subsections. In this discussion, the magnitude of the effect of the uncertainty on the risk characterization is categorized as either small, moderate, or large. Uncertainties categorized as small should not affect the risk estimates by more than one order of magnitude, uncertainties categorized as moderate may affect the risk estimates by between one and two orders of magnitude, and uncertainties categorized as large may affect the risk estimate by more than two orders of magnitude.

In evaluating these uncertainties and their estimated effect on the risk estimates, it must be remembered that the following uncertainties are neither independent nor mutually exclusive. Therefore, the total effect of all uncertainties discussed in the following subsections on the risk estimates (i.e., total ELCRs and HIs) is <u>not</u> the sum of the estimated effects.

1.6.1 Uncertainties Associated with Data and Data Evaluation

Several uncertainties are associated with the data set and the selection of COPCs. Specific uncertainties which will be discussed in the following subsections are selection of COPCs, determination of exposure point concentrations under current and future conditions, and use of concentrations from total versus filtered samples for inorganic compounds in groundwater.

1.6.1.1 Selection of COPCs

Some uncertainty is involved with the selection of COPCs. This uncertainty is derived from several sources. The first uncertainty related to the selection of COPCs is the retention of infrequently detected chemicals in the list of COPCs. As can be seen in Table 1.19, several of the chemicals retained in the list of COPCs were detected in less than 10 percent of the samples taken. Of greatest concern is that some of these COPCs are retained as COCs. Table 1.86 presents the difference in total ELCR estimates and total HI when the chemicals detected in less than 10 percent of the samples are retained as COPCs and when they are deleted from the COPC list. This table indicates that the infrequently detected COPCs had virtually no effect on the risk or hazard estimates. Therefore, the estimated effect of the uncertainty on the risk estimates is small. In addition, some infrequently detected analytes were analyzed for in a limited number of samples. Some of these analytes were included in the BHHRA and are risk drivers. The most notable example is the retention of particular actinium, lead, potassium, and thorium isotopes that were only analyzed for in one sample taken from the McNairy and RGA aquifers. For the rural residential ELCR in the McNairy, these radionuclides contributed nearly 45% of the total ELCR. Lead-210 alone contributes over 43% of the total ELCR. For the rural residential ELCR in the RGA, these radionuclides contribute nearly 6% of the total ELCR, and lead-210 alone contributes over 5% of the total ELCR. However, even though these infrequently analyzed for radionuclides contribute nearly 45% of the total ELCR in McNairy groundwater, the net effect on the final risk estimates is small. (In a review comment on the D1 revision of this report, EPA noted that the retention of lead-210 as a COPC may be an artifact of the risk assessment data evaluation process. As supporting evidence, EPA noted that the levels of lead-210 in soil should be comparable to those of uranium-238 and radium226. In any case, the uncertainties in the risks from lead-210 should be carefully considered when making risk management decisions for WAG 6.)

The second uncertainty related to selection of COPCs in the BHHRA is that temporal patterns in detection of analytes were not considered when selecting COPCs. If temporal patterns were considered, the final risk results in this BHHRA may be quite different depending on the times at which risks were estimated. However, in the time frame considered in this BHHRA (i.e., 40 years), the assumed effect of this uncertainty on the risk estimates is small.

The third uncertainty related to selection of COPCs in the BHHRA concerns the quantitation limits used for some analytes. For many organic analytes, the quantitation limit exceeds a concentration that may result in a significant health effect. For example, for McNairy groundwater, 34 organic compounds have quantitation limits for at least one sample that exceed the residential use ELCR risk-based concentration [i.e., risk-based preliminary remediation goal (PRG)] (see Table 1.87). Similarly, in subsurface soil at WAG 6, 32 organic compounds have quantitation limits for at least one sample that exceeds the residential use ELCR PRG (see Table 1.87). Because the quantitation limits exceed the PRGs, these chemicals are possibly present at concentrations that pose considerable risk but may not be retained as COPCs and be quantitatively evaluated. However, because these organic compounds tend to be unrelated to processes at WAG 6, the estimated effect of this uncertainty on the risk estimates is small.

A fourth uncertainty related to selection of COPCs is the omission of historical data. As noted earlier, these data were not added to the data set. However, the estimated effect of this uncertainty on the risk estimates is small because the data set developed during the recently completed remedial investigation is much larger than the historical data set. In addition, as noted in Subsect. 1.2.5, the preliminary list of COPCs contained in the WAG 6 work plan and the list of COPCs developed in the BHHRA are very similar.

A fifth uncertainty related to the selection of COPCs is the inclusion of common laboratory contaminants in the COPC list. Table 1.88 presents the difference in total ELCR estimates and total HI when the common laboratory contaminants are retained as COPCs and when they are deleted from the COPC list. This table indicates that the infrequently detected COPCs had virtually no effect on the risk or hazard estimates. Therefore, the estimated effect of the uncertainty on the risk estimates is small.

A sixth uncertainty related to the selection of COPCs is that analyte concentrations were not compared to concentrations found in blank samples. Common laboratory contaminants, and other analytes, may be dropped from the COPC list if they are also detected in blank samples at appropriate concentrations (RAGS). While not performing this test ensures that all analytes that may be potential laboratory contaminants are treated as site contaminants, to be certain that the laboratory contaminants are actually present in the environment is possible. However, the effect of this uncertainty is estimated to be small because, generally, these contaminants are present at low concentrations.

A seventh uncertainty related to the selection of the COPCs is the use of a toxicity screen to determine the final COPCs list. In this BHHRA, the maximum detected concentrations of analytes within each medium at each SWMU were compared to residential human health risk-based screening criteria. The residential risk-based screening levels were used per regulatory agreement (Methods Document). Analytes with maximum concentrations less than these screening criteria were removed from the list of COPCs. The derivation of these criteria is explained in detail in Subsect. 1.2.

To examine the effect the toxicity screen may have had on the COPCs list and on the resulting risk estimates developed in the BHHRA, marginal hazard and risk contributions for analytes removed on the basis of this screen were calculated. Marginal hazard and risk contributions can be defined as the estimated increase in the final hazard and risk estimates which would be seen if the analytes removed from the list of COPCs had been left on the list. Exhibit 1.51 presents the marginal contributions to total HI and total ELCR, by medium and location, for those areas in which the rural residential scenario was assessed. As illustrated in this exhibit, the marginal contribution of the analytes removed from the COPCs list is minimal. Therefore, the estimated effect of this uncertainty on the final risk estimates is small.

An eighth uncertainty related to the selection of the COPCs is the use of a background screen to determine the final COPCs list. In this BHHRA, the maximum detected concentrations of analytes within soil at each location were compared to background concentrations. The source of these background values is described in Subsect. 1.2.

In Table 1.89, the background concentrations in soil used for this screen are compared to their respective medium-specific human health risk-based screening criteria discussed in Subsect 1.2. As shown in Table 1.89, several of the background concentrations used in the BHHRA are greater than their respective risk-based screening criteria. (Note that the target HI and ELCR used for chemicals when calculating the screening criteria are 0.1 and 1×10^{-7}, respectively, and that the target ELCR for radionuclides is 1×10^{-6}.) The results presented in this table indicate that if analytes were not removed from the COPCs list on the basis of the background screen, the final risk estimates would be larger. However, because this screen relied on a comparison of the maximum detected concentration of each analyte in a medium to the selected soil background concentration, the idea that analytes were removed from the list of COPCs in error is unlikely. Therefore, the estimated effect of the background screen on the COPCs list is small, and the resulting effect on the final risk estimates is small.

Exhibit 1.51. Marginal ELCR and HI contributions of analytes removed from the COPCs list on the basis of the toxicity screen with lead included as a COPC

Sector	Total ELCR			Total Hazard Index		
	Total ELCR	Marginal Contribution	Total with analytes added	Total HI	Marginal Contribution	Total with analytes added
			Future Rural Resident			
WAG 6 McNairy	3.5×10^{-2}	2.3×10^{-6}	3.5×10^{-2}	127,000	<1	127,000
WAG 6 RGA	6.4×10^{-2}	3.1×10^{-6}	6.4×10^{-2}	36,900	<1	36,900
WAG 6 soil	1.3×10^{-2}	2.4×10^{-6}	1.3×10^{-2}	79,300	<1	79,300
Sector 1 soil	NV	NV	NV	NV	NV	NV
Sector 2 soil	8.1×10^{-4}	4.2×10^{-7}	8.1×10^{-4}	10.6	<1	10.6
Sector 3 soil	8.2×10^{-3}	7.9×10^{-7}	8.2×10^{-3}	13.3	<1	13.3
Sector 4 soil	1.9×10^{-4}	2.1×10^{-7}	1.9×10^{-4}	24.8	<1	24.8
Sector 5 soil	1.4×10^{-2}	1.1×10^{-6}	1.4×10^{-2}	85.5	<1	85.5
Sector 6 soil	5.0×10^{-2}	1.8×10^{-6}	5.0×10^{-2}	119	<1	119
Sector 7 soil	1.5×10^{-3}	3.2×10^{-7}	1.5×10^{-3}	129,000	<1	129,000
Sector 8 soil	2.1×10^{-3}	6.4×10^{-7}	2.1×10^{-3}	18.8	<1	18.8
Sector 9 soil	2.7×10^{-4}	1.5×10^{-6}	2.7×10^{-4}	36.8	<1	36.8

Note: NV indicates that a value is not available because the scenario was not assessed for this location—the sector encompasses the area below the C-400 Building.
All HI values are for the child resident.

Unlike soil, a background screen was not used when developing the list of COPCs for groundwater. This screen was not performed because the background concentrations for groundwater, which were used in earlier risk assessments at the PGDP, were determined to be suspect during recent discussions with regulatory agencies because of changes in sampling methods. Generally, these changes in sampling methods led to unfair comparisons between analyte concentrations in site samples and the background concentrations. Although an effort to update the groundwater background concentrations is underway, this work was not completed when this assessment was performed. However, because the risks from groundwater in this assessment are driven in large part by organic chemicals which would not be removed from the list of COPCs on the basis of a background screen, the estimated effect of this uncertainty is small.

1.6.1.2 Determination of exposure point concentrations—current conditions

The uncertainty in the calculated exposure point concentrations under current conditions cannot be quantified for this BHHRA. Although sampling data came from sources of known quality, and the data set was generated from samples collected and analyzed using EPA-approved protocols, the lack of validation for some data could have resulted in the retention of analyte concentrations that may be erroneous. Similarly, as indicated in Sect. 2 of Vol. 1, data assessment indicates that some results may be suspect for a variety of reasons. However, because the risk estimates are driven for the most part by contaminants known to be present in the WAG 6 area from earlier work, the effect of this uncertainty on the final risk estimates is believed to be small.

1.6.1.3 Determination of exposure point concentrations—future conditions

Uncertainty is involved in characterizing exposure point concentrations under future conditions in this BHHRA. In calculating the exposure point concentrations at WAG 6, the concentrations of COPCs are kept

530512

constant throughout the exposure period. That is, the risk assessment does not consider that concentrations of some COCs may be lower or higher in the future because of processes such as degradation and attenuation. However, because the COCs driving risk at the SWMUs are not expected to degrade significantly throughout a lifetime, the effect of this uncertainty is estimated to be small.

A second uncertainty is the potential risk which may develop as COPCs in media at WAG 6 migrate to groundwater below the WAG and are transported offsite. As noted in Sect. 5 of Vol. 1, to address this uncertainty, the Multimedia Environmental Pollutant Assessment System (MEPAS) model was used to estimate potential concentrations of selected COPCs in groundwater at the DOE property boundary. (A complete presentation of the results of the MEPAS model is in App. C of this volume.) While the MEPAS model can estimate contaminant transport though multiple media, this model does not consider all possible contaminants present and geochemical interactions that may occur. Additionally, the model estimates contaminant concentrations assuming that the receiving groundwater is not contaminated. Therefore, the contaminant concentrations estimated for groundwater differ from the actual concentrations. Therefore, the risk estimates generated using the results of the MEPAS model should be considered to be screening estimates, and they should only be used to direct future modeling efforts as needed. Generally, the belief is that the effect of the MEPAS modeling uncertainties on the risk estimates is moderate.

A related uncertainty is the lack of modeling of contaminant migration to surface water bodies through overland flow. As discussed in Sect. 5 of Vol. 1, this pathway was not modeled because site information indicated that contaminant migration through this pathway was not significant at WAG 6. Generally, the results of the exposure assessment and the risk characterization support this conclusion. These determined that the primary surface contaminants at WAG 6 are PAHs. These contaminants do not partition to water; therefore, any transport must involve sediment transport as well as water flow. Because each of the WAG 6 locations are of low relief limiting the velocity of sheet flow, and because much of the unit is covered by either gravel, concrete, or grass, such transport is not expected. Therefore, the estimated effect of this uncertainty on the final risk estimates is small.

1.6.1.4 Use of concentrations from total versus filtered samples

In this BHHRA, all analyte concentrations in water came from the analyses of unfiltered or total samples. The use of data from analyses of total samples is consistent with current EPA guidance (RAGS) but introduces an additional uncertainty to the BHHRA for some water use pathways. Note that the magnitude of the effect of this uncertainty upon the risk estimates is difficult to determine because it is not known to what extent the quality of water (in terms of total solids) from a residential well would vary from the quality of water taken during the recent sampling effort. However, because the samples used in this BHHRA came from both wells and driven rods, some samples did have high solid content. Exhibit 1.52 addresses theses groundwater issues by presenting a comparison between residential use risk estimates calculated using results from all unfiltered groundwater samples, unfiltered groundwater samples from monitoring wells alone, and all filtered samples.

Exhibit 1.52. Comparison of filtered and unfiltered samples and monitoring wells and driven rods

SWMU	All Samples; Unfiltered Water		Monitoring Well Samples; Unfiltered Water		All Samples; Filtered Water	
	HI	ELCR	HI	ELCR	HI	ELCR
WAG 6 McNairy	224	3.6×10^{-2}	16.7	1.1×10^{-2}	4.2	1.6×10^{-2}
WAG 6 RGA	475	6.6×10^{-2}	6800	2.5×10^{-1}	7.9	3.0×10^{-4}

Notes: All risks estimated are for a residential user. HI is for a child resident.
All HI estimates do not include lead as a COPC.

As seen in Exhibit 1.52, for samples from both the RGA and the McNairy Formation, the HI estimates calculated using unfiltered water from all samples differed from HI estimates calculated using unfiltered samples from monitoring wells and from HI estimates calculated using filtered samples by about one and two orders of magnitude, respectively. However, for ELCR the differences in the estimates between the RGA and McNairy were not consistent. For the McNairy samples, these differences were less than one order of magnitude. For the RGA, these differences were again about one and two orders of magnitude, respectively. In addition, for the RGA, the risk estimates are actually seen to be larger for unfiltered samples from monitoring wells than for unfiltered water from all samples. (Note, this is most likely because of the smaller data set for monitoring wells which led to the selection of the maximum detected concentration of contaminants as exposure concentrations.) In any case, the results in Exhibit 1.52 shows, for RGA samples, that the risk estimates could be markedly different if results from filtered samples were used. This conclusion is different from that reached in an earlier uncertainty analysis in *Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant* (DOE 1994a, page 5-95), where it was determined that risk from the total and filtered concentrations of manganese, a primary risk driver in that assessment, varied by less than an order of magnitude. In summary, the uncertainty in water sampling appears to vary from small to moderate in this assessment depending upon which comparisons are investigated.

1.6.2 Uncertainties Associated with Exposure Assessment

Uncertainties associated with the exposure assessment are from five sources. These are uncertainties in biota fate and transport modeling, in use of the RME scenario, in the development of the conceptual site model and selection of pathways, in use of default values when estimating dermal absorbed dose, and in use of conservative exposure values for the excavation worker. Each of these uncertainties is discussed in the following material.

1.6.2.1 Uncertainties in biota fate and transport modeling

Modeling was used to estimate chemical concentrations and radionuclide activities in biota in this BHHRA. Although the models used in this assessment are industry standards (Methods Document), the output from these models contain a considerable amount of uncertainty. To ensure that these models generated values which were unlikely to underestimate dose (i.e., were conservative values), default modeling parameters were used in all cases. Such conservative assumptions ensure that the risk values estimated tend to be conservative. However, their use may result in risk estimates that overestimate the real risk.

To examine this uncertainty, risk estimates including and omitting the biota exposure routes were compiled. Exhibit 1.53 displays these results. (Note, all estimates of HI are for child exposures, and the effects of lead have been removed.) This exhibit shows that the effect of this uncertainty on the assessment is small for groundwater and small to moderate for soil.

The effect of this uncertainty on the results for the future recreational user is much greater. As discussed in Subsect. 1.3, the only pathways assessed for the future recreational user were the biota pathways. Therefore, the recreational land use scenario would not be a scenario of concern for any location if the biota pathways are ignored.

Exhibit 1.53. Effect of omitting the biota pathways

SWMU	Future Resident with Biota Consumption		Future Resident without Biota Consumption	
	HI	**ELCR**	**HI**	**ELCR**
WAG 6 McNairy	224	3.6×10^{-2}	134.5	2.2×10^{-2}
WAG 6 RGA	475	6.6×10^{-2}	279	2.0×10^{-2}
WAG 6 soil	89.6	1.3×10^{-2}	11.7	1.1×10^{-3}
Sector 1 soil	NV	NV	NV	NV
Sector 2 soil	10.6	8.1×10^{-4}	2.6	5.9×10^{-5}
Sector 3 soil	13.3	8.2×10^{-3}	2.1	3.3×10^{-4}
Sector 4 soil	24.8	1.9×10^{-4}	6.0	1.2×10^{-5}
Sector 5 soil	85.5	1.4×10^{-2}	11.1	1.3×10^{-3}
Sector 6 soil	119	5.0×10^{-2}	8.4	3.7×10^{-3}
Sector 7 soil	53.6	1.5×10^{-3}	10.1	3.8×10^{-4}
Sector 8 soil	18.8	2.1×10^{-3}	6.0	7.3×10^{-4}
Sector 9 soil	36.8	2.7×10^{-4}	8.0	2.8×10^{-5}

Note: NV indicates that the scenario was not assessed for this location because this location is covered by the C-400 Building.
HI values are for the child without including lead as a COPC.

1.6.2.2 Uncertainties in use of reasonable maximum exposure scenarios

For each exposure pathway modeled, assumptions were made about the number of times a year an activity could occur, routes of exposure, and rate of intake of contaminated media. Because site-specific data were not available for many parameters, EPA and Commonwealth of Kentucky defaults were used (Methods Document). Because most of these defaults are conservative to prevent the underestimation of risk estimates, the risk estimates tend to be conservative. Generally, when several upper-bound values are combined, the resulting value tends to exceed the level of exposure that may be reasonable at a site. In consideration of this problem, attention should be focused not on the fact that any individual dose model is overly conservative, because most are not, but on the fact that if results from several conservative dose models are combined, then the resulting total dose is an overestimate.

To examine the potential effect of this uncertainty, risks for the residential scenario were estimated using average values for all exposure parameters. (All exposure parameters used in this assessment were taken from the preliminary review draft of EPA's *Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure, Review Draft*. This report is presented in App. H of this volume.) In this assessment, the exposure pathways evaluated were identical to those used in the RME scenario. Similarly, the exposure equations, chemical concentrations, radionuclide activities, and toxicity values were identical to those used for the RME scenario. The results of this assessment are presented in the Exhibit 1.54. (Note, in this exhibit, HIs are for child exposures. Also, the results include lead as a COPC.) This exhibit shows that the effect of this uncertainty was small for estimates of systemic toxicity and ELCR.

Exhibit 1.54. Comparison of results using average exposure parameters to calculate dose versus RME parameters to calculate dose for the rural resident

SWMU	HI (RME)	HI (Average)	ELCR (RME)	ELCR (Average)
WAG 6 McNairy	127,000 (224)	105,000	3.5×10^{-2}	7.8×10^{-3}
WAG 6 RGA	36,900 (475)	30,500	6.4×10^{-2}	1.4×10^{-2}
WAG 6 soil	79,300 (89.6)	52,600	1.3×10^{-2}	2.7×10^{-3}
Sector 1 soil	NV	NV	NV	NV
Sector 2 soil	10.6 (10.6)	7.1	8.1×10^{-4}	1.7×10^{-4}
Sector 3 soil	13.3 (13.3)	8.86	8.2×10^{-3}	1.7×10^{-3}
Sector 4 soil	24.8 (24.8)	16.5	1.9×10^{-4}	4.1×10^{-5}
Sector 5 soil	85.5 (85.5)	56.8	1.4×10^{-2}	2.9×10^{-3}
Sector 6 soil	119 (119)	78.7	5.0×10^{-2}	1.1×10^{-2}
Sector 7 soil	129,000 (53.6)	85,800	1.5×10^{-3}	3.2×10^{-4}
Sector 8 soil	18.8 (18.8)	12.5	2.1×10^{-3}	4.4×10^{-4}
Sector 9 soil	36.8 (36.8)	24.5	2.7×10^{-4}	5.5×10^{-5}

Note: NV indicates that the scenario was not assessed for this location because it is entirely covered by the C-400 Building.
All HI values are for a child resident.
For information, the total HI without lead is shown in parenthesis under HI(RME).

1.6.2.3 Uncertainties related to development of the site conceptual models

Generally, the level of uncertainty in the development of the site conceptual models is small. Data used to develop these models were from several previous studies of the site and from local experts. However, there are some uncertainties related to specific scenarios that deserve additional explanation. These uncertainties are the consideration or lack of consideration of specific pathways for some scenarios, the lack of consideration of a separate intruder/infrequent recreational user scenario, and the summation of risks across areas and across scenarios.

An uncertainty related to assessment of specific pathways is the consideration of groundwater ingestion by the future industrial worker and future rural resident. Use of groundwater as drinking water and for showering was assumed in the assessment. These exposure routes were included to provide risk managers with additional information about the potential risk posed by groundwater at WAG 6. However, at present, PGDP does not use groundwater. Additionally, PGDP does not plan to use groundwater in the future.

In this assessment the risks from on-site use of groundwater were reported separately from risks from exposure to contaminants in soil. This is unlike earlier assessments for PGDP in which risks from soil exposure were summed with those from groundwater exposure. Risks were not summed in this assessment because contaminant concentrations in groundwater were calculated using all groundwater data collected from the WAG 6 area while contaminant concentrations were calculated both within sector and over the WAG 6 area. Exhibit 1.55 addresses this issue for the WAG 6 area by reporting the sum of risks from soil and groundwater exposures for the future industrial worker and future rural resident. (The HIs do not include lead as a COPC.) As shown in these tables, the effect of this uncertainty is small at WAG 6.

Exhibit 1.55. Presentation of groundwater risks plus soil risks for the future industrial worker and future rural resident at WAG 6

			ELCR		
Receptor	**McNairy**	**RGA**	**WAG 6 soil**	**McNairy + soil**	**RGA + soil**
Future industrial worker	4.5×10^{-3}	2.7×10^{-3}	3.3×10^{-4}	4.8×10^{-3}	3.0×10^{-3}
Future rural resident	3.5×10^{-2}	6.4×10^{-2}	1.3×10^{-2}	4.8×10^{-2}	7.7×10^{-2}
			HI		
Future industrial worker	20.6	37.7	1.84	22.44	39.54
Future child rural resident	224	475	89.6	313.6	564.6
Future adult rural resident	84.4	169	26.9	111.3	195.9

Notes: All HIs do not include lead as a COPC.

Another uncertainty related to the consideration of specific pathways is lack of consideration of consumption of livestock or products from livestock raised in contaminated areas. If the industrial infrastructure was removed, WAG 6 is of sufficient size to supply sufficient pasture for beef and dairy cows. Based on the results of other risk assessments done for PGDP (DOE 1994a), that incorporation of this pathway into the risk characterization would have increased the risk to the rural resident at this unit. However, because the ECLR and systemic hazard to the rural resident at these units are already very high, the incorporation of the livestock pathway into the risk characterization would not have changed the final selection of the rural resident as a land use scenario of concern at this unit. Therefore, the effect of this uncertainty for all units is small.

The lack of consideration of a separate intruder/infrequent recreational user scenario in the risk assessment did not impact the results reported in the risk characterization because the results from this scenario would have been reported separately. Also, because WAG 6 presents little attractive recreational landscape (there are no ponds or creeks) the assessment assumes no direct exposure by a recreational user to contaminated media. Therefore, the risks to an infrequent intruder/infrequent recreational user would equal those for the frequent recreational user because the only route of exposure is through consumption of venison, rabbit and quail that may range in the WAG 6 area at some time in the future. However, a change in the rate of consumption of game from the area would affect the results.

In the BHHRA, risks were calculated across all sectors and for each sector. Presenting the risks in this manner does not impact the risk characterization for each of the scenarios within the separate analyses. However, when examining the risks across all sectors, note that high contaminant concentrations for some areas may be masked by the lower contaminant concentrations in other sectors. Interestingly, this result is at odds with several recently received comments which have noted that reported risks would be higher if exposure at multiple units is considered. As shown in this assessment, this is true only when areas with minor contamination are assessed or when exposure rates are allowed to vary between assessment. However, when significant contamination is considered and when exposure rates are held constant, the risk estimate across multiple units is less than the risk estimates for the single unit.

1.6.2.4 Uncertainties related to use of default values when estimating dermal absorbed dose

In this assessment, the default dermal absorption factors for soil provided by the Commonwealth of Kentucky in its *Risk Assessment Guidance* (KDEP 1995) were used in most cases because chemical-specific absorption values were not available. In this guidance the absorption factors, which estimate the percentage of a contaminant in soil or sediment crossing the skin and entering the body, are 5 percent for inorganic compounds, 10 percent for semivolatile organic compounds, and 25 percent for volatile organic compounds.

These factors are much higher than those recommended by EPA Region IV (EPA 1995a). These factors are 0.1 percent for inorganic chemicals and 1 percent for organic compounds.

The effect of using the Commonwealth of Kentucky's default values for dermal absorption versus the EPA Region IV values is illustrated in Exhibit 1.56. This exhibit compares the systemic hazards and ELCRs from the dermal contact exposure route for the WAG 6 area when these estimates are derived using the Commonwealth of Kentucky's default values and EPA Region IV values, respectively. (Note, all values in the following exhibit are for current industrial worker with lead included as a COPC.) As shown in this exhibit, the overall effect of this uncertainty at this location is small for ELCR and large for HI.

Exhibit 1.56. Effect of using Commonwealth of Kentucky defaults for dermal absorption versus EPA Region IV defaults for current industrial worker

	HI (Kentucky)	HI (EPA)	ELCR (Kentucky)	ELCR (EPA)
WAG 6	1120	22	3.2×10^{-4}	2.4×10^{-5}

1.6.2.5 Uncertainties related to use of default values for the excavation worker and industrial worker exposure scenario

In guidance, the Commonwealth of Kentucky (KDEP 1995) recommends using 185 days per year and 25 years for the exposure frequency and the exposure duration, respectively, for the excavation worker. These values probably exceed the real values for WAG 6 because the excavation scenario typically represents a soil removal action associated with construction of a foundation or excavation of contaminated soil. For nearly all waste sites or foundation construction sites, this is a one time event of short duration. According to *Regulatory Impact Analysis for Radiation Site Cleanup Proposed Rule* (EPA 1995b) and *Means Heavy Construction Cost Data, 8th Annual Edition*. R.S. Means Company, Inc. Kingston, Massachusetts, a cubic meter of soil can be excavated in 0.05 hours with a crew of one supervisor, two laborers, and one heavy equipment operator. Using the sizes of the sectors presented earlier, assuming that the first 10 feet of soil is excavated, and using a 1 m^3/0.05 hr (20 m^3/hr) soil excavation rate, the number of eight hour work days, with no breaks, required to totally excavate each sector can be calculated.

Exhibit 1.57 compares risks calculated using the KDEP exposure parameters to risks calculated using site-specific duration. As shown, ELCR decreases for all locations, and HI decreases for all but WAG 6 and Sector 8. (The site-specific exposure frequency could possibly be above the KDEP default; therefore, the HI can increase under site-specific exposure rates. For this BHHRA, the number of days and years to complete the excavation was set to maintain the exposure frequency as close to, but not over, 250 days per year, and the exposure duration was set to maintain the smallest whole number of years possible. This was the most conservative approach.) The effect of using KDEP exposure parameters for an excavation worker is moderate for ELCR and small for systemic toxicity.

Another uncertainty affecting the excavation worker scenario concerns the toxicity values used for the scenario. For the excavation worker calculations, toxicity values based on chronic exposure were utilized. By definition, chronic exposures are those longer than 7 years in length and subchronic exposures are those less than 7 years in length (RAGS). Therefore, for the excavation worker scenario, toxicity values based on subchronic exposure may have been more appropriate. However, chronic values were used for the excavation scenario to remain consistent with KDEP exposure duration (i.e., 25 years) and because subchronic values are lacking for many chemicals. However, because the difference between subchronic and chronic toxicity values for systemic toxicity is one order of magnitude (RAGS), the effect of this uncertainty on the risk assessment is small.

Exhibit 1.57. Effect of using Commonwealth of Kentucky defaults for excavation worker versus site specific exposure parameters for current excavation worker

SWMU	HI default	HI site specific without lead	ELCR default	ELCR site specific
WAG 6 soil	810 (3.2)	14	2.6×10^{-3}	4.6×10^{-4}
Sector 1 soil	NV	NV	NV	NV
Sector 2 soil	1.2 (1.2)	<1	8.1×10^{-4}	1.1×10^{-6}
Sector 3 soil	790 (<1)	<1	1.2×10^{-4}	1.0×10^{-6}
Sector 4 soil	770 (1.6)	<1	3.6×10^{-4}	3.8×10^{-6}
Sector 5 soil	770 (1.6)	1.3	2.3×10^{-4}	7.9×10^{-6}
Sector 6 soil	2.1 (2.1)	<1	5.5×10^{-4}	8.4×10^{-6}
Sector 7 soil	860 (1.7)	<1	1.3×10^{-4}	1.9×10^{-6}
Sector 8 soil	1900 (4.4)	10	2.3×10^{-4}	2.1×10^{-5}
Sector 9 soil	1700 (2.7)	<1	1.5×10^{-4}	$<1 \times 10^{-6}$

Note: NV indicates that the scenario was not assessed for this location. Sector 1 was not assessed because it is entirely covered by the C-400 Building.
Values in parentheses are for when lead is not included as a COPC.

For this assessment, site-specific exposure parameters for the current industrial worker were not used. However, at other locations at PGDP, the site-specific exposure parameters for general site maintenance were estimated to be approximately 16 days a year for exposure frequency and 25 years for exposure duration. Exhibit 1.58 presents a comparison of risk results using KDEP default exposure parameters to the aforementioned PGDP site-specific exposure parameters.Note, in this comparison, lead is not included as a COPC. As shown, the effect of using KDEP exposure parameters for a current industrial worker is small for ELCR and systemic toxicity.

Exhibit 1.58. Effect of using Commonwealth of Kentucky defaults for industrial worker versus site specific exposure parameters for current industrial worker

SWMU	HI default	HI site specific	ELCR default	ELCR site specific
WAG 6 soil	1.8	<1	3.3×10^{-4}	2.1×10^{-5}
Sector 1 soil	NV	NV	NV	NV
Sector 2 soil	<1	<1	1.7×10^{-5}	1.1×10^{-6}
Sector 3 soil	<1	<1	8.5×10^{-5}	5.4×10^{-6}
Sector 4 soil	1.0	<1	3.7×10^{-6}	2.3×10^{-7}
Sector 5 soil	1.8	<1	4.0×10^{-4}	2.6×10^{-5}
Sector 6 soil	1.2	<1	1.1×10^{-3}	7.3×10^{-5}
Sector 7 soil	1.6	<1	1.2×10^{-4}	7.9×10^{-6}
Sector 8 soil	1.0	<1	2.4×10^{-4}	1.5×10^{-5}
Sector 9 soil	1.3	<1	5.2×10^{-6}	3.3×10^{-7}

Note: NV indicates that the scenario was not assessed for this location because it is entirely covered by the C-400 Building.

While Exhibit 1.58 shows that risks only fall slightly when exposure at the sectors is set to the rates used for general maintenance of other sites at PGDP, these risks may still exceed the real risks associated with exposure at the WAG 6 SWMUs because site-specific information indicates that the real rates of exposure at the SWMUs are very small. For example, interviews with management personnel about worker access to the WAG 6 SWMUs determined the following.

- SWMU 11 (Sector 4)–Sampling crews spend an estimated 5 man-hours per year in the area sampling and taking water measurements from wells.
- SWMU 26 (Sector 8)–General grounds maintenance requires two individuals at the rates of one day a month and seven months a year.
- SWMU 40 (Sector 2)–Sampling crews spend an estimated 15 minutes per week taking the water level of the pit.
- SWMU 47 (Sector 6)–This area is not easily accessed because it is a health physics radiological area. There is no grounds maintenance in the area.
- SWMU 203 (Sector 7)–This area is not routinely accessed. The last reported maintenance activity on the pit occurred approximately 3 years ago and required 16 man-hours.

1.6.3 Uncertainties Associated with Toxicity Assessment

Uncertainties related to the toxicity assessment are from three sources. These are uncertainty because of lack of toxicity values for some chemicals, uncertainty in the calculation of toxicity values by EPA, and uncertainty in the calculation of absorbed dose toxicity values from administered dose toxicity values. Each of these is discussed in the following paragraphs.

1.6.3.1 Uncertainties because of lack of toxicity values for some chemicals

Uncertainties because of lack of toxicity values for some chemicals results from two sources in this BHHRA. These are the uncertainty from the use of provisional or withdrawn values and the uncertainty from extrapolating a toxicity value for an administered dose (oral) to an inhalation dose.

The uncertainty from the use of provisional or withdrawn values had a significant effect on the results of the BHHRA. Some COPCs did not have approved toxicity values, so a provisional or withdrawn value was used. The most notable of these COPCs was lead. This provisional reference dose toxicity value was provided by KDEP in a comment package on the WAG 17 RI/BRA. As discussed extensively in Subsect. 1.5, the systemic toxicity posed by lead dominates all land use scenarios in those sectors where lead was detected. For better interpretation of the systemic toxicity results for the rest of the COPCs in the BHHRA, results with and without contributions from lead are provided. Generally, the effect of using these provisional and withdrawn values on the final risk estimates was large for systemic toxicity and small for ELCR. Table 1.90 presents these results.

In the past, for the PCBs (e.g., Aroclor 1254, 1260, etc.), there was uncertainty in the selection of the appropriate toxicity value for individual Aroclors because of difficulty in the identification of specific Aroclors in the laboratory, the differential media accumulation of the Aroclors over time, and weathering processes which alter Aroclors over time making the Aroclors appear to be more chlorinated than they really are. To address these concerns and to ensure that the risk numbers for Aroclors were conservative, KDEP requires that all PCBs be evaluated as Aroclor 1260. This assessment is consistent with KDEP guidance because in it the ingestion of soil toxicity values for all Aroclors were assumed to be equal to 2.0 $[mg/(kg\text{-}day)]^{-1}$, consistent with recent EPA guidance (EPA 1996a), and results for exposures to multiple Aroclors are summed. Therefore, unlike earlier assessments performed at PGDP where the effect of the uncertainty in the selection of the appropriate toxicity values for PCBs on the final risk values may have been moderate, the effect of this uncertainty on the final risk values in the current assessment on the final risk number is small.

Including inhalation toxicity values extrapolated from toxicity values based on administered doses in the risk characterization would not have significantly affected the results of the BHHRA. EPA guidance recommends against extrapolating between oral and inhalation toxicity values (RAGS) because of the differing path a chemical entering through the lungs must follow before exerting its effect versus entry through the gut. However, examination of this form of extrapolation as an uncertainty in assessments for the PGDP was requested by the regulatory community. Previous work at the PGDP, in which this effect was examined quantitatively, determined that including extrapolated inhalation toxicity values in the risk characterization resulted in insignificant changes in the final risk estimates. Therefore, the estimated effect of this uncertainty on risk results is small.

1.6.3.2 Uncertainties in deriving toxicity values

Standard EPA RfDs and slope factors were used to estimate potential noncarcinogenic and carcinogenic health effects from exposure to chemicals. Considerable uncertainty is associated with the method applied to derive slope factors and RfDs. The EPA has working groups that review all relevant human and animal studies for each compound and select the studies pertinent to the derivation of the specific RfD and slope factor. These studies often involve data from experimental studies in animals, high exposure levels, and exposures under acute or occupational conditions. Extrapolation of these data to humans under low-dose, chronic conditions introduces uncertainties. The magnitude of these uncertainties is addressed by applying uncertainty factors to the dose response data for each applicable uncertainty. These factors are incorporated to provide a margin of safety for use in human health risk assessments. The effect of uncertainties in calculation of chemical toxicity values is moderate.

Unlike the uncertainty associated with chemical toxicity values, the uncertainty associated with radionuclide toxicity values is small. The dose-response relationship between cancer and ionizing radiation has been evaluated in many reports and is well established. In addition, unlike toxicity values for chemicals, risk factors for radionuclides are extrapolated from the cancer risk established using the Japanese Atomic Bomb Survivors database and a relative risk projection model. Therefore, these values are based on human data.

1.6.3.3 Uncertainties because of calculation of absorbed dose toxicity values from administered dose toxicity values

Uncertainty exists in the validity of the calculations used to convert an administered dose toxicity value to an absorbed dose. Of greatest importance is the lack of consideration of point-of-contact effects in this calculation. For example, some organic analytes (e.g., PAHs) can cause a toxic or cancer response in skin. This effect is not considered in the calculation of absorbed dose toxicity values from administered dose toxicity values using EPA protocols. Similarly, the administered dose response for many chemicals relies on the delivery of a high concentration of contaminants to the liver via the portal system after ingestion; this effect is not seen if a contaminant is absorbed through the skin because of the larger distribution space for the contaminant absorbed through the skin. However, even with these uncertainties, the effect of the uncertainty in calculation of absorbed dose toxicity values from administered dose toxicity values upon the risk estimates is estimated to be small.

530521

1.6.4 Uncertainties Associated with Risk Characterization

Two uncertainties are related to risk characterization. The first is the method used to combine HQs and chemical-specific ELCRs over pathways and combine pathway HIs and ELCRs to calculate total HI and ELCR. The second is the uncertainty added to the assessment by combining risks from chemicals and radionuclides. These uncertainties are discussed in the following subsections.

1.6.4.1 Combining chemical-specific risk values and pathway risk values

The primary uncertainty in risk characterization is the method used to combine HQs and chemical-specific ELCRs over pathways and combine pathway HIs and ELCRs to calculate total HI and ELCR. The uncertainties in this method are discussed in the following text.

The method used to calculate pathway HIs and ELCRs in the BHHRA followed EPA protocols (RAGS, Methods Document). This guidance calls for the simple summation of HQs and chemical-specific ELCRs to calculate pathway HIs and ELCRs, respectively. This method assumes that all effects between chemicals are additive. EPA makes this assumption because information concerning the effect of chemical mixtures is lacking. Specific limitations of this approach for systemic toxicity effects have been reported by EPA in RAGS.

- Little is known about the effects of chemical mixtures; although additivity is assumed, the interaction of multiple chemicals could possibly be synergistic or antagonistic.

- The RfDs and RfCs do not have equal accuracy or precision and are not based on the same severity of effects.

- Dose additivity is most properly applied to compounds that induce the same effect by the same mechanism of action. While the approach recommended by EPA is a useful screening-level approach, the potential for at least noncarcinogenic effects to occur can be overestimated for chemicals that act by different mechanisms and on different target organs.

Therefore, the effect of this uncertainty on the estimate of systemic toxicity depends on how many contaminants drive systemic toxicity and if the contaminants have different endpoints. In this BHHRA, many contaminants do drive systemic toxicity for most scenarios, and these contaminants do have differing endpoints. However, as shown in Exhibits 1.46 through 1.49, individual contaminants alone contribute significant levels of risk for each scenario, and the HI associated with the single contaminant alone is great enough that a systemic toxic effect may be reasonably expected. Therefore, the effect of this uncertainty on HIs is small.

Specific limitations for this approach in regard to chemical carcinogenesis have also been reported by EPA in RAGS:

- Cancer risks (i.e., ELCRs) are based on slope factors that represent an upper 95th percentile estimate of potency; the upper 95th percentiles of probability distributions are not strictly additive. Summing these risks can result in an overly conservative estimate of lifetime ELCR.

- Cancer risks may not be additive. Similar to HI, the endpoints may differ, and mechanisms of effect may vary.

- Not all slope factors contain the same weight-of-evidence for human carcinogenicity. As explained in Subsect. 1.4, EPA recognizes this by placing weight-of-evidence classifications on all slope factors. Those contaminants with an A weight-of-evidence should probably receive more attention in the selection of a remedial design than contaminants with a B or C classification. Similarly, a contaminant with a B classification should probably receive greater attention than one with a C classification. The simple combination of ELCRs does not take this hierarchy into account.

Therefore, the uncertainties involved in combining chemical-specific ELCRs and pathway ELCRs are considerable. However, the effect of these uncertainties on the total ELCRs presented in the BHHRA is small because a single chemical dominates the pathway ELCR for most pathways. Therefore, the potential effect of mixtures is reduced.

1.6.4.2 Combining risks from chemicals with those from radionuclides

Some uncertainty is associated with adding risks from chemical exposure to those from exposure to radionuclides. This uncertainty arises from two sources. First, as noted in Subsect. 1.4, the slope factors used to characterize the risk from chemicals are derived differently from the slope factors used to characterize risk from radionuclides. This difference may result in estimates of chemical exposure risks that may be considered to be upper-bound risk estimates and estimates of radionuclide exposure risks that may be considered to be central tendency (i.e., "best") estimates. Therefore, combining chemical exposure and radionuclide exposure risk estimates to estimate total risk for a land use scenario may place too much emphasis on chemical exposure risk. Second, the mechanism by which chemicals may cause cancer may vary from the mechanism by which radionuclides may cause cancer (see Subsect. 1.4). This difference in mechanism of action inflates the uncertainties discussed in Subsect. 1.6.4.1 that assume cancer risks are additive. Overall, the effect of this uncertainty on the total risk value for each land use scenario is small because, as discussed in Subsect 1.6.4.1, generally one COC drives the risks at the SWMUs assessed. At sites where there are multiple chemicals and radionuclides driving risk, the effect of this uncertainty could be moderate.

1.6.5 Summary of Uncertainties

As is shown in the previous subsections, the risk estimates could vary if different assumptions were used in deriving the risk estimates or if better information was available for some parameters. The following text summarizes the estimated effects of each uncertainty mentioned previously.

The only uncertainty with an effect estimated to be large is the use of the provisional toxicity values for lead systemic toxicity. (Please note, because this uncertainty was identified as being large and easy to quantify, it receives greater attention in summary discussions in this RI than some of the other uncertainties. This attention is not meant to imply that the authors believe that the provisional toxicity value for lead provided by the KDEP is incorrect.)

Uncertainties with effects estimated to be moderate are:

- migration of groundwater to offsite receptors may underestimate risk,
- use of site-specific exposure values on ELCR for the excavation worker,
- calculation of toxicity values for chemicals, and
- combination of chemical with radiological ELCRs.

Uncertainties with effects estimated to be small are:

- inclusion of infrequently detected COPCs,
- inclusion of infrequently analyzed for COPCs,
- determination of temporal patterns in data,
- use of quantitation limits that exceed human health PRGs,
- lack of historical data with data collected as part of the RI,
- inclusion of common laboratory contaminants in the data,
- lack of analyte comparison to blanks,
- contribution of analytes removed based on comparison to PRGs,
- removal of analytes based on comparison to background values,
- determination of exposure points for current concentrations,
- determination of exposure points for future concentrations,
- use of total water samples versus filtered,
- inclusion of biota exposure pathways,
- use of RME default exposure values instead of central tendency exposure values,
- evaluation of groundwater separately from soil in future land use scenarios,
- omission of livestock in future rural resident land use scenario,
- omission of an intruder/infrequent recreator land use scenario,
- summation across land use scenarios and SWMUs on risk characterization,
- use of KDEP dermal absorption values instead of EPA values on the total risk,
- use of site-specific exposure values on systemic toxicity for the excavation worker,
- use of site-specific exposure values on systemic toxicity and ELCR for the current industrial worker,
- use of chronic toxicity values for the excavation worker land use scenario,
- use of provisional and withdrawn toxicity values, except for lead, on ELCR and HI,
- selection of toxicity values for PCBs,
- use of inhalation toxicity values extrapolated from oral toxicity values,
- determination of radionuclide toxicity values,
- use of absorbed toxicity values calculated from administered toxicity values,
- combination of risk from chemicals and radionuclides in pathways, and
- combination of pathway risks to determine land use scenario risk.

These uncertainties are summarized in more detail in Table 1.91.

1.7 CONCLUSIONS AND SUMMARIES

This section summarizes the results of the risk assessment and draws conclusions from the results. The primary purpose of this section is to provide a concise summary of each of the risk assessment steps without the use of tables, extensive explanations, or justifications. However, this section also includes a series of observations in which the results of the risk assessment are combined with the uncertainties in the risk assessment.

1.7.1 Chemicals of Potential Concern

COPCs were selected from the data collected in the recently completed WAG 6 field investigation. This data set was screened to produce a final COPCs list ordered by medium and depth of sampling. The media considered were soil and groundwater. The depths considered for soil were surface soil (sample collected from 0 to 1 foot below ground surface), subsurface soil (sample collected from 0 to 16 feet below ground surface), and other (sample collected from more than 16 feet below ground surface). For groundwater, the depth considered were Upper Continental Recharge System (UCRS) water, Regional Gravel Aquifer (RGA) water, and McNairy Formation water. Of these groups, one soil group and one water group are not assessed

530524

directly in the risk assessment. These are other soils and UCRS water. However, while not assessed directly, these groups are assessed indirectly because they serve as sources of contamination to underlying groundwater in the contaminant transport modeling.

Through a series of screening steps, which follow regulatory agency approved procedures, the soil data sets were reduced to a list of COPCs for each location (i.e., Sectors) and for the WAG 6 area as a whole, and the water data sets were reduced to a list of COPCs for the WAG 6 area as a whole. (Water was only assessed on an area basis because the areas (i.e., Sectors) included in this assessment are contiguous.)

Over the WAG 6 area, 43 COPCs were identified in surface soil, 68 COPCs were identified in subsurface soil, 51 COPCs were identified in RGA water, and 48 COPCs were identified in McNairy Formation water. In addition, over the WAG 6 area, 35 COPCs were modeled from surface and subsurface sources. For sectors, the number of COPCs per soil group was less and varied from 18 and 33 COPCs in surface and subsurface soil, respectively, in Sector 9 (i.e., Far East/Northeast) to 32 and 51 COPCs in Sector 5 (i.e., Southwest).

In general, for the WAG 6 area soil and the sectors, the majority of the COPCs were organic compounds followed in number by inorganic chemicals and radionuclides. Specifically, for the WAG 6 area surface soil, 23 COPCs were organic compounds, 13 COPCs were inorganic chemicals and 7 were radionuclides. Numbers within these classes for WAG 6 subsurface soils were 39, 19, and 10.

For groundwater, the majority of the COPCs were inorganic chemicals followed by radionuclides, and organic compounds. Numbers for these classes for the RGA and McNairy formation were 23, 14, and 14 for the RGA and 12, 19 and 17 for the McNairy Formation. However, the large number of inorganic chemical COPCs in water is related, in part, to the lack of approved background concentrations for these chemicals in groundwater and the collection of water samples from unscreened, undeveloped soil borings.

1.7.2 Exposure Assessment

Historical information and newly collected data were used to develop a conceptual site model for the WAG 6 area and its sectors. After consideration of all data, the scenarios selected for assessment were the industrial worker, excavation worker, recreational user, and rural resident. The current land use scenario was determined to be industrial, and the most plausible future land use scenario was also determined to be industrial. Another future land use determined to be likely was excavation. A less likely future land use scenario was recreational. The least likely land use scenario was determined to be residential. Routes of exposure for each scenario are presented in the following text.

Current onsite industrial worker

- ingestion of soil,
- dermal contact with soil,
- inhalation of vapors and particulates emitted from soil, and
- external exposure to ionizing radiation emitted from soil.

Future industrial worker

- ingestion of soil,
- dermal contact with soil,
- inhalation of vapors and particulates emitted from soil,
- external exposure to ionizing radiation emitted from soil,

530525

- ingestion of groundwater,
- dermal contact with groundwater while showering, and
- inhalation of vapors emitted by groundwater while showering.

Future excavation worker

- ingestion of soil,
- dermal contact with soil,
- inhalation of vapors and particulates emitted from soil, and
- external exposure to ionizing radiation emitted from soil.

Future onsite recreational user

- consumption of venison,
- consumption of rabbit, and
- consumption of quail.

Future onsite rural resident

- ingestion of soil,
- dermal contact with soil,
- inhalation of vapors and particulates emitted from soil,
- external exposure to ionizing radiation emitted from soil,
- ingestion of groundwater,
- dermal contact with groundwater while showering,
- inhalation of vapors emitted by groundwater during household use,
- inhalation of vapors emitted by groundwater while showering, and
- consumption of vegetables.

Future offsite rural resident (at PGDP security fence)

- ingestion of groundwater,
- dermal contact with groundwater while showering,
- inhalation of vapors emitted by groundwater during household use, and
- inhalation of vapors emitted by groundwater while showering.

After selection of the exposure routes, chronic daily intakes were calculated for each medium using standard exposure models. Most parameters used in models were default values; however, site-specific information, especially for the biota pathways, was included.

1.7.3 Toxicity Assessment

The toxicity values used in the risk assessment were those approved by the EPA or recommended for use by the Commonwealth of KDEP. After compiling toxicity information, the determination was made that the majority of the COPCs had a toxicity value available for one or more routes of exposure.

1.7.4 Risk Characterization

Risks were characterized by integrating the chronic daily intakes calculated during the exposure assessment and the toxicity values collected during the toxicity assessment. As a result of this

530526

characterization, it was determined that there are risks associated with exposure to soil and groundwater. Significant results of the risk characterization by area are presented in the following text.

1.7.4.1 Land use scenarios of concern

On site land use scenarios

For the WAG 6 area, all land uses were determined to be of concern [i.e., have a cumulative HI or ELCR greater than 1 or 1×10^{-6}, respectively]. In addition, for the WAG 6 area, risks from both groundwater use and soil contact were of concern if examined alone.

For the sectors, the lists of land uses of concern varied. For Sector 1, which is the area below the C-400 Building, only the excavation worker scenario was assessed, and this scenario was a scenario of concern. For Sectors 2, 4, 7, and 9, all land uses assessed, except the recreational user, were of concern. For Sectors 3, 5, 6, and 8, all scenarios were of concern.

Off site land use scenario

Residential use of RGA groundwater containing contaminants migrating from WAG 6 was determined to be a use of concern.

1.7.4.2 Contaminants of concern

On site land uses

For the WAG 6 area, multiple COCs were found for each of the land uses. The following paragraphs list these COCs by medium and assessment end point.

- Over all land uses, the COCs in soil for systemic toxicity included 14 inorganic chemicals (i.e., aluminum, antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, manganese, nickel, uranium, vanadium, and zinc) and 7 organic compounds (i.e., 1,2-dichloroethene, 2,4-dinitrotoluene, carbon tetrachloride, *trans*-1,2-dichloroethene, trichloroethene, and, as groups of compounds, PAHs and PCBs).

- Over all land uses, the COCs in soil for ELCR included 2 inorganic chemicals (i.e., arsenic and beryllium); 9 organic compounds (i.e., 1,1-dichloroethene, 2,4-dinitrotoluene, carbon tetrachloride, n-nitroso-di-n-propylamine, tetrachloroethene, trichloroethene, vinyl chloride, and, as groups of compounds, PAHs and PCBs); and 7 radionuclides (i.e., cesium-137, neptunium-237, plutonium-239, technetium-99, uranium-234, uranium-235, and uranium-238).

- Over all land uses, the COCs in RGA and McNairy water combined for systemic toxicity included 19 inorganic chemicals (i.e., aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, nitrate, selenium, silver, uranium, vanadium, and zinc) and 12 organic compounds (i.e., 1,1-dichloroethene, 1,2-dichloroethene, 1,2-dichloroethane, 2,4-dinitrotoluene, carbon tetrachloride, chloroform, di-n-octylphthalate, tetrachloroethene, toluene, trichloroethene, *cis*-1,2-dichloroethene, and *trans*-1,2-dichloroethene).

- Over all land uses, the COCs in RGA and McNairy water combined for ELCR included 2 inorganic chemicals (i.e., arsenic and beryllium); 12 organic compounds (1,1-dichloroethene, 1,2-dichloroethene, 2,4-dinitrotoluene, bis(2-ethylhexyl)phthalate, bromo-dichloromethane, carbon tetrachloride,

530527

chloroform, dibromochloromethane, n-nitroso-di-n-propylamine, tetrachloroethene, trichloroethene, and vinyl chloride); and 15 radionuclides (i.e., actinium-228, americium-241, cesium-137, lead-210, lead-212, neptunium-237, plutonium-239, potassium-40, technetium-99, thorium-228, thorium-230, thorium-234, uranium-234, uranium-235, and uranium-238.)

For the current use scenario and the most likely future use scenario (i.e., industrial use), the list of COCs for the WAG 6 area was reduced. The following paragraphs list these COCs by medium type and end point. (The COCs in groundwater are applicable to the future worker scenario only because groundwater is not used on site under current conditions.)

- For the industrial worker scenarios, the COCs in soil for systemic toxicity included 7 inorganic chemicals (i.e., aluminum, antimony, arsenic, chromium, iron, lead, and vanadium).

- For the industrial worker, the COCs in soil for ELCR included 2 inorganic chemicals (i.e., arsenic and beryllium); 2 organic compounds (i.e., PAHs and PCBs as groups of chemicals); and 3 radionuclides (i.e., cesium-137, neptunium-237, and uranium-238).

- For the future industrial worker, the COCs in RGA and McNairy Formation water combined for systemic toxicity included 10 inorganic chemicals (i.e., aluminum, antimony, arsenic, chromium, iron, lead, manganese, nitrate, vanadium, and zinc) and 4 organic compounds (i.e., carbon tetrachloride, di-n-octylphthalate, trichloroethene, and *cis*-1,2-dichloroethene).

- For the future industrial worker, the COCs in RGA and McNairy Formation water combined for ELCR included 2 inorganic chemicals (i.e., arsenic and beryllium); 8 organic compounds (bromodichloromethane, carbon tetrachloride, chloroform, dibromochloromethane, n-nitroso-di-n-propylamine, tetrachloroethene, trichloroethene, and vinyl chloride); and 12 radionuclides (i.e., americium-241, cesium-137, lead-210, lead-214, neptunium-237, plutonium-239, potassium-40, technetium-99, thorium-228, thorium-234, uranium-235, and uranium-238).

Combining the lists of COCs provided above and considering the magnitude of the chemical-specific HIs and ELCRs, the following COCs can be considered "priority COCs" in WAG 6 soil for the current use and most likely future use scenarios (i.e., industrial use):

- Inorganic chemicals–beryllium and lead

- Organic compounds–PAHs

- Radionuclides–none

Combining the lists of COCs provided above and considering the magnitude of the chemical-specific HIs and ELCRs, the following COCs can be considered "priority COCs" in WAG 6 water for the most likely future use scenario (i.e., industrial use):

- Inorganic chemicals–arsenic, beryllium, iron, lead, and vanadium

- Organic compounds–trichloroethene and vinyl chloride

- Radionuclides–lead-210

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Off site land uses

Multiple COCs were also found for the off site residential groundwater user. COCs from WAG 6 sources determined through modeling to be migrating from the WAG 6 area and posing either unacceptable systemic toxicity or ELCR were:

- Inorganic chemicals–antimony, copper, iron, and manganese
- Organic compounds–1,1-dichloroethene, 2,4-dinitrotoluene, carbon tetrachloride, n-nitroso-di-n-propylamine, tetrachloroethene, trichloroethene, and vinyl chloride
- Radionuclides–technetium-99

1.7.4.3 Pathways of concern

On site land uses

All exposure routes included in the BHHRA were determined to be pathways of concern for the WAG 6 area for one or more land uses. However, for current industrial user, the only exposure routes identified as pathways of concern were incidental ingestion of soil, dermal contact with soil, and external exposure to ionizing radiation emitted from contaminants in soil. For the future industrial user, in addition to the soil exposure routes, the following water exposure routes were also determined to be pathways of concern: ingestion of water, dermal contact with water while showering, and inhalation of vapors emitted by groundwater while showering.

Off site land uses

Risks from exposure through individual exposure routes were not included in the assessment of off site use of groundwater. However, the assumption is that each of the exposure routes included in the calculation of the risk-based concentrations used in the assessment are pathways of concern. These are ingestion of water, dermal contact with water, inhalation of vapors emitted by water during showering, and inhalation of vapors emitted by water during household use.

1.7.4.4 Media of concern

Surface soil, subsurface soil, RGA groundwater, and McNairy Formation groundwater were each determined to be a medium of concern for on site contact or use. RGA groundwater was determined to be a medium of concern for off site contact or use.

1.7.5 Observations

This section presents observations based on the risk results and uncertainties presented in the previous sections.

- For all sectors and the C-400 area, the cumulative human health ELCR and systemic toxicity exceeds the accepted standards of the KDEP and the EPA for one or more scenarios.
- The use of the provisional lead RfDs provided by KDEP resulted in total hazard indices (a measure of potential for the development of systemic toxic effects) that exceeded 1,000. However, when this provisional value was not included in the risk characterization, total hazard indices were less than 100

530529

in most cases. Because the total hazard indices calculated using the provisional lead RfD were dominated by the hazard index of lead, a quantitative uncertainty analysis in which contributions from lead are not included should be considered when examining the hazards presented by other COCs.

Because of the uncertainty in the provisional lead RfD, the risk presented by lead may be better understood using comparisons to regulatory agency screening values and results of EPA's IEUBK lead model. The comparisons show that lead concentrations in soil in WAG 6 are below regulatory values; however, the lead concentrations groundwater exceed these values. Similarly, results from the lead model indicate that the concentrations of lead in groundwater are unacceptable.

- In addition to the uncertainty in the evaluation of lead as a metal, there is considerable uncertainty in the identification of the radioisotope lead-210 as a COC. As noted in a review comment from EPA on the D1 revision of this report, the retention of lead-210 may be an artifact of the risk assessment data evaluation procedures. Therefore, when making decisions for WAG 6, risk managers should consider the uncertainties in the identification of lead-210 as a COC.

- In the BHHRA, the dermal contact with soil exposure route poses considerable risk, and a significant portion of this risk comes from contact with metals and PAHs in soil. In fact, for all land use scenarios evaluated, the systemic toxicity and the ELCR posed through the soil dermal exposure route exceeds that posed by the soil ingestion route. This result is due, in part, to the use of dermal absorption factors (ABS values) for metals that exceed gastrointestinal absorption values and may be too conservative. This observation indicates that the risk estimates from dermal exposure to metals in soil may be unrealistic and exceed the real risk posed by this route of exposure. Because of the uncertainty associated with risk from this exposure route, remedial decisions based on the dermal contact with soil exposure route should be carefully considered before taking action.

- Except for Sector 1, which does not have surface soil data because it is covered by the C-400 Building, the current land use scenario (industrial use) has risk that is unacceptable for each sector and for the WAG 6 area as a whole when dose is derived using default exposure durations and frequencies. At each location, the pathway driving systemic toxicity and ELCR is dermal contact with soil. The primary contaminants driving systemic toxicity and ELCR within this pathway are metals and PAHs. If site-specific exposure durations and frequencies are used at each sector and the WAG 6 area as a whole, then the systemic toxicity (not including contributions from lead) is below 1 for the WAG 6 area and all sectors but the ELCR still exceeds 1×10^{-6} for the WAG 6 area and Sectors 2, 3, 5, 6, 7, and 8. Results of the BHHRA indicate that for the current industrial worker land use scenario, current institutional controls for WAG 6 should be maintained. Current risks are manageable under these conditions.

- The most plausible future land use scenario (industrial use) has risk that is unacceptable at each location when assessed using default exposure parameters. This result is consistent with that for the current industrial land use because the future industrial land use scenario is identical to the current industrial land use scenario except that the future industrial land use scenario also evaluates use of groundwater. Addition of groundwater as a medium of exposure adds significantly to the risk for this scenario. If groundwater contribution is removed from the risk totals, the pathway driving systemic toxicity and ELCR is dermal contact with soil. The primary contaminants driving systemic toxicity and ELCR within this pathway are metals and PAHs. As with the current industrial worker, if current institutional controls at PGDP are maintained, then risks are manageable.

- Inhalation of vapors and particulates emitted from soil is the only pathway evaluated that is not of concern for any of the WAG 6 sectors or for WAG 6 as a whole for the current use and most plausible future use scenarios (industrial use). (Note, unlike other assessments for the PGDP where this pathway is never of concern, this assessment determined that emission of vapors from soil was the driving pathway for ELCR to an excavation worker in Sectors 4 and 5 (Southeast and Southwest, respectively. The driving contaminant within this pathway was vinyl chloride.)

- Risks from use of groundwater drawn from both the RGA and the McNairy Formation are unacceptable for all scenarios. For the RGA (ignoring contribution from lead as a metal), the contaminants driving systemic toxicity were iron and trichloroethene, and the contaminants driving ELCR were trichloroethene, vinyl chloride, and lead-210. For the McNairy Formation (ignoring contribution from lead as a metal), the contaminants driving systemic toxicity were arsenic and iron, and the contaminants driving ELCR were arsenic and lead-210. However, in an assessment of the data set, the fact that many of the groundwater samples used in the assessment were from unscreened, undeveloped soil borings was noted. Water collected in this manner tends to have a high particulate content and be unlike the water which may be used in the home. To examine this uncertainty, a follow-up assessment was completed in which only results from filtered samples were used. In this assessment, both the hazard index and the ELCR were still found to exceed the *de minimis* benchmarks for systemic toxicity and ELCR. In a second follow-up assessment in which only sampling results (unfiltered) from monitoring wells were used, both the hazard index and the ELCR were still found to exceed the *de minimis* benchmarks for systemic toxicity and ELCR. These results indicate that the risks determined for use of groundwater drawn from the RGA and McNairy at WAG 6 are real and not an artifact of the sampling methods.

- Contaminants of concern in RGA groundwater at the DOE fence boundary for a future rural resident selected using a comparison between maximum modeled concentrations and human health risk-based concentrations are 1,1-dichloroethene; 1,2-dichloroethene; 2,4-dinitrotoluene; carbon tetrachloride; N-nitroso-di-n-propylamine; tetrachloroethene; *trans*-1,2-dichloroethene; trichloroethene, vinyl chloride; antimony; copper; iron; manganese; and technetium-99. (Note, technetium-99 was placed on this list using professional judgement because technetium-99 sources in the RGA were not modeled.) This list of chemicals is similar to that developed in two earlier assessments for the Northwest Plume and is in agreement with the hypothesis that sources in WAG 6 are major contributors to that plume.

- The identification of PAHs as risk drivers in soil at WAG 6 is in agreement with earlier work reported in the Phase II Site Investigation. However, the significance of this finding needs to be considered along with the potential sources previously and currently at PGDP. This observation is based on material in a report for the Portsmouth Gaseous Diffusion Plant, a uranium enrichment facility that is similar to PGDP. In that report, it was determined that the many continuing on site and off site sources of PAH contamination, such as road repair, coal burning, and emissions from automobiles, are probably more likely contributors to this contamination at the Portsmouth plant than past releases (DOE 1997c). Additionally, that report concluded that the concentrations detected at the Portsmouth plant are similar to concentrations detected in many areas outside the plant, such as in other industrial areas and along roadways. These results indicate that the potential for contamination with PAHs at and around PGDP should be considered before beginning to address contamination by these compounds in the WAG 6 area alone.

- To summarize the effect that multiple uncertainties have upon the risk estimates for the most likely current and future use at WAG 6, Exhibits 1.59 and 1.60 were prepared. Exhibit 1.59 presents a quantitative comparison between ELCR estimates as various uncertainties are addressed. Exhibit 1.60 presents the same information for systemic toxicity. Specific uncertainties addressed in these exhibits are use of the provisional lead RfD (Exhibit 1.60 only), use of site-specific exposure values, importance of common laboratory contaminants, use of EPA dermal absorption defaults, and inclusion of analytes that are infrequently detected. In addition, the last column in each exhibit presents the total risk that results when several uncertainties are addressed simultaneously. The risks in this column were calculated using site-specific exposure assumptions, excluding all common laboratory contaminants, using the EPA default dermal absorption values, and omitting infrequently detected COPCs. Note, the intent of the information in this column is to provide a rational, quantitative lower-bound risk estimate for the industrial worker at each location that can be used by risk managers when making remedial decisions. The results in this column, and the exhibit in general, are not meant to indicate which risks are real for the WAG 6 area.

As shown in Exhibit 1.59a, the ELCR estimates calculated for the current industrial worker using the default exposure rates (column 1) vary dramatically from the lower-bound estimates (last column). Generally, the decrease in ELCR is about two orders of magnitude. Indeed, in all cases, the lower-bound estimate is very close to or below the *de minimis* level established in the Methods Document (i.e., ELCR = 1×10^{-6}). Interestingly, the intermediate columns in the table indicate that no one uncertainty accounts for all the decrease in ELCR. For the WAG 6 area, the uncertainties involving common laboratory contaminants and infrequently analyzed COPCs are shown to have virtually no effect on the ELCR estimate, but the incorporation of site-specific exposure values alone is shown to decrease ELCR by about 94%, and the incorporation of default EPA dermal absorption values alone is shown to decrease ELCR by about 88%. The total decrease seen in ELCR for the WAG 6 area is about 99%.

The difference between ELCR estimates for future industrial worker exposure to soil under default and lower-bound conditions is not as dramatic. As shown in Exhibit 1.59b, the decrease in the ELCR estimate is less than 1 order of magnitude for all locations except Sectors 7 and 8, where the decrease slightly exceeds 1 order of magnitude. (This result is obtained because the exposure parameters used for site-specific exposure rates for the future industrial worker do not vary from the default exposure parameters. A decision was made to use the default exposure rates as the site-specific rates under future conditions because no evidence exists indicating that the exposure rates under future industrial conditions would vary from the default rates.) For all locations, except Sector 4, the lower-bound ELCR estimate for exposure to soil exceeds the *de minimis* level. However, for Sectors 2, 7, and 9, the lower-bound estimate is similar to the *de minimis* level.

Exhibit 1.59b also shows that the ELCR estimates for future industrial worker exposure to groundwater under default and lower-bound conditions do not vary dramatically. Although substantial percentage decreases are seen (i.e., 62% for McNairy Formation and 26% for RGA), the actual changes are less than one order of magnitude, and the resulting lower-bound ELCR estimate still greatly exceeds the *de minimis* level.

The HI estimates for both current and future industrial worker exposure to soil calculated using the default exposure rates (column 1) also vary dramatically from the lower-bound estimates (last column) for those locations where lead was included as a COPC and the provisional lead RfD was used (see Exhibits 1.60a and 1.60b). For those locations, omitting lead from the list of COPCs decreases the HIs by about 4 orders of magnitude. Other uncertainties investigated in both Exhibit 1.60a and 1.60b have little effect on the HI estimates. However, for all locations, the lower-bound estimates of HI are less than the *de minimis* level established in the Methods Document (i.e., HI = 1).

Similarly, of those uncertainties included in the Exhibit 1.60b, only the uncertainty concerning lead had a dramatic impact on the HI estimates for groundwater use by the future industrial worker. For groundwater use, the lower-bound HI estimates are about 3 orders of magnitude less than the RME estimates, and virtually all the decrease is from omitting lead as a COPC. However, the lower-bound HI estimates remain greater than the *de minimis* level.

530533

Exhibit 1.59a. Quantitative summary of uncertainties for the current industrial worker– excess lifetime cancer risk

Location	Default ELCR[a]	Site-specific ELCR[b]	Default ELCR minus common laboratory contaminants[c]	Default ELCR calculated using EPA default dermal absorption values[d]	Default ELCR minus analytes infrequently detected[e]	Lower-bound ELCR[f]
WAG 6	3.3×10^{-4}	2.1×10^{-5}	3.3×10^{-4}	4.1×10^{-5}	3.3×10^{-4}	2.6×10^{-6}
Sector 1	NV	NV	NV	NV	NV	NV
Sector 2	1.7×10^{-5}	1.1×10^{-6}	1.7×10^{-5}	3.8×10^{-6}	1.7×10^{-5}	2.4×10^{-7}
Sector 3	8.5×10^{-5}	5.4×10^{-6}	8.5×10^{-5}	3.0×10^{-5}	8.5×10^{-5}	1.9×10^{-6}
Sector 4	3.7×10^{-6}	2.3×10^{-7}	3.7×10^{-6}	5.9×10^{-7}	3.7×10^{-6}	3.8×10^{-8}
Sector 5	4.0×10^{-4}	2.6×10^{-5}	4.0×10^{-4}	4.5×10^{-5}	4.0×10^{-4}	2.9×10^{-6}
Sector 6	1.1×10^{-3}	7.3×10^{-5}	1.1×10^{-3}	1.5×10^{-4}	1.1×10^{-3}	9.8×10^{-6}
Sector 7	1.2×10^{-4}	7.9×10^{-6}	1.2×10^{-4}	5.7×10^{-6}	1.2×10^{-4}	3.7×10^{-7}
Sector 8	2.4×10^{-4}	1.5×10^{-5}	2.4×10^{-4}	9.8×10^{-6}	2.4×10^{-4}	6.2×10^{-7}
Sector 9	5.2×10^{-6}	3.3×10^{-7}	5.2×10^{-6}	3.7×10^{-6}	5.2×10^{-6}	2.3×10^{-7}

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.

[a] These values are identical to the values presented in Exhibit 1.24.
[b] These values are identical to the values presented in Exhibit 1.58.
[c] These values are identical to the values presented in Table 1.88.
[d] These values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)
[e] These values are identical to the values presented in Table 1.86.
[f] These values were derived using site-specific exposure rates for general maintenance workers at PGDP (see Subsect. 1.6.2.5) and EPA default dermal absorption values and omitting contributions from common laboratory contaminants and infrequently detected analytes.

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Exhibit 1.59b. Quantitative summary of uncertainties for the future industrial worker–excess lifetime cancer risk

Location	Default ELCR[a]	Site-specific ELCR[b]	Default ELCR minus common laboratory contaminants[c]	Default ELCR calculated using EPA default dermal absorption values[d]	Default ELCR minus analytes infrequently detected[e]	Lower-bound ELCR[f]
WAG 6 McNairy[g]	4.5×10^{-3}	4.5×10^{-3}	4.5×10^{-3}	4.5×10^{-3}	1.7×10^{-3}	1.7×10^{-3}
WAG 6 RGA[g]	2.7×10^{-3}	2.7×10^{-3}	2.7×10^{-3}	2.7×10^{-3}	2.1×10^{-3}	2.0×10^{-3}
WAG 6 soil	3.3×10^{-4}	3.3×10^{-4}	3.3×10^{-4}	4.1×10^{-5}	3.3×10^{-4}	4.1×10^{-5}
Sector 1	NV	NV	NV	NV	NV	NV
Sector 2	1.7×10^{-5}	1.7×10^{-5}	1.7×10^{-5}	3.8×10^{-6}	1.7×10^{-5}	3.8×10^{-6}
Sector 3	8.5×10^{-5}	8.5×10^{-5}	8.5×10^{-5}	3.0×10^{-5}	8.5×10^{-5}	3.0×10^{-5}
Sector 4	3.7×10^{-6}	3.7×10^{-6}	3.7×10^{-6}	5.9×10^{-7}	3.7×10^{-6}	5.9×10^{-7}
Sector 5	4.0×10^{-4}	4.0×10^{-4}	4.0×10^{-4}	4.5×10^{-5}	4.0×10^{-4}	4.5×10^{-5}
Sector 6	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.5×10^{-4}	1.1×10^{-3}	1.5×10^{-4}
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1.2×10^{-4}	5.7×10^{-6}	1.2×10^{-4}	5.7×10^{-6}
Sector 8	2.4×10^{-4}	2.4×10^{-4}	2.4×10^{-4}	9.8×10^{-6}	2.4×10^{-4}	9.8×10^{-6}
Sector 9	5.2×10^{-6}	5.2×10^{-6}	5.2×10^{-6}	3.7×10^{-6}	5.2×10^{-6}	3.7×10^{-6}

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.

[a] These values are identical to the values presented in Exhibit 1.34.
[b] These values are identical to the default ELCR values because site-specific exposure rates for the future industrial worker are unknown.
[c] These values are identical to the values presented in Table 1.88.
[d] These values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)
[e] These values are identical to the values presented in Table 1.86.
[f] These values were derived using default exposure rates and EPA default dermal absorption values and omitting contributions from laboratory contaminants and infrequently detected analytes.
[g] Values are for groundwater use by the future industrial worker.

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Exhibit 1.60a. Quantitative summary of uncertainties for the current industrial worker–systemic toxicity

Location	Default HI[a]	Default HI w/o lead[b]	Site-specific HI w/o lead[c]	Default HI minus common laboratory contaminants w/o lead[d]	Default HI calculated EPA default dermal absorption values w/o lead[e]	Default HI minus analytes infrequently detected w/o lead[f]	Lower-bound HI[g]
WAG 6	1,160	1.8	<1	1.8	<1	1.8	<1
Sector 1	NV	NV	NV	NV	NV	NV	NV
Sector 2	<1	<1	<1	<1	<1	<1	<1
Sector 3	<1	<1	<1	<1	<1	<1	<1
Sector 4	<1	<1	<1	<1	<1	<1	<1
Sector 5	1.8	1.8	<1	1.8	<1	1.8	<1
Sector 6	1.2	1.2	<1	1.2	<1	1.2	<1
Sector 7	1,890	1.6	<1	1.6	<1	1.6	<1
Sector 8	1.0	1.0	<1	1.0	<1	1.0	<1
Sector 9	1.3	1.3	<1	1.3	<1	1.3	<1

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.
<1 indicates that the hazard index is less than the *de minimis* level.

[a] These values are identical to the values presented in Exhibit 1.22.
[b] These values are identical to the values presented in Exhibit 1.22, including footnote b.
[c] These values are identical to the values presented in Exhibit 1.58.
[d] These values are identical to the values presented in Table 1.88.
[e] These values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)
[f] These values are identical to the values in Table 1.86.
[g] These values were derived using site-specific exposure rates for general maintenance workers at PGDP (see Subsect. 1.6.2.5) and EPA default dermal absorption rates and omitting contributions from common laboratory contaminants and infrequently detected analytes.

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Exhibit 1.60b. Quantitative summary of uncertainties for the future industrial worker–systemic toxicity

Location	Default HI[a]	Default HI w/o lead[b]	Site-specific HI w/o lead[c]	Default HI minus common laboratory contaminants w/o lead[d]	Default HI calculated using EPA default dermal absorption values w/o lead[e]	Default HI minus analytes infrequently detected w/o lead[f]	Lower-bound HI[g]
WAG 6 McNairy[h]	11,500	20.6	20.6	20.6	20.6	20.6	20.6
WAG 6 RGA[h]	3,320	37.7	37.7	37.7	37.7	37.7	37.7
WAG 6 soil	1,160	1.8	1.8	1.8	<1	1.8	<1
Sector 1	NV	NV	NV	NV	NV	NV	NV
Sector 2	<1	<1	<1	<1	<1	<1	<1
Sector 3	<1	<1	<1	<1	<1	<1	<1
Sector 4	<1	<1	<1	<1	<1	<1	<1
Sector 5	1.8	1.8	1.8	1.8	<1	1.8	<1
Sector 6	1.2	1.2	1.2	1.2	<1	1.2	<1
Sector 7	1,890	1.6	1.6	1.6	<1	1.6	<1
Sector 8	1.0	1	1	1.0	<1	1.0	<1
Sector 9	1.3	1.3	1.3	1.3	<1	1.3	<1

Notes: NV indicates that a value is not available because the sector encompasses the area below the C-400 Building.
<1 indicates that the hazard index is less than the *de minimis* level.

[a] These values are identical to the values presented in Exhibit 1.26.
[b] These values are identical to the values presented in Exhibit 1.26, including footnote c.
[c] These values are identical to the default HI values (w/o lead) because site-specific exposure rates for the future industrial worker are unknown.
[d] These values are identical to the values presented in Table 1.88.
[e] These values were calculated using the soil dermal absorption rates suggested by EPA. (See Subsect. 1.6.2.4.)
[f] These values are identical to the values in Table 1.86.
[g] These values were derived using default exposure rates and default EPA dermal absorption rates and omitting contributions from common laboratory contaminants and infrequently detected analytes.
[h] Values are for groundwater use by a future industrial worker.

1.8 REMEDIAL GOAL OPTIONS

This section presents RGOs for the COCs identified in Subsect. 1.5 and the methods used to calculate the RGOs. These RGOs should not be interpreted as being clean-up goals but as risk-based values which may be used to guide the development of clean-up goals by risk managers. Clean-up goals will be determined in the feasibility study. RGOs were calculated for each medium at each location. For pathways involving contributions from more than one medium (i.e., consumption of vegetables), the RGOs were calculated for each medium by setting the contributions from all other media to zero; this allowed for accurate determination of RGOs by medium. Where ingestion rates differed between adults and children, the more conservative child ingestion rates were used. In addition, maximum contaminant levels (MCLs) are presented in the tables developed as part of this section. Note, MCLs are not clean-up criteria. The National Contingency Plan notes that reduction of contaminant concentrations below MCLs may be required if multiple contaminants are present or if contaminants may reach a receptor through exposure routes not considered in the development of MCLs. Therefore, risks for use of contaminated groundwater must be presented in addition to a simple screen against MCLs so that risk managers can make decisions.

1.8.1 Calculation of RGOs

Recently received EPA guidance directs that RGOs are to be calculated for all COCs identified in a baseline risk assessment. The COCs identified in this risk assessment, their RGOs, and MCLs are presented in Table 1.92. The program used to calculate these RGOs is Program 10 in App. D of this volume.

EPA guidance (EPA 1991) directs that RGOs for each COC are to be calculated by rearranging the equations used to calculate each COC's HQ or chemical-specific ELCR so that the equation can be used to solve for a concentration of the COC which will result in target total HIs of 0.1, 1.0, and 3.0 and target total ELCRs of 1×10^{-4}, 1×10^{-5}, and 1×10^{-6}. Here, the target total HI is defined as the sum of a COC's HQs over all pathways of concern, and the target total ELCR is defined as the sum of a COC's chemical-specific ELCRs over all pathways of concern. While rearranging the risk equations and solving for a concentration is one approach to calculating RGOs, it is simpler to use the fact that risk is calculated in this risk assessment by linearly combining a series of exposure factors and toxicity factors with each analyte's environmental concentration. Therefore, the risk posed by an analyte at any given concentration is directly related to the risk posed by that analyte at any other concentration. This relationship is illustrated in the following equation.

$$\frac{\textbf{Concentration}}{\textbf{Risk}} = \frac{\textbf{RGO}}{\textbf{Target Risk}}$$

where:

Concentration is the exposure concentration for the medium.
Risk is the risk posed by exposure to the contaminated medium.
RGO is the remedial goal option.
Target Risk is one of the values listed above.

1.8.2 Presentation of RGOs

The equation developed in the previous subsection was applied for each COC. The RGOs developed for all land use scenarios of concern, POCs, and COCs, for the WAG 6 area and its sectors using this equation are presented in Table 1.92. In addition, these tables present the representative exposure concentration used in the BHHRA and, for groundwater, each COC's MCL. The MCLs were taken from *Chemical-specific Applicable or Relevant and Appropriate Requirements (ARARs): Federal/Kentucky, April 1996* (Energy Systems 1996a). Note, RGOs for sources of off site groundwater contamination are not presented because these rely on the fate and transport modeling performed in Sect. 5 of Vol. 1 of this report. These RGOs will

530537

be developed after this modeling is refined as needed in the feasibility study. However, the RGOs for groundwater in the offsite location are presented.

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2. BASELINE ECOLOGICAL RISK ASSESSMENT

The primary purpose of the BERAs is to determine whether any credible risks to ecological receptors exist at the site. Because only abiotic data (soil) are available for WAG 6, a BERA has been performed that evaluates existing media data only. Additional lines of evidence (e.g., media toxicity testing and biological surveys) were not collected and do not appear to be necessary at this stage given the industrial nature of the WAG 6 area. Within this BERA, the potential for ecological risks is identified by eliminating:

- particular chemicals or classes of chemicals as chemicals of potential ecological concern (COPECs),
- particular media as sources of contaminant exposure,
- particular ecological receptors as assessment endpoints, or
- ecological risks as a consideration during the planning of remedial actions.

The purpose of the BERA is to estimate potential effects resulting from exposure to chemicals and/or radionuclides present at or migrating from SWMUs within WAG 6.

The BERA consists of the following elements:

- problem formulation (Subsect. 2.1)
- exposure assessment (Subsect. 2.2)
- effects assessment (Subsect. 2.3)
- risk characterization (Subsect. 2.4)

Because WAG 6 SWMUs may differ in terms of potential exposure media and pathways, receptor populations, and contaminant migration pathways, the general objectives of each step of the BERA are provided as introductory material. Site-specific information is then provided in subsequent subsections. Note, as explained in the description of the problem formulation process in Subsect. 2.1, under current conditions habitat for ecological receptors at WAG 6 is extremely limited. Because of the limited habitat, exposures are not expected under current conditions. However, this assessment does address potential exposures should suitable habitat become available in the future.

2.1 PROBLEM FORMULATION

BERAs, like all ecological risk assessments, must begin with a problem formulation phase that defines the scope of the assessment in terms of (1) environmental description, (2) evaluating the adequacy of available data for identifying COPECs, (3) assessment endpoints, (4) potential receptor populations, (5) identification of potential exposure pathways, and (6) development of a conceptual site model. The problem formulation phase determines:

530541

- which analytes (organic, inorganic, radionuclides),
- which media (surface water, sediment, soil),
- which routes of exposure (ingestion of and/or dermal contact with surface water, sediment, soil; inhalation of volatile organic compounds and/or particulates; ingestion of contaminated prey), and
- which categories of receptors (herbivore, omnivore, carnivore, vermivore, piscivore) need to be considered (Suter et al. 1995).

The result of the problem formulation phase is a conceptual site model that is designed based on an integration of the information gathered.

2.1.1 Environmental Description

PGDP is situated between Bayou Creek (locally called Big Bayou Creek) to the west and Little Bayou Creek to the east. The confluence of these two creeks is a marsh approximately 4.8 km (3 mi) north (downgradient) of PGDP with ultimate discharge to the Ohio River. PGDP is located on a local drainage divide with surface water flow to the east and northeast toward Little Bayou Creek and to the west and northwest toward Big Bayou Creek. Most of the flow in the creeks is from process effluents from PGDP (Energy Systems 1990).

The Bayou drainage system (including both soils and surface water) verges on acidity. Stream alkalinity and pH are periodically low; soil pH is strongly acidic and low in buffering capacity. In addition, the pH of rainfall in the region has been reported to be as low as 3.5 (Birge et al. 1989). The entire PGDP is above the historical high water floodplain of the Ohio River (CH2M HILL 1991).

Aquatic Communities. Aquatic habitats are not present in the SWMUs comprising WAG 6. However, the aquatic communities in and around the PGDP area include Little Bayou Creek and Big Bayou Creek (both perennial streams), the north-south diversion ditch, and other smaller drainage areas. In addition, about 13 fishing ponds are located in the WKWMA. Aquatic habitats are used by muskrat, raccoon, and beaver as well as many species of water birds, including wood duck, geese, heron, bald eagle, and other species of migratory birds. The dominant fish populations include several species of sunfish (especially bluegill and green sunfish) as well as bass and catfish. The shallow areas of the two creeks are dominated by bluegill, green and longear sunfish, and stoneroller. Ponds are dominated by largemouth bass and bluegill and, to a lesser extent, green sunfish.

Terrestrial Communities. The terrestrial component of the ecosystem includes the plants and animals that use the habitat for food, reproduction, and protection but is described by the dominant vegetation groups that characterize the community. Because much of PGDP's terrestrial habitat is managed for multiple uses, the diversity of habitat is excellent. Forest and shrub tracts alternate with fencerows and transitional edge habitats (ecotones) along roads and transmission-line corridors. In addition to upland terrestrial communities, a number of wetland communities exist at PGDP.

No quantitative surveys of terrestrial wildlife near PGDP were conducted as part of RI activities. However, observations by staff ecologists during previous investigations and information from WKWMA and BCWMA staff have provided a qualitative description of wildlife likely to inhabit terrestrial areas. Open herbaceous areas are frequented by rabbits, mice, and a variety of other small mammals. Birds include red-winged blackbirds, quail, sparrows, and predators such as hawks and owls. In ecotones (including fencerows, low shrub and young forests), a variety of wildlife is present, including opossum, vole, mole, raccoon, and deer. Birds typical in ecotones include red-winged blackbird, loggerhead shrike, mourning dove, bobwhite quail, turkey, cardinal, and meadowlark. Several groups of coyotes also reside in the vicinity of PGDP. In mature forests, squirrel, various songbirds, and great horned owls may be present. The primary game species occurring in the area are deer, turkey, opossum, rabbit, raccoon, squirrel, quail, and mourning dove.

Solid waste management units 11, 26, 40, 47, and 203 comprising WAG 6 are located within the fenced security area of the PGDP DOE reservation. A detailed description of each of these SWMUs is provided earlier in this document. Generally the SWMUs included in WAG 6 are in an industrialized area and are included fenced areas. Therefore, these units provide minimal habitat for ecological receptors. As is evident in Fig. 1.3 to 1.7 (presented earlier in this volume), the WAG 6 SWMUs are largely buildings surrounded by unvegetated gravel or cement.

2.1.2 Data Evaluation

2.1.2.1 Ecological data evaluation considerations

For the BERA, the data evaluation steps described in *Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual (Part A, Baseline Risk Assessment)* (RAGS) (EPA 1989) (as they apply to data collected at PGDP and as modified by recent regulatory agency comments) and *Ecological Risk Assessment Guidelines for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (EPA 1997) were followed when developing COPECs. Environmental data evaluated for the BERA were those collected during the WAG 6 RI field activities. For the assessment of ecological risk from soils, only surface soil samples (<1 ft) were evaluated. In this evaluation, soil is the sole medium evaluated as none of the SWMUs include aquatic habitats.

Background data are available for soils. The comparison between analyte concentrations and radionuclide activities in site samples and background samples involved only inorganic analytes and naturally occurring radionuclides.

Many of the chemical concentrations in soil were below the sample quantitation limits. Chemicals that were not detected in any sample from a site were excluded from further consideration. If one or more values for an analyte at a site were above the sample quantitation limit, sample concentrations of that analyte below the sample quantitation limit were assigned a value of half the sample quantitation limit unless the analyte was deemed to be site related. [As discussed in Subsect. 1.2, analytes believed to be site related were TCE and its breakdown products, technetium-99, uranium (metal and all radioisotopes), PCBs, and fluoride.] These values were then used to calculate the 95% UCL as discussed in Subsect. 1.3.5.

For ecological risk evaluation, the exposure concentration that is compared to the benchmarks depends on the characteristics of the receptor. In general, a concentration should be used that represents a reasonable maximum concentration (RMC) given the characteristics of the medium and receptor. The fundamental distinction that must be made is between receptors that average their exposure spatially and those that have essentially constant exposure. For example, nonmotile receptors (e.g., plants) are more likely to be exposed to maximum contaminant concentrations, whereas motile species (e.g., wildlife) move through the environment and are more likely to be exposed to an average of contaminant concentrations. Derivation of the RMC for receptors in this BERA is described in the following text.

- Terrestrial wildlife move across a site potentially consuming soil, vegetation, or prey from locations that vary in their degree of contamination. For the conservative estimate to be used in the assessment, the 95% UCL on the mean is appropriate unless it exceeds the maximum detected concentration, in which case the maximum value is used as the RMC.

- Soil concentrations are relatively constant over time and plants, invertebrates, and microbes are immobile or nearly immobile. Therefore, the RMC for these receptors is the maximum observed concentration. That is, some organisms occupy that maximally contaminated soil or would occupy it if it were not toxic. Therefore, exceedence of ecotoxicological benchmarks at any location implies a potential risk to some receptors.

Comparison to wildlife benchmarks requires specification of individual wildlife species. The chosen species should include potentially sensitive representatives of trophic groups and vertebrate classes that are potentially exposed to contaminants on the site. In some cases, there are no appropriate toxicity data available for a chemical/receptor combination. For these cases, the chemical cannot be eliminated and its toxicity cannot be addressed. Such chemicals are retained in a separate category for purposes of determining the need for media toxicity testing and prevent elimination from further consideration of the media in which the chemicals occur (Suter et al. 1995).

2.1.2.2 Selection of COPECs for WAG 6

Summary statistics (frequency of detection and mean and maximum concentrations) for the analytes detected in soil at SWMUs in WAG 6 are provided in Table 2.1. (Because of their size, all tables are located in App. A of this volume.) Table 2.2 presents the exposure concentrations for wildlife. Each of these is the lower of the 95% UCL and the maximum detected concentration. Analytes with maximum concentrations within background limits were eliminated from further consideration in the analysis. Those analytes with concentrations above background or without a background value were carried through the assessment.

2.1.3 Ecological Assessment Endpoints

Assessment endpoints are the actual environmental characteristics that are to be protected. Should these environmental characteristics be significantly affected by site contamination, then the need for remediation may be indicated (Suter 1989, EPA 1992, EPA 1997). Measurement endpoints are quantitative summaries of a measurement or series of measurements that are related to effects on an assessment endpoint (Suter 1989, EPA 1992, EPA 1995, EPA 1997). For example, if the assessment endpoint is fish abundance in a stream suspected of being affected by a waste site, then the stream can be sampled, and fish abundance (the corresponding measurement endpoint) can be measured directly.

If the assessment endpoint is not readily observable, the measurement endpoint may be a surrogate for the assessment endpoint. For example, if the assessment endpoint is fish abundance in a stream that may receive future discharges from a waste site, then the effect of these discharges on fish abundance cannot be measured directly. Instead, future contaminant concentrations in the stream must be modeled and then compared to standard toxicity data. The characteristics of good assessment endpoints are identified in the EPA's field and laboratory manual for ecological assessment of hazardous waste sites and the EPA's framework for ecological risk assessment. These characteristics are ecological and societal relevance, susceptibility to hazards at the site, and accessibility to prediction and measurement (Suter 1989, EPA 1992, EPA 1997).

Six terrestrial populations (soil microflora, soil invertebrates, plants, herbivorous mammals, omnivorous mammals, and vermivorous mammals) with characteristics that meet one or more of the criteria for good assessment endpoints were chosen for the BERA. Identification of assessment endpoint applicability by site is provided in Subsect. 2.1.6 (Conceptual Site Models). The following paragraphs discuss the reasons, in general, that each type of representative receptor population has been chosen for evaluation in the BERA.

The ability of the soil microbial population to perform the activities of the nutrient cycle was chosen as an assessment endpoint for the evaluation of terrestrial exposure to contaminants in soil for the following reasons. Soil microflora are (1) ecologically significant because they play a critical role in nutrient cycling as primary consumers of soil organic matter and conversion of nutrients to plant-available forms, (2) susceptible to hazards at the site because they inhabit the soil medium and are thereby directly exposed to any contaminants in that medium, and (3) accessible to prediction (toxicity data are available) and measurement (through biological surveys and/or toxicity testing).

Abundance of soil invertebrates was chosen as an assessment endpoint for the evaluation of terrestrial exposure to contaminants in soil for the following reasons. Soil invertebrate species are (1) ecologically significant because they consume fresh organic material and leave partially decomposed products in their excreta which are then further decomposed by soil microbia, (2) susceptible to hazards at the site because they inhabit the soil medium and are thereby directly exposed to any contaminants in that medium, and (3) accessible to prediction (toxicity data are available) and measurement (through biological surveys and/or toxicity testing).

Abundance and primary production of plants within the terrestrial community were chosen as assessment endpoints for the evaluation of terrestrial exposure to contaminants in soil for the following reasons. Terrestrial plant communities are (1) ecologically significant because the plant community provides habitat for terrestrial animal species, (2) societally significant because the plant community provides habitat for terrestrial game species, (3) susceptible to hazards at the site, because plants are immobile and receive their nutrients and water from a fixed area of the soil medium and would thereby be directly exposed to contaminants in that medium, and (4) accessible to prediction (toxicity data are available) and measurement (through biological surveys).

Abundance of herbivorous mammals within the terrestrial community was chosen as an assessment endpoint for the evaluation of terrestrial exposure to contaminants in soil (incidental ingestion) and in their diet (uptake of contaminants into vegetation) for the following reasons. Herbivorous mammals are (1) of societal significance because they are a primary big game species in eastern North America, (2) are susceptible to hazards at the site, and (3) accessible to prediction (toxicity data are available) and measurement (through biological surveys).

Abundance of omnivorous small mammals within the terrestrial community was chosen as an assessment endpoint for the evaluation of terrestrial exposure to contaminants in soil (incidental ingestion) and in their diet (uptake of contaminants into vegetation as well as invertebrates) for the following reasons. Omnivorous mammals are (1) ecologically significant because they are prey for many other species, (2) susceptible to hazards at the site because they have home ranges small enough that their activities can be associated with a specific site, and (3) accessible to prediction (toxicity data are available) and measurement (through biological surveys).

Abundance of vermivorous small mammals within the terrestrial community was chosen as an assessment endpoint for the evaluation of terrestrial exposure to contaminants in soil (incidental ingestion) and in their diet [bioaccumulation/biomagnification in earthworms (the principal prey species)] for the following reasons. Vermivorous mammals are (1) ecologically significant because they are prey for many other species, (2) susceptible to hazards at the site because they have home ranges small enough that their activities can be associated with a specific site, and (3) accessible to prediction (toxicity data are available) and measurement (through biological surveys).

The complete definition of an assessment endpoint includes a subject (e.g., soil invertebrates) as well as a level of effects (e.g., reduction in species richness or abundance) that will be used to determine whether or not an impact has occurred (Suter 1993). Guidance for choosing levels of effects on endpoint properties that may constitute grounds for remedial action has not been promulgated on a national basis for ecological risk assessment as it has been for human health risk assessment. Therefore, these levels of effects must be inferred on the basis of analysis of historical federal and state EPA practice as well as that of other state regulatory agencies (Suter et al. 1995).

Assessment endpoints for evaluation of the potential effects on the terrestrial environment at WAG 6 SWMUs by contaminants which occur or which are migrating or have potential to migrate from these sites are:

- the ability of the soil microbial population to perform the activities of nutrient cycling (e.g., carbon mineralization, nitrogen fixation);
- the abundance of soil invertebrates within the terrestrial community;
- the abundance and primary production of plants within the terrestrial community; and
- the abundance of wildlife populations within the terrestrial community which may result from ingestion of and/or dermal contact with soil from the terrestrial environment and/or ingestion of contaminated food items (plant and/or animal) from the terrestrial environment.

2.1.4 Identification of Potentially Exposed Receptors

A detailed discussion of ecological assessment endpoints is provided in Subsect. 2.1.3. To evaluate assessment endpoints, a representative set of receptor species is selected. The subsections that follow discuss the selection of these representative receptors and their relationship to the particular medium which they are used to evaluate. Effects on species that are not included explicitly in the representative assessment receptor set are nonetheless considered implicitly in the evaluation because no species exists in isolation from the community of which it is a part.

The principal assessment endpoints are effects to the receptor population or community rather than the individual level of biological organization unless the assessment is concerned with effects on a T&E species or a set of species of special concern or habitat of special concern. In these cases, assessment endpoints are defined at the individual level because of the high level of legal and societal concern with which these species or habitats are regarded. Assessments of effects at higher levels of biological organization (i.e., communities and ecosystems) must primarily address physical disturbance because there is little information on toxic effects at these levels. An additional difficulty associated with assessment of effects at higher levels of organization is that available toxicity data are generally inconsistent. However, functional system redundancy tends to buffer ecosystem processes from toxic effects, and the higher level taxa used as endpoint receptor species tend to integrate the effects on ecosystem processes.

2.1.4.1 Endpoint receptor species

Because there are several terrestrial endpoint receptor species, they are discussed individually in the following list.

- **Soil microbes.** Soil microorganisms play a critical role in nutrient cycling. As primary consumers of soil organic matter, soil microbes convert nutrients to plant-available forms and serve as a food source

530546

for higher trophic levels. The soil microbiota is a heterogeneous collection of highly adaptable organisms exploiting the many microniches in the soil. The effect of contaminants may be to change the microbial community structure without overall changes in the functional ability of the community. The soil microfloral population is the representative receptor population for soil microbes.

- **Soil macroinvertebrates**. Soil macroinvertebrates are representative of those animals that live in intimate contact with the soil environment. The earthworm (*Lumbricus* sp.) was selected as the representative receptor species for soil invertebrates because this species has benchmark values that are available for evaluation.

- **Vascular plants**. Terrestrial vascular plant populations were selected as representative receptor populations because plants are immobile and receive their nutrients and water from a fixed area of the soil medium; therefore, potential contaminant exposure can be associated with a specific site. In addition, benchmarks are available for evaluation.

- **Herbivorous mammalian wildlife**. Herbivorous wildlife are those species that subsist primarily on plant material. The white-tailed deer (*Odocoileus virginianus*) was selected as a receptor species because of its societal importance and because home ranges potentially could incorporate all or most of WAG 6.

- **Omnivorous mammalian wildlife**. Omnivorous wildlife are those animals that subsist on both plant and animal material. The white-footed mouse (*Peromyscus leucopus*) was selected as the omnivorous receptor species because it is common on most sites and has a range small enough so that its activities can be associated with a specific site. In addition, benchmark values are available for evaluation.

- **Vermivorous mammalian wildlife**. Vermivorous wildlife are those animals that subsist primarily on earthworms. The use of these species for evaluation is a natural extension of the use of earthworms as the representative receptor species for soil invertebrates. The short-tailed shrew (*Blarina brevicauda*) was selected as the vermivorous receptor species because it is common on most sites, has a range small enough so that its activities can be associated with a specific site, and has benchmark values available for evaluation. In addition, exposure for this receptor is likely to be higher than for most other small mammals because of high metabolic rate, high percentage of invertebrates in the diet, and high soil ingestion rates.

Terrestrial carnivores are not included as representative endpoint receptor species because they typically inhabit areas significantly larger than WAG 6, which makes them less likely to be clearly associated with a specific site. In addition, for this same reason, they are less likely to receive a significant dose of contamination in comparison to vascular plants or terrestrial species with smaller ranges. Other wide ranging carnivore species such as red-tailed hawks (*Buteo jamaicensis*) are also less likely to be regularly associated with specific contaminated sites; therefore, their level of exposure is likely to be less than for species with smaller ranges. Similarly, it is not necessary to designate migratory birds as representative receptor species because these species would use the site far less frequently than the resident mammals that are being evaluated.

2.1.4.2 Special endpoints

The potential for occurrence of two categories of special ecological endpoints is considered by the BERA, though not quantitatively evaluated. These were floodplains and wetlands (special habitat) and T&E species (special receptors). During this evaluation, the documents, *Environmental Investigations at the Paducah Gaseous Diffusion Plant and Surrounding Area, McCracken County, Kentucky, Vol. II, Wetland*

530547

Investigation and *Vol. III, Threatened and Endangered Species* (COE 1994a and COE 1994b, respectively), were consulted because no site-specific wetland or T&E species surveys have been conducted for WAG 6 SWMUs. This evaluation concluded that the sites do not include wetland areas or suitable habitat for T&E species. (See Figs. 1.3.-1.7 in Subsect. 1.3 of this volume.)

2.1.5 Identification of Potential Exposure Pathways

2.1.5.1 Terrestrial

As discussed in Section 2.1.6, SWMUs in WAG 6 do not currently contain suitable habitat for terrestrial wildlife, so potential exposure pathways are not complete. However, there are three potential terrestrial exposure pathways:

- Plants are in intimate association with the analyte-containing growth medium (soil) which is the major potential source of exposure. The analytes associated with the soil solution are in physical contact with plant roots in the soil and may enter the root with soil water. Plants are in turn eaten by herbivores and herbivores are eaten by carnivores.

- Earthworms, as representatives of soil-dwelling macroinvertebrates, are in direct contact with contaminant-containing soil. The outer cuticle is in contact with analytes associated with soil particles and in soil solution, and the earthworm gut is in contact with soil as it is taken in during feeding. Earthworms may then be eaten by first order predators (e.g., shrew, robin) who then may be eaten by second order carnivores (e.g., fox, hawk).

- Terrestrial wildlife may also consume contaminated soil by incidental ingestion while feeding. Wildlife receptors are not believed to receive significant exposure via dermal contact. Because such species are fur-covered, little if any direct exposure to dermal surfaces can occur. The probability is high that exposure could occur through grooming, but this exposure route is accounted for as incidental ingestion of soil. Omitting dermal contact as an exposure route to be quantitatively evaluated is a practice that is widely accepted in the field of ecological risk analysis. Further, exposure parameters and toxicity values for dermal exposure are generally not available.

2.1.6 Conceptual Site Model

The ecological conceptual site model graphically represents the relationships between the contaminant sources and the endpoint receptors. It integrates the information in the other subsections of the problem formulation step.

A generalized conceptual site model of possible exposure pathways for ecological receptors at WAG 6 SWMUs is provided in Fig. 2.1. Given the industrial nature of WAG 6 and the lack of suitable habitat for ecological receptors (see Figs. 1.3-1.7 in Subsect. 1.3 of this volume), exposure of ecological receptors at WAG 6 under current conditions is unlikely. Therefore, an evaluation of current exposures has not been conducted for this RI.

530548

While exposures are unlikely and not evaluated under current conditions, the possibility of exposures in the future are evaluated. The text in this chapter is primarily directed at hypothetical future exposures. The future condition assumes that industrial controls are no longer present, and the sites develop suitable habitat for terrestrial plants and wildlife. Note, only terrestrial exposures are evaluated in this assessment because aquatic habitats are not present in WAG 6.

Surface soils at WAG 6 have been contaminated during plant operations. Contaminants present in surface soils may leach into subsurface soils and then into the groundwater underlying the site.

Earthworms may be exposed to contaminants in surface soil through soil ingestion and direct contact with soil. Terrestrial plants may be exposed to contaminants in surface soil through direct contact of the roots with the soil and through root uptake. The short-tailed shrew may be exposed to contaminants in surface soil through incidental ingestion of soil and through ingestion of earthworms which may bioaccumulate contaminants in their tissues. The white-footed mouse may be exposed to contaminants in surface soil through incidental ingestion of soil and through ingestion of both plants and earthworms which may bioaccumulate contaminants in their tissues.

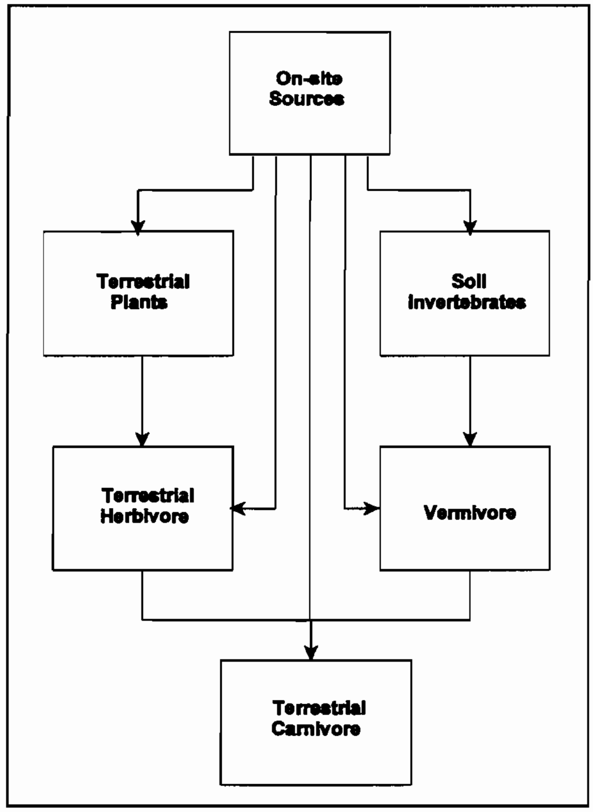

Fig. 2.1 Conceptual site model for ecological receptors at WAG 6.

2.2 EXPOSURE ASSESSMENT

This section describes the future modes of exposure that could occur at WAG 6 SWMUs, the ways in which exposure is estimated, and the available exposure data for the BERA. Under this future scenario, the assumption is that industrial controls no longer exist, buildings have collapsed, the soil contamination at the site has not been removed, and sites have developed habitat suitable for ecological receptors.

2.2.1 Routes and Mechanisms of Chemical Transport and Transformation

Assuming that there are no accidental or additional releases to PGDP watersheds, chemical concentrations to which terrestrial plant and wildlife receptors may be exposed should decrease over time. Contaminants in surface soil may decrease because of leaching or natural degradation. Metals may absorb to mineral as well as organic components of soil. Therefore, soil contaminant concentrations will likely not increase but decrease in the future. However, for a conservative evaluation of future exposures, the assumption is that future surface soil concentrations are similar to current concentrations.

2.2.2 Description of Exposure Models

Exposure models for specific exposure pathways are the same for each site where they are applicable. Exposure of soil invertebrates and terrestrial plants is evaluated based on a comparison of measured media

530549

concentrations to appropriate benchmarks; therefore, explicit exposure models for these receptors are not required. Exposure models are used to evaluate contaminant intake for terrestrial wildlife. Methods and models used in the BERA are described in the following subsection.

2.2.2.1 Nonradionuclide exposures

The potential daily contaminant intake from all potential sources for terrestrial wildlife may be estimated using the following generalized equation (Sample and Suter 1994):

$$\textbf{Intake} = [(C_{plant} * IR_{plant})F_{plant} + (C_{prey} * IR_{prey})F_{prey} + (C_{soil} * IR_{soil})F_{soil}] / BW$$

where:

Intake is the estimated analyte exposure for generalized terrestrial animal (mg/day × kg)
C_{plant} is the analyte concentration in plants (mg/kg, wet weight) (C_{soil} x B_v)
IR_{plant} is the rate of ingestion of plant material (kg/day)
C_{prey} is the analyte concentration in prey (mg/kg, wet weight) [C_{media} x BAF (terrestrial)]
IR_{prey} is the rate of ingestion of prey (kg/day)
C_{soil} is the analyte concentration in soil (mg/kg, dry weight)
IR_{soil} is the rate of ingestion of soil (kg/day)
F_{plant} is the fraction of plant ingested that is contaminated (unitless)
F_{prey} is the fraction of prey ingested that is contaminated (unitless)
F_{soil} is the fraction of soil ingested that is contaminated (unitless)
BW is the body weight of animal (kg)

Life history parameter values required to estimate analyte exposure for terrestrial wildlife are presented in Table 2.3. Body weights and food consumption rates for each endpoint receptor species were obtained from Sample and Suter (1994). Because surface water is not consistently available at WAG 6 SWMUs, ingestion of drinking water is not considered in the BERA. Reasons for not including exposure to surface water include the general principal that contaminant doses from drinking water are minor relative to doses from food and soil ingestion and that areas in the vicinity of WAG 6 only contain water intermittently. Soil consumption rates were obtained from the open literature for all species.

2.2.2.2 Radiological exposures

In the assessment, the assumption is that all parts of an organism are exposed equally to radionuclide energies. While ecological receptors are exposed to radiation from natural sources, doses were only quantified for radiation from nuclides detected at WAG 6 SWMUs. Radiation dose rates (mrad/d) from radionuclide exposures were calculated for plants, earthworms, and representative terrestrial wildlife species using methodology adapted from Blaylock et al. (1993) and Baker and Soldat (1992). Dose rates from internal exposures via ingestion of food and soil and inhalation of dust were evaluated, as were dose rates from external exposures via soil.

The representative terrestrial wildlife selected as endpoints for the radiological assessment were the same as those for the chemical data assessment: short-tailed shrew, white-footed mouse, and white-tailed deer. Life history parameters used in the radiological assessment were identical to those used for the chemical data assessment (Table 2.3). In addition, to assume species-specific values for fraction of time spent above and below ground was necessary. The short-tailed shrew and white-footed mouse were assumed to spend 75% of their time above ground and 25% below the soil surface in dens or burrows. White-tailed deer spend 100% of their time above ground and were assigned a value of 1.

The general methodology and the equations specific to each exposure route used in estimation of dose rates for biota are described in this subsection. Equations used in this assessment estimate the daily dose from current conditions. Dose from α, β, and γ emissions (only β and γ for external exposures of earthworms and plants and only γ for external exposures of wildlife receptors) were calculated for each radionuclide, including the dose rates from all short-lived daughter products. Dose from each radionuclide was then summed over all exposure routes and all radionuclides to arrive at the overall dose received for each receptor at each site.

External exposures: direct radiation from soil

The equation for estimating above ground external dose rates (mrad/d) for terrestrial receptors exposed to contaminated soil uses dose coefficients published by Eckerman and Ryman (1993). Dose rate reduction factors are used to account for the fraction of time the receptor spends above ground. Dose coefficients assume the source region is a smooth plane (Eckerman and Ryman 1993), but this is rarely the case in a terrestrial habitat. A representative average dose reduction factor for ground roughness is 0.7 (Eckerman and Ryman 1993). For the shrew and mouse, relatively small mammals which are effectively much closer than 1 m to the source, an elevation correction factor of 2 was applied to account for the increased dose expected at ground level relative to the effective height of a standard human used to derive the dose coefficients. For plants, the assumption was that the dose represents that to the reproductive part of the plant with an effective height similar to that of the standard human. The equation for above ground dose from external exposures for a plant or wildlife receptor is written:

Above soil exposures:

$$D_{abovegrd} = F_{above} \; F_{ruf} \sum C_{soil,i} \; DF_{grd,i} \; CFb \; ECF$$

where:

$D_{above\ grd}$ is the external dose rate to receptor from above-ground exposures to contaminated soil (mrad/d)
F_{above} is the dose rate reduction factor accounting for the fraction of time the receptor spends above ground (unitless)
F_{ruf} is the dose rate reduction factor accounting for ground roughness (unitless). Representative average of 0.7 (Eckerman and Ryman 1993) used for this assessment.
$C_{soil,i}$ is the activity of radionuclide *i* in surface soil (pCi/g)
$DF_{grd,i}$ is the dose coefficient for radionuclide *i* in soil contaminated to depth of 15 cm (Table III.6, Eckerman and Ryman 1993) (Sv/s per Bq/m^3)
CFb is the conversion factor to change Sv/s per Bq/m^3 to mrad g/pCi d. Equals 5.12×10^{14}.
ECF is the elevation correction factor to adjust dose coefficients to value representative of effective height of animal above ground

Dose from alpha radiation is not a concern for external sources, as alpha radiation lacks penetrating power. The effective dose coefficients from Eckerman and Ryman (1993) incorporate both high energy β and γ emissions. Radionuclide-specific parameters are provided in Table 2.4. The lower of the UCL95 and the maximum detected concentration in surface soil within a subbasin were used in estimating the dose from external exposures.

Below-ground exposures are calculated assuming immersion in a continuous soil medium. Dose coefficients were unavailable for the immersion scenario, so exposures were modeled as dose to soil adjusted for absorption by a small volume of tissue. The exposure fraction reflects the fraction of time the receptor spends below ground. Because white-tailed deer do not go below ground, they do not receive a dose via this exposure route. Only γ radiations with energies greater than 0.01 MeV were evaluated for wildlife receptors, as those with lower energies are unlikely to penetrate skin. Both β and γ radiations were evaluated for earthworms. The equation for below-ground external exposures of earthworms and wildlife receptors is written:

Below-ground exposures:

$$D_{belowgrd} = 1.05 \quad F_{below} \sum C_{soil,i} \quad \epsilon_i \quad CFa$$

where:

$D_{below\,grd}$ is the external dose rate to earthworm or wildlife receptor in burrow from contaminated soil (mrad/d)
F_{below} is the dose rate reduction factor accounting for the fraction of time the receptor spends below ground (unitless)
$C_{soil,\,i}$ is the activity of radionuclide *i* in surface soil (pCi/g)
ϵ_i is the energy for γ emissions by nuclide *i* (MeV/nt)
1.05 is the conversion factor to account for immersion in soil vs water (Estimated value; Keith Eckerman, Health Sciences Research Division, Oak Ridge National Laboratory, personal communication, June 1996)
CFa is the conversion factor to go from MeV/nt to g mrad/pCi d. (5.12×10^{-2})

Internal exposures: ingestion

Wildlife receptors may receive internal radiation doses after ingesting contaminated prey or soil, or after inhaling contaminated dust. Blaylock et al. (1993) provide an equation for estimating the internal dose to fish contaminated with radionuclides. This equation can be modified to address consumers eating a variety of prey types and ingesting soil as well as plants and invertebrates taking up contaminants directly from the soil:

$$D_{ing} = \sum QF \quad C_{tissue} \quad \epsilon_i \quad CFa \quad AF$$

where:

D_{ing} is the internal dose rate received after ingestion of contaminated prey and soil (mrad/d)
QF is the quality factor to account for the greater biological effectiveness of α particles (20 for α; 1 for β and γ emissions; unitless)
C_{tissue} is the activity (pCi/g) of radionuclide *i* in tissue of organism
ϵ_i is the energy for α, β, or γ emissions by nuclide *i* (MeV/nt)
CFa is the conversion factor to go from MeV/nt to g mrad/pCi d (5.12×10^{-2})
AF is the absorption factor (unitless)

Radionuclide activity in tissue was determined a number of ways depending upon data availability. Measured plant, earthworm, and small mammal data were unavailable. Soil-to-tissue uptake factors were available for a number of analytes. When they were available, tissue concentrations were calculated as discussed in Sect. 2.2.3.3. When soil-to-tissue uptake factors were unavailable for wildlife receptors, literature-derived uptake factors were used to obtain terrestrial biota tissue concentrations. When uptake factors were unavailable for specific radionuclides, values were derived from those for related isotopes. Uptake factors used in this assessment are provided in Table 2.5. The assumption was that uptake of radionuclides from ingested food and soil was similar.

Absorbed energy fractions for α radiations were assumed unity for all receptors. Absorption fractions for β radiations were assumed unity for wildlife receptors, but β absorption fractions for large insects from Blaylock et al. (1993) were used for plants (assuming small reproductive parts of greatest concern) and earthworms. Absorption fractions for γ radiations for plants and earthworms were also obtained from those for large insects presented in Blaylock et al. (1993). Absorption fractions for γ radiations derived for infant, 1 yr-old, and adult humans using the methodology described in Cristy and Eckerman (1987) were used for wildlife receptors of similar sizes. Table 2.4 presents absorption factors used for each receptor-radionuclide combination evaluated in this report.

Dose from internal exposures was calculated for α, β, and γ energies of each radionuclide. Energies were obtained from Eckerman and Ryman (1993) and are provided in Table 2.4. Because different types of radiation differ in their relative biological effectiveness per unit of absorbed dose, a quality factor derived from data on humans is normally applied (NCRP 1987). A quality factor of 1 is used for β and γ radiation and 20 for α radiation (Blaylock et al. 1993).

Internal exposures: inhalation

Wildlife species using burrows receive an additional internal dose from inhalation of dust originating from contaminated soil. Intake of radionuclide *i* by inhalation is estimated as (DOE 1995):

$$D_{inh} = QF \quad F_{below} \sum C_{soil,i} \quad A \quad \frac{1}{AD} \quad \epsilon_i \; CFa \quad AF$$

where:

D_{inh} is the internal dose rate from inhalation of contaminated soil (mrad/d)
F_{exp} is the dose reduction factor for fraction of time receptor spends below ground (unitless)
A is the mass of respirable dust per volume of air breathed (0.1 g/m^3; DOE 1995)
AD is the air density (1200 g/m^3; Eckerman and Ryman 1993)
ϵ_i is the α, β, or γ radiation energies for radionuclide *i* (MeV)
CFa is the conversion factor to go from MeV to mrad g/pCi/d (5.12 x 10^{-2})
AF is the absorption factor (unitless)

Healy (1980) suggests that 0.0001 g/m^3 would be a conservative value when addressing human exposures to dust. Because burrowing animals are likely to spend a greater portion of their time in a confined space (burrow) than humans and are physically closer to the soil surface, an air mass loading of 0.1 g/m^3 was selected as a conservative estimate of the mass of respirable dust (A) to which these animals may be exposed.

Total internal exposures are obtained by adding ingestion and inhalation dose rates over all radionuclides, including all short-lived daughter products.

2.2.3 Quantification of Exposure

2.2.3.1 Exposure by plants

Vegetation is exposed to analytes that have been deposited in the soil. Some metal elements are more readily available for uptake by plants from soil pore water than others. Availability depends on a number of factors including the solubility of the source compound and interactions with soil constituents (e.g., organic material and clay) as well as interactions with other analytes. Organic analytes may interact strongly with soil organic matter and therefore be of limited availability for plant uptake. The use of reported concentrations for the BERA is consistent with the application of benchmarks that are derived from literature values representing essentially total (or added) soil metal concentrations.

A comprehensive analysis of the exposure of plants to the inorganic and organic analytes in the soils at WAG 6 SWMUs would require information about important soil parameters (e.g., types and quantities of clay and organic components, pH, moisture status) and characteristics of the analyte compounds (e.g., water solubility and, in the case of organic compounds, lipid solubility). Because only partial information is available, it is assumed that the reported concentrations of the analytes are available for plant uptake at any one time, and analytes will therefore be assessed for potential negative impact on plant growth at those concentrations.

Analytes will have distinctive vertical distributions in soil that reflect interactions between the soil and the analyte as controlled by the chemical and physical nature of the soil and the quantity and chemical nature of the analyte. The exposure of plant roots to an analyte in the soil will depend on the aforementioned abiotic factors and growth characteristics of individual plants, such as rooting depth and density. Because only partial information is available, it is assumed that the plants are rooted entirely in the zone from which the soil was sampled for analysis (i.e., the top 15 cm), and all plants rely on that zone for their immediate water and nutrient requirements. Therefore, the reasonable maximum concentration (RMC) for terrestrial plants to the soil medium is the maximum observed concentration (as discussed in Subsect. 2.1.3.1).

2.2.3.2 Exposure by earthworms

The same abiotic soil and chemical factors considered in the quantification of exposure of plants to soil contaminants are applicable to the quantification of exposure of earthworms to analytes in the soil. Earthworms may be exposed to analytes by dermal contact with soil and pore water and ingestion of soil. To distinguish between and quantify the exposure to earthworms by these two pathways is impossible. The assumption is that the earthworms spend their entire life span in soil with analyte levels represented by those in the soils sampled for analyses. Therefore, maximum observed concentrations will be used to assess potential negative impacts of contaminated soils on earthworm populations (as discussed in Subsect. 2.1.3.1).

2.2.4.3 Exposure by terrestrial wildlife

Because data on the analyte concentrations in vegetation (a primary food of white-tailed deer and white-footed mice) and earthworms (primary food of short-tailed shrews) were not available, these values were estimated using soil-to-plant and soil-to-earthworm uptake factors obtained from the following literature. Soil-to-plant uptake factors for inorganic analytes were obtained from Efroymson et al. (1996), NCRP (1989), or Baes et al. (1984), in that order. Soil-to-invertebrate uptake factors were obtained from Sample et al. (1996b), Menzie et al. (1992), or Beyer and Stafford (1993). Travis and Arms (1988) report that uptake factors for organic chemicals in vegetation are inversely proportional to the square-root of the octanol-water partitioning coefficient (K_{ow}). K_{ow} values were used to estimate plant uptake factors for organic chemicals. Plant and earthworm uptake factors are presented in Table 2.5. Exposure parameters for each wildlife receptor species are provided in Table 2.3.

2.3 EFFECTS ASSESSMENT

Ecological effects assessment involves the identification of known effects of contaminants on representative receptor populations through the use of conventional toxicity data, ambient media toxicity tests, and biological survey data. Since media toxicity and biological survey data are not available for the BERA, expected media concentrations must be compared with conventional toxicity data. This section discusses the toxicological evidence that will be used in the risk characterization section (Subsect. 2.4) to evaluate risks to terrestrial plants and animals.

In the chemical toxicity section (Subsect. 2.3.1) the types, development, and interpretation of appropriate toxicological benchmarks are discussed, and available toxicity data relevant to the endpoint organisms are summarized in toxicity profiles for COPEC. Conventional toxicity data consist of published values for toxicity of contaminants to test species; these data are generally not readily useful for ecological risk assessment. They are used in development of toxicological benchmarks applied in the risk assessment to determine if biological effects are likely. By comparing contaminant concentrations detected in a medium at a site to benchmarks for that medium, the likelihood that contaminants may pose a risk can be estimated. Toxicological benchmarks for soil microbes, earthworms, and plants are located in Table 2.1. Benchmarks

530554

for terrestrial wildlife are located in Table 2.2. Note that additional lines of evidence such as biological surveys and soil toxicity testing are generally desired for a baseline risk assessment, but given the lack of suitable habitat currently at the sites, such data have not been collected. This is recognized as an uncertainty in the evaluation of potential future risks to ecological receptors.

2.3.1 Evaluation of Ecological Contaminants of Potential Concern

The procedures for screening COPECs in surface soil are described in the following paragraphs. Subsequent sections then discuss the results of the hypothetical future exposure assessment for WAG 6 SWMUs. Chemicals that occur at concentrations that are safe for ecological receptors can be excluded as COPECs. Exposure concentrations that are deemed to be safe are referred to as Ecotoxicological benchmarks. These benchmark values are updated regularly because of the addition of new chemicals, discovery of new data, and receipt of new direction from the regulators.

2.3.1.1 Chemical toxicity data for terrestrial biota

Contaminant exposures experienced by wildlife are compared to toxicological benchmarks to assess potential ecological effects. Total exposure estimates are compared to LOAELs derived according to the methods outlined by Sample et al. (1996a). Only studies of the effects of long-term, chronic oral exposures, whether in food or water, were used. To make the LOAELs relevant to possible population effects, preference was given to studies that evaluated effects on reproductive parameters. In the absence of a reproduction endpoint, studies that considered effects on growth, survival, and longevity were used. The following paragraphs contain the toxicity profiles for the COPECs.

Aluminum

Aluminum (Al), the third most abundant element, is found in the earth's crust at approximately 8 mg/kg (Krueger et al. 1984). Its natural occurrence is restricted to highly insoluble complex minerals (Freeman and Everhart 1971). Upon contact with acidic water, aluminum becomes more soluble and available to local flora and fauna (Havas 1985) by complexing with hydroxide, fluoride and organic ligands (Baker and Schofield 1982). Aluminum is amphoteric, i.e., it is more soluble in both acidic and basic solutions than in approximately neutral solutions, with its highest toxicity occurring around pH 5.5 (Freeman and Everhart 1971, Baker and Schofield 1982). Toxicities of aluminum in the field may be substantially lower than indicated by dissolved aluminum analysis values because of complexation with humic and fulvic acids. At pH values below 6.5, however, aluminum may be substantially more toxic because low pH favors the formation and solubilization of cationic aluminum (Al^{3+}).

Toxicity to Plants in Soil. Aluminum uptake is pH and plant species dependent. In acidic soils, aluminum levels are greater in roots and older leaves than in younger foliage (Will and Suter 1995). Seedling establishment of white clover in a silt loam soil (pH 5.0) was reduced by approximately 30% by the addition of 50 mg/kg Al as $Al_2(SO_4)_3$, the lowest concentration tested (Mackay et al. 1990).

Toxicity to Plants in Solution. Will and Suter (1995) reported No Observed Effect Concentrations (NOEC) and Lowest Observed Effect Concentrations (LOEC) for aluminum in solutions on growth of trees, crops, and grasses. The NOEC's for tree growth ranged from 0.11 mg/L for citrange to 162 mg/L for pines. LOEC's ranged from 2.7 mg/L for citrange to 269.8 mg/L for pine. Trees tend to exhibit symptoms of aluminum toxicity in the roots. At acidic concentrations, mean root weight and length decreased from 21-42% with the addition of 2.7-270.0 mg/L Al. The NOEC's for crops and grasses ranged from 0.05 mg/L for asparagus to 8 mg/L for barley, and the LOEC's ranged from 0.05 mg/L for onions to 10 mg/L for barley.

Field crops exhibit symptoms of toxicity in the roots and in the seedling shoot and leaf. Severity of the reaction to aluminum in solution depends on plant species, pH, and length of exposure.

Phytotoxic Mode of Action. Aluminum interferes with cell division inn roots, decreases root respiration, fixes P in unavailable forms in roots, interferes with uptake, transport, and use of Ca, Mg, P, K, and water, and interferes with enzyme activities (Foy et al. 1978). Symptoms of toxicity include stubby, coralloid, damaged, and brittle roots, stunting, late maturity, collapse of growing points, purpling of stems, death of leaf tips, and dark green leaves (Aller et al. 1990). Such damage to the roots inhibits water and nutrient absorption. Seedlings are more susceptible to damage from Al toxicity than are older plants. Aluminum has been shown to form an insoluble phosphate in the cortex of roots, inducing phosphorus deficiency (Hutchinson et al. 1971).

Toxicity to Mammals. Relative to other metals, toxicity of aluminum is low (Sorenson et al. 1974). The principal effect of aluminum is to interfere with phosphorus metabolism. In the alimentary canal, aluminum forms insoluble compounds with phosphorus, resulting in an imbalance of calcium and phosphorus (Carriere et al. 1986). Toxicity of aluminum was sharply increased when dietary Al levels reached 50% or more of dietary P levels (Deobald and Elvehjem 1935, cited in Scheuhammer 1987). Other effects of aluminum include neurotoxicity. The oral LD50 for mice ranges from 770 to 980 mg Al/kg body weight (Ondreicka et al. 1966). Mice consuming diets containing 500 to 1000 mg/kg Al displayed ataxia and paralysis of the hind limbs (Golub et al. 1987). While the number of litters and offspring per litter was not reduced in mice receiving 19.3 mg Al/kg body weight/day in drinking water for three generations, growth was significantly reduced among all offspring in the second and third generations (Ondreicka et al. 1966). While aluminum does not appear to affect the number of litters or number of offspring per litter, growth and survival of offspring of aluminum exposed parents is reduced (Golub et al. 1987, Paternain et al. 1988).

Arsenic

Arsenic (As) is a naturally-occuring metaloid found in air and all living organisms. It is present in the earth's crust at approximately 2 mg/kg and is sparingly soluble in water and body fluids. It occurs as two forms in ambient media, arsenic (III), usually the most toxic, and arsenic (V) (EPA 1985-As) with its magnitude of bioavailability and toxicity dependent upon the oxidation state and temperature (McGeachy and Dixon 1992). The state is dependent on environmental conditions, including Eh, pH, organic content, suspended solids and sediment. The relative toxicities of the various forms of arsenic apparently vary from species to species. Arsenic may be released into aquatic ecosystems by anthropogenic sources including the manufacture and use of arsenical defoliants and pesticides, electric generating stations, manufacturing companies, mineral or strip mines, steel production, fossil fuel combustion and smelting operations (Sorensen 1991; McGeachy and Dixon 1989; Ferguson and Gavis 1972; NRCC 1978) and natural leaching of the soils. Arsenic levels in a river ecosystem were found to be dependent upon the availability of arsenic, rain water dilution, extent of complexation with dissolved organic matter and possibly the metabolic activity of aquatic plants (Koranda et al. 1981). As soil clay concentration increases, arsenic adsorption into the soil increases as a function of soil pH, texture, iron, aluminum, organic matter and time (Woolson 1977). Arsenic is known as one of the most toxic elements to fish with acute exposures resulting in immediate death (Sorensen 1991).

Toxicity to Plants in Soil. The tolerance of spruce seedlings to As in soil was tested in field plots by Rosehart and Lee (1973). Three-yr old seedlings grown 335 d in soil to which 1000 mg/kg As was added as As(III) (lowest concentration tested) experienced a 50% reduction in height.

Soil type affected the toxicity of As(III) added to two soils on the shoot weight of cotton and soybeans grown from seed for 6 weeks (Deuel and Swoboda 1972). In a sandy loam soil, shoot weights of both crops were reduced (cotton 22%; soybeans 45%) by 11 mg/kg As (the lowest concentration tested). Soybean growth in a clay soil was reduced 28% by 22.4 mg/kg As (lowest concentration tested). Cotton growth in this soil was reduced 29% by 89.6 mg/kg As.

The source of As(V) has been shown to influence the effect on corn grown from seed for 4 weeks in a loamy sand (pH 7.1). Plant weight reductions were almost 100% for NaH_2AsO_4, over 75% for $Al(H_2AsO_4)_3$, and about 65% for $Ca(H_2AsO_4)_2$ with the addition of 100 mg/kg As (Woolson et al. 1971).

Will and Suter (1995) reported soil NOEC and soil LOEC values for the effects of arsenic derived from experiments conducted in soil. The soil NOEC values ranged from 10 to 62.7 mg/kg and the soil LOEC values ranged from 2 mg/kg (barley) to 1000 mg/kg (spruce) for the phytotoxicity of arsenic.

Soil-plant uptake factors (concentration in plant/concentration in soil) for grass and herbs were calculated at 0.0166 and 0.0005, respectively (Efroymson et al. 1996).

Toxicity to Plants in Solution. Mhatre and Chaphekar (1982) found no effect of As(III) (As_2O_3), up to 1 mg/kg As, on germination of seeds of sorghum, alfalfa, mung bean, cluster bean, and radish. After 5d, reductions in root length occurred between 0.001 mg/kg As (29% reduction in cluster bean) and 1 mg/kg As (55 and 87% reductions in alfalfa and mung bean). The concentrations of As (V), from Na_2HAsO_4, required for a 50% reduction in seed germination and root length of mustard after 3d exposure in solution (pH 7.3), was reported by Fargasova (1994) to be 30 ppm. The EC50 for root length was 5.5 mg/kg As.

Will and Suter (1995) reported NOEC and LOEC values for the effects of arsenic in solution The NOEC's ranged from 0.001 to 0.1 mg/kg and the LOEC's ranged from 0.001 mg/kg (LCT for cluster bean) to 30 mg/kg (LC50 for mustard).

Phytotoxic Mode of Action. Arsenic is not essential for plant growth. It is taken up actively by roots, with arsenate being more easily absorbed than arsenite. Arsenic and phosphate ions are likely taken up by the same carrier (Asher and Reay 1979). The phytotoxicity is strongly affected by the form in which it occurs in soils. Arsenite (III) is more toxic than arsenate (V), and both are considerably more toxic than organic forms (Peterson et al. 1981). In experiments with toxic levels of As, rice and legumes appear to be more sensitive than other plants. Symptoms include wilting of new-cycle leaves, retardation of root and top growth, violet coloration, root discoloration, cell plasmolysis, leaf necrosis and death (Aller et al. 1990). Arsenic is chemically similar to phosphorous, it is translocated in the plant in a similar manner and is able to replace P in many cell reactions. Arsenic (III) probably reacts with sulphydryl enzymes leading to membrane degradation and cell death. Arsenic (V) is known to uncouple phosphorylation and affect enzyme systems (Peterson et al. 1981).

Toxicity to Mammals. Tissues of animals generally contain an average of <0.5 mg/kg (Venugopal and Luckey 1978). Arsenic is a carcinogen and teratogen. Effects include reduced growth, hearing/sight loss, liver/kidney damage, and death (Eisler 1988). Inorganic arsenic is usually more toxic than organic arsenic compounds. Arsenic may be a required micronutrient; growth, survival, and reproduction of goats is poor if the diet contains <0.05 mg/kg As [National Academy of Sciences (NAS) 1977]. Wildlife mortality and malformations have been observed for chronic doses of 1-10 mg As/kg bw and dietary concentrations of 5-50 mg/kg (Eisler 1988). Acute LD50s for mammals of 35–100 mg calcium arsenate/kg body weight and 10-50 mg lead arsenate/kg body weight have been reported [National Research Council of Canada (NRCC) 1978].

After a 14d exposure to arsine gas, mice had a significant decrease in red blood cells, haemoglobin, and hematocrit numbers. The spleen to body ration increased from 38 to 236% at 0.5 to 5.0 mg/L As (Hong et al. 1989). The solubility in organic solvents and relative nonpolarity of arsine gas allow it to transverse biologic membranes of stem cells and/or react with sulfhydryl groups of proteins necessary for osmotic balance within erythrocytes (Graham et al. 1946; Levinsky et al. 1970).

Schroeder and Mitchner (1971) exposed mice to 5 mg/kg sodium arsenite in drinking water for three generations. While mice exposed to arsenic survived well, litter size decreased in subsequent generations. A dose of 0.38 mg arsenic/kg over a lifetime was sufficient to cause a slight decrease in the median lifespan of laboratory mice (Schroeder and Balassa 1967), but it had no effect on growth. As little as 3 mg arsenic trioxide/kg body weight or 1 mg sodium arsenite/kg body weight can be lethal (NAS 1977).

Because metabolism of arsenic in rats is unlike that in other animals, results of toxicity studies using rats generally should not be extrapolated to other species (Eisler 1988).

Soil-small mammal uptake factors for *Sigmodon hispidus, Peromyscus leucopus*, and *Oryzomys palustais* were calculated at 0.001, 0.004, and 0.010, respectively (Sample et al. 1996).

Cadmium

Cadmium (Cd) occurs predominately in the form of free divalent cations in most well oxygenated, low organic matter, fresh waters (EPA 1985-Cd). However, both particulate matter and dissolved organic matter can bind cadmium in biologically unavailable forms. There is no evidence that cadmium is a biologically essential or beneficial element (Eisler 1985). Cd toxicity is related to water hardness, with a reduction in toxicity associated with increased water hardness (EPA 1985-Cd). Therefore, the cadmium toxicity values presented in Table 2 that are not from tests conducted in waters of moderate hardness are normalized to 100 mg/L using the slopes calculated by the EPA (1985-Cd).

Toxicity to Plants in Soil. A number of researchers have measured reductions in growth of a variety of plants in different soils with 10 mg/kg or less of Cd added to soil as soluble salts. Plants tested include sycamore and spruce trees, wild flowering plants, and crops and horticultural plants (corn, lettuce, radish, wheat). Soils range from light sands to heavy silty clay loams in the acid to neutral pH range. There are no clear trends in responses indicating that any particular type of plant is more sensitive to Cd (reductions in growth range from 23 to 45%), or that growth conditions (pH and soil texture) consistently affected toxicity. Grasses appear to be generally less sensitive than several other plant groups with growth adversely affected at concentrations greater than 10 mg/kg (up to 160 mg/kg for oats) under a variety of growth conditions.

Will and Suter (1995) reported a large range of soil no-observed-effect concentration (NOEC) and LOEC values for the toxicity of cadmium in soil. The NOEC values ranged from 1 to 56.3 mg/kg and the LOEC values ranged from1 to 300 mg/kg.

Soil-plant uptake factors (concentration in plant/ concentration in the soil) for grass, herbs, and tree/shrubs were calculated at 0.2303, 0.0042, and 0.7837, respectively (Efroymson et al. 1996).

Toxicity to Plants in Solution. Will and Suter (1995) reported a large range of soil NOEC and LOEC values for the toxicity of cadmium in solution. The NOEC values ranged from 0.01 to 11.2 mg/L and the LOEC values ranged from 0.01 to 692 mg/L.

Phytotoxic Mode of Action. Cadmium is not essential for plant growth. If present in available form, it is readily taken up by the roots and translocated through the plant, and accumulated. Cadmium is chemically similar to Zn, an essential element. Competition between the two for organic ligands may explain some of the toxic effects of Cd, and the ameliorative effects of Zn on Cd toxicity. Cadmium depresses uptake of Fe, Mn, and probably Ca, Mg, and N (Wallace et al. 1977a; Iwai, et al. 1975). Cadmium is toxic at low concentrations. Symptoms resemble Fe chlorosis, and include necrosis, wilting, reduced Zn levels, and reduction in growth. The mechanisms of toxicity include reduced photosynthetic rate, poor root system development, reduced conductivity of stems, and ion interactions in the plant. Agronomic crops are more sensitive to Cd toxicity than trees (Adriano 1986).

Chromium

Chromium (Cr) occurs in the environment as either chromium (III) or chromium (VI). Trivalent chromium is an essential metal in animals, playing an important role in insulin metabolism (Larngard and Norseth 1979). Hexavalent chromium is more toxic than chromium (III) because of its high oxidation potential and the ease with which it penetrates biological membranes (Steven et al. 1976; Taylor and Parr 1978). Chromium (III), the predominant form in the environment, exhibits decreasing solubility with increasing pH, and is completely precipitated at a pH above 5.5. In most soils, chromium is primarily present as precipitated chromium (III), which is not bioavailable and has not been know to biomagnify through food chains in its inorganic form (Eisler 1986a). Chromium is released into the environment in the processing of chromate, electroplating, production at tanning and textile plants, pigment production, and cooling tower preservation. Cr is naturally released into the environment through the weathering of soils (Fishbein 1976).

Toxicity to Plants in Soil. The belief is that Cr(VI) is more toxic to plants and more mobile inside the plant than Cr(III). Valence of the Cr ion is also more important in determining the distribution of the element than the specific species. There are, however, conflicting views on the uptake and metabolism of Cr(III) and Cr(VI). One argument is that Cr(VI) may be absorbed into roots while the other states that Cr(VI) is reduced to Cr(III) just before absorption into the roots (Smith et al. 1989).

Turner and Rust (1971) investigated the effect of Cr added as Cr(VI) on soybean seedlings grown 3 days in a loam soil. Fresh shoot weight was reduced 30% by 30 mg/L Cr, while 10 mg/kg had no effect. Adema and Henzen (1989) calculated EC50 concentrations for effects of Cr added as Cr(VI) on lettuce, tomato and oats grown in a growth chamber from seed for 14d. The EC50 for lettuce in a humic sand soil (pH 5.1, % organic matter 3.7) was greater than 11 mg/kg while in a loam soil (pH 7.4, % organic matter 1.4) it was 1.8 mg/kg Cr. The EC50 for tomato in the humic sand soil was 21 mg/kg, while in the loam soil it was 6.8 mg/kg Cr. The EC50 for oats in the humic sand soil was 31 mg/kg, while in the loam soil it was 7.4 mg/kg Cr. Results of these experiments show the ameliorating effects of organic matter on Cr (VI) toxicity.

Fargasova (1994) studied the effects of metals on the germination and root growth of *Sinapsis alba* seeds at various pHs. 72h LC50s for germination were 123.03 mg/kg at pH 2.46 and 100.0 mg/kg at pH 7.25. 72h LC50s for root growth inhibition were 5.01 mg/kg at pH 2.46 and 45.71 mg/kg at pH 7.25.

Will and Suter (1995) reported soil NOEC and soil LOEC values for the toxicity of chromium to plants in soil. The NOEC values ranged from 0.35 to 11 mg/kg and the LOEC values ranged from 1.8 to 31 mg/kg. A bioconcentration factor of 1000 was calculated for barley seedlings (Smith et al. 1989).

Soil-plant uptake factors (concentration in plant/concentration in the soil) for grass, herbs, and tree/shrubs were calculated at 0.0663, 0.0007, and 0.0249, respectively (Efroymson et al. 1996).

Toxicity to Plants in Solution. Calculated EC50 concentrations for effects of Cr(VI) added as $K_2Cr_2O_7$ on lettuce, tomato and oats grown from seed for 14d ranged from 0.16 (lettuce) to 1.4 mg/kg Cr (oats) (Adema and Henzen 1989). The concentration of Cr(VI), from $(NH_4)_2CrO_4$, required for a 50% reduction in seed germination and root length of mustard after 3d exposure in solution (pH 7.3), was reported by Fargasova (1994) to be 100 mg/kg. EC50 for root length was 46 mg/kg Cr. Using a 1:1 combination of

Cr(III) ($CrCl_3$) and Cr(VI) (K_2CrO_7) in nutrient solution (pH 5), Hara et al. (1976) measured a 68% reduction in weight of cabbage with 10 mg/kg Cr (2 mg/kg had no effect).

Top weight of soybean seedlings grown for 5d in nutrient solution containing Cr(VI) was reduced 21% by 1 mg/kg Cr, while 0.5 mg/kg had no effect (Turner and Rust 1971). Wallace et al. (1977b) measured a 30% reduction in leaf weight of bush beans grown 11d in nutrient solution containing 0.54 mg/kg Cr as (Cr VI).

Length of the longest root of rye grass was reduced 69% by exposure to 2.5 mg/kg Cr(VI) (lowest concentration tested) in nutrient solution (pH 7) for 14d (Wong and Bradshaw 1982). Length of the longest shoot was not affected at this concentration. Breeze (1973) found little difference in the toxicity of Cr(III) [$Cr_2(SO_4)_3$] and Cr(VI) ($K_2Cr_2O_7$) to rye grass seed germination. Seed exposed to solutions containing 50 mg/kg Cr (III) or (VI) reduced germination 37 and 38% after 2.5d.

Nutrient solution containing 0.05 mg/kg Cr(III) [$Cr_2(SO_4)_3$] reduced leaf and stem weights of chrysanthemum seedlings exposed for 2 d by 31 and 36% (Patel et al. 1976). This was the lowest concentration tested and root weight was not affected.

Based on these experiments, there is an indication that the source of the Cr affects plant response and seed germination is not as sensitive as growth.

Will and Suter (1995) reported NOEC and LOEC values for the toxicity of chromium to plants in solution. The NOEC values ranged from 0.004 to 50 mg/L and the LOEC values ranged from 0.052 to 100 mg/L.

Phytotoxic Mode of Action. Chromium is not an essential element in plants. The (VI) form is more soluble and available to plants than the (III) form and is considered the more toxic form (Smith, et al. 1989). In soils within a normal Eh and pH range, Cr(VI), a strong oxidant, is likely to be reduced to the less available Cr(III) form, although the (III) form may be oxidized to the (VI) form in the presence of oxidized Mn (Bartlett and James 1979). In nutrient solution, however, both forms are about equally taken up by plants and toxic to plants (McGrath 1982). Cr(VI), as CrO_4^{2-}, may share a root membrane carrier with SO_4^{2-}. Cr(VI) is more mobile in plants than Cr(III) but translocation varies with plant type. After plant uptake, Cr generally remains in the roots because of the many binding sites in the cell wall capable of binding especially the Cr(III) ions (Smith et al. 1989). Within the plant Cr(VI) may be reduced to the +3 form and complexed as an anion with organic molecules. Symptoms of toxicity include stunted growth, poorly developed roots, and leaf curling. Chromium may interfere with C, N, P, Fe, and Mo metabolism, and enzyme reactions (Kabata-Pendias and Pendias 1984).

Toxicity to Heterotrophic Processes and Soil and Litter Invertebrates. Liang and Tabatabai (1977) investigated the effects of various metals on N mineralization by native soil microflora in four soils. Chromium(III) at 260 ppm reduced N mineralization in the soil containing the highest organic matter content. The effects of Cr(III) on dehydrogenase activity of the native soil microflora in soil from the Rocky Mountain Arsenal was assessed by Rogers and Li (1985). After 6 days, a concentration of 30 ppm Cr (the lowest concentration tested) reduced dehydrogenase activity by 54%. Juma and Tabatabai (1977) evaluated the effect of Cr on soil acid and alkaline phosphatase activities in microbes. Acid and alkaline phosphatase activities were affected at 1635 ppm in all three soils to about the same degree, but greater inhibition of alkaline phosphatase activity occurred in the soil with the greatest content of organic matter and clay. Ross et al. (1981) evaluated the relative toxicities of forms of Cr to respiration of native soil microflora in a loam and a sandy loam soil. Cr (III), tested at only 100 ppm, caused reductions in both soils of 41 and 48%. A concentration of 10 ppm (the lowest concentration tested) Cr (VI) caused reductions in both soils (27 and

33%). Cr(VI) was more toxic than Cr(III) to soil respiration. Bhuiya and Cornfield (1976) investigated the effects of several metals on N mineralization and nitrification by native soil microflora in a sandy soil at different pH levels. At 6 weeks, mineralization and nitrification were reduced by 1000 ppm Cr at pH 7, but not at pH 6. After 12 weeks, neither mineralization nor nitrification was affected by Cr at either pH.

Haanstra and Doelman (1991) investigated short- and long-term effects of Cr on arylsulfatase activity, urease activity (Doelman and Haanstra 1986), and total phosphatase activity (Doelman and Haanstra 1989) by native soil microflora in five soils. The highest EC_{50}s were 3203, 5512, and 4470 ppm, respectively, for arylsulfatase, phosphatase, and urease activities found in different soils. The lowest was 17 ppm in the sand for arylsulfatase and 1170 and 490 ppm in the clay for phosphatase and urease. In an 18-month study, the highest EC_{50}s were 1798, 20020, and 1110 ppm Cr, respectively, for arylsulfatase, phosphatase, and urease activities found in different soils. The lowest were 12 and <1 ppm in the clay for arylsulfatase and urease activities and 2692 ppm in the sandy loam for phosphatase activity. The benchmark for Cr for microbes was established at 10 ppm because the 10th percentile lies between the EC_{50} values of 12 and 15 ppm from the work of Haanstra and Doelman (1991). Confidence in this benchmark is high because of the relatively large amount of data available for a variety of functional measures.

Abbasi and Soni (1983) assessed the effect of Cr(VI), added as $K_2Cr_2O_7$, on survival and reproduction of the earthworm *Octochaetus pattoni*. Survival was the most sensitive measure with a 75% decrease resulting from 2 ppm Cr, the lowest concentration tested. The number of cocoons produced was not diminished until the concentration reached 20 ppm Cr (highest concentration tested); the number of juveniles produced was not affected. Soni and Abbasi, (1981) found no survival of *Pheretima posthuma* after 61 days in a paddy soil to which 10 ppm Cr(VI) (lowest concentration tested) was added. van Gestel et al. (1992), also found growth of *E. andrei* to be more sensitive to Cr than reproduction. Thirty-two (32) ppm Cr (III) reduced growth by 30% while cocoons/worm/week, percent fertile cocoons, and juveniles/worm/week were reduced 28, 22, and 51%, respectively, by 100 ppm Cr. Molnar et al. (1989) examined the effects of Cr(III) and Cr(VI) on growth and reproduction of *Eisenia fetida*. Reproduction after 8 weeks was the measure most sensitive to Cr(III) with a 55% decrease in the number of cocoons and hatchlings at 625 ppm Cr(III).

A benchmark concentration for toxicity of Cr to earthworms is difficult to set. Survival may be more sensitive than reproduction to the metal when it is added to the earthworm substrate as a soluble salt. The relative toxicity of Cr(III) and Cr(VI) is not clear from these studies. Cr(VI) ions can pass through cell membranes with much greater ease than Cr(III) ions. However, Cr(VI) is presumably reduced to Cr(III) inside the cell (Molnar et al. 1989); this latter may be the final active form. Without a better understanding of Cr transformations in the soil, transport across earthworm cell membranes, and reactions within the cell, to separate the effects of the two different forms is difficult. The 0.4 ppm benchmark for Cr is based on the work of Abbasi and Soni (1983). A safety factor of 5 was applied to the 2 ppm LOEC because it caused a 75% reduction in earthworm survival. Confidence in this benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms.

Toxicity to Mammals. At high concentrations, chromium is a mutagen, teratogen and carcinogen (Eisler 1986a). The LD50 for chromium (III) in mice is 260 mg/kg bw and 5 mg/kg BW for chromium (VI). Rats fed Cr(VI) reached a toxic threshold at 1000 mg/kg (Steven et al. 1976). Similar results were observed among rats consuming water containing 25 mg/L Cr(VI) for 1 year (Mackenzie et al. 1958). Tissue accumulation of hexavalent Cr was nine times higher than trivalent chromium.

Soil-small mammal uptake factors for *Sigmodon hispidus, Peromyscus leucopus*, and *Oryzomys palustais* were calculated at 0.001, 0.030, and 0.121, respectively (Sample et al. 1996).

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Iron

Iron (Fe) is the fourth most abundant element in the earth's crust. Dissolved concentrations in water and soil are dependent upon redox conditions and pH. Fe typically occurs in water between 0.01 and 1.4 mg/L (Jorgensen et al. 1991; as cited in Gerhardt 1994) with occurrence increasing in the presence of humic acids (Gerhardt 1993). At lower concentrations, iron is an essential trace metal in both the plant and animal kingdoms because of its role in oxygen and energy transport. Iron occurs in the +1,+2 and +3 valence states and speciation from the +2 to the +3 state has been known to occur between pH 4.5 and 7. However, increased toxicity of iron in acidic conditions may be a result of the photoreduction from +3 to the +2 state, or the destabilization of weaker iron complexes (Gerhardt 1994). The most common dissolved inorganic form of iron is $Fe(OH)_2^+$ (Dave 1984).

Toxicity to Soil Microbes. Iron has been found to reduce nitrogen mineralization in soil at 280 ppm (Liang and Tabatabai 1977). Juma and Tabatabai (1977) reported reduced acid phosphatase activity at 1398 ppm Fe (as Fe+2) in soil with low pH and low organic matter content. Fe+3 also resulted in reduced activity but over a broader range of organic matter content. Data on toxicity to soil microbes and heterotrophic processes is limited.

Thallium

Thallium (Tl) is a widely distributed metal, occurring at concentrations of approximately 1 mg/kg in the earth's crust (Kazantzis 1979). Tl exists as Tl(II) or the more stable, and soluble, Tl(I) and is soluble over a wide range of pH (Kwan and Smith 1991). Industrial uses of thallium include alloys, electronic devices, special glass and explosives (Zitko 1975). Coal-fired power plants are major sources of Tl air pollution because of its presence in flyash (Wallwork-Barber et al. 1985). The international market for thallium is limited, therefore its removal from mining effluent is of low priority (Zitko et al. 1975). Thallium has been used since the 1920s as a rodenticide and is a major primary and secondary source of poisoning for raptors and other predatory mammals (Crabtree 1962; Robinson 1948: as cited in Bean and Hudson 1976). Because of their high toxicity to larger mammals, their use against larger predatory animals was canceled in 1972 (Zitko 1975).

Toxicity to Plants in Soil. No primary data were found showing toxicity of Tl to plants grown in soil. Kloke (1979) reported unspecified toxic effects on plants grown in a surface soil with the addition of 1 mg/kg Tl.

Soil-plant uptake factors (concentration in plant/concentration in soil) for grass and trees/shrubs were calculated at 0.0143 and 0.0038 (Efroymson et al. 1996).

Toxicity to Plants in Solution. The effect of Tl, as $TlCl_3$, on root elongation of 3-week old Norway spruce seedlings grown for 7d in nutrient solution (pH 4) was examined by Lamersdorf et al. (1991). The only concentration tested, 0.02 mg/kg Tl, reduced root elongation by 27%.

The effects of 0.5 to 40 mg/kg Tl, from Tl_2SO_4, on germination and radicle length after 3d growth in solution of radish, cabbage, turnip, lettuce, wheat, and millet were determined by Carlson et al. (1991). There was no effect on seed germination up to 40 mg/kg Tl. Effective concentrations ranged from 0.5 mg/kg (65% decrease in lettuce radicle length) to 7.5 mg/kg Tl (23% decrease in cabbage radicle length). Carlson et al. (1975) measured 40 and 55% reductions in photosynthesis when corn and sunflower seedlings were grown in nutrient solution containing 1 mg/kg Tl ($TlCl_2$) (lowest concentration tested).

Phytotoxic Mode of Action. Thallium is not essential for plant growth. Soluble Tl is readily taken up by plants and translocated to aerial parts, probably because of its chemical similarity to K. Toxic effects on plants include impairment of chlorophyll synthesis and seed germination, reduced transpiration because of interference in stomatal processes, growth reduction, stunting of roots, and leaf chlorosis (Adriano 1986).

Uranium

Uranium (U) is a silvery white metal consisting of three semistable radioactive isotopes; U238, U235, and U234 (Brobst and Pratt 1973) making up approximately 3-4 mg/kg of the earth's crust (Merritt 1971). Despite their radioactive properties, metallic uranium and particles of insoluble uranium compounds are biologically inert, its chemical toxicity being exerted only by its aqueous ions (Durbin and Wrenn 1975). Aqueous ions have been identified for uranium (III), uranium (IV), uranium (V), and uranium (VI), but only uranium (IV) and uranium (VI) are stable in solution. In a solution of low acidity, uranium (IV) hydrolyzes to form insoluble hydroxides (Durbin and Wrenn 1975). Uranyl nitrate and uranyl fluoride are 1.4–2 times more toxic than UCl_5, UCl_4, UO_3, or $NO_2U_2O_7$ and 3 times more toxic than $(NH_4)_2U_2O_7$ (Durbin and Wrenn 1975). Uranium-235 is the most radioactive of the uranium isotopes. Other uranium isotopes including uranium-233, -234, and -238 have low specific activities, long half-lives, and have lower potential to cause radiation induced diseases (ATSDR 1990a).

In its radioactive elemental form, U fuels nuclear reactions, and is used in the manufacture of nuclear weapons and ammunition. In its natural or depleted form, U is used as counterweights in airplanes and as shielding material (Burkart 1991).

Toxicity to Plants in Soil. Sheppard et al. (1983) grew Swiss chard in a sandy (pH 6.4, CEC 1.2 meq/100g) and a peaty (pH 3, CEC 65 meq/100 g, 92% organic matter) soil to test effects of ^{238}U added as uranyl nitrate [$UO_2(NO_3)_2$]. In the sandy soil, 5 ppm reduced root weight 23% while shoot weight was not effected. In the peat soil, 10 ppm reduced root weight 44% while shoot weight was not effected.

Toxicity to Plants in Solution. A concentration of 42 ppm U as UO_2 reduced soybean seedling length 33% after a 6 day exposure while 0.42 ppm had no effect (Murthy et al. 1984). Seed germination was unaffected at both concentrations.

Phytotoxic Mode of Action. Uranium exists in the water-soluble fraction of plant tissue, probably as the uranyl ion and bound to cell wall proteins (Whitehead et al. 1971). The mechanisms of uranium phytotoxicity involve inhibition of enzyme systems and possibly binding to nucleic acids (Feldman et al. 1967). The minimal amount of radiation measured in experimental plants has led researchers to conclude that toxic effects are the result of the element rather than radiation (Sheppard et al. 1983).

Vanadium

Vanadium is a metallic element that occurs in six oxidation states and numerous inorganic compounds. Some of the more important compounds are vanadium pentoxide (V_2O_5), sodium metavanadate ($NaVO_3$), sodium orthovanadate (Na_3VO_4), vanadyl sulfate ($VOSO_4$), and ammonium vanadate (NH_4VO_3). Vanadium is used primarily as an alloying agent in steels and non-ferrous metals (ATSDR 1990b). Vanadium compounds are also used as catalysts and in chemical, ceramic or specialty applications.

The toxicity of vanadium depends on its physico-chemical state; particularly on its valence state and solubility. Based on acute toxicity, pentavalent NH_4VO_3 has been reported to be more than twice as toxic as trivalent VCl_3 and more than 6 times as toxic as divalent VI_2. Pentavalent V_2O_5 has been reported to be more than 5 times as toxic as trivalent V_2O_3 (Roschin 1967).

Toxicity to Plants in Soil. There are no primary reference data describing toxicity of vanadium to plants grown in soil (Efroymson et al. 1997). Kabata-Pendias and Pendias (1984) report unspecified toxic effects on plants grown in a surface soil with addition of 50 ppm V. Vanadium added at a concentration of 2.5 ppm was toxic to plants in a study reported by EPA (1980a).

Toxicity to Plants in Solution. Vanadium (NH_4VO_3) at 0.51 ppm in a pH 5 nutrient solution reduced root and shoot weight of bush bean seedlings by 46% after a 14-day exposure (Wallace 1979). Cabbage seedling weight was reduced 34% after a 55 day exposure to 4 ppm V as VCl_3 while 0.4 ppm had no effect on growth (Hara et al. 1976). Plant weight of soybean seedlings was reduced 36% in a solution with 6 ppm V (as $VOSO_4$), but 3 ppm V had no effect on growth (Kaplan et al. 1990). Gil et al. (1995) measured 26 and 28% reductions in root fresh weight and shoot dry weight of 2-week old lettuce seedlings grown in nutrient solution (pH 4.7) containing 0.2 ppm V (as NH_4VO_3) while 0.1 ppm had no effect.

Phytotoxic Mode of Action. Vanadium is not known to be essential for plant growth although it may be involved in N_2 fixation in nodules of legume roots. Toxic symptoms include chlorosis, dwarfing, and inhibited root growth (Pratt 1966). Vanadium inhibits various enzyme systems while stimulating others, the overall effect on plant growth being negative (Peterson and Girling 1981). After uptake, most vanadium remains in the root system in insoluble form with Ca (Wallace and Romney 1977).

Zinc

Zinc (Zn) is an essential trace element in all organisms; it assures the stability of biological molecules and structures such as DNA, membranes, and ribosomes (Eisler 1993). It is used commercially primarily in galvanized metals and metal alloys, but zinc compounds also have wide applications as chemical intermediates, catalysts, pigments, vulcanization activators and accelerators in the rubber industry, UV stabilizers, and supplements in animal feeds and fertilizers. Zinc compounds are also used in rayon manufacture, smoke bombs, soldering fluxes, mordants for printing and dyeing, wood preservatives, mildew inhibitors, deodorants, antiseptics, and astringents (Lloyd 1984; ATSDR 1989a). Zinc phosphide is used as a rodenticide. Zinc makes up about 0.002% of the earth's crust (NAS 1980) and occurs in many forms in natural waters and aquatic sediments.

In freshwater with pH >4 and <7, the dominant forms of dissolved zinc are the free ion (aquo ion complex) (98%) and zinc sulfate (2%) (Campbell and Stokes 1985), whereas at pH 9.0, the dominant forms are the monohydroxide ion (78%), zinc carbonate (16%), and the free ion (6%) (EPA 1987-Zn).

Zinc occurs in nature as a sulfide, oxide, or carbonate (Eisler 1993). It is divalent in solution. Zinc interacts with many chemicals, and it may diminish the toxic effects of cadmium and protect against lead toxicosis in terrestrial animals (Eisler 1993). Background concentrations seldom exceed 0.040 mg/L in water or 200 mg/kg in soil or sediment (Eisler 1993).

Although it is essential for normal growth and reproduction (Prasad 1979; Stahl et al. 1989) and important to central nervous system function (Eisler 1993), the primary toxic effect of zinc is on zinc-dependent enzymes that regulate RNA and DNA. It is most harmful to aquatic life in conditions of low pH, low alkalinity, low dissolved oxygen, and elevated temperature. Zinc is relatively nontoxic in mammals, but excessive intake can cause a variety of effects. It is not known to be carcinogenic by normal exposure routes (Eisler 1993).

Toxicity to Plants in Soil. Muramoto et al. (1990) measured the effects of addition of Zn as ZnO to an alluvial soil (pH 6) on root and stem weights, stem length, and grain yield of wheat and rice grown from seed to maturity. Root weight of rice was reduced about 29% by 1000 mg/kg (lowest concentration tested). Wheat grain yield and plant weight were reduced 66 and 28% by 1000 mg/kg (lowest concentration tested).

The effect of Zn on soybean growth has been evaluated. Number of seeds produced per plant was decreased by 28% when plants were grown from seed to maturity in an average garden soil to which 25 mg/kg Zn was added as $ZnSO_4$ (Aery and Sakar 1991). Zn at 10 mg/kg had no effect. The work of White et al. (1979) shows the ameliorating effect on Zn toxicity of increased pH in a sandy loam soil. Soybean leaf weight was reduced 30% by 131 mg/kg Zn at pH 5.5, while 115 mg/kg had no effect. At pH 6.5, leaf weight was reduced 33% by 393 mg/kg Zn, while 327 mg/kg had no effect.

Lata and Veer (1990) measured 45 and 22% reductions in plant weights of spinach and coriander after 60 days in soil with 87 mg/kg Zn.

Toxicity to Plants in Solution. Carroll and Loneragan (1968) measured effects of Zn on weight of 1-week old seedlings of barrel medic (*Medicago*), subterranean clover, and lucerne (*Medicago*) grown for 46 d in nutrient solution (pH 6). Zinc at 0.41 mg/L reduced weights 80, 40, and 37%, respectively, while 0.08 mg/L had no effect. Rye grass root growth was reduced 63% after 14 d growth in solution (pH 7) containing 1.85 mg/L Zn ($ZnSO_4$) (Wong and Bradshaw 1982). After 16 d, weights bush bean plant weight was reduced approximately 40% by 6.6 mg/L Zn (as $ZnSO_4$), while 0.66 mg/L had no effect (Wallace et al. 1977c).

Patel et al. (1976) found a 30% decrease in root and stem weights of chrysanthemum seedlings when grown for 21 d in nutrient solution with 6.5 mg/L Zn (as $ZnSO_4$), while 0.65 mg/L had no effect.

Phytotoxic Mode of Action. Zinc is an essential element for plant growth. It has a part in many enzymes, and is involved in disease protection and metabolism of carbohydrates and proteins. Zinc is actively taken up by roots in ionic form, and less so in organically chelated form (Collins 1981). It is fairly uniformly distributed between roots and shoots being transported in the xylem in ionic form (Wallace and Romney 1977). Transport in the phloem appears to be as an anionic complex (van Goor and Wiersma 1976). Toxicity symptoms include chlorosis and depressed plant growth (Chapman 1966). It acts to inhibit CO_2 fixation, phloem transport of carbohydrates, and alter membrane permeability (Collins 1981).

Polychlorinated biphenyls (PCBs)

Polychlorinated biphenyls are a family of man-made chemicals consisting of 209 individual compounds with varying toxicity (ATSDR 1989b). Aroclor is the trade name for PCBs made by Monsanto. Because of their insulating and nonflammable properties, PCBs were widely used in industrial applications such as coolants and lubricants in transformers, capacitors, and electrical equipment (ATSDR 1989b). The United States stopped manufacturing PCBs in 1977 because of evidence that they accumulate in the environment. PCBs have become widespread environmental contaminants.

Toxicity to Mammals. Most exposures to PCBs are oral. Absorption of PCBs following oral exposure is often >90% (ATSDR 1989b). PCBs are preferentially stored in adipose tissues in animals. They may cross the placenta or be transferred to offspring through milk. PCBs with higher chlorine content (the last 2 digits of the Aroclor designation indicate the percent Cl content of the compound) tend to persist in the environment longer than those with lower Cl content, and PCBs are known to bioaccumulate and biomagnify to toxic concentrations in animals (Eisler 1986b, ATSDR 1989b). Chronic exposures are of particular concern. PCBs with high K_{ow} values and high numbers of chlorines in adjacent positions are generally the most toxic. Although relatively insoluble in water, PCBs are generally freely soluble in nonpolar organic solvents and in biological lipids (EPA 1980b).

2.3.1.2 Effects data for organisms exposed to radionuclides

The International Atomic Energy Agency (IAEA) recommends limiting the dose for terrestrial organisms to 100 mrad/d (IAEA 1992). Studies evaluating reproductive success and survival were used to determine the dose limit. Species-specific effects data were not available, so 100 mrad/d was selected as the threshold dose for all representative wildlife receptors. A dose rate of this magnitude is unlikely to cause observable changes in terrestrial animal populations (IAEA 1992). Higher dose rates may result in impaired reproduction or reduced survivorship. A dose rate of 1 rad/d is generally considered protective of plant and invertebrate populations (IAEA 1992, Barnthouse 1995) based on studies of productivity and community characteristics. This dose rate or less is unlikely to cause observable changes in terrestrial plant populations (IAEA 1992). Higher dose rates may result in reduced productivity or changes in species composition within communities. Therefore, 1 rad/d was selected as the threshold dose for effects on plant and invertebrate populations. Invertebrates tend to be less radiosensitive than plants or animals, and indirect responses to radiation-induced vegetation changes appear more critical than direct effects from radiation (IAEA 1992).

2.4 RISK CHARACTERIZATION

Risk characterization is the phase of ecological risk assessment in which the information concerning exposure (Subsect. 2.2) and the information concerning the potential effects of exposure (Subsect. 2.3) are integrated to estimate risks (the likelihood of effects given the exposure). Standard risk characterization in ecological risk assessment is performed by a weight-of-evidence analysis. The principal lines of evidence concerning effects are single chemical toxicity data that indicate the toxic effects of the concentrations measured in site media, media toxicity data that indicate whether the contaminated media are toxic under controlled conditions, and biological survey data that indicate the actual state of the receiving environment. Media toxicity data and biological surveys were not available for this evaluation; therefore, the assessment is based on single chemical toxicity data only. The result is a BERA that is a conservative estimate of site risk.

Certain limitations which may tend to induce either false positive or false negative results must be considered when interpreting the results of the BERA:

- Combined toxic effects of analytes (synergistic or antagonistic) are not considered.
- Analysis of ambient media may miss locally high concentrations in spatially variable media.
- For some analytes, limits of detection may be above toxic concentrations.

Additional uncertainties involved in calculating and interpreting risk to biota based on single chemistry toxicity data are discussed in detail in Sect. 2.5.

Procedurally, the risk characterization is performed for each assessment endpoint by (1) screening contaminants against toxicological benchmarks, (2) estimating the effects of the contaminants retained by the analysis, and (3) listing and discussing the uncertainties in the assessment.

Contaminant concentrations potentially toxic to the endpoint biota were identified by comparing the site media concentrations to toxicological benchmarks. Many of the analytes commonly identified during a remedial investigation also occur naturally in the environment. The concentrations of these analytes found at local background sites are normally assumed to be nonhazardous. To ensure that risk management decisions are based on the risks posed by site contaminants, the background constituents should be differentiated from the site-associated contaminants. For each area, the detected, naturally occurring inorganic and radionuclide analytes should be compared to background. Synthetic organic compounds should not be present at background samples; therefore, any synthetic organic compound that is detected and validated is considered above background. The lowest of either the maximum detected contaminant concentration or the 95% UCL was used for detected analytes. Nondetected analytes were not screened. Because background data are available for soil (DOE 1997), comparison between site surface soil concentrations and background concentrations was performed.

In the screening against benchmarks portion of risk characterization, the analyte concentrations measured in abiotic media (soil) or estimated doses in the case of wildlife receptors are compared to Ecotoxicological benchmarks to derive HQs by the formula:

$$\mathbf{HQ} = \frac{\mathbf{EC\ or\ Dose}}{\mathbf{Benchmark}}$$

where:

EC is the exposure concentration or the concentration of the contaminant in soil, mg/kg
Dose is the dose derived from the exposure concentration, mg/(day × kg)
Benchmark is the appropriate ecotoxicological benchmark

HQs greater than 1 suggest that the chemical is potentially hazardous to the endpoint biota. HQs less than 1 suggest that the chemical is nonhazardous and need not be considered further. Hazard quotient calculations are performed by medium for each endpoint receptor population.

Some endpoint receptor populations have multiple routes of exposure. For example, wildlife receptors may be exposed to soil-borne contaminants directly by ingesting soil or indirectly by ingesting food (e.g., plants, prey items) that is directly associated with soil. While antagonistic and synergistic effects are not quantitatively evaluated in this BERA, a high degree of conservatism is maintained within each of the media receptor-specific calculations.

Toxicological benchmark values derived for contaminants found at PGDP and the Oak Ridge Reservation (Sample et al. 1996a, Will and Suter 1995a, Will and Suter 1995b) are used in this assessment. Benchmark development is an ongoing process, and although the methods for derivation remain the same, the most current benchmarks are used. The ecological risks posed by contaminants are discussed as they relate to each endpoint population, including multiple pathways of exposure (e.g., food, soil) when applicable.

Benchmarks were not available for all chemical-receptor combinations. Table 2.6 shows the chemicals that were detected above background in each sector for which a benchmark was lacking for at least one receptor group.

Because adverse effects associated with radionuclides in soil were evaluated differently than nonradiological contaminants, the results and characterization of potential ecological risks because of radionuclides are discussed in separate subsections within this section.

As discussed previously, no risks to ecological receptors are expected under current conditions because of lack of complete exposure pathways. The results presented below are for the hypothetical future condition. Results are presented by sector as described in Sect. 1 of this volume and shown in Fig. 1.1.

2.4.1 Central (Sector 1)

This sector includes samples collected immediately around the C-400 building.

2.4.1.1 Risks to plants

No analytes exceeded available benchmarks for plants in this sector (Table 2.1).

2.4.1.2 Risks to earthworms

Earthworm benchmarks were unavailable for the analytes found in this sector (Table 2.1).

2.4.1.3 Risks to soil microflora

Benchmarks were unavailable for soil microflora for the analytes found in this sector (Table 2.1)

2.4.1.4 Risks to terrestrial wildlife

No analytes exceeded benchmarks for wildlife receptors in this sector (Table 2.2)

2.4.1.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks are expected for ecological receptors in this sector.

2.4.2 Northeast (Sector 2)

This sector includes the area around SWMU 40, the C-403 Neutralization Tank.

2.4.2.1 Risks to plants

Three analytes exceeded unity for plants exposed to contaminants in surface soil in this sector (Tables 2.1 and 2.8). The HQ for zinc was 1.4, and the maximum zinc concentration was only 1.1times background. Zinc is unlikely to be a concern at this site. Confidence in the benchmark used to evaluate uranium is low because it was based on a single study (Efroymson et al. 1997a). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is also low, again because of the small number of studies available (Efroymson et al. 1997a).

2.4.2.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.2.3 Risks to soil microflora

Chromium was the only analyte exceeding a benchmark for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b).

2.4.2.4 Risks to terrestrial wildlife

Chromium was the only analyte exceeding a benchmark for wildlife receptors in this sector. The shrew was the only wildlife receptor potentially at risk (Table 2.9). The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2).

2.4.2.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks are expected for ecological receptors in this sector.

2.4.3 East (Sector 3)

This sector is away from any SWMU in the WAG 6 investigation. Data are used to characterize an area associated with the C-400 building.

2.4.3.1 Risks to plants

Three analytes exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). Confidence in the benchmark used to evaluate uranium is low because it was based on a single study (Efroymson et al. 1997a). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is also low, again because of the small number of studies available (Efroymson et al. 1997a). The thallium benchmark was based on a report of unspecified toxic effects on plants, so confidence is low.

2.4.3.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.3.3 Risks to soil microflora

Chromium was the only analyte exceeding a benchmark for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b).

2.4.3.4 Risks to terrestrial wildlife

Chromium and PCB-1260 were the only analytes exceeding benchmarks for wildlife receptors in this sector. The shrew was the only wildlife receptor potentially at risk from chromium while both shrews and mice were estimated to receive unacceptably high PCB doses (Table 2.9). The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2).

2.4.3.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

2.4.4 Southeast (Sector 4)

Data from this sector were used to characterize the area around SWMU 11, the C-400 TCE Leak Site.

2.4.4.1 Risks to plants

Two analytes exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is low because of the small number of studies available (Efroymson et al. 1997a). Aluminum resulted in a high HQ (HQ = 284), but it is unlikely to be a concern. The maximum aluminum concentration in this sector was only 1.1times background. Concentrations near background levels are unlikely to present a significant risk.

2.4.4.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.4.3 Risks to soil microflora

Aluminum and chromium were the only analytes exceeding benchmarks for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b). As discussed for plants, the maximum aluminum concentration was only 1.1times background, so adverse effects from aluminum seem unlikely.

2.4.4.4 Risks to terrestrial wildlife

Aluminum and chromium were the only analytes exceeding benchmarks for wildlife receptors in this sector. The shrew was the only wildlife receptor potentially at risk from chromium while shrews, mice, and deer were estimated to receive unacceptably high aluminum exposures (Table 2.9). The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2). Unacceptable risks from exposure to aluminum are unlikely given that the maximum aluminum concentration was only 1.1times background.

2.4.4.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

530570

2.4.5 Southwest (Sector 5)

Data from this sector were used to characterize an area associated with the C-400 building. This area is away from all SWMUs in the WAG 6 investigation.

2.4.5.1 Risks to plants

Four analytes exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is low because of the small number of studies available (Efroymson et al. 1997a). Confidence in the benchmark used to evaluate uranium is also low because it was based on a single study (Efroymson et al. 1997a). The thallium benchmark was based on a report of unspecified toxic effects on plants, so confidence is low. The HQ for zinc was 2.2, and the maximum zinc concentration was only 1.7times background. Zinc is unlikely to be a concern at this site.

2.4.5.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.5.3 Risks to soil microflora

Chromium, iron, and zinc were the only analytes exceeding benchmarks for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b). Confidence in the iron benchmark is low because of limitations in the type and number of studies available (Efroymson et al. 1997b). Iron is unlikely of significant concern given that the maximum concentration was near background levels (1.3times background). Although confidence in the zinc benchmark is high, the low HQ (1.1) and near background levels (maximum concentration only 1.7times background) suggest a low likelihood of significant concern.

2.4.5.4 Risks to terrestrial wildlife

Chromium was the only analyte exceeding a benchmark for wildlife receptors in this sector. The shrew was the only wildlife receptor potentially at risk from chromium (Table 2.9). The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2).

2.4.5.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

2.4.6 West (Sector 6)

Data from this sector are used to characterize the area around SWMU 47, the Tc-99 Storage Tank Area.

530571

2.4.6.1 Risks to plants

Six analytes exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). While aluminum was well above its plant benchmark, the maximum aluminum concentration was only 1.4times background. At concentrations near background, significant effects are unlikely. Confidence in the arsenic and cadmium benchmarks are moderate and high, respectively. The maximum cadmium concentration marginally exceeded the benchmark, and it appears that this value is an outlier relative to other samples. The mean cadmium concentration is more than an order of magnitude lower than the maximum (Table 2.1). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is low because of the small number of studies available (Efroymson et al. 1997a). Confidence in the benchmark used to evaluate uranium is also low because it was based on a single study (Efroymson et al. 1997a). As with cadmium, the maximum detected uranium concentration appears high relative to other samples (Table 2.1). The HQ for zinc was 1.5, and the maximum zinc concentration was only 1.2times background. Zinc is unlikely to be a concern at this site.

2.4.6.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.6.3 Risks to soil microflora

Aluminum and chromium were the only analytes exceeding benchmarks for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b). As discussed for plants, the maximum aluminum concentration was only 1.4times background, so adverse effects from aluminum seem unlikely.

2.4.6.4 Risks to terrestrial wildlife

Aluminum, arsenic, and chromium were the only analytes exceeding a benchmark for wildlife receptors in this sector. The shrew was the only wildlife receptor potentially at risk from arsenic and chromium (Table 2.9), while shrews, mice, and deer could be at risk from aluminum. However, given the conservative nature of the exposure calculations and the fact that aluminum was near background levels, adverse effects seem unlikely. The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2).

2.4.6.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

2.4.7 Northwest (Sector 7)

Data from this sector are used to characterize the area around SWMU 203, the Waste Discard Sump.

530572

2.4.7.1 Risks to plants

Three analytes exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is low because of the small number of studies available (Efroymson et al. 1997a). Confidence in the benchmark used to evaluate uranium is also low because it was based on a single study (Efroymson et al. 1997a). The maximum detected uranium concentration was just 2 times background and resulted in a HQ of 1.9 (Table 2.1). The HQ for vanadium was 2.1, and the maximum vanadium concentration was only 1.1 times background. Uranium and vanadium are unlikely to be a concern at this site.

2.4.7.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.7.3 Risks to soil microflora

Chromium, iron, and vanadium were the only analytes exceeding benchmarks for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b). The maximum detected iron concentration was only 1.1 times background, so it seems unlikely that iron would be a serious concern in this area. Similarly for vanadium, the maximum concentration was only 1.1 times background.

2.4.7.4 Risks to terrestrial wildlife

Chromium was the only analyte exceeding a benchmark for a wildlife receptor in this sector. The shrew was the only wildlife receptor potentially at risk from chromium (Table 2.9). The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2).

2.4.7.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

2.4.8 Far North/Northwest (Sector 8)

Data from this sector are used to characterize the area around SWMU 26, the C-400 to C-404 Transfer Line.

2.4.8.1 Risks to plants

Chromium and uranium exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is low because of the small number of studies available (Efroymson et al. 1997a). Confidence in the benchmark used to evaluate uranium is also low because it was based on a single study (Efroymson et al. 1997a).

2.4.8.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.8.3 Risks to soil microflora

Chromium was the only analyte exceeding a benchmark for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b).

2.4.8.4 Risks to terrestrial wildlife

Chromium was the only analyte exceeding a benchmark for a wildlife receptor in this sector. The shrew was the only wildlife receptor potentially at risk from chromium (Table 2.9). The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2).

2.4.8.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

2.4.9 Far East/Northeast (Sector 9)

Data from this sector are used to characterize an area around the C-400 building that is away from SWMUs in the WAG 6 investigation.

2.4.9.1 Risks to plants

Aluminum, chromium, and uranium exceeded unity for plants exposed to contaminants in surface soil in this sector (Table 2.8). Confidence in the chromium benchmark, which was based on the more toxic Cr+6, is low because of the small number of studies available (Efroymson et al. 1997a). Confidence in the benchmark used to evaluate uranium is also low because it was based on a single study (Efroymson et al. 1997a). Aluminum resulted in a high HQ, but it is unlikely to be a concern. The maximum aluminum concentration in this sector was only 1.2 times background. Concentrations near background levels are unlikely to present a significant risk.

2.4.9.2 Risks to earthworms

Chromium was the only analyte exceeding a benchmark for soil invertebrates (Table 2.8). Confidence in the chromium benchmark is low because it is based on only five reported concentrations causing toxicity to earthworms (Efroymson et al. 1997b). The relative toxicity of Cr+3 vs Cr+6 to earthworms is not clear.

2.4.9.3 Risks to soil microflora

Aluminum and chromium were the only analytes exceeding a benchmark for soil microflora (Table 2.8). Confidence in the chromium benchmark for soil microflora is high (Efroymson et al. 1997b). As noted for

530574

plants, the maximum aluminum concentration was near background levels, so aluminum is unlikely to be a significant concern.

2.4.9.4 Risks to terrestrial wildlife

Aluminum and chromium were the only analytes exceeding a benchmark for a wildlife receptor in this sector. The shrew was the only wildlife receptor potentially at risk from chromium (Table 2.9) while aluminum resulted in exceedances for shrews, mice, and deer. The benchmark for chromium was based on the more toxic Cr+6. Although speciation was not performed as part of the RI, Cr+3 is more likely in soil. Assuming chromium was present as Cr+3, chromium would not present a risk to wildlife in this sector (Table 2.2). Given that the maximum aluminum concentration was near background levels (1.2 times background), it seems unlikely that aluminum would present a significant risk to wildlife populations in this area.

2.4.9.5 Risks to terrestrial organisms from radiological exposures

Estimated dose rates for plants, soil invertebrates, and wildlife receptors were all below the thresholds of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife (Table 2.7). No unacceptable risks from exposure to radionuclides are expected for ecological receptors in this sector.

2.5 UNCERTAINTIES

The uncertainties associated with any BERA are extensive. However, the primary sources of uncertainty are (1) the paucity of ecologically relevant data necessary to estimate site-specific HQs resulting in over-reliance on system models and default variables, (2) the necessity to evaluate risk to biota based only on the single chemical toxicity data line of evidence, and (3) extrapolation from current to future conditions. The following subsections discuss the uncertainties involved in the BERA by receptor.

2.5.1 Risks to Plants

Factors that create uncertainty in assessing the risk to plants posed by the COPECs in soils are discussed in the following list:

- **Bioavailability of elements**. The extraction methods used may remove from the soil quantities of elements and compounds greater than those available to plants. The double-acid extraction method used for RI sampling removes the exchangeable fraction of metals, thereby giving a concentration that reflects the total potential pool of contaminants, not that to which the plant is exposed at any one time. Under field conditions, these contaminants will be in the soil solution and available for uptake in concentrations reflecting a dynamic equilibrium between the solid and liquid phase. Therefore, it is difficult to assess the types of interactions that may occur between contaminants and plant roots under field conditions at the site. This is confounded by the concentration- and species-dependent synergistic and antagonistic interactions between metals during uptake by roots and once inside plants. The analytical techniques also fail to differentiate between species of metals present in the soil (particularly arsenic, chromium, and mercury) that have variable toxicity to plants and other life forms. Without specific analyses for these forms, or soil chemical and physical data sufficient to evaluate the probable occurrence of the species, it is not possible to accurately assess the risk posed by these contaminants at the site.

- **Variable response to toxicants**. Information on toxicity of contaminants to specific plant species and growth stages is generally not available. There is a considerable amount of variability between plant species and plant growth stages in tolerance to specific and combinations of contaminants. The literature from which benchmarks were derived is not based on experiments using plants found in ecosystems representative of site-specific conditions. It is difficult to extrapolate from agricultural crops in early growth stages, which are used in most of the published literature, to trees and other natural vegetation found onsite.

- **Multiple contaminant exposure**. Because of a lack of understanding of the complex interactions between contaminants, benchmark levels are necessarily derived from experiments in which plants are exposed to single contaminants. Exposure to site soils is that of multiple contaminant exposure which may not be adequately assessed on the basis of literature-derived, single contaminant benchmarks.

- **Lack of benchmarks for some metals and most organic compounds.** Little research has been conducted on the phytotoxic effects of organic compounds. Therefore, it is not possible to assess the risk to plant growth posed by some of the analytes found in soils (i.e., cyanide).

2.5.2 Risks to Earthworms

Factors that create uncertainty in assessing the risk to soil macroinvertebrates (earthworms) posed by the COPECs in soils are considered in the following list:

- **Bioavailability of elements**. This factor is discussed in the previous paragraph which focused on the uncertainty associated with evaluating the risk to plants. The extraction methods used may remove from the soil quantities of elements and compounds greater than those to which earthworms are actually exposed.

- **Variable response to contaminants.** There is variability between earthworm species and growth stages in terms of tolerance to specific contaminants and combinations of contaminants. The literature from which benchmarks were derived is not based on experiments using earthworm species known to be representative of those occurring in site soils.

- **Multiple contaminant exposure**. Toxicity benchmark concentrations are derived from experiments in which earthworms are exposed to single contaminants. However, multiple contaminant exposure probably occurs in most soils. This multiple exposure may not be adequately assessed on the basis of literature-derived benchmarks.

2.5.3 Risks to Soil Microflora

Factors that create uncertainty in assessing the risk to soil microorganisms posed by the COPECs in soils are considered in the following list:

- **Bioavailability of elements**. This factor is discussed in the previous paragraphs which focused on the uncertainty associated with evaluating the risk to plants. The extraction methods used may remove from the soil quantities of elements and compounds greater than those to which microorganisms are actually exposed.

- **Variable response to contaminants**. There is likely variability between species and growth stages in terms of tolerance to specific contaminants and combinations of contaminants.

- **Multiple contaminant exposure**. Toxicity benchmark concentrations are derived from experiments in which microflora are exposed to single contaminants. However, multiple contaminant exposure probably

530576

occurs in most soils. This multiple exposure may not be adequately assessed on the basis of literature-derived benchmarks.

2.5.4 Risks to Wildlife

Factors that create uncertainty in assessing the risk to terrestrial wildlife posed by the COPECs in soils are considered in the following list:

- **Bioavailability of elements**. Bioavailability of contaminants was assumed to be comparable between soil WAG 6 SWMUs and the diets used in the literature toxicity tests. Because bioavailability may not be comparable, exposure estimates based upon the contaminant concentrations may either under- or overestimate the actual contaminant exposure experienced.

- **Extrapolation from Published Toxicity Data**. To estimate toxicity of contaminants at the site, it was necessary to extrapolate from studies performed on test species (i.e., mice and rats). While it was assumed that toxicity could be estimated as a function of body size, the accuracy of the estimate is not known. For example, shrews may be more or less sensitive to contaminants than mice, because of factors other than metabolic rate.

  Additional extrapolation uncertainty exists for those contaminants for which data consisted of only LOAELs or tests were subchronic in duration. For either case, an uncertainty factor of 10 was employed to estimate NOAELs or chronic data. The uncertainty factor of 10 may either over- or underestimate the actual LOAEL-NOAEL or subchronic-chronic relationship.

  Toxicity of PCBs to wildlife was evaluated using toxicity data from studies on Aroclor 1254. Because toxicity of PCB congeners can vary dramatically, the applicability of data for Aroclor 1254 is unknown.

- **Variable Food Consumption**. While food consumption by wildlife was assumed to be similar to that reported for the same or related species in other locations, the validity of this assumption cannot be determined. Food consumption by wildlife may be greater or lesser than that reported in the literature, resulting in either an increase or decrease in contaminant exposure.

- **Subsurface Soil Exposures.** Wildlife exposures were only evaluated for surface soil (0-1 foot bgs). While this accounts for the majority of likely exposures for most wildlife receptors, burrowing animals could be exposed to soils below 1 foot. If concentrations of some contaminants are greater below 1 foot bgs, doses to burrowing animals from exposure to these soils may be greater than those determined using surface soil alone.

- **Multiple Contaminants Exposure.** While wildlife are exposed to multiple contaminants concurrently, published toxicological values only consider effects experienced by exposures to single contaminants. Because some contaminants to which wildlife are exposed can interact antagonistically, single contaminant studies may overestimate their toxic potential. Similarly, for those contaminants that interact additively or synergistically, single contaminant studies may underestimate their toxic potential.

- **Metal Speciation.** Toxicity of metal species varies dramatically depending upon the valence state or form (organic or inorganic) of the metal. For example, arsenic (III), chromium (VI), and methyl mercury are more toxic than arsenic (V), chromium (III), and inorganic mercury, respectively. The available data on the contaminant concentrations in media do not report which species or form of the contaminant was observed. Because benchmarks used for comparison represented the more toxic species/forms of the metals (particularly for arsenic, chromium, and mercury), if the less toxic species/form of the metal was actually present, potential toxicity at the sites may be overestimated.

- **Uptake Factors.** Soil-to-biota or food-to-biota uptake factors specific to WAG 6 were unavailable. Therefore, the assumption was that the uptake factors derived from published studies were applicable. Because of potential differing geologies and histories between the study areas and WAG 6, the factors from published studies may over- or underestimate the actual biota concentrations. Uncertainties associated with literature-derived uptake factors may also result in over- or underestimates of actual biota concentrations.

2.6 SUMMARY AND CONCLUSIONS

Lack of suitable habitat in the industrial setting of WAG 6 precludes exposures of ecological receptors under current conditions. It was determined during problem formulation that an assessment of ecological risks under current conditions was unnecessary. However, an assessment of potential risks in the future, assuming conditions change such that suitable habitat becomes available for ecological receptors, was conducted.

Chemical and radionuclide contaminants were evaluated for surface soils from the nine sectors within the WAG 6 area. Detectable concentrations that exceeded background were evaluated for the potential of inducing adverse ecological effects to a representative set of receptor species that potentially could inhabit the WAG 6 area. Tables 2.8 and 2.9 summarize COPECs that were identified based on the results of screening contaminant concentrations against ecological benchmarks. A variety of analytes (primarily organics) for which ecological risk could not be estimated because receptor-specific toxicity data were lacking are included in Tables 2.1 and 2.2. These are summarized in Table 2.6.

Ten nonradionuclide COPECs (nine inorganics and PCB-1260) exceeded benchmarks for at least one receptor group. The inorganics were aluminum, arsenic, cadmium, chromium, iron, thallium, uranium, vanadium, and zinc. Aluminum is unlikely to be a concern in the WAG 6 area as the maximum aluminum concentration in any of the sectors was only 1.4 times background. Similarly, iron, vanadium, and zinc were near background levels (maximum of 1.3 times, 1.1 times, and 1.7times background, respectively). Cadmium was only of concern for plants in the West sector (Sector 6) and may have been related to a hot spot rather than sector-wide concern. Arsenic was only a concern for shrews and plants in the West sector. Chromium was of potential concern in all sectors except Central (there were no COPECs identified for the Central sector). Thallium resulted in low exceedances (maximum HQ of 1.5) for plants in the East and Southwest sectors. Uranium resulted in plant exceedances in all sectors except Central and Southeast. PCB-1260 was only a concern for shrews and mice in the East sector. While individuals in the East sector may be at risk from exposure to PCBs, population-level risks across a broader area appear unlikely given the lack of risk from PCBs in other sectors.

Estimated doses from exposure to radionuclides in soil were below recommended dose rate limits for all receptors in all sectors. Therefore, no unacceptable risks are expected from exposure to radionuclides.

The purpose of this activity was to evaluate the potential for unacceptable adverse effects on ecological receptors at WAG 6. Under current conditions, complete exposure pathways are not expected for terrestrial wildlife. Thus, this evaluation focuses on hypothetical future exposures assuming loss of industrial controls and buildings and development of suitable habitat. Analytes which were retained as COPECs may require further study to determine if adverse ecological effects are likely if decisions for remedial actions will be based on ecological concerns. Uncertainty concerning the future condition, the bioavailability of various

530578

metals (e.g., aluminum at all sites was only slightly elevated above background), and use of only one line of evidence (comparison of exposures to Lowest Observed Adverse Effects Levels or LOAELs) may have lead to an overestimate of potential future ecological risks.

A summary of analytes of potential concern and receptors potentially at risk should future exposures occur is presented below by sector and in Tables 2.8 and 2.9.

Central. No analytes were identified as being of significant concern in the Central sector.

Northeast. In the Northeast sector, chromium and uranium may pose significant risks to plants or soil microflora. Zinc also exceeded plant benchmarks, but it was detected near background levels. Chromium could present a risk to wildlife (shrews) if it is present as Cr+6, but if the more likely Cr+3, no risks are expected.

East. Chromium, thallium, uranium, and PCB-1260 pose potential risks to ecological receptors in the East sector. PCBs were only of concern for mice and shrews and may not represent population level effects. Chromium was of potential concern for plant, soil invertebrates, soil microflora, and shrews. Thallium and uranium were only of concern for plants.

Southeast. In the Southeast sector chromium poses a potential risk to plants, soil invertebrates, soil microflora, and shrews. Risks to the shrew population seem unlikely given the minor exceedance of the highly conservative Cr+6 benchmark. Aluminum also resulted in exceedances for plants, soil microflora, and all wildlife receptors, but it is unlikely to be of concern as the maximum concentration was only 1.1 times background.

Southwest. In the Southwest sector chromium, thallium, and uranium appear to pose potential risks to plants. Chromium is also of potential concern for soil microflora, soil invertebrates, and shrews. Zinc exceeded benchmarks for plants and soil microflora, but it is unlikely to be of significant concern as the maximum concentration was near background levels.

West. The West sector had more analytes exceeding benchmarks than any of the other sectors. Arsenic, cadmium, chromium, and uranium appear to pose potential risks to plants. Arsenic also exceeded toxicity levels for shrews. Chromium was of potential concern for all receptors. Aluminum and zinc were also above benchmark levels, but maximum concentrations were near background levels, suggesting significant risks are unlikely.

Northwest. In the Northwest sector chromium appeared to be the only analyte of potentially significant concern. Chromium exceeded benchmark values for plants, soil invertebrates, soil microflora, and short-tailed shrews. Iron, uranium, and vanadium also exceeded benchmarks for plants or soil microflora, but iron and vanadium had maximum concentrations only 1.1 times background, and uranium was only 2 times background.

Far North/Northwest. Chromium and uranium in the Far North/Northwest sector appear to pose potential risks to plants, and chromium could also be of concern for soil microflora, soil invertebrates, and shrews.

Far East/Northeast. Chromium and uranium in the Far East/Northeast sector appear to pose potential risks to plants, and chromium could also be of concern for soil microflora, soil invertebrates, and shrews. While aluminum resulted in exceedances for plants, soil microflora, and wildlife, the maximum aluminum concentration was only 1.2 times background.

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530589

APPENDIX A

TABLES

Table 1.1 Excess lifetime cancer risk from chemicals in RGA groundwater–residential use [compiled[a] from information in Appendix 6C of *Results of the Site Investigation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1991a)]

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Average Exposure Assumptions–Residential Wells				
1,2-Dichloroethene	NA	NR	NV	NV
1,2-Dichloroethane	3.0×10^{-7}	4.6×10^{-7}	7.6×10^{-7}	2%
Aroclor 1260	NA	NR	NV	NV
Benzene	NA	NR	NV	NV
Bis(2-ethylhexyl)phthalate	1.0×10^{-6}	NA	1.0×10^{-6}	2%
Carbon tetrachloride	1.8×10^{-6}	2.7×10^{-6}	4.5×10^{-6}	11%
Chloroform	2.1×10^{-7}	3.1×10^{-7}	5.2×10^{-7}	1%
Tetrachloroethene	1.7×10^{-7}	2.6×10^{-7}	4.3×10^{-7}	1%
Trichloroethene	1.1×10^{-5}	1.6×10^{-5}	2.7×10^{-5}	66%
Arsenic	7.3×10^{-6}	NA	7.3×10^{-6}	18%
Pathway Total	2.2×10^{-5}	1.9×10^{-5}	**4.1×10^{-5}**	
% of Total	54%	46%		
Average Exposure Assumptions–Monitoring Wells				
1,2-Dichloroethene	NA	NR	NV	NV
1,2-Dichloroethane	NA	NR	NV	NV
Aroclor 1260	NA	NR	NV	NV
Benzene	2.2×10^{-7}	3.4×10^{-7}	5.6×10^{-7}	3%
Bis(2-ethylhexyl)phthalate	4.3×10^{-6}	NA	4.3×10^{-6}	24%
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	2.4×10^{-8}	3.5×10^{-8}	5.9×10^{-8}	<1%
Tetrachloroethene	NA	NR	NV	NV
Trichloroethene	3.4×10^{-6}	5.1×10^{-6}	8.5×10^{-6}	47%
Arsenic	4.2×10^{-6}	NA	4.2×10^{-6}	23%
Pathway Total	1.2×10^{-5}	5.5×10^{-6}	**1.8×10^{-5}**	
% of Total	67%	31%		

530592

Table 1.1 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Average Exposure Assumptions–TVA Wells				
1,2-Dichloroethene	NA	NR	NV	NV
1,2-Dichloroethane	NA	NR	NV	NV
Aroclor 1260	NA	NR	NV	NV
Benzene	NA	NR	NV	NV
Bis(2-ethylhexyl)phthalate	NA	NR	NV	NV
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	NA	NR	NV	NV
Tetrachloroethene	NA	NR	NV	NV
Trichloroethene	4.5×10^{-7}	6.8×10^{-7}	1.1×10^{-6}	2%
Arsenic	5.4×10^{-5}	NA	5.4×10^{-5}	98%
Pathway Total	5.4×10^{-5}	6.8×10^{-7}	**5.5×10^{-5}**	
% of Total	98%	1%		
Maximum Exposure Assumptions–Residential Wells				
1,2-Dichloroethene	NA	NR	NV	NV
1,2-Dichloroethane	2.2×10^{-6}	3.3×10^{-6}	5.5×10^{-6}	<1%
Aroclor 1260	NA	NR	NV	NV
Benzene	NA	NR	NV	NV
Bis(2-ethylhexyl)phthalate	1.2×10^{-5}	NA	1.2×10^{-5}	2%
Carbon tetrachloride	1.3×10^{-5}	2.0×10^{-5}	3.3×10^{-5}	5%
Chloroform	2.5×10^{-6}	3.8×10^{-6}	6.3×10^{-6}	<1%
Tetrachloroethene	1.2×10^{-6}	1.8×10^{-6}	3.0×10^{-6}	<1%
Trichloroethene	2.2×10^{-4}	3.3×10^{-4}	5.5×10^{-4}	83%
Arsenic	4.6×10^{-5}	NA	4.6×10^{-5}	7%
Pathway Total	3.0×10^{-4}	3.6×10^{-4}	**6.6×10^{-4}**	
% of Total	45%	55%		
Maximum Exposure Assumptions–Monitoring Wells				
1,2-Dichloroethene	NA	NR	NV	NV
1,2-Dichloroethane	NA	NR	NV	NV
Aroclor 1260	NA	NR	NV	NV
Benzene	1.1×10^{-6}	1.7×10^{-6}	2.8×10^{-6}	1%
Bis(2-ethylhexyl)phthalate	5.5×10^{-5}	NA	5.5×10^{-5}	24%
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	1.5×10^{-7}	2.3×10^{-7}	3.8×10^{-7}	<1%
Tetrachloroethene	NA	NR	NV	NV
Trichloroethene	4.6×10^{-5}	9.2×10^{-5}	1.4×10^{-4}	61%
Arsenic	3.5×10^{-5}	NA	3.5×10^{-5}	15%
Pathway Total	1.4×10^{-4}	9.4×10^{-5}	**2.3×10^{-4}**	
% of Total	60%	40%		

Table 1.1 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Maximum Exposure Assumptions–TVA Wells				
1,2-Dichloroethene	NA	NR	NV	NV
1,2-Dichloroethane	NA	NR	NV	NV
Aroclor 1260	NA	NR	NV	NV
Benzene	NA	NR	NV	NV
Bis(2-ethylhexyl)phthalate	NA	NR	NV	NV
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	NA	NR	NV	NV
Tetrachloroethene	NA	NR	NV	NV
Trichloroethene	1.0×10^{-5}	1.5×10^{-5}	2.5×10^{-5}	3%
Arsenic	7.0×10^{-4}	NA	7.0×10^{-4}	96%
Pathway Total	7.1×10^{-4}	1.5×10^{-5}	**7.3×10^{-4}**	
% of Total	98%	2%		

Notes: NA is defined as not applicable in CH2M Hill 1991a.
NR indicates that the value is not reported in CH2M Hill 1991a.
NV indicates that a value could not be calculated.

[a] All values were recalculated using information in Appendix 6C because inhalation risk values were not reported in tables found in Appendix 6C.

Table 1.2 Hazard indices from chemicals in RGA groundwater–residential use [compiled[a] from information in Appendix 6C of *Results of the Site Investigation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1991a)]

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Average Exposure Assumptions–Residential Wells				
2-Butanone	NA	NR	NV	NV
Bis(2-ethhylhexyl)phthalate	0.03	NA	0.03	3%
Carbon disulfide	NA	NR	NV	NV
Carbon tetrachloride	0.15	0.23	0.38	43%
Chloroform	0.03	0.05	0.08	9%
Di-n-butyl phthalate	<0.01	NA	<0.01	<1%
1,2-Dichloroethene	0.02	0.03	0.05	6%
Diethyl phthalate	NA	NR	NV	NV
Di-n-octyl phthalate	0.03	NA	0.03	3%
Ethylbenzene	NA	NR	NV	NV
4-Nitrophenol	NA	NR	NV	NV
Tetrachloroethene	<0.01	<0.01	<0.01	<1%
Toluene	<0.01	<0.01	<0.01	<1%
Xylenes	NA	NR	NV	NV
Aluminum	NA	NR	NV	NV
Barium	0.04	NA	0.04	5%
Beryllium	<0.01	NA	<0.01	<1%
Cadmium	0.08	NA	0.08	9%
Chromium VI	0.08	NA	0.08	9%
Manganese	0.01	NA	0.01	1%
Mercury	0.01	NA	0.01	1%
Nickel	0.02	NA	0.02	2%
Selenium	0.03	NA	0.03	3%
Silver	0.04	NA	0.04	5%
Pathway Total	0.57	0.31	**0.88**	
% of Total	65%	35%		

530595

Table 1.2 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Average Exposure Assumptions–Monitoring Wells				
2-Butanone	<0.01	<0.01	<0.01	<1%
Bis(2-ethhylhexyl)phthalate	0.11	NA	0.11	12%
Carbon disulfide	NA	NR	NV	NV
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	<0.01	<0.01	0.01	<1%
Di-n-butyl phthalate	<0.01	NA	<0.01	<1%
1,2-Dichloroethene	0.02	0.02	0.04	4%
Diethyl phthalate	<0.01	NA	<0.01	<1%
Di-n-octyl phthalate	0.01	NA	0.01	<1%
Ethylbenzene	NA	NR	NV	NV
4-Nitrophenol	NA	NR	NV	NV
Tetrachloroethene	NA	NR	NV	NV
Toluene	<0.01	<0.01	<0.01	<1%
Xylenes	<0.01	<0.01	<0.01	<1%
Aluminum	NA	NA	NV	NV
Barium	0.09	NA	0.09	8%
Beryllium	<0.01	NA	<0.01	<1%
Cadmium	0.14	NA	0.14	12%
Chromium VI	0.31	NA	0.31	27%
Manganese	0.20	NA	0.20	18%
Mercury	NA	NR	NV	NV
Nickel	0.06	NA	0.06	5%
Selenium	0.02	NA	0.02	2%
Silver	0.13	NA	0.13	12%
Pathway Total	1.10	0.03	**1.13**	
% of Total	97%	3%		

Table 1.2 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Average Exposure Assumptions–TVA Wells				
2-Butanone	NA	NR	NV	NV
Bis(2-ethhylhexyl)phthalate	NA	NA	NV	NV
Carbon disulfide	NA	NR	NV	NV
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	NA	NR	NV	NV
Di-n-butyl phthalate	NA	NA	NV	NV
1,2-Dichloroethene	NA	NR	NV	NV
Diethyl phthalate	<0.01	NA	<0.01	<1%
Di-n-octyl phthalate	NA	NA	NV	NV
Ethylbenzene	NA	NR	NV	NV
4-Nitrophenol	NA	NR	NV	NV
Tetrachloroethene	NA	NR	NV	NV
Toluene	NA	NR	NV	NV
Xylenes	NA	NR	NV	NV
Aluminum	NA	NR	NV	NV
Barium	0.05	NA	0.05	10%
Beryllium	<0.01	NA	<0.01	<1%
Cadmium	NA	NA	NV	NV
Chromium VI	0.14	NA	0.14	29%
Manganese	0.19	NA	0.19	39%
Mercury	NA	NA	NV	NV
Nickel	0.05	NA	0.05	10%
Selenium	0.03	NA	0.03	6%
Silver	0.03	NA	0.03	6%
Pathway Total	0.49	NV	**0.49**	
% of Total	100%	NV		

530597

Table 1.2 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Maximum Exposure Assumptions–Residential Wells				
2-Butanone	NA	NR	NV	NV
Bis(2-ethhylhexyl)phthalate	0.10	NA	0.10	4%
Carbon disulfide	NA	NR	NV	NV
Carbon tetrachloride	0.33	0.50	0.83	31%
Chloroform	0.10	0.15	0.25	9%
Di-n-butyl phthalate	<0.01	NA	<0.01	<1%
1,2-Dichloroethene	0.05	0.08	0.13	5%
Diethyl phthalate	NA	NA	NV	NV
Di-n-octyl phthalate	0.04	NA	0.04	1%
Ethylbenzene	NA	NR	NV	NV
4-Nitrophenol	NA	NR	NV	NV
Tetrachloroethene	<0.01	<0.01	0.01	<1%
Toluene	<0.01	<0.01	<0.01	<1%
Xylenes	NA	NR	NV	NV
Aluminum	NA	NA	NV	NV
Barium	0.19	NA	0.19	7%
Beryllium	<0.01	NA	<0.01	<1%
Cadmium	0.11	NA	0.11	NV
Chromium VI	0.61	NA	0.61	23%
Manganese	0.12	NA	0.12	4%
Mercury	0.02	NA	0.02	<1%
Nickel	0.08	NA	0.08	3%
Selenium	0.13	NA	0.13	5%
Silver	0.10	NA	0.10	4%
Pathway Total	1.98	0.73	**2.71**	
% of Total	73%	27%		

Table 1.2 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Maximum Exposure Assumptions–Monitoring Wells				
2-Butanone	<0.01	<0.01	0.01	<1%
Bis(2-ethhylhexyl)phthalate	0.46	NA	0.46	12%
Carbon disulfide	NA	NR	NV	NV
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	<0.01	<0.01	0.02	<1%
Di-n-butyl phthalate	<0.01	NA	NV	NV
1,2-Dichloroethene	0.03	0.05	0.08	2%
Diethyl phthalate	<0.01	NA	<0.01	<1%
Di-n-octyl phthalate	<0.01	NA	<0.01	<1%
Ethylbenzene	NA	NR	NV	NV
4-Nitrophenol	NA	NR	NV	NV
Tetrachloroethene	NA	NR	NV	NV
Toluene	<0.01	<0.01	<0.01	<1%
Xylenes	<0.01	<0.01	<0.01	<1%
Aluminum	NA	NR	NV	NV
Barium	0.42	NA	0.42	11%
Beryllium	0.01	NA	0.01	<1%
Cadmium	0.23	NA	0.23	6%
Chromium VI	1.28	NA	1.28	33%
Manganese	0.82	NA	0.82	21%
Mercury	NA	NA	NV	NV
Nickel	0.23	NA	0.23	6%
Selenium	0.07	NA	0.07	2%
Silver	0.26	NA	0.26	7%
Pathway Total	3.84	0.05	**3.89**	
% of Total	99%	1%		

Table 1.2 (Continued)

Chemical	Ingestion	Inhalation of Vapors	Chemical Total	% of Total
Maximum Exposure Assumptions–TVA Wells				
2-Butanone	NA	NR	NV	NV
Bis(2-ethhylhexyl)phthalate	NA	NA	NV	NV
Carbon disulfide	NA	NR	NV	NV
Carbon tetrachloride	NA	NR	NV	NV
Chloroform	NA	NR	NV	NV
Di-n-butyl phthalate	NA	NR	NV	NV
1,2-Dichloroethene	NA	NR	NV	NV
Diethyl phthalate	<0.01	NA	<0.01	<1%
Di-n-octyl phthalate	NA	NR	NV	NV
Ethylbenzene	NA	NR	NV	NV
4-Nitrophenol	NA	NR	NV	NV
Tetrachloroethene	NA	NR	NV	NV
Toluene	NA	NR	NV	NV
Xylenes	NA	NR	NV	NV
Aluminum	NA	NA	NV	NV
Barium	0.22	NA	0.22	13%
Beryllium	<0.01	NA	<0.01	<1%
Cadmium	NA	NA	NV	NV
Chromium VI	0.54	NA	0.54	31%
Manganese	0.72	NA	0.72	41%
Mercury	NA	NA	NV	NV
Nickel	0.11	NA	0.11	6%
Selenium	0.10	NA	0.10	6%
Silver	0.05	NA	0.05	3%
Pathway Total	1.74	NV	**1.74**	
% of Total	100%	NV		

Notes: NA is defined as not applicable in CH2M Hill 1991a.
NR indicates that the value is not reported in CH2M Hill 1991a.
NV indicates value could not be calculated.

[a] All values were recalculated using information in Appendix 6C because inhalation risk values were not reported in tables found in Appendix 6C.

Table 1.3 Excess lifetime cancer risk from radionuclides in RGA groundwater–residential use [compiled[a] from information in Appendix 6D of *Results of the Site Investigation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1991a)]

Radionuclide	Ingestion	Radionuclide Total	% of Total
Average Exposure Assumptions–Residential Wells			
Technetium-99	1.1×10^{-6}	1.1×10^{-6}	26%
Uranium-238	1.5×10^{-6}	1.5×10^{-6}	35%
Uranium-235	7.8×10^{-8}	7.8×10^{-8}	2%
Uranium-234	1.6×10^{-6}	1.6×10^{-6}	37%
Thorium-230	7.2×10^{-8}	7.2×10^{-8}	2%
Neptunium-237	NR	NV	NV
Plutonium-239	7.1×10^{-9}	7.1×10^{-9}	<1%
Pathway Total	4.3×10^{-6}	**4.3×10^{-6}**	
% of Total	100%		
Average Exposure Assumptions–Monitoring Wells			
Technetium-99	5.5×10^{-7}	5.5×10^{-7}	20%
Uranium-238	1.0×10^{-6}	1.0×10^{-6}	36%
Uranium-235	7.8×10^{-8}	7.8×10^{-8}	3%
Uranium-234	9.0×10^{-7}	9.0×10^{-7}	32%
Thorium-230	1.6×10^{-7}	1.6×10^{-7}	6%
Neptunium-237	NR	NV	NV
Plutonium-239	8.6×10^{-8}	8.6×10^{-8}	3%
Pathway Total	2.8×10^{-6}	**2.8×10^{-6}**	
% of Total	100%		
Average Exposure Assumptions–TVA Wells			
Technetium-99	2.9×10^{-7}	2.9×10^{-7}	3%
Uranium-238	6.1×10^{-6}	6.1×10^{-6}	62%
Uranium-235	8.4×10^{-7}	8.4×10^{-7}	9%
Uranium-234	2.3×10^{-6}	2.3×10^{-6}	23%
Thorium-230	7.7×10^{-8}	7.7×10^{-8}	<1%
Neptunium-237	NR	NV	NV
Plutonium-239	2.9×10^{-7}	2.9×10^{-7}	3%
Pathway Total	9.8×10^{-6}	**9.8×10^{-6}**	
% of Total	100%		

Table 1.3 (Continued)

Radionuclide	Ingestion	Radionuclide Total	% of Total
Maximum Exposure Assumptions–Residential Wells			
Technetium-99	3.4×10^{-5}	3.4×10^{-5}	63%
Uranium-238	9.7×10^{-6}	9.7×10^{-6}	18%
Uranium-235	3.7×10^{-7}	3.7×10^{-7}	<1%
Uranium-234	9.5×10^{-6}	9.5×10^{-6}	18%
Thorium-230	5.8×10^{-7}	5.8×10^{-7}	1%
Neptunium-237	NR	NV	NV
Plutonium-239	4.8×10^{-8}	4.8×10^{-8}	<1%
Pathway Total	5.4×10^{-5}	**5.4×10^{-5}**	
% of Total	100%		
Maximum Exposure Assumptions–Monitoring Wells			
Technetium-99	6.3×10^{-6}	6.3×10^{-6}	13%
Uranium-238	2.5×10^{-5}	2.5×10^{-5}	51%
Uranium-235	6.3×10^{-7}	6.3×10^{-7}	1%
Uranium-234	1.5×10^{-5}	1.1×10^{-5}	22%
Thorium-230	1.8×10^{-6}	1.8×10^{-6}	4%
Neptunium-237	NR	NV	NV
Plutonium-239	4.1×10^{-7}	4.1×10^{-7}	<1%
Pathway Total	4.9×10^{-5}	**4.9×10^{-5}**	
% of Total	100%		
Maximum Exposure Assumptions–TVA Wells			
Technetium-99	3.1×10^{-6}	3.1×10^{-6}	<1%
Uranium-238	2.8×10^{-4}	2.8×10^{-4}	88%
Uranium-235	7.4×10^{-6}	7.4×10^{-6}	2%
Uranium-234	2.9×10^{-5}	2.9×10^{-5}	9%
Thorium-230	1.1×10^{-6}	1.1×10^{-6}	<1%
Neptunium-237	NR	NV	NV
Plutonium-239	1.4×10^{-6}	1.4×10^{-6}	<1%
Pathway Total	3.2×10^{-4}	**3.2×10^{-4}**	
% of Total	100%		

Notes: NR indicates that the value is not reported in CH2M Hill 1991a.
NV indicates value could not be calculated.
[a] All values, except percentages, taken from Appendix 6D in CH2M Hill 1991a.

Table 1.4 Excess lifetime cancer risk from chemicals in RGA groundwater–residential use [compiled[a] from information in *Human Health Baseline Risk Asessment for the Northwest Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1993a)]

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
High TCE/^{99}Tc Well Group							
1,2-Dichloroethane	–	–	–	–	–	–	–
cis-1,2-Dichloroethene	NC	NC	NC	NC	NC	NC	NC
2-Butanone	NC	NC	NC	NC	NC	NC	NC
4-Nitrophenol	NC	NC	NC	NC	NC	NC	NC
Bis(2-chloroethyl)ether	8.3×10^{-5}	2.3×10^{-5}	5.0×10^{-7}	1.3×10^{-3}	5.8×10^{-8}	1.4×10^{-3}	52%
Bis(2-ethylhexyl)phthalate	3.3×10^{-7}	NC	3.1×10^{-8}	1.3×10^{-7}	6.3×10^{-8}	5.6×10^{-7}	<1%
Bromodichloromethane	8.7×10^{-6}	NC	1.5×10^{-7}	8.1×10^{-5}	9.1×10^{-9}	9.0×10^{-5}	3%
Carbon tetrachloride	1.2×10^{-5}	5.5×10^{-6}	7.7×10^{-7}	3.9×10^{-5}	3.3×10^{-8}	5.8×10^{-5}	2%
Chloroform	9.7×10^{-7}	4.8×10^{-6}	2.5×10^{-8}	8.0×10^{-6}	1.1×10^{-9}	1.4×10^{-5}	<1%
Di-n-butylphthalate	NC	NC	NC	NC	NC	NC	NC
Dibromochloromethane	9.9×10^{-7}	NDA	NDA	NDA	NDA	9.9×10^{-7}	<1%
Dieldrin	–	–	–	–	–	–	–
Diethylphthalate	NC	NC	NC	NC	NC	NC	NC
Phenol	NC	NC	NC	NC	NC	NC	NC
N-nitrosodiphenylamine	–	NC	–	–	–	–	–
Tetrachloroethene	6.0×10^{-7}	2.7×10^{-7}	8.3×10^{-8}	2.5×10^{-6}	1.3×10^{-9}	3.4×10^{-6}	<1%
Toluene	NC	NC	NC	NC	NC	NC	NC
Trichloroethene	1.9×10^{-4}	1.2×10^{-4}	8.6×10^{-6}	7.7×10^{-4}	4.0×10^{-7}	1.1×10^{-3}	41%
Uranium	NC	NC	NC	NC	NC	NC	NC
Xylene	NC	NC	NC	NC	NC	NC	NC
Techetium-99	2.0×10^{-5}	NC	NC	3.8×10^{-6}	1.1×10^{-5}	3.5×10^{-5}	1%
Uranium-234	5.7×10^{-7}	NC	NC	1.1×10^{-7}	1.4×10^{-9}	6.8×10^{-7}	<1%
Uranium-235	1.7×10^{-8}	NC	NC	3.2×10^{-9}	4.0×10^{-11}	2.0×10^{-8}	<1%
Uranium-238	1.0×10^{-6}	NC	NC	1.9×10^{-7}	1.4×10^{-9}	1.2×10^{-6}	<1%
Pathway Total	3.2×10^{-4}	1.5×10^{-4}	1.0×10^{-5}	2.2×10^{-3}	1.2×10^{-5}	**2.7×10^{-3}**	
% of Total	12%	6%	<1%	82%	<1%		

Table 1.4 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
TCE/^{99}Tc Plume Well Group							
1,2-Dichloroethane	1.1×10^{-6}	9.4×10^{-7}	1.6×10^{-8}	1.7×10^{-5}	7.3×10^{-10}	1.9×10^{-5}	15%
cis-1,2-Dichloroethene	NC	NC	NC	NC	NC	NC	NC
2-Butanone	NC	NC	NC	NC	NC	NC	NC
4-Nitrophenol	NC	NC	NC	NC	NC	NC	NC
Bis(2-chloroethyl)ether	–	–	–	–	–	–	–
Bis(2-ethylhexyl)phthalate	3.1×10^{-6}	NC	2.9×10^{-7}	1.2×10^{-6}	5.9×10^{-7}	5.2×10^{-6}	4%
Bromodichloromethane	–	–	–	–	–	–	–
Carbon tetrachloride	–	–	–	–	–	–	–
Chloroform	–	–	–	–	–	–	–
Di-n-butylphthalate	NC	NC	NC	NC	NC	NC	NC
Dibromochloromethane	–	–	–	–	–	–	–
Dieldrin	2.0×10^{-5}	5.6×10^{-6}	9.3×10^{-7}	1.2×10^{-5}	3.9×10^{-5}	7.7×10^{-5}	60%
Diethylphthalate	NC	NC	NC	NC	NC	NC	NC
Phenol	NC	NC	NC	NC	NC	NC	NC
N-nitrosodiphenylamine	1.2×10^{-7}	NC	1.2×10^{-8}	2.3×10^{-7}	5.0×10^{-10}	3.6×10^{-7}	<1%
Tetrachloroethene	–	–	–	–	–	–	–
Toluene	NC	NC	NC	NC	NC	NC	NC
Trichloroethene	4.0×10^{-6}	2.6×10^{-6}	1.8×10^{-7}	1.6×10^{-5}	8.3×10^{-9}	2.3×10^{-5}	18%
Uranium	NC	NC	NC	NC	NC	NC	NC
Xylene	NC	NC	NC	NC	NC	NC	NC
Technetium-99	1.8×10^{-6}	NC	NC	3.5×10^{-7}	1.0×10^{-6}	3.2×10^{-6}	2%
Uranium-234	–	–	–	–	–	–	–
Uranium-235	–	–	–	–	–	–	–
Uranium-238	6.5×10^{-7}	NC	NC	1.2×10^{-7}	8.9×10^{-10}	7.7×10^{-7}	<1%
Pathway Total	3.1×10^{-5}	9.1×10^{-6}	1.4×10^{-6}	4.7×10^{-5}	4.0×10^{-5}	**1.3×10^{-4}**	
% of Total	24%	7%	1%	37%	31%		

Table 1.4 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
Outside of Plume Well Group							
1,2-Dichloroethane	–	–	–	–	–	–	–
cis-1,2-Dichloroethene	NC	NC	NC	NC	NC	NC	NC
2-Butanone	NC	NC	NC	NC	NC	NC	NC
4-Nitrophenol	NC	NC	NC	NC	NC	NC	NC
Bis(2-chloroethyl)ether	–	–	–	–	–	–	–
Bis(2-ethylhexyl)phthalate	1.5×10^{-6}	NC	1.4×10^{-7}	6.0×10^{-7}	2.9×10^{-7}	2.5×10^{-6}	21%
Bromodichloromethane	–	–	–	–	–	–	–
Carbon tetrachloride	–	–	–	–	–	–	–
Chloroform	–	–	–	–	–	–	–
Di-n-butylphthalate	NC	NC	NC	NC	NC	NC	NC
Dibromochloromethane	–	–	–	–	–	–	–
Dieldrin	–	–	–	–	–	–	–
Diethylphthalate	NC	NC	NC	NC	NC	NC	NC
Phenol	NC	NC	NC	NC	NC	NC	NC
N-nitrosodiphenylamine	1.2×10^{-7}	NC	1.2×10^{-8}	2.3×10^{-7}	5.0×10^{-10}	3.6×10^{-7}	3%
Tetrachloroethene	–	–	–	–	–	–	–
Toluene	NC	NC	NC	NC	NC	NC	NC
Trichloroethene	–	–	–	–	–	–	–
Uranium	NC	NC	NC	NC	NC	NC	NC
Xylene	NC	NC	NC	NC	NC	NC	NC
Techetium-99	–	–	–	–	–	–	–
Uranium-234	2.2×10^{-6}	NC	NC	4.1×10^{-7}	5.2×10^{-9}	2.6×10^{-6}	21%
Uranium-235	1.1×10^{-7}	NC	NC	2.2×10^{-8}	2.7×10^{-10}	1.3×10^{-7}	1%
Uranium-238	5.6×10^{-6}	NC	NC	9.7×10^{-7}	6.9×10^{-9}	6.6×10^{-6}	54%
Pathway Total	9.5×10^{-6}	NV	1.5×10^{-7}	2.2×10^{-6}	3.0×10^{-7}	**1.2×10^{-5}**	
% of Total	78%	NV	1%	18%	2%		

Table 1.4 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
Reference Well Group							
1,2-Dichloroethane	–	–	–	–	–	–	–
cis-1,2-Dichloroethene	NC	NC	NC	NC	NC	NC	NC
2-Butanone	NC	NC	NC	NC	NC	NC	NC
4-Nitrophenol	NC	NC	NC	NC	NC	NC	NC
Bis(2-chloroethyl)ether	–	–	–	–	–	–	–
Bis(2-ethylhexyl)phthalate	2.9×10^{-5}	NC	2.8×10^{-6}	1.2×10^{-5}	5.6×10^{-6}	4.9×10^{-5}	98%
Bromodichloromethane	–	–	–	–	–	–	–
Carbon tetrachloride	–	–	–	–	–	–	–
Chloroform	–	–	–	–	–	–	–
Di-n-butylphthalate	NC	NC	NC	NC	NC	NC	NC
Dibromochloromethane	–	–	–	–	–	–	–
Dieldrin	–	–	–	–	–	–	–
Diethylphthalate	NC	NC	NC	NC	NC	NC	NC
Phenol	NC	NC	NC	NC	NC	NC	NC
N-nitrosodiphenylamine	1.2×10^{-7}	NC	1.2×10^{-8}	2.3×10^{-7}	5×10^{-10}	3.6×10^{-7}	<1%
Tetrachloroethene	–	–	–	–	–	–	–
Toluene	NC	NC	NC	NC	NC	NC	NC
Trichloroethene	–	–	–	–	–	–	–
Uranium	NC	NC	NC	NC	NC	NC	NC
Xylene	NC	NC	NC	NC	NC	NC	NC
Techetium-99	1.4×10^{-7}	NC	NC	2.7×10^{-8}	8.3×10^{-8}	2.5×10^{-7}	<1%
Uranium-234	1.2×10^{-7}	NC	NC	2.2×10^{-8}	1.6×10^{-10}	1.4×10^{-7}	<1%
Uranium-235	–	–	–	–	–	–	–
Uranium-238	–	–	–	–	–	–	–
Pathway Total	2.9×10^{-5}	NV	2.8×10^{-6}	1.2×10^{-5}	5.7×10^{-6}	**5.0×10^{-5}**	
% of Total	59%	NV	6%	24%	11%		

Notes: NC is defined as not "a carcinogen for this pathway" in DOE 1993a.
– is defined as "chemical was not detected in this well group in DOE 1993a.
NV indicates that a value cannot be calculated for the pathway.

[a] All values were taken from information in Table 5.1 through 5.4 of DOE 1993a.

[b] Exposure route = inhalation of volatiles emitted by groundwater during household use.

[c] Exposure route = dermal exposure to chemicals in groundwater while bathing.

[d] Exposure route = consumption of vegetable irrigated with groundwater.

[e] Exposure route = consumption of meat and milk from cows receiving groundwater to drink.

Table 1.5 Excess lifetime cancer risk from naturally occurring metals in RGA groundwater–residential use [compiled[a] from information in *Human Health Baseline Risk Asessment for the Northwest Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1993a)]

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
High TCE/^{99}Tc Well Group							
Arsenic	2.0×10^{-4}	NC	5.7×10^{-7}	6.7×10^{-5}	6.2×10^{-6}	2.7×10^{-4}	100%
Barium	NC	NC	NC	NC	NC	NC	NC
Cadmium	NC	NC	NC	NC	NC	NC	NC
Copper	NC	NC	NC	NC	NC	NC	NC
Cyanide	NC	NC	NC	NC	NC	NC	NC
Lead	NC	NC	NC	NC	NC	NC	NC
Silver	NC	NC	NC	NC	NC	NC	NC
Pathway Total	2.0×10^{-4}	NV	5.7×10^{-7}	6.7×10^{-5}	6.2×10^{-6}	**2.7×10^{-4}**	
% of Total	73%	NV	<1%	25%	2%		
TCE/^{99}Tc Plume Well Group							
Arsenic	1.9×10^{-4}	NC	5.4×10^{-7}	6.3×10^{-5}	5.8×10^{-6}	2.6×10^{-4}	100%
Barium	NC	NC	NC	NC	NC	NC	NC
Cadmium	NC	NC	NC	NC	NC	NC	NC
Copper	NC	NC	NC	NC	NC	NC	NC
Cyanide	NC	NC	NC	NC	NC	NC	NC
Lead	NC	NC	NC	NC	NC	NC	NC
Silver	NC	NC	NC	NC	NC	NC	NC
Pathway Total	1.9×10^{-4}	NV	5.4×10^{-7}	6.3×10^{-5}	5.8×10^{-6}	**2.6×10^{-4}**	
% of Total	73%	NV	<1%	24%	2%		
Outside of Plume Well Group							
Arsenic	2.7×10^{-5}	NC	7.7×10^{-8}	9.0×10^{-6}	8.3×10^{-7}	3.7×10^{-5}	100%
Barium	NC	NC	NC	NC	NC	NC	NC
Cadmium	NC	NC	NC	NC	NC	NC	NC
Copper	NC	NC	NC	NC	NC	NC	NC
Cyanide	NC	NC	NC	NC	NC	NC	NC
Lead	NC	NC	NC	NC	NC	NC	NC
Silver	NC	NC	NC	NC	NC	NC	NC
Pathway Total	2.7×10^{-5}	NV	7.7×10^{-8}	9.0×10^{-6}	8.3×10^{-7}	**3.7×10^{-5}**	
% of Total	73%	NV	<1%	24%	2%		

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Table 1.5 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
Reference Well Group							
Arsenic	1.5×10^{-4}	NC	4.3×10^{-7}	5.1×10^{-5}	4.8×10^{-6}	2.1×10^{-4}	100%
Barium	NC	NC	NC	NC	NC	NC	NC
Cadmium	NC	NC	NC	NC	NC	NC	NC
Copper	NC	NC	NC	NC	NC	NC	NC
Cyanide	NC	NC	NC	NC	NC	NC	NC
Lead	NC	NC	NC	NC	NC	NC	NC
Silver	NC	NC	NC	NC	NC	NC	NC
Pathway Total	1.5×10^{-4}	NV	4.3×10^{-7}	5.1×10^{-5}	4.8×10^{-6}	**2.1×10^{-4}**	
% of Total	73%	NV	<1%	25%	2%		

Notes: NC is defined as not "a carcinogen for this pathway" in DOE 1993a.
NV indicates that a value cannot be calculated for the pathway.

[a] All values were taken from information in Table 5.5 of DOE 1993a.
[b] Exposure route = inhalation of volatiles emitted by groundwater during household use.
[c] Exposure route = dermal exposure to chemicals in groundwater while bathing.
[d] Exposure route = consumption of vegetable irrigated with groundwater.
[e] Exposure route = consumption of meat and milk from cows receiving groundwater to drink.

Table 1.6 Hazard indices for chemicals in RGA groundwater–residential use [compiled[a] from information in *Human Health Baseline Risk Asessment for the Northwest Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1993a)]

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
High TCE/^{99}Tc Well Group							
1,2-Dichloroethane	NR	NR	NR	NR	NR	NV	NV
cis-1,2-Dichloroethene	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<1%
2-Butanone	–	–	–	–	–	NV	NV
4-Nitrophenol	NR	NR	NR	NR	NR	NV	NV
Bis(2-chloroethyl)ether	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	<0.01	NR	<0.01	<0.01	<0.01	<0.01	<1%
Bromodichloromethane	0.02	NR	<0.01	0.15	<0.01	0.17	9%
Carbon tetrachloride	0.31	NR	0.02	1.00	<0.01	1.31	68%
Chloroform	0.03	NR	<0.01	0.30	<0.01	0.34	18%
Di-n-butylphthalate	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1%
Dibromochloromethane	<0.01	NDA	NDA	NDA	NDA	<0.01	<1%
Dieldrin	–	–	–	–	–	NV	NV
Diethylphthalate	–	–	–	–	–	NV	NV
Phenol	<0.01	NR	<0.01	0.01	<0.01	0.01	<1%
N-nitrosodiphenylamine	NR	NR	NR	NR	NR	NV	NV
Tetrachloroethene	<0.01	NR	<0.01	0.01	<0.01	0.01	<1%
Toluene	–	–	–	–	–	NV	NV
Trichloroethene	NR	NR	NR	NR	NR	NV	NV
Uranium	0.06	NR	<0.01	0.02	<0.01	0.08	4%
Xylene	–	–	–	–	–	NV	NV
Pathway Total	0.42	<0.01	0.02	1.50	<0.01	**1.94**	
% of Total	22%	<1%	1%	77%	<1%		

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Table 1.6 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
TCE/^{99}Tc Plume Well Group							
1,2-Dichloroethane	NR	NR	NR	NR	NR	NV	NV
cis-1,2-Dichloroethene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1%
2-Butanone	<0.01	<0.01	<0.01	0.30	<0.01	0.30	48%
4-Nitrophenol	NR	NR	NR	NR	NR	NV	NV
Bis(2-chloroethyl)ether	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	0.03	NR	<0.01	0.01	<0.01	0.04	6%
Bromodichloromethane	–	–	–	–	–	NV	NV
Carbon tetrachloride	–	–	–	–	–	NV	NV
Chloroform	–	–	–	–	–	NV	NV
Di-n-butylphthalate	<0.01	<0.01	<0.01	<0.01	<0.01	NV	NV
Dibromochloromethane	–	–	–	–	–	NV	NV
Dieldrin	0.06	NR	<0.01	0.04	0.11	0.21	34%
Diethylphthalate	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1%
Phenol	<0.01	NR	<0.01	0.01	<0.01	0.01	<1%
N-nitrosodiphenylamine	NR	NR	NR	NR	NR	NV	NV
Tetrachloroethene	–	–	–	–	–	NV	NV
Toluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1%
Trichloroethene	NR	NR	NR	NR	NR	NV	NV
Uranium	0.04	NR	<0.01	0.01	<0.01	0.06	10%
Xylene	<0.01	<0.01	<0.01	0.01	<0.01	0.01	2%
Pathway Total	0.13	<0.01	<0.01	0.38	0.11	**0.62**	
% of Total	21%	<1%	<1%	61%	18%		

Table 1.6 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
Outside of Plume Well Group							
1,2-Dichloroethane	NR	NR	NR	NR	NR	NV	NV
cis-1,2-Dichloroethene	–	–	–	–	–	NV	NV
2-Butanone	–	–	–	–	–	NV	NV
4-Nitrophenol	NR	NR	NR	NR	NR	NV	NV
Bis(2-chloroethyl)ether	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	0.01	NR	<0.01	<0.01	<0.01	0.02	6%
Bromodichloromethane	–	–	–	–	–	NV	NV
Carbon tetrachloride	–	–	–	–	–	NV	NV
Chloroform	–	–	–	–	–	NV	NV
Di-n-butylphthalate	–	–	–	–	–	NV	NV
Dibromochloromethane	–	–	–	–	–	NV	NV
Dieldrin	–	–	–	–	–	NV	NV
Diethylphthalate	–	–	–	–	–	NV	NV
Phenol	–	–	–	–	–	NV	NV
N-nitrosodiphenylamine	NR	NR	NR	NR	NR	NV	NV
Tetrachloroethene	–	–	–	–	–	NV	NV
Toluene	–	–	–	–	–	NV	NV
Trichloroethene	NR	NR	NR	NR	NR	NV	NV
Uranium	0.25	NR	<0.01	0.08	0.01	0.34	94%
Xylene	–	–	–	–	–	NV	NV
Pathway Total	0.26	NV	<0.01	0.08	0.01	**0.36**	
% of Total	72%	NV	<1%	22%	3%		

Table 1.6 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
Reference Well Group							
1,2-Dichloroethane	NR	NR	NR	NR	NR	NV	NV
cis-1,2-Dichloroethene	–	–	–	–	–	NV	NV
2-Butanone	–	–	–	–	–	NV	NV
4-Nitrophenol	NR	NR	NR	NR	NR	NV	NV
Bis(2-chloroethyl)ether	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	0.24	NR	0.02	0.10	0.05	0.41	95%
Bromodichloromethane	–	–	–	–	–	NV	NV
Carbon tetrachloride	–	–	–	–	–	NV	NV
Chloroform	–	–	–	–	–	NV	NV
Di-n-butylphthalate	–	–	–	–	–	NV	NV
Dibromochloromethane	–	–	–	–	–	NV	NV
Dieldrin	–	–	–	–	–	NV	NV
Diethylphthalate	–	–	–	–	–	NV	NV
Phenol	–	–	–	–	–	NV	NV
N-nitrosodiphenylamine	NR	NR	NR	NR	NR	NV	NV
Tetrachloroethene	–	–	–	–	–	NV	NV
Toluene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1%
Trichloroethene	NR	NR	NR	NR	NR	NV	NV
Uranium	0.02	NR	<0.01	<0.01	<0.01	0.02	5%
Xylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1%
Pathway Total	0.26	<0.01	0.02	0.10	0.05	**0.43**	
% of Total	60%	<1%	5%	23%	12%		

Notes: NR is defined "as no RFD for this pathway" in DOE 1993a.
In DOE 1993a, NDA is used to indicate that some parameters needed to estimate risk for the chemical were not available.
– is defined as "chemical was not detected in this well group in DOE 1993a.
NV indicates that a value cannot be calculated.

[a] All values were taken from information in Table 5.6 through 5.9 of DOE 1993a.
[b] Exposure route = inhalation of volatiles emitted by groundwater during household use.
[c] Exposure route = dermal exposure to chemicals in groundwater while bathing.
[d] Exposure route = consumption of vegetable irrigated with groundwater.
[e] Exposure route = consumption of meat and milk from cows receiving groundwater to drink.

Table 1.7 Hazard indices for naturally occurring metals in RGA groundwater–residential use [compiled[a] from information in *Human Health Baseline Risk Asessment for the Northwest Plume, Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1993a)]

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
High TCE/^{99}Tc Well Group							
Arsenic	0.89	NR	<0.01	0.29	0.02	1.22	33%
Barium	0.11	NR	<0.01	0.04	<0.01	0.15	4%
Cadmium	0.04	NR	<0.01	0.04	0.01	0.09	2%
Copper	0.08	NR	<0.01	0.88	0.52	1.48[f]	40%
Cyanide	<0.01	NR	<0.01	0.57	<0.01	0.58	16%
Lead	NR	NR	NR	NR	NR	NV	NV
Silver	0.04	NR	<0.01	0.02	0.14	0.21	6%
Pathway Total	1.16	NV	<0.01	1.84	0.69	**3.69**	
% of Total	31%	NV	<1%	50%	19%		
TCE/^{99}Tc Plume Well Group							
Arsenic	0.83	NR	<0.01	0.28	0.03	1.10	57%
Barium	0.10	NR	<0.01	0.04	<0.01	0.15	8%
Cadmium	0.06	NR	<0.01	0.05	0.02	0.13	7%
Copper	0.05	NR	<0.01	0.05	0.03	0.13	7%
Cyanide	<0.01	NR	<0.01	0.33	<0.01	0.34	18%
Lead	NR	NR	NR	NR	NR	NV	NV
Silver	0.01	NR	<0.01	<0.01	0.05	0.07	4%
Pathway Total	1.05	NV	<0.01	0.75	0.13	**1.92**	
% of Total	55%	NV	<1%	39%	7%		
Outside of Plume Well Group							
Arsenic	0.12	NR	<0.01	0.04	<0.01	0.16	15%
Barium	0.13	NR	<0.01	0.05	<0.01	0.19	18%
Cadmium	0.10	NR	<0.01	0.09	0.03	0.21	20%
Copper	0.02	NR	<0.01	0.03	0.01	0.06	6%
Cyanide	<0.01	NR	<0.01	0.37	<0.01	0.37	35%
Lead	NR	NR	NR	NR	NR	NV	NV
Silver	0.01	NR	<0.01	<0.01	0.04	0.06	6%
Pathway Total	0.38	NV	<0.01	0.58	0.08	**1.05**	
% of Total	36%	NV	<1%	55%	8%		

Table 1.7 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Beef and Milk[e]	Chemical Total	% of Total
Reference Well Group							
Arsenic	0.67	NR	<0.01	0.23	0.02	0.92	55%
Barium	0.06	NR	<0.01	0.03	<0.01	0.09	5%
Cadmium	0.08	NR	<0.01	0.07	0.02	0.16	10%
Copper	0.04	NR	<0.01	0.05	0.03	0.12	7%
Cyanide	<0.01	NR	<0.01	0.27	<0.01	0.27	16%
Lead	NR	NR	NR	NR	NR	NV	NV
Silver	0.02	NR	<0.01	0.01	0.07	0.10	6%
Pathway Total	0.87	NV	<0.01	0.66	0.14	**1.66**	
% of Total	52%	NV	<1%	40%	8%		

Notes: NC is defined as not "a carcinogen for this pathway" in DOE 1993a.
NV indicates that a value cannot be calculated.

[a] All values were taken from information in Table 5.5 of DOE 1993a.
[b] Exposure route = inhalation of volatiles emitted by groundwater during household use.
[c] Exposure route = dermal exposure to chemicals in groundwater while bathing.
[d] Exposure route = consumption of vegetable irrigated with groundwater.
[e] Exposure route = consumption of meat and milk from cows receiving groundwater to drink.
[f] DOE 1993a reports this value as 2.24; however, the pathway-specific hazard quotients for copper do not sum to 2.24. The reason for this error is unknown.

Table 1.8 Excess lifetime cancer risk from chemicals in RGA groundwater–residential use [compiled[a] from information in App. H of *Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant* (DOE 1994a)]

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Biota[e]	Chemical Total[f]	% of Total
Plume Centroid Well Group							
Copper	NC	NC	NC	NC	NC	NV	NV
Lead	NC	NC	NC	NC	NC	NV	NV
Manganese	NC	NC	NC	NC	NC	NV	NV
Silicon	NC	NC	NC	NC	NC	NV	NV
Sulfide	NC	NC	NC	NC	NC	NV	NV
Tungsten	NC	NC	NC	NC	NC	NV	NV
Bis(2-chloroethyl)ether	1.3×10^{-4}	5.8×10^{-6}	NC	2.3×10^{-4}	3.8×10^{-5}	4.0×10^{-4}	9%
Bromodichloromethane	8.7×10^{-6}	NC	NC	5.9×10^{-6}	7.0×10^{-6}	2.2×10^{-5}	<1%
Carbon tetrachloride	7.6×10^{-6}	1.1×10^{-6}	1.0×10^{-6}	3.0×10^{-6}	3.5×10^{-6}	1.6×10^{-5}	<1%
Chloroform	3.6×10^{-7}	1.3×10^{-6}	8.3×10^{-8}	3.4×10^{-7}	1.8×10^{-7}	2.3×10^{-6}	<1%
Dibromochloromethane	4.0×10^{-6}	NC	NC	3.2×10^{-6}	2.4×10^{-6}	9.6×10^{-6}	<1%
Trichloroethene	7.7×10^{-5}	1.4×10^{-5}	NC	4.3×10^{-5}	7.9×10^{-5}	2.1×10^{-4}	5%
Vinyl chloride	1.1×10^{-3}	6.4×10^{-5}	NC	2.3×10^{-3}	2.0×10^{-4}	3.7×10^{-3}	81%
Americium-241	2.5×10^{-6}	NC	NC	5.7×10^{-7}	1.8×10^{-6}	4.8×10^{-6}	<1%
Plutonium-239	1.5×10^{-6}	NC	NC	3.3×10^{-7}	2.2×10^{-7}	2.1×10^{-6}	<1%
Technetium-99	1.0×10^{-5}	NC	NC	5.9×10^{-6}	9.5×10^{-5}	1.1×10^{-4}	2%
Uranium-234	1.0×10^{-6}	NC	NC	2.4×10^{-7}	6.0×10^{-8}	1.3×10^{-6}	<1%
Uranium-238	1.7×10^{-6}	NC	NC	6.0×10^{-6}	1.4×10^{-7}	7.7×10^{-6}	<1%
Pathway Total	1.4×10^{-3}	8.1×10^{-5}	1.1×10^{-6}	2.6×10^{-3}	4.3×10^{-4}	**4.5×10^{-3}**	
% of Total	31%	2%	<1%	57%	10%		

530615

Table 1.8 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Biota[e]	Chemical Total[f]	% of Total
Dissolved Plume Well Group							
Aluminum	NC	NC	NC	NC	NC	NV	NV
Manganese	NC	NC	NC	NC	NC	NV	NV
Reactive Silica	NC	NC	NC	NC	NC	NV	NV
Silicon	NC	NC	NC	NC	NC	NV	NV
Sulfate	NC	NC	NC	NC	NC	NV	NV
Tungsten	NC	NC	NC	NC	NC	NV	NV
1,1,2-Trichloroethane	1.4×10^{-5}	2.8×10^{-6}	9.3×10^{-7}	8.0×10^{-6}	1.5×10^{-5}	4.1×10^{-5}	1%
1,2-Dichloroethane	1.2×10^{-5}	2.1×10^{-6}	3.2×10^{-7}	2.5×10^{-5}	6.4×10^{-7}	4.0×10^{-5}	1%
4-Nitrophenol	NC	NC	NC	NC	NC	NV	NV
Bis(2-ethylhexyl)phthalate	1.8×10^{-6}	NC	1.6×10^{-6}	2.4×10^{-8}	8.0×10^{-6}	1.1×10^{-5}	<1%
Bromodichloroethane	9.5×10^{-6}	NC	NC	7.3×10^{-6}	7.6×10^{-6}	2.4×10^{-5}	<1%
Carbon disulfide	NC	NC	NC	NC	NC	NV	NV
Carbon tetrachloride	2.0×10^{-5}	2.9×10^{-6}	2.6×10^{-6}	9.0×10^{-6}	9.1×10^{-6}	4.4×10^{-5}	1%
Chloroform	9.3×10^{-7}	3.4×10^{-6}	2.2×10^{-7}	1.0×10^{-6}	4.7×10^{-7}	6.0×10^{-6}	<1%
cis-1,2-Dichloroethene	NC	NC	NC	NC	NC	NV	NV
Dieldrin	1.7×10^{-5}	2.8×10^{-9}	NC	2.5×10^{-6}	2.3×10^{-3}	2.3×10^{-3}	72%
Naphthalene	NC	NC	NC	NC	NC	NV	NV
Trichloroethene	1.2×10^{-4}	2.2×10^{-4}	NC	7.7×10^{-5}	1.2×10^{-4}	5.4×10^{-4}	17%
Vinyl chloride	4.5×10^{-5}	2.6×10^{-6}	NC	1.1×10^{-4}	7.9×10^{-6}	1.7×10^{-4}	5%
Americium-241	5.0×10^{-6}	NC	NC	1.3×10^{-6}	3.7×10^{-6}	1.0×10^{-5}	<1%
Neptunium-237	2.3×10^{-6}	NC	NC	6.1×10^{-7}	7.7×10^{-7}	3.7×10^{-6}	<1%
Technetium-99	1.1×10^{-6}	NC	NC	7.3×10^{-7}	1.2×10^{-5}	1.4×10^{-5}	<1%
Pathway Total	2.5×10^{-4}	2.3×10^{-4}	5.8×10^{-6}	2.4×10^{-4}	2.5×10^{-3}	**3.2×10^{-3}**	
% of Total	8%	7%	<1%	8%	78%		
Outside and West of Plume Well Group							
Aluminum	NC	NC	NC	NC	NC	NV	NV
Nitrate as Nitrogen	NC	NC	NC	NC	NC	NV	NV
Silicon	NC	NC	NC	NC	NC	NV	NV
Bis(2-ethylhexyl)phthalate	1.5×10^{-6}	NC	1.3×10^{-6}	1.7×10^{-8}	6.5×10^{-6}	9.3×10^{-6}	25%
Uranium-234	2.4×10^{-6}	NC	NC	5.4×10^{-7}	1.4×10^{-7}	3.1×10^{-6}	8%
Uranium-238	5.3×10^{-6}	NC	NC	1.9×10^{-5}	4.6×10^{-7}	2.5×10^{-5}	66%
Pathway Total	9.1×10^{-6}	NV	1.3×10^{-6}	2.0×10^{-5}	7.1×10^{-6}	**3.7×10^{-5}**	
% of Total	24%	NV	3%	53%	19%		

Table 1.8 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Biota[e]	Chemical Total[f]	% of Total
Near Shawnee Steam Plant Well Group							
Aluminum	NC	NC	NC	NC	NC	NV	NV
Arsenic	3.8×10^{-4}	NC	NC	9.1×10^{-5}	1.5×10^{-4}	6.2×10^{-4}	50%
Barium	NC	NC	NC	NC	NC	NV	NV
Manganese	NC	NC	NC	NC	NC	NV	NV
Nickel	NC	NC	NC	NC	NC	NV	NV
Sulfate	NC	NC	NC	NC	NC	NV	NV
Bis(2-ethylhexyl)phthalate	1.6×10^{-6}	NC	1.5×10^{-6}	1.9×10^{-8}	7.2×10^{-6}	1.0×10^{-5}	<1%
Carbon disulfide	NC	NC	NC	NC	NC	NV	NV
Vinyl chloride	1.8×10^{-4}	1.0×10^{-5}	NC	3.8×10^{-4}	3.2×10^{-5}	6.0×10^{-4}	48%
Technetium-99	1.9×10^{-6}	NC	NC	1.1×10^{-6}	1.8×10^{-5}	2.1×10^{-5}	2%
Pathway Total	5.6×10^{-4}	1.0×10^{-5}	1.5×10^{-6}	4.7×10^{-4}	2.1×10^{-4}	**1.3×10^{-3}**	
% of Total							
Near Ohio River							
1,1,2-Trichloroethane	4.7×10^{-6}	1.1×10^{-7}	3.1×10^{-7}	2.3×10^{-6}	4.9×10^{-6}	1.2×10^{-5}	100%
Pathway Total	4.7×10^{-6}	1.1×10^{-7}	3.1×10^{-7}	2.3×10^{-6}	4.9×10^{-6}	**1.2×10^{-5}**	
% of Total	38%	<1%	3%	19%	40%		

Notes: Only chemicals identified as chemicals of potential concern under current conditions (COPCs) are shown.
NC indicates that the chemical is not a carcinogen for the pathway in DOE 1994a..
NV indicates that a value cannot be calculated.

[a] All values were taken from information in App. E of DOE 1994a.

[b] Exposure route = inhalation of volatiles emitted by groundwater during household use.

[c] Exposure route = dermal exposure to chemicals in groundwater while bathing and swimming.

[d] Exposure route = consumption of vegetable irrigated with groundwater.

[e] Exposure route = sum of risks from consumption of meat and milk from cows drinking groundwater and eating pasture irrigated with groundwater, consumption of venison from deer drinking groundwater and eating pasture irrigated with groundwater, and consumption of fish raised in ponds filled with groundwater.

[f] Includes risk from ingestion of soil contaminated though irrigation with groundwater.

Table 1.9 Hazard indices from chemicals in RGA groundwater–residential use [compiled[a] from information in App. H of *Baseline Risk Assessment and Technical Investigation Report for the Northwest Dissolved Phase Plume, Paducah Gaseous Diffusion Plant* (DOE 1994a)]

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Biota[e]	Chemical Total[f]	% of Total
Plume Centroid Well Group							
Copper	0.06	NR	NR	0.02	0.31	0.39	6%
Lead	NR	NR	NR	NR	NR	NV	NV
Manganese	1.23	NR	0.16	0.02	0.48	1.89	31%
Silicon	NR	NR	NR	NR	NR	NV	NV
Sulfide	NR	NR	NR	NR	NR	NV	NV
Tungsten	NR	NR	NR	NR	NR	NV	NV
Bis(2-chloroethyl)ether	NR	NR	NR	NR	NR	NV	NV
Bromodichloromethane	0.01	NR	NR	0.01	0.01	0.03	<1%
Carbon tetrachloride	1.96	NR	0.03	0.77	0.90	3.66	61%
Chloroform	0.01	NR	<0.01	0.01	<0.01	0.02	<1%
Dibromochloromethane	<0.01	NR	NR	<0.01	<0.01	<0.01	<1%
Trichloroethene	NR	NR	NR	NR	NR	NV	NV
Vinyl chloride	NR	NR	NR	NR	NR	NV	NV
Americium-241	NR	NR	NR	NR	NR	NV	NV
Plutonium-239	NR	NR	NR	NR	NR	NV	NV
Technetium-99	NR	NR	NR	NR	NR	NV	NV
Uranium-234	NR	NR	NR	NR	NR	NV	NV
Uranium-238	NR	NR	NR	NR	NR	NV	NV
Pathway Total	3.29	NV	0.19	0.84	1.71	**6.03**	
% of Total	55%	NV	3%	14%	28%		

530618

Table 1.9 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Biota[e]	Chemical Total[f]	% of Total
Dissolved Plume Well Group							
Aluminum	NR	NR	NR	NR	NR	NV	NV
Manganese	4.94	NR	0.64	0.05	1.93	7.56	47%
Reactive Silica	NR	NR	NR	NR	NR	NV	NV
Silicon	NR	NR	NR	NR	NR	NV	NV
Sulfate	NR	NR	NR	NR	NR	NV	NV
Tungsten	NR	NR	NR	NR	NR	NV	NV
1,1,2-Trichloroethane	0.14	NR	<0.01	0.08	0.15	0.37	2%
1,2-Dichloroethane	NR	NR	NR	NR	NR	NV	NV
4-Nitrophenol	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	0.02	NR	0.01	<0.01	0.07	0.10	<1%
Bromodichloroethane	0.02	NR	NR	0.01	0.01	0.04	<1%
Carbon disulfide	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<1%
Carbon tetrachloride	0.51	NR	0.07	0.23	0.23	1.04	6%
Chloroform	0.04	NR	<0.01	0.04	0.02	0.08	<1%
cis-1,2-Dichloroethene	0.11	NR	NR	NR	NR	0.11	<1%
Dieldrin	0.05	NR	NR	<0.01	6.75	6.80	42%
Naphthalene	NR	NR	NR	NR	NR	NV	NV
Trichloroethene	NR	NR	NR	NR	NR	NV	NV
Vinyl chloride	NR	NR	NR	NR	NR	NV	NV
Americium-241	NR	NR	NR	NR	NR	NV	NV
Neptunium-237	NR	NR	NR	NR	NR	NV	NV
Technetium-99	NR	NR	NR	NR	NR	NV	NV
Pathway Total	5.83	0.02	0.74	0.42	9.17	**16.20**	
% of Total	36%	<1%	5%	3%	57%		
Outside and West of Plume Well Group							
Aluminum	NR	NR	NR	NR	NR	NV	NV
Nitrate as Nitrogen	0.16	NR	NR	0.04	NR	0.20	71%
Silicon	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	0.01	NR	0.01	<0.01	0.06	0.08	29%
Uranium-234	NR	NR	NR	NR	NR	NV	NV
Uranium-238	NR	NR	NR	NR	NR	NV	NV
Pathway Total	0.17	NV	0.01	0.04	0.06	**0.28**	
% of Total	61%	NV	4%	14%	21%		

Table 1.9 (Continued)

Chemical	Ingestion	Inhalation[b]	Dermal Contact[c]	Vegetables[d]	Biota[e]	Chemical Total[f]	% of Total
Near Shawnee Steam Plant Well Group							
Aluminum	NR	NR	NR	NR	NR	NV	NV
Arsenic	1.64	NR	0.01	0.39	1.96	4.00	14%
Barium	0.20	NR	0.01	0.09	0.06	0.36	1%
Manganese	15.00	NR	1.95	0.14	5.82	22.91	82%
Nickel	0.15	NR	<0.01	0.05	0.47	0.67	2%
Sulfate	NR	NR	NR	NR	NR	NV	NV
Bis(2-ethylhexyl)phthalate	0.01	NR	0.01	<0.01	<0.01	0.02	<1%
Carbon disulfide	<0.01	0.02	<0.01	<0.01	<0.01	0.02	<1%
Vinyl chloride	NR	NR	NR	NR	NR	NV	NV
Technetium-99	NR	NR	NR	NR	NR	NV	NV
Pathway Total	17.09	0.02	1.99	0.67	8.31	**28.08**	
% of Total	61%	<1%	7%	2%	30%		
Near Ohio River							
1,1,2-Trichloroethane	0.05	NR	<0.01	0.02	0.05	0.12	100%
Pathway Total	0.05	NV	<0.01	0.02	0.05	**0.12**	
% of Total	42%	NV	<1%	17%	42%		

Notes: Only chemicals identified as chemicals of potential concern under current conditions (COPCs) are shown.
NR indicates that the chemical did not have an RfD for the pathway in DOE 1994a..
NV indicates that a value cannot be calculated.

a All values were taken from information in App. E of DOE 1994a.
b Exposure route = inhalation of volatiles emitted by groundwater during household use.
c Exposure route = dermal exposure to chemicals in groundwater while bathing and swimming.
d Exposure route = consumption of vegetable irrigated with groundwater.
e Exposure route = sum of risks from consumption of meat and milk from cows drinking groundwater and eating pasture irrigated with groundwater, consumption of venison from deer drinking groundwater and eating pasture irrigated with groundwater, and consumption of fish raised in ponds filled with groundwater.
f Includes risk from ingestion of soil contaminated though irrigation with groundwater.

Table 1.10 Excess lifetime cancer risk for soil at SWMUs 11, 40, and 47–frequent industrial worker [compiled[a] from information in App. H of *Results of the Site Investigation, Phase II, at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (CH2M Hill 1991b)]

Chemical[b]	Incidental Ingestion	Dermal Contact	Inhalation of Particulates	External Exposure	Analyte Total	% of Total
Acenaphthene	NC	NC	NC	NA	NV	NV
Anthracene	NC	NC	NC	NA	NV	NV
Benzo(a)anthracene	1×10^{-6}	6×10^{-6}	NC	NA	7×10^{-6}	16%
Benzo(a)pyrene	9×10^{-7}	5×10^{-6}	NC	NA	6×10^{-6}	13%
Benzo(b)fluoranthene	1×10^{-6}	6×10^{-6}	NC	NA	7×10^{-6}	17%
Benzo(g,h,i)perylene	NC	NC	NC	NA	NV	NV
Benzo(k)fluoranthene	8×10^{-7}	5×10^{-6}	NC	NA	6×10^{-6}	12%
Chrysene	1×10^{-6}	6×10^{-6}	NC	NA	7×10^{-6}	17%
Dibenzo(a,h)anthracene	1×10^{-7}	8×10^{-7}	NC	NA	9×10^{-7}	2%
Fluoranthene	NC	NC	NC	NA	NV	NV
Indeno(1,2,3-cd)pyrene	6×10^{-7}	4×10^{-6}	NC	NA	5×10^{-6}	10%
Phenanthrene	NC	NC	NC	NA	NV	NV
Pyrene	NC	NC	NC	NA	NV	NV
Aroclor 1260	4×10^{-7}	2×10^{-6}	NC	NA	2×10^{-6}	6%
Aluminum	NC	NC	NC	NA	NV	NV
Arsenic	2×10^{-6}	1×10^{-6}	NC	NA	3×10^{-6}	6%
Barium	NC	NC	NC	NA	NV	NV
Beryllium	4×10^{-7}	2×10^{-7}	NC	NA	6×10^{-7}	1%
Cadmium	NC	NC	NC	NA	NV	NV
Cobalt	NC	NC	NC	NA	NV	NV
Chromium	NC	NC	NC	NA	NV	NV
Copper	NC	NC	NC	NA	NV	NV
Manganese	NC	NC	NC	NA	NV	NV
Nickel	NC	NC	NC	NA	NV	NV
Lead	NC	NC	NC	NA	NV	NV
Vanadium	NC	NC	NC	NA	NV	NV
Zinc	NC	NC	NC	NA	NV	NV
Pathway Total for Chemicals	8×10^{-6}	4×10^{-5}	NV	NV	**4×10^{-5}**	
% of Total	NV	NV	NV	NV		

Table 1.10 (Continued)

Chemical[b]	Incidental Ingestion	Dermal Contact	Inhalation of Particulates	External Exposure	Analyte Total	% of Total
^{237}Np	1.9×10^{-7}	NA	2.4×10^{-7}	8.1×10^{-7}	1.2×10^{-6}	8%
^{239}Pu	2.1×10^{-8}	NA	3.0×10^{-7}	1.2×10^{-8}	3.3×10^{-7}	2%
^{99}Tc	2.2×10^{-7}	NA	1.4×10^{-8}	3.7×10^{-9}	2.3×10^{-7}	1%
^{230}Th	9.1×10^{-8}	NA	1.2×10^{-6}	1.4×10^{-7}	1.4×10^{-6}	9%
^{234}Th	NV	NA	NV	2.4×10^{-6}	2.4×10^{-6}	15%
^{234}U	7.6×10^{-7}	NA	1.5×10^{-6}	2.0×10^{-7}	2.5×10^{-6}	17%
^{235}U	2.7×10^{-8}	NA	5.3×10^{-8}	1.3×10^{-6}	1.4×10^{-6}	9%
^{238}U	8.5×10^{-7}	NA	1.5×10^{-6}	2.0×10^{-7}	2.6×10^{-6}	16%
^{234}Pa	NV	NA	NV	7.5×10^{-7}	7.5×10^{-7}	5%
^{234m}Pa	NV	NA	NV	2.7×10^{-6}	2.7×10^{-6}	17%
Pathway Total for Radionuclides	2.2×10^{-6}	NV	4.8×10^{-6}	8.6×10^{-6}	**1.6×10^{-5}**	
% of Total	14%	NV	30%	54%		

Notes: NA indicates exposure route not applicable to this analyte.
NC indicates value is not reported in CH2M Hill 1991b.
NV indicates value could not be calculated.

[a] All values taken from tables in pages H-67, H-74, H-75, AND H76 in App. H of CH2M Hill 1991b.

[b] Cancer risks for chemicals are reported to one significant digit in CH2M Hill 1991b.

Table 1.11. Assignment of sampling stations to sectors ordered by sector number

Station	Sector	Sector Number
400-019	Central	1
400-020	Central	1
040-001	Northeast	2
040-002	Northeast	2
040-003	Northeast	2
040-004	Northeast	2
040-005	Northeast	2
040-006	Northeast	2
040-007	Northeast	2
040-008	Northeast	2
040-009	Northeast	2
040-011	Northeast	2
040-013	Northeast	2
400-002	Northeast	2
400-003	Northeast	2
400-005	Northeast	2
400-007	Northeast	2
400-008	Northeast	2
400-042	Northeast	2
400-056	Northeast	2
400-058	Northeast	2
400-059	Northeast	2
400-061	Northeast	2
400-081	Northeast	2
400-094	Northeast	2
400-095	Northeast	2
400-124	Northeast	2
400-126	Northeast	2
400-129	Northeast	2
400-153	Northeast	2
400-167	Northeast	2
400-186	Northeast	2
400-187	Northeast	2
MW177	Northeast	2
MW178	Northeast	2
011-001	East	3
011-002	East	3
400-011	East	3
400-025	East	3
400-026	East	3
400-046	East	3
400-047	East	3
400-062	East	3
400-063	East	3
400-064	East	3
400-098	East	3
400-099	East	3
400-100	East	3
400-130	East	3
400-131	East	3
400-132	East	3
400-173	East	3
400-198	East	3
011-003	Southeast	4
011-004	Southeast	4
011-005	Southeast	4
011-006	Southeast	4
011-007	Southeast	4
011-008	Southeast	4
011-009	Southeast	4
011-010	Southeast	4
011-011	Southeast	4
400-014	Southeast	4
400-016	Southeast	4
400-027	Southeast	4
400-037	Southeast	4
400-038	Southeast	4
400-065	Southeast	4
400-066	Southeast	4
400-067	Southeast	4
400-068	Southeast	4
400-069	Southeast	4
400-070	Southeast	4
400-071	Southeast	4
400-091	Southeast	4
400-092	Southeast	4
400-101	Southeast	4
400-103	Southeast	4
400-104	Southeast	4
400-105	Southeast	4
400-116	Southeast	4
400-117	Southeast	4

530623

Table 1.11. (Continued)

Station	Sector	Sector Number
400-134	Southeast	4
400-137	Southeast	4
400-138	Southeast	4
400-139	Southeast	4
400-140	Southeast	4
400-162	Southeast	4
400-163	Southeast	4
400-176	Southeast	4
400-195	Southeast	4
400-197	Southeast	4
400-200	Southeast	4
400-201	Southeast	4
400-202	Southeast	4
400-205	Southeast	4
400-207	Southeast	4
400-211	Southeast	4
400-215	Southeast	4
MW155	Southeast	4
MW156	Southeast	4
MW157	Southeast	4
MW212	Southeast	4
MW215	Southeast	4
400-009	Southwest	5
400-010	Southwest	5
400-015	Southwest	5
400-017	Southwest	5
400-018	Southwest	5
400-030	Southwest	5
400-036	Southwest	5
400-041	Southwest	5
400-045	Southwest	5
400-072	Southwest	5
400-073	Southwest	5
400-074	Southwest	5
400-085	Southwest	5
400-087	Southwest	5
400-088	Southwest	5
400-089	Southwest	5
400-106	Southwest	5
400-107	Southwest	5

Station	Sector	Sector Number
400-113	Southwest	5
400-114	Southwest	5
400-115	Southwest	5
400-141	Southwest	5
400-142	Southwest	5
400-143	Southwest	5
400-144	Southwest	5
400-145	Southwest	5
400-146	Southwest	5
400-147	Southwest	5
400-158	Southwest	5
400-159	Southwest	5
400-160	Southwest	5
400-161	Southwest	5
400-171	Southwest	5
400-172	Southwest	5
400-177	Southwest	5
400-178	Southwest	5
400-191	Southwest	5
400-192	Southwest	5
400-193	Southwest	5
400-194	Southwest	5
400-204	Southwest	5
400-213	Southwest	5
400-214	Southwest	5
MW068	Southwest	5
MW069	Southwest	5
MW071	Southwest	5
MW096	Southwest	5
MW213	Southwest	5
MW219	Southwest	5
047-001	West	6
047-002	West	6
047-003	West	6
047-004	West	6
047-005	West	6
047-007	West	6
047-008	West	6
047-009	West	6
047-010	West	6

Table 1.11. (Continued)

Station	Sector	Sector Number
047-012	West	6
400-044	West	6
400-076	West	6
400-083	West	6
400-084	West	6
400-108	West	6
400-148	West	6
400-157	West	6
400-169	West	6
400-170	West	6
400-190	West	6
400-199	West	6
MW175	West	6
MW176	West	6
203-001	Northwest	7
203-002	Northwest	7
203-003	Northwest	7
203-004	Northwest	7
203-005	Northwest	7
203-006	Northwest	7
203-007	Northwest	7
203-008	Northwest	7
400-001	Northwest	7
400-004	Northwest	7
400-021	Northwest	7
400-031	Northwest	7
400-033	Northwest	7
400-035	Northwest	7
400-040	Northwest	7
400-054	Northwest	7
400-077	Northwest	7
400-080	Northwest	7
400-109	Northwest	7
400-111	Northwest	7
400-119	Northwest	7
400-120	Northwest	7
400-122	Northwest	7
400-149	Northwest	7
400-155	Northwest	7
400-156	Northwest	7

Station	Sector	Sector Number
400-165	Northwest	7
400-181	Northwest	7
400-183	Northwest	7
400-188	Northwest	7
400-203	Northwest	7
400-210	Northwest	7
400-216	Northwest	7
400-217	Northwest	7
400-218	Northwest	7
400-219	Northwest	7
026-001	Far North/Northwest	8
026-002	Far North/Northwest	8
026-003	Far North/Northwest	8
026-004	Far North/Northwest	8
026-005	Far North/Northwest	8
026-006	Far North/Northwest	8
026-007	Far North/Northwest	8
026-008	Far North/Northwest	8
026-009	Far North/Northwest	8
026-010	Far North/Northwest	8
026-011	Far North/Northwest	8
026-012	Far North/Northwest	8
026-013	Far North/Northwest	8
026-014	Far North/Northwest	8
026-015	Far North/Northwest	8
026-016	Far North/Northwest	8
026-017	Far North/Northwest	8
026-018	Far North/Northwest	8
026-020	Far North/Northwest	8
026-025	Far North/Northwest	8
040-010	Far North/Northwest	8
400-022	Far North/Northwest	8
400-034	Far North/Northwest	8
400-043	Far North/Northwest	8
400-123	Far North/Northwest	8
400-206	Far North/Northwest	8
400-208	Far North/Northwest	8
MW167	Far North/Northwest	8
MW168	Far North/Northwest	8
MW256	Far North/Northwest	8

Table 1.11. (Continued)

Station	Sector	Sector Number
400-039	Far East/Northeast	9
400-048	Far East/Northeast	9
400-049	Far East/Northeast	9
400-050	Far East/Northeast	9
400-051	Far East/Northeast	9
400-052	Far East/Northeast	9
400-053	Far East/Northeast	9
400-212	Far East/Northeast	9
MW206	Far East/Northeast	9

Table 1.12. Background concentrations of inorganic compounds and radionuclides by media

Analyte	Subsurface Soil Background Value[a]	Surface Soil Background Value[a]	Groundwater Background Value[b]
Inorganic Chemical (mg/kg or mg/l)			
Aluminum	12000	13000	2.19
Antimony	0.21	0.21	0.111
Arsenic	7.9	12	0.0112
Barium	170	200	0.286
Beryllium	0.69	0.67	0.00932
Cadmium	0.21	0.21	0.0206
Calcium	6100	200000	44.2
Chloride			68.6
Chromium			0.131
Chromium (III)	43	16	
Chromium (VI)	1	1	
Cobalt	13	14	0.0955
Copper	25	19	0.0223
Cyanide (CN-)			0.006
Fluoride			0.354
Iron	28000	28000	5.06
Lead	23	36	0.104
Magnesium	2100	7700	16.7
Manganese	820	1500	0.159
Mercury	0.13	0.2	0.000379
Molybdenum			0.1
Nickel	22	21	0.0619
Nitrate as N			18.6
Nitrate as Nitrogen			6.13
Potassium	950	1300	6.18
Selenium	0.7	0.8	0.00929
Silica			39.3
Silver	2.7	2.3	0.0041
Sodium	340	320	60.2
Sulfate			19.9
Sulfide	1	1	0.5
Thallium	0.34	0.21	0.108
Tin	1	1	
Uranium	4.6	4.9	0.0021
Vanadium	37	38	0.137
Zinc	60	65	0.0266
Radionuclides (pCi/g or pCi/l)			
Cesium-137	0.28	0.49	
Neptunium-237		0.1	
Plutonium-238		0.073	

530627

Table 1.12. (Continued)

Analyte	Subsurface Soil Background Value[a]	Surface Soil Background Value[a]	Groundwater Background Value[b]
Plutonium-239		0.025	
Potassium-40	16	16	
Radium-226	1.5	1.5	
Total Radium			0.938
Strontium-90		4.7	
Technetium-99	2.8	2.5	
Thorium-228	1.6	1.6	
Thorium-230	1.4	1.5	1.41
Thorium-232	1.5	1.5	
Uranium-234	2.4	2.5	1.21
Uranium-235	0.14	0.14	0.153
Uranium-238	1.2	1.2	1.05

Note: Blank cells indicate data not available or appropriate.

[a] Subsurface and surface soil values are from *Background Levels of Selected Radionuclides and Metals in Soils and Geologic Media at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (DOE 1997a).

[b] Groundwater values are from *Baseline Risk Assessment and Technical Investigation for the Northwest Dissolved Phase Plume* (DOE 1994a). These values are not used in the development of the list of chemicals of potential concern (COPCs) in the data evaluation portion of the baseline risk assessment because they are being revised. However, the values are used as reference values in the uncertainty analysis.

530629

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	3/3	8.13E-01 - 1.39E+02		N	2.89E+01	mg/L
Antimony	0/3		2.77E-02 - 2.77E-02	NT	1.39E-02	mg/L
Arsenic	2/3	3.28E-02 - 4.06E-01	1.11E-03 - 1.11E-03	N	7.33E-02	mg/L
Barium	3/3	1.95E-01 - 5.88E-01		N	1.82E-01	mg/L
Beryllium	3/3	3.33E-04 - 1.30E-02		N	2.83E-03	mg/L
Bromide	16/41	1.40E-02 - 5.20E-02	1.00E+00 - 1.00E+00	L	3.81E-02	mg/L
Cadmium	2/3	5.56E-04 - 2.99E-03	2.67E-04 - 2.67E-04	N	6.36E-04	mg/L
Calcium	3/3	1.74E+01 - 5.45E+01		N	1.79E+01	mg/L
Chloride	41/41	3.20E+00 - 2.24E+01		L	4.81E+00	mg/L
Chromium	3/3	3.52E-02 - 3.87E-01		N	8.80E-02	mg/L
Cobalt	2/3	4.87E-02 - 1.07E-01	1.78E-03 - 1.78E-03	N	2.62E-02	mg/L
Copper	2/3	1.69E-02 - 9.57E-02	9.56E-03 - 9.56E-03	N	2.04E-02	mg/L
Cyanide	0/2		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/L
Fluoride	16/41	5.10E-02 - 2.92E-01	1.00E+00 - 1.00E+00	L	2.10E-01	mg/L
Iron	3/3	1.75E+00 - 3.37E+02		N	6.64E+01	mg/L
Lead	2/3	3.13E-02 - 1.77E-01	1.33E-03 - 1.33E-03	N	3.49E-02	mg/L
Magnesium	3/3	9.78E+00 - 3.19E+01		N	9.38E+00	mg/L
Manganese	3/3	1.77E-02 - 2.44E+00		N	5.12E-01	mg/L
Mercury	0/3		2.10E-04 - 2.10E-04	NT	1.05E-04	mg/L
Nickel	3/3	6.37E-02 - 1.86E-01		N	5.35E-02	mg/L
Nitrate	23/41	7.00E-03 - 2.90E+00	1.00E+00 - 1.00E+00	N	4.33E-01	mg/L
Nitrate/Nitrite	1/16	5.00E-03 - 5.00E-03	1.00E+00 - 1.00E+00	N	4.69E-01	mg/L
Nitrite	0/25		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/L
Orthophosphate	3/41	3.30E-02 - 1.01E-01	1.00E+00 - 1.00E+00	N	4.66E-01	mg/L
Potassium	3/3	3.38E+00 - 2.12E+01		N	5.48E+00	mg/L
Selenium	1/3	4.41E-02 - 4.41E-02	1.44E-03 - 2.30E-02	N	1.14E-02	mg/L
Silver	0/3		5.67E-03 - 5.67E-03	NT	2.84E-03	mg/L
Sodium	3/3	1.34E+01 - 3.67E+01		N	1.09E+01	mg/L
Tetraoxo-sulfate(1-)	41/41	1.23E+01 - 5.34E+01		L	1.52E+01	mg/L
Thallium	2/3	5.00E-04 - 1.03E-03	4.67E-04 - 4.67E-04	N	3.33E-04	mg/L
Uranium	2/3	2.73E-03 - 4.27E-03	8.00E-05 - 8.00E-05	N	2.36E-03	mg/L
Vanadium	3/3	5.44E-03 - 1.57E+00		N	2.82E-01	mg/L
Zinc	3/3	1.80E-02 - 1.21E+01		N	2.12E+00	mg/L
1,1,1,2-Tetrachloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1,1-Trichloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1,2,2-Tetrachloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1,2-Trichloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1-Dichloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1-Dichloroethene	2/54	2.00E-02 - 2.40E-02	4.00E-03 - 2.00E-01	N	4.18E-03	mg/L
1,2,3-Trichloropropane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,2,4-Trichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,2-Dibromoethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,2-Dichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,2-Dichloroethane	1/5	1.00E-03 - 1.00E-03	5.00E-03 - 1.30E-02	N	2.90E-03	mg/L
1,2-Dichloropropane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,2-Dimethylbenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,3-Dichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,4-Dichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4,5-Trichlorophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4,6-Trichlorophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dichlorophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dimethylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dinitrophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4-Dinitrotoluene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,6-Dinitrotoluene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Butanone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
2-Chloro-1,3-butadiene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
2-Chloroethyl vinyl ether	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
2-Chloronaphthalene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Chlorophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Hexanone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
2-Methyl-4,6-dinitrophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Methylnaphthalene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Methylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Nitrobenzenamine	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Nitrophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Propanol	0/4		5.40E-02 - 1.40E-01	NT	3.78E-02	mg/L
3,3'-Dichlorobenzidine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
3-Nitrobenzenamine	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Bromophenyl phenyl ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chloro-3-methylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorobenzenamine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorophenyl phenyl ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Methyl-2-pentanone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
4-Methylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Nitrobenzenamine	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Nitrophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Acenaphthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acenaphthylene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acetone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Acrolein	0/5		5.00E-02 - 1.30E-01	NT	3.80E-02	mg/L

580631

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Acrylonitrile	0/5		5.00E-02 - 1.30E-01	NT	3.80E-02	mg/L
Anthracene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benz(a)anthracene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Benzenemethanol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(a)pyrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(b)fluoranthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(ghi)perylene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(k)fluoranthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzoic acid	1/5	1.00E-03 - 1.00E-03	5.00E-02 - 5.00E-02	N	2.01E-02	mg/L
Bis(2-chloroethoxy)methane	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroethyl) ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroisopropyl)ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-ethylhexyl)phthalate	3/5	1.00E-03 - 8.00E-03	1.00E-02 - 1.00E-02	N	3.00E-03	mg/L
Bromodichloromethane	2/5	1.00E-03 - 8.00E-03	5.00E-03 - 1.30E-02	N	3.20E-03	mg/L
Bromoform	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Bromomethane	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Butyl benzyl phthalate	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbazole	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbon disulfide	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Carbon tetrachloride	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Chlorobenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Chloroethane	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Chloroform	4/5	1.00E-03 - 1.90E-02	5.00E-03 - 5.00E-03	N	3.30E-03	mg/L
Chloromethane	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Chrysene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Di-n-butyl phthalate	1/5	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.10E-03	mg/L
Di-n-octylphthalate	2/5	1.00E-03 - 6.00E-03	1.00E-02 - 1.00E-02	N	3.70E-03	mg/L
Dibenz(a,h)anthracene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibenzofuran	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibromochloromethane	2/5	1.00E-03 - 4.00E-03	5.00E-03 - 1.30E-02	N	2.80E-03	mg/L
Dibromomethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Dichlorodifluoromethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Diethyl phthalate	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dimethyl phthalate	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dimethylbenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Ethyl cyanide	0/5		1.00E-01 - 2.50E-01	NT	7.50E-02	mg/L
Ethyl methacrylate	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Ethylbenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Fluoranthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

530632

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Fluorene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobutadiene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorocyclopentadiene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachloroethane	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Indeno(1,2,3-cd)pyrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Iodomethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Isophorone	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Methacrylonitrile	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Methyl methacrylate	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Methylene chloride	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
N-Nitroso-di-n-propylamine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
N-Nitrosodiphenylamine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Naphthalene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Nitrobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Pentachlorophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Phenanthrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Phenol	3/5	1.00E-03 - 5.00E-03	1.00E-02 - 1.00E-02	N	2.70E-03	mg/L
Pyrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Styrene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Tetrachloroethene	1/5	2.70E-02 - 2.70E-02	5.00E-03 - 1.00E-02	N	5.20E-03	mg/L
Toluene	3/5	1.00E-03 - 4.00E-03	1.00E-02 - 1.30E-02	N	2.90E-03	mg/L
Trichloroethene	39/54	2.00E-04 - 1.28E+00	4.00E-03 - 4.00E-03	L	9.78E-03	mg/L
Trichlorofluoromethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Vinyl acetate	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Vinyl chloride	1/54	2.00E-02 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.94E-03	mg/L
cis-1,2-Dichloroethene	2/54	4.00E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.98E-03	mg/L
cis-1,3-Dichloropropene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
trans-1,2-Dichloroethene	5/54	1.50E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	8.25E-03	mg/L
trans-1,3-Dichloropropene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
trans-1,4-Dichloro-2-butene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Actinium-228	1/1	2.72E+01 - 2.72E+01		NT	2.72E+01	pCi/L
Alpha activity	48/51	1.69E+00 - 1.49E+02	2.90E-01 - 1.88E+00	L	2.21E+01	pCi/L
Americium-241	1/6	5.30E-02 - 5.30E-02	0.00E+00 - 3.70E-01	N	1.21E-01	pCi/L
Beta activity	51/51	4.42E+00 - 1.16E+04		L	1.48E+02	pCi/L
Bismuth-212	0/1		8.00E+00 - 8.00E+00	NT	8.00E+00	pCi/L
Bismuth-214	1/1	9.00E+00 - 9.00E+00		NT	9.00E+00	pCi/L
Cesium-134	0/1		-2.00E-01 --2.00E-01	NT	-2.00E-01	pCi/L
Cesium-137	4/6	2.49E+00 - 1.65E+01	-1.70E+00 - 2.29E+00	N	6.57E+00	pCi/L
Cobalt-57	0/1		-3.10E-01 --3.10E-01	NT	-3.10E-01	pCi/L

530633

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Cobalt-60	0/1		5.00E-01 - 5.00E-01	NT	5.00E-01	pCi/L
Lead-210	1/1	4.21E+02 - 4.21E+02		NT	4.21E+02	pCi/L
Lead-212	1/1	2.25E+01 - 2.25E+01		NT	2.25E+01	pCi/L
Lead-214	1/1	1.21E+01 - 1.21E+01		NT	1.21E+01	pCi/L
Neptunium-237	6/6	0.00E+00 - 1.31E+01		N	4.39E+00	pCi/L
Plutonium-238	0/1		4.00E-03 - 4.00E-03	NT	4.00E-03	pCi/L
Plutonium-239	1/5	2.12E+00 - 2.12E+00	-2.00E-02 - 4.00E-02	N	4.30E-01	pCi/L
Plutonium-239/240	0/1		1.30E-02 - 1.30E-02	NT	1.30E-02	pCi/L
Potassium-40	1/1	6.80E+01 - 6.80E+01		NT	6.80E+01	pCi/L
Radium-226	0/1		0.00E+00 - 0.00E+00	NT	0.00E+00	pCi/L
Technetium-99	3/6	6.60E-01 - 6.16E+02	-1.56E+00 - 1.27E+00	N	1.03E+02	pCi/L
Thallium-208	1/1	6.70E+00 - 6.70E+00		NT	6.70E+00	pCi/L
Thorium-228	1/1	1.23E+00 - 1.23E+00		NT	1.23E+00	pCi/L
Thorium-230	6/6	2.40E-01 - 1.88E+00		N	8.55E-01	pCi/L
Thorium-232	1/1	1.15E+00 - 1.15E+00		NT	1.15E+00	pCi/L
Thorium-234	1/1	7.19E+02 - 7.19E+02		NT	7.19E+02	pCi/L
Uranium-233/234	1/1	6.10E-01 - 6.10E-01		NT	6.10E-01	pCi/L
Uranium-234	4/5	1.90E-01 - 2.23E+00	1.50E-01 - 1.50E-01	N	9.84E-01	pCi/L
Uranium-235	1/6	2.30E+01 - 2.30E+01	1.00E-02 - 1.00E-01	N	3.86E+00	pCi/L
Uranium-238	4/6	2.00E-01 - 1.82E+00	1.00E-02 - 1.20E-01	N	6.43E-01	pCi/L

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	80/80	9.96E-02 - 2.50E+02		L	3.61E+01	mg/L
Antimony	11/80	1.40E-03 - 4.02E-02	8.00E-04 - 2.77E-01	N	1.10E-02	mg/L
Arsenic	61/80	1.00E-03 - 4.36E-01	1.00E-03 - 1.00E-02	L	1.99E-02	mg/L
Barium	80/80	5.58E-02 - 6.93E+00		L	3.60E-01	mg/L
Beryllium	69/79	2.22E-04 - 1.11E-01	2.22E-04 - 5.00E-03	L	7.40E-03	mg/L
Bromide	10/39	2.90E-02 - 1.40E+00	1.00E+00 - 1.12E+00	N	4.10E-01	mg/L
Cadmium	29/80	3.56E-04 - 1.59E-02	2.67E-04 - 3.22E-03	L	1.02E-03	mg/L
Calcium	80/80	2.27E+01 - 7.87E+01		L	1.91E+01	mg/L
Chloride	39/39	7.01E+00 - 1.25E+02		N	2.99E+01	mg/L
Chromium	62/80	5.00E-03 - 4.49E+00	6.56E-03 - 1.39E-01	L	7.97E-02	mg/L
Cobalt	76/80	5.33E-03 - 4.84E-01	1.78E-03 - 1.00E-02	L	7.75E-02	mg/L
Copper	58/80	8.10E-03 - 1.05E+01	8.60E-03 - 1.00E-02	N	1.08E-01	mg/L

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Cyanide	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/L
Fluoride	9/39	1.79E-01 - 2.31E-01	1.00E+00 - 1.00E+00	L	2.15E-01	mg/L
Iron	80/80	6.83E-02 - 2.24E+03		L	2.20E+02	mg/L
Lead	63/80	1.96E-03 - 2.63E-01	1.00E-03 - 1.56E-02	L	2.32E-02	mg/L
Magnesium	80/80	7.97E+00 - 3.33E+01		L	7.96E+00	mg/L
Manganese	80/80	7.78E-03 - 5.79E+01		L	2.03E+00	mg/L
Mercury	30/80	3.00E-05 - 6.12E-04	2.00E-04 - 2.10E-04	L	1.40E-04	mg/L
Nickel	74/80	9.67E-03 - 4.88E+00	2.61E-02 - 8.21E-02	L	1.55E-01	mg/L
Nitrate	39/39	9.30E-02 - 1.74E+02		L	2.04E+01	mg/L
Nitrate/Nitrite	3/9	3.20E-02 - 1.14E-01	1.00E+00 - 1.00E+00	L	7.25E-02	mg/L
Nitrite	0/30		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/L
Orthophosphate	2/39	2.50E-02 - 3.60E-02	1.00E+00 - 1.00E+00	N	4.75E-01	mg/L
Potassium	80/80	9.57E-01 - 2.53E+01		L	2.68E+00	mg/L
Selenium	23/80	1.34E-03 - 4.80E-03	1.30E-03 - 4.00E-02	N	7.08E-03	mg/L
Silver	8/80	4.00E-03 - 3.98E-01	1.00E-03 - 5.00E-02	N	8.12E-03	mg/L
Sodium	80/80	2.71E+01 - 8.38E+01		L	2.34E+01	mg/L
Tetraoxo-sulfate(1-)	39/39	3.70E+00 - 5.64E+01		L	1.10E+01	mg/L
Thallium	13/80	4.89E-04 - 4.56E-03	4.20E-04 - 2.00E-03	L	3.79E-04	mg/L
Uranium	45/52	1.30E-04 - 1.21E-02	8.00E-05 - 1.00E-03	L	2.45E-03	mg/L
Vanadium	73/80	4.20E-03 - 1.35E+00	4.00E-03 - 4.00E-03	L	1.09E-01	mg/L
Zinc	77/80	1.58E-02 - 8.18E+01	9.00E-03 - 9.00E-03	L	5.42E-01	mg/L
1,1,1,2-Tetrachloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1,1-Trichloroethane	1/23	1.20E-02 - 1.20E-02	1.00E-02 - 1.30E+01	L	1.01E+00	mg/L
1,1,2,2-Tetrachloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1,2-Trichloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1-Dichloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1-Dichloroethene	20/155	1.00E-03 - 1.54E-01	4.00E-03 - 3.20E+01	L	4.08E-03	mg/L
1,2,3-Trichloropropane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2,4-Trichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,2-Dibromoethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2-Dichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,2-Dichloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2-Dichloropropane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2-Dimethylbenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,3-Dichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,4-Dichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4,5-Trichlorophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4,6-Trichlorophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dichlorophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dimethylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

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530635

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2,4-Dinitrophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4-Dinitrotoluene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,6-Dinitrotoluene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Butanone	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
2-Chloro-1,3-butadiene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
2-Chloroethyl vinyl ether	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
2-Chloronaphthalene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Chlorophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Hexanone	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
2-Methyl-4,6-dinitrophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Methylnaphthalene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Methylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Nitrobenzenamine	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Nitrophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Propanol	0/16		1.10E-01 - 5.40E+01	NT	2.66E+00	mg/L
3,3'-Dichlorobenzidine	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
3-Nitrobenzenamine	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Bromophenyl phenyl ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chloro-3-methylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorobenzenamine	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorophenyl phenyl ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Methyl-2-pentanone	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
4-Methylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Nitrobenzenamine	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Nitrophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Acenaphthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acenaphthylene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acetone	1/23	5.00E-03 - 5.00E-03	2.00E-02 - 2.50E+01	L	2.23E+00	mg/L
Acrolein	0/23		1.00E-01 - 1.30E+02	NT	6.63E+00	mg/L
Acrylonitrile	0/23		1.00E-01 - 1.30E+02	NT	6.63E+00	mg/L
Anthracene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benz(a)anthracene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Benzenemethanol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(a)pyrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(b)fluoranthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(ghi)perylene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(k)fluoranthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzoic acid	5/16	1.00E-03 - 5.00E-03	5.00E-02 - 5.00E-02	L	2.93E-03	mg/L
Bis(2-chloroethoxy)methane	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

530636

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Bis(2-chloroethyl) ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroisopropyl)ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03 - 1.00E-03	2.00E-03 - 3.20E-02	L	4.42E-03	mg/L
Bromodichloromethane	2/23	3.00E-03 - 4.00E-03	1.00E-02 - 1.30E+01	L	3.72E-03	mg/L
Bromoform	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Bromomethane	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
Butyl benzyl phthalate	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbazole	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbon disulfide	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Carbon tetrachloride	4/23	1.00E-03 - 2.70E-01	1.00E-02 - 1.30E+01	L	1.82E-02	mg/L
Chlorobenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Chloroethane	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
Chloroform	6/23	1.50E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	2.22E-02	mg/L
Chloromethane	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
Chrysene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Di-n-butyl phthalate	8/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	2.75E-03	mg/L
Di-n-octylphthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Dibenz(a,h)anthracene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibenzofuran	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibromochloromethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Dibromomethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Dichlorodifluoromethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Diethyl phthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Dimethyl phthalate	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dimethylbenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Ethyl cyanide	0/23		2.00E-01 - 2.50E+02	NT	1.30E+01	mg/L
Ethyl methacrylate	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Ethylbenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Fluoranthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Fluorene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobutadiene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorocyclopentadiene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachloroethane	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Indeno(1,2,3-cd)pyrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Iodomethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Isophorone	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Methacrylonitrile	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Methyl methacrylate	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Methylene chloride	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L

530637

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
N-Nitroso-di-n-propylamine	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
N-Nitrosodiphenylamine	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Naphthalene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Nitrobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Pentachlorophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Phenanthrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Phenol	6/16	1.00E-03 - 4.00E-02	1.00E-02 - 1.00E-02	L	4.61E-03	mg/L
Pyrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Styrene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Tetrachloroethene	6/23	3.00E-03 - 3.00E-02	1.00E-02 - 1.30E+01	L	1.45E-02	mg/L
Toluene	1/23	3.60E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	8.78E-01	mg/L
Trichloroethene	146/155	1.50E-03 - 7.01E+02	4.00E-03 - 4.00E-03	L	5.27E+00	mg/L
Trichlorofluoromethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Vinyl acetate	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Vinyl chloride	3/155	1.00E-03 - 1.33E-01	4.00E-03 - 3.20E+01	N	1.15E+00	mg/L
cis-1,2-Dichloroethene	10/155	1.30E-03 - 3.70E-01	4.00E-03 - 3.20E+01	N	1.23E+00	mg/L
cis-1,3-Dichloropropene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
trans-1,2-Dichloroethene	27/155	1.50E-03 - 1.20E+00	4.00E-03 - 3.20E+01	L	7.62E-03	mg/L
trans-1,3-Dichloropropene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
trans-1,4-Dichloro-2-butene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Actinium-228	0/1		1.00E+00 - 1.00E+00	NT	1.00E+00	pCi/L
Alpha activity	129/151	6.90E-01 - 1.36E+02	-8.53E-01 - 5.06E+00	N	1.45E+01	pCi/L
Americium-241	2/30	7.70E-02 - 1.68E+00	-1.50E-01 - 1.22E+02	N	1.08E+01	pCi/L
Beta activity	149/151	2.86E+00 - 1.72E+04	1.28E+00 - 1.50E+00	L	2.45E+02	pCi/L
Bismuth-212	1/1	4.20E+01 - 4.20E+01		NT	4.20E+01	pCi/L
Bismuth-214	0/1		5.50E+00 - 5.50E+00	NT	5.50E+00	pCi/L
Cesium-134	0/1		1.10E+00 - 1.10E+00	NT	1.10E+00	pCi/L
Cesium-137	15/31	3.33E+00 - 1.45E+01	-1.19E+00 - 3.38E+01	N	8.31E+00	pCi/L
Cobalt-57	0/1		-1.00E-01 --1.00E-01	NT	-1.00E-01	pCi/L
Cobalt-60	0/4		3.00E-01 - 3.94E+01	NT	2.38E+01	pCi/L
Lead-210	1/1	1.00E+02 - 1.00E+02		NT	1.00E+02	pCi/L
Lead-212	0/1		4.60E+00 - 4.60E+00	NT	4.60E+00	pCi/L
Lead-214	1/1	7.40E+00 - 7.40E+00		NT	7.40E+00	pCi/L
Neptunium-237	23/30	0.00E+00 - 1.44E+01	2.04E+00 - 5.30E+01	N	9.10E+00	pCi/L
Plutonium-238	0/1		2.40E-02 - 2.40E-02	NT	2.40E-02	pCi/L
Plutonium-239	4/27	0.00E+00 - 1.30E-01	-3.00E-02 - 1.10E-01	N	3.22E-02	pCi/L
Plutonium-239/240	0/1		1.70E-02 - 1.70E-02	NT	1.70E-02	pCi/L
Potassium-40	0/1		1.40E+01 - 1.40E+01	NT	1.40E+01	pCi/L
Radium-226	0/1		4.00E+01 - 4.00E+01	NT	4.00E+01	pCi/L
Technetium-99	26/28	2.00E+00 - 1.70E+04	-1.53E+01 --5.20E+00	N	1.42E+03	pCi/L

530638

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Thallium-208	0/1		7.00E-01 - 7.00E-01	NT	7.00E-01	pCi/L
Thorium-228	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Thorium-230	22/28	1.80E-01 - 8.40E+00	6.00E-02 - 2.20E-01	L	6.85E-01	pCi/L
Thorium-232	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Thorium-234	0/1		-1.20E+01 --1.20E+01	NT	-1.20E+01	pCi/L
Uranium-233/234	1/1	6.50E-01 - 6.50E-01		NT	6.50E-01	pCi/L
Uranium-234	17/30	1.70E-01 - 1.70E+01	2.00E-02 - 4.98E+02	L	7.00E-01	pCi/L
Uranium-235	3/28	1.03E-01 - 7.70E-01	-2.00E-02 - 4.10E-01	N	6.55E-02	pCi/L
Uranium-238	13/31	1.90E-01 - 1.66E+01	-1.30E-01 - 5.44E+02	N	4.11E+01	pCi/L

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	196/196	9.13E+01 - 2.34E+04		N	5.71E+03	mg/kg
Antimony	73/196	6.00E-03 - 9.40E+00	5.00E-01 - 6.00E+00	N	4.83E-01	mg/kg
Arsenic	196/196	2.75E-02 - 4.52E+01		N	3.01E+00	mg/kg
Barium	196/196	8.16E-01 - 2.79E+02		N	5.12E+01	mg/kg
Beryllium	196/196	4.20E-03 - 1.20E+00		N	2.92E-01	mg/kg
Cadmium	117/196	1.30E-03 - 4.25E+00	5.00E-03 - 5.00E-01	N	7.61E-02	mg/kg
Calcium	196/196	6.49E+00 - 3.40E+05		N	9.57E+03	mg/kg
Chromium	196/196	1.22E-01 - 1.41E+02		N	9.56E+00	mg/kg
Cobalt	196/196	4.40E-02 - 1.96E+01		N	3.34E+00	mg/kg
Copper	196/196	6.70E-02 - 9.52E+03		N	3.09E+01	mg/kg
Cyanide	0/204		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	196/196	1.50E+02 - 5.17E+04		N	9.45E+03	mg/kg
Lead	196/196	5.70E-02 - 8.75E+01		N	5.41E+00	mg/kg
Magnesium	196/196	9.38E+00 - 2.72E+04		N	1.12E+03	mg/kg
Manganese	196/196	2.19E+00 - 1.37E+03		N	1.99E+02	mg/kg
Mercury	166/196	9.50E-03 - 8.30E+00	8.00E-03 - 9.90E-03	N	3.43E-02	mg/kg
Nickel	196/196	7.80E-02 - 1.76E+04		N	5.25E+01	mg/kg
Potassium	196/196	2.20E+00 - 1.14E+03		N	2.02E+02	mg/kg
Selenium	30/196	2.00E-01 - 1.30E+00	2.00E-01 - 1.00E+00	N	1.34E-01	mg/kg
Silver	45/196	7.00E-03 - 2.51E+01	8.00E-04 - 3.00E-01	N	2.03E-01	mg/kg
Sodium	196/196	3.92E+00 - 1.67E+03		N	2.41E+02	mg/kg
Thallium	16/196	7.00E-03 - 2.30E+00	5.00E-01 - 6.00E+00	N	3.40E-01	mg/kg
Uranium	151/151	1.19E+00 - 4.26E+02		N	1.13E+01	mg/kg

530639

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Vanadium	196/196	1.76E-01 - 6.72E+01		N	1.35E+01	mg/kg
Zinc	196/196	2.00E-01 - 1.81E+02		N	1.79E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
1,1,1-Trichloroethane	3/142	1.20E-02 - 2.40E+00	5.00E-03 - 8.00E-01	N	1.83E-02	mg/kg
1,1,2,2-Tetrachloroethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
1,1,2-Trichloroethane	3/142	3.90E-03 - 5.30E-01	5.00E-03 - 8.00E-01	N	1.17E-02	mg/kg
1,1-Dichloroethane	0/142		5.00E-03 - 9.80E-01	NT	1.32E-02	mg/kg
1,1-Dichloroethene	10/181	1.20E-03 - 9.50E-01	6.00E-03 - 1.40E+00	N	3.47E-01	mg/kg
1,2,3-Trichloropropane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
1,2,4-Trichlorobenzene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
1,2-Dibromoethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
1,2-Dichlorobenzene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
1,2-Dichloroethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
1,2-Dichloropropane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
1,3-Dichlorobenzene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
1,4-Dichlorobenzene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2,4,5-Trichlorophenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2,4,6-Tribromophenol	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
2,4,6-Trichlorophenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2,4-Dichlorophenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2,4-Dimethylphenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2,4-Dinitrophenol	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
2,4-Dinitrotoluene	1/203	4.57E-01 - 4.57E-01	6.70E-01 - 1.65E+01	N	6.28E-01	mg/kg
2,6-Dinitrotoluene	4/203	3.47E-01 - 4.32E-01	6.70E-01 - 1.65E+01	N	6.25E-01	mg/kg
2-Butanone	0/142		1.00E-01 - 2.00E+01	NT	1.88E-01	mg/kg
2-Chloro-1,3-butadiene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
2-Chloroethyl vinyl ether	0/142		1.00E-02 - 2.00E+00	NT	1.88E-02	mg/kg
2-Chloronaphthalene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2-Chlorophenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
2-Fluorophenol	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
2-Hexanone	1/142	4.40E-03 - 4.40E-03	5.00E-02 - 8.00E+00	N	9.78E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
2-Methylnaphthalene	2/203	4.40E-02 - 9.00E-01	6.70E-01 - 8.00E+00	N	5.89E-01	mg/kg
2-Methylphenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2-Nitrobenzenamine	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
2-Nitrophenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
2-Propanol	0/142		5.00E-02 - 8.00E+00	NT	9.80E-02	mg/kg
3,3'-Dichlorobenzidine	0/203		6.91E-01 - 1.65E+01	NT	1.13E+00	mg/kg
3-Nitrobenzenamine	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg

530640

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Bromophenyl phenyl ether	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
4-Chloro-3-methylphenol	0/203		6.91E-01 - 1.65E+01	NT	1.13E+00	mg/kg
4-Chlorobenzenamine	0/203		6.91E-01 - 1.65E+01	NT	1.13E+00	mg/kg
4-Chlorophenyl phenyl ether	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
4-Methyl-2-pentanone	0/142		5.00E-02 - 8.00E+00	NT	9.80E-02	mg/kg
4-Methylphenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
4-Nitrobenzenamine	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
4-Nitrophenol	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
Acenaphthene	20/203	6.10E-03 - 7.07E+00	6.70E-01 - 8.00E+00	N	5.06E-01	mg/kg
Acenaphthylene	1/203	2.20E-01 - 2.20E-01	6.90E-01 - 1.65E+01	N	6.28E-01	mg/kg
Acetone	18/142	6.10E-03 - 4.30E+00	1.00E-01 - 2.00E+01	N	2.09E-01	mg/kg
Acrolein	0/142		1.00E-01 - 2.00E+01	NT	1.88E-01	mg/kg
Acrylonitrile	0/142		1.50E-03 - 2.00E+01	NT	1.88E-01	mg/kg
Aniline	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
Anthracene	28/203	1.00E-02 - 8.43E+01	6.90E-01 - 8.00E+00	N	6.83E-01	mg/kg
Benz(a)anthracene	43/203	2.10E-02 - 3.92E+01	6.90E-01 - 8.00E+00	N	6.55E-01	mg/kg
Benzene	1/142	1.70E-02 - 1.70E-02	5.00E-03 - 8.00E-01	N	9.84E-03	mg/kg
Benzenemethanol	0/203		6.91E-01 - 1.65E+01	NT	1.13E+00	mg/kg
Benzidine	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
Benzo(a)pyrene	42/203	1.90E-02 - 3.77E+01	6.90E-01 - 8.00E+00	N	6.41E-01	mg/kg
Benzo(b)fluoranthene	42/203	1.80E-02 - 6.24E+01	6.90E-01 - 8.00E+00	N	7.18E-01	mg/kg
Benzo(ghi)perylene	32/203	1.20E-02 - 8.84E+00	6.30E-02 - 8.00E+00	N	5.30E-01	mg/kg
Benzo(k)fluoranthene	44/203	1.60E-02 - 9.41E+01	6.90E-01 - 8.00E+00	N	7.36E-01	mg/kg
Benzoic acid	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
Bis(2-chloroethoxy)methane	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Bis(2-chloroethyl) ether	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Bis(2-ethylhexyl)phthalate	71/203	1.50E-03 - 8.77E-01	6.90E-01 - 1.65E+01	N	4.87E-01	mg/kg
Bromodichloromethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Bromoform	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Bromomethane	0/142		1.00E-02 - 2.00E+00	NT	1.88E-02	mg/kg
Butyl benzyl phthalate	5/203	4.00E-02 - 4.34E-01	6.70E-01 - 1.65E+01	N	6.22E-01	mg/kg
Carbazole	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
Carbon disulfide	1/142	3.90E-03 - 3.90E-03	5.00E-03 - 8.00E-01	N	9.80E-03	mg/kg
Carbon tetrachloride	3/142	2.00E-03 - 7.10E-01	5.00E-03 - 8.00E-01	N	1.23E-02	mg/kg
Chlorobenzene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Chloroethane	0/142		1.00E-02 - 2.00E+00	NT	1.88E-02	mg/kg
Chloroform	5/142	1.40E-03 - 1.80E-02	5.00E-03 - 8.00E-01	N	9.79E-03	mg/kg
Chloromethane	0/142		1.00E-02 - 2.00E+00	NT	1.88E-02	mg/kg
Chrysene	43/203	2.20E-02 - 4.37E+01	6.90E-01 - 8.00E+00	N	6.72E-01	mg/kg

530641

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Di-n-butyl phthalate	56/203	4.00E-02 - 3.80E+00	6.70E-01 - 1.65E+01	N	6.09E-01	mg/kg
Di-n-octylphthalate	2/203	6.00E-02 - 6.06E-01	6.70E-01 - 1.65E+01	N	6.27E-01	mg/kg
Dibenz(a,h)anthracene	9/203	7.70E-02 - 4.27E+00	6.60E-02 - 8.00E+00	N	5.51E-01	mg/kg
Dibenzofuran	12/203	2.80E-03 - 3.60E+00	6.90E-01 - 8.00E+00	N	5.24E-01	mg/kg
Dibromochloromethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Dibromomethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Dichlorodifluoromethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Diethyl phthalate	9/203	4.00E-02 - 6.10E+00	6.70E-01 - 1.65E+01	N	6.51E-01	mg/kg
Dimethyl phthalate	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Dimethylbenzene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Diphenyldiazene	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
Ethyl cyanide	0/142		1.00E-01 - 2.00E+01	NT	1.88E-01	mg/kg
Ethyl methacrylate	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Ethylbenzene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Fluoranthene	56/203	1.20E-03 - 9.68E+01	6.90E-01 - 8.00E+00	N	1.03E+00	mg/kg
Fluorene	18/203	4.80E-03 - 4.54E+00	6.70E-01 - 8.00E+00	N	5.04E-01	mg/kg
Hexachlorobenzene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Hexachlorobutadiene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Hexachlorocyclopentadiene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Hexachloroethane	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Indeno(1,2,3-cd)pyrene	30/203	1.10E-02 - 9.69E+00	6.60E-02 - 8.00E+00	N	5.23E-01	mg/kg
Iodomethane	1/142	7.00E-01 - 7.00E-01	5.00E-03 - 8.00E-01	N	9.80E-03	mg/kg
Isophorone	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Methacrylonitrile	0/142		2.60E-02 - 3.80E+00	NT	4.94E-02	mg/kg
Methyl methacrylate	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Methylene chloride	83/142	1.20E-03 - 8.00E-01	1.30E-03 - 4.00E-02	N	9.58E-03	mg/kg
N-Nitroso-di-n-propylamine	4/203	4.84E-01 - 6.34E-01	6.70E-01 - 1.65E+01	N	6.26E-01	mg/kg
N-Nitrosodimethylamine	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
N-Nitrosodiphenylamine	2/203	5.82E-01 - 8.23E-01	6.70E-01 - 1.65E+01	N	6.28E-01	mg/kg
Naphthalene	10/203	2.40E-03 - 1.90E+00	6.70E-01 - 8.00E+00	N	5.32E-01	mg/kg
Nitrobenzene	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Nitrobenzene-d5	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
PCB-1016	0/78		1.80E-02 - 9.40E-01	NT	3.43E-02	mg/kg
PCB-1221	0/78		1.80E-02 - 9.40E-01	NT	3.43E-02	mg/kg
PCB-1232	0/78		1.80E-02 - 9.40E-01	NT	3.43E-02	mg/kg
PCB-1242	0/78		1.80E-02 - 9.40E-01	NT	3.43E-02	mg/kg
PCB-1248	0/78		1.80E-02 - 9.40E-01	NT	3.43E-02	mg/kg
PCB-1254	6/78	5.20E-03 - 9.60E-01	1.80E-02 - 9.40E-01	N	5.40E-02	mg/kg
PCB-1260	12/78	3.00E-03 - 3.30E+00	1.80E-02 - 2.10E-01	N	6.69E-02	mg/kg
PCB-1262	1/78	3.80E-02 - 3.80E-02	1.80E-02 - 9.40E-01	N	3.45E-02	mg/kg

530642

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1268	0/78		1.80E-02 - 9.40E-01	NT	3.43E-02	mg/kg
Pentachloroethane	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Pentachlorophenol	0/203		6.91E-01 - 4.00E+01	NT	2.76E+00	mg/kg
Phenanthrene	43/203	4.00E-02 - 7.75E+01	6.90E-01 - 8.00E+00	N	8.50E-01	mg/kg
Phenol	0/203		6.70E-01 - 1.65E+01	NT	6.29E-01	mg/kg
Phenol-d5	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
Polychlorinated biphenyl	19/205	3.00E-03 - 1.00E+01	1.90E-02 - 1.00E+00	N	4.76E-01	mg/kg
Pyrene	51/203	4.10E-02 - 1.11E+02	6.90E-01 - 8.00E+00	N	9.74E-01	mg/kg
Pyridine	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
Styrene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Tetrachloroethene	4/142	5.20E-03 - 6.90E-01	5.00E-03 - 8.00E-01	N	1.23E-02	mg/kg
Toluene	26/142	1.20E-03 - 3.20E-01	5.00E-03 - 8.00E-01	N	1.32E-02	mg/kg
Trichloroethene	60/181	1.45E-03 - 1.11E+04	1.49E-03 - 1.10E+00	N	7.46E+01	mg/kg
Trichlorofluoromethane	1/142	1.70E-03 - 1.70E-03	5.00E-03 - 8.00E-01	N	9.79E-03	mg/kg
Vinyl acetate	3/142	1.70E-03 - 5.50E-02	5.00E-02 - 8.00E+00	N	9.77E-02	mg/kg
Vinyl chloride	16/181	1.90E-03 - 2.90E+01	1.00E-02 - 2.30E+01	N	9.71E-01	mg/kg
cis-1,2-Dichloroethene	43/181	1.40E-03 - 2.40E+00	6.00E-03 - 2.30E+01	N	7.62E-01	mg/kg
cis-1,3-Dichloropropene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
p-Terphenyl-d14	0/131		6.64E-01 - 1.65E+01	NT	5.02E-01	mg/kg
trans-1,2-Dichloroethene	19/181	1.40E+00 - 1.02E+02	6.00E-03 - 6.32E+02	N	7.69E+00	mg/kg
trans-1,3-Dichloropropene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/142		5.00E-03 - 8.00E-01	NT	9.80E-03	mg/kg
Alpha activity	215/252	6.03E+00 - 8.78E+02	-3.46E+00 - 7.15E+00	N	2.48E+01	pCi/g
Americium-241	19/151	1.20E-01 - 1.30E+00	1.00E-01 - 2.00E-01	N	1.37E-01	pCi/g
Beta activity	245/252	9.64E+00 - 8.08E+03	3.48E+00 - 8.46E+00	N	7.29E+01	pCi/g
Cesium-137	44/151	2.00E-01 - 1.11E+01	1.00E-01 - 3.00E-01	N	2.75E-01	pCi/g
Neptunium-237	73/151	2.00E-01 - 5.26E+01	1.00E-01 - 2.00E-01	N	5.95E-01	pCi/g
Plutonium-239	12/151	2.00E-01 - 1.12E+01	1.00E-01 - 1.00E-01	N	2.00E-01	pCi/g
Technetium-99	113/151	2.00E-01 - 4.84E+03	1.00E-01 - 3.00E-01	N	3.62E+01	pCi/g
Thorium-230	150/151	3.00E-01 - 1.88E+01	2.00E-01 - 2.00E-01	N	1.44E+00	pCi/g
Uranium-234	151/151	4.00E-01 - 1.02E+02		N	2.83E+00	pCi/g
Uranium-235	21/151	2.00E-01 - 4.90E+00	1.00E-01 - 1.00E-01	N	1.91E-01	pCi/g
Uranium-238	151/151	4.00E-01 - 1.42E+02		N	3.78E+00	pCi/g

530643

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	27/27	3.25E+03 - 1.77E+04		N	5.34E+03	mg/kg
Antimony	14/27	6.00E-01 - 2.90E+00	5.00E-01 - 6.00E-01	L	8.81E-01	mg/kg
Arsenic	27/27	3.86E+00 - 4.52E+01		L	4.32E+00	mg/kg
Barium	27/27	3.53E+01 - 1.47E+02		N	4.37E+01	mg/kg
Beryllium	27/27	2.20E-01 - 8.00E-01		N	2.65E-01	mg/kg
Cadmium	20/27	4.00E-02 - 4.25E+00	2.00E-02 - 2.00E-02	L	2.39E-01	mg/kg
Calcium	27/27	2.18E+03 - 2.77E+05		L	1.82E+04	mg/kg
Chromium	27/27	8.25E+00 - 6.60E+01		L	1.01E+01	mg/kg
Cobalt	27/27	3.00E+00 - 1.43E+01		N	3.65E+00	mg/kg
Copper	27/27	5.90E+00 - 3.46E+01		L	7.21E+00	mg/kg
Cyanide	0/27		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	27/27	1.12E+04 - 3.70E+04		L	9.89E+03	mg/kg
Lead	27/27	8.00E+00 - 4.20E+01		L	7.06E+00	mg/kg
Magnesium	27/27	8.20E+02 - 1.08E+04		L	1.22E+03	mg/kg
Manganese	27/27	1.65E+02 - 7.36E+02		N	2.08E+02	mg/kg
Mercury	24/27	1.65E-02 - 1.36E-01	8.00E-03 - 8.70E-03	L	4.15E-02	mg/kg
Nickel	27/27	5.70E+00 - 2.55E+01		N	6.99E+00	mg/kg
Potassium	27/27	1.33E+02 - 1.00E+03		L	2.46E+02	mg/kg
Selenium	7/27	2.00E-01 - 3.00E-01	2.00E-01 - 1.00E+00	L	2.00E-01	mg/kg
Silver	8/27	1.00E-01 - 1.10E+00	7.00E-02 - 1.00E-01	L	7.92E-02	mg/kg
Sodium	27/27	1.80E+02 - 8.15E+02		L	2.07E+02	mg/kg
Thallium	4/27	6.00E-01 - 1.50E+00	5.00E-01 - 1.00E+00	L	3.52E-01	mg/kg
Uranium	21/21	1.49E+00 - 1.19E+02		L	1.78E+01	mg/kg
Vanadium	27/27	7.40E+00 - 4.24E+01		N	1.29E+01	mg/kg
Zinc	27/27	1.77E+01 - 1.11E+02		L	2.24E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,1,1-Trichloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,1,2-Trichloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,1-Dichloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,1-Dichloroethene	0/3		6.00E-03 - 7.00E-01	NT	2.18E-01	mg/kg
1,2,3-Trichloropropane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,2,4-Trichlorobenzene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
1,2-Dibromoethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg

530644

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,2-Dichlorobenzene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
1,2-Dichloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,2-Dichloropropane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
1,3-Dichlorobenzene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
1,4-Dichlorobenzene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2,4,5-Trichlorophenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2,4,6-Tribromophenol	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
2,4,6-Trichlorophenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2,4-Dichlorophenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2,4-Dimethylphenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2,4-Dinitrophenol	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
2,4-Dinitrotoluene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2,6-Dinitrotoluene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2-Butanone	0/3		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
2-Chloroethyl vinyl ether	0/3		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2-Chlorophenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2-Fluoro-1,1'-biphenyl	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
2-Fluorophenol	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
2-Hexanone	0/3		5.00E-02 - 6.00E-02	NT	2.83E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
2-Methylnaphthalene	2/25	4.40E-02 - 9.00E-01	6.70E-01 - 8.00E+00	L	1.83E-01	mg/kg
2-Methylphenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2-Nitrobenzenamine	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
2-Nitrophenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
2-Propanol	0/3		5.00E-02 - 6.00E-02	NT	2.83E-02	mg/kg
3,3'-Dichlorobenzidine	0/25		7.25E-01 - 1.65E+01	NT	3.73E+00	mg/kg
3-Nitrobenzenamine	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
4-Bromophenyl phenyl ether	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
4-Chloro-3-methylphenol	0/25		7.25E-01 - 1.65E+01	NT	3.73E+00	mg/kg
4-Chlorobenzenamine	0/25		7.25E-01 - 1.65E+01	NT	3.73E+00	mg/kg
4-Chlorophenyl phenyl ether	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg

530645

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Methyl-2-pentanone	0/3		5.00E-02 - 6.00E-02	NT	2.83E-02	mg/kg
4-Methylphenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
4-Nitrobenzenamine	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
4-Nitrophenol	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
Acenaphthene	11/25	6.10E-03 - 7.07E+00	6.70E-01 - 7.90E+00	L	5.50E-01	mg/kg
Acenaphthylene	1/25	2.20E-01 - 2.20E-01	7.10E-01 - 1.65E+01	L	2.39E+00	mg/kg
Acetone	0/3		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrolein	0/3		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/3		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Aniline	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
Anthracene	14/25	1.00E-02 - 8.43E+01	7.25E-01 - 7.50E+00	L	1.09E+00	mg/kg
Benz(a)anthracene	18/25	2.10E-02 - 3.92E+01	7.25E-01 - 7.50E+00	L	1.73E+00	mg/kg
Benzene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Benzenemethanol	0/25		7.25E-01 - 1.65E+01	NT	3.73E+00	mg/kg
Benzidine	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
Benzo(a)pyrene	18/25	1.90E-02 - 3.77E+01	7.25E-01 - 7.50E+00	L	1.71E+00	mg/kg
Benzo(b)fluoranthene	18/25	1.80E-02 - 6.24E+01	7.25E-01 - 7.50E+00	L	1.96E+00	mg/kg
Benzo(ghi)perylene	13/25	1.20E-02 - 8.84E+00	7.25E-01 - 7.90E+00	L	9.93E-01	mg/kg
Benzo(k)fluoranthene	19/25	1.60E-02 - 9.41E+01	7.25E-01 - 7.90E+00	L	1.61E+00	mg/kg
Benzoic acid	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
Bis(2-chloroethoxy)methane	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Bis(2-chloroethyl) ether	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Bis(2-chloroisopropyl)ether	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Bis(2-ethylhexyl)phthalate	3/25	8.00E-02 - 1.00E-01	7.10E-01 - 1.65E+01	L	9.08E-02	mg/kg
Bromodichloromethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Bromoform	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Bromomethane	0/3		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Carbazole	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
Carbon disulfide	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Carbon tetrachloride	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Chlorobenzene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Chloroethane	0/3		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg

530646

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Chloroform	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Chloromethane	0/3		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chrysene	18/25	2.20E-02 - 4.37E+01	7.25E-01 - 7.50E+00	L	1.82E+00	mg/kg
Di-n-butyl phthalate	5/25	4.00E-02 - 1.23E+00	6.70E-01 - 1.65E+01	L	3.85E-01	mg/kg
Di-n-octylphthalate	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Dibenz(a,h)anthracene	6/25	7.70E-02 - 4.27E+00	7.10E-01 - 8.00E+00	L	5.29E-01	mg/kg
Dibenzofuran	7/25	2.80E-03 - 3.60E+00	7.10E-01 - 7.90E+00	L	3.12E-01	mg/kg
Dibromochloromethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Dibromomethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Dichlorodifluoromethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Diethyl phthalate	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Dimethyl phthalate	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Dimethylbenzene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Diphenyldiazene	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
Ethyl cyanide	0/3		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Ethylbenzene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Fluoranthene	22/25	4.00E-02 - 9.68E+01	7.25E-01 - 7.50E+00	L	3.33E+00	mg/kg
Fluorene	9/25	4.80E-03 - 4.54E+00	6.70E-01 - 7.90E+00	L	4.15E-01	mg/kg
Hexachlorobenzene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Hexachlorobutadiene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Hexachlorocyclopentadiene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Hexachloroethane	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Indeno(1,2,3-cd)pyrene	13/25	1.10E-02 - 9.69E+00	6.98E-01 - 7.90E+00	L	9.39E-01	mg/kg
Iodomethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Isophorone	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Methacrylonitrile	0/3		2.70E-02 - 2.90E-02	NT	1.42E-02	mg/kg
Methyl methacrylate	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Methylene chloride	2/3	2.00E-03 - 1.40E-02	5.00E-03 - 5.00E-03	N	3.50E-03	mg/kg
N-Nitroso-di-n-propylamine	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
N-Nitrosodimethylamine	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
N-Nitrosodiphenylamine	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Naphthalene	5/25	2.40E-03 - 1.90E+00	6.70E-01 - 7.90E+00	L	2.04E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Nitrobenzene	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Nitrobenzene-d5	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
PCB-1016	0/13		1.80E-02 - 9.40E-01	NT	1.04E-01	mg/kg
PCB-1221	0/13		1.80E-02 - 9.40E-01	NT	1.04E-01	mg/kg
PCB-1232	0/13		1.80E-02 - 9.40E-01	NT	1.04E-01	mg/kg
PCB-1242	0/13		1.80E-02 - 9.40E-01	NT	1.04E-01	mg/kg
PCB-1248	0/13		1.80E-02 - 9.40E-01	NT	1.04E-01	mg/kg
PCB-1254	2/13	7.70E-02 - 9.60E-01	1.80E-02 - 9.40E-01	L	2.60E-03	mg/kg
PCB-1260	6/13	3.00E-03 - 3.30E+00	1.80E-02 - 2.10E-01	L	2.58E-02	mg/kg
PCB-1262	1/13	3.80E-02 - 3.80E-02	1.80E-02 - 9.40E-01	L	6.80E-02	mg/kg
PCB-1268	0/13		1.80E-02 - 9.40E-01	NT	1.04E-01	mg/kg
Pentachloroethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Pentachlorophenol	0/25		7.25E-01 - 4.00E+01	NT	9.44E+00	mg/kg
Phenanthrene	18/25	4.00E-02 - 7.75E+01	7.25E-01 - 7.50E+00	L	2.31E+00	mg/kg
Phenol	0/25		6.70E-01 - 1.65E+01	NT	2.08E+00	mg/kg
Phenol-d5	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
Polychlorinated biphenyl	9/24	3.00E-03 - 1.00E+01	1.00E+00 - 1.00E+00	L	1.12E-01	mg/kg
Pyrene	21/25	4.10E-02 - 1.11E+02	7.25E-01 - 7.50E+00	L	3.01E+00	mg/kg
Pyridine	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
Styrene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Tetrachloroethene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Toluene	1/3	3.10E-03 - 3.10E-03	6.00E-03 - 6.00E-03	N	2.52E-03	mg/kg
Trichloroethene	1/3	1.60E-03 - 1.60E-03	6.00E-03 - 6.00E-01	N	2.03E-01	mg/kg
Trichlorofluoromethane	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Vinyl acetate	0/3		5.00E-02 - 6.00E-02	NT	2.83E-02	mg/kg
Vinyl chloride	0/3		1.00E-02 - 7.00E-01	NT	4.37E-01	mg/kg
cis-1,2-Dichloroethene	0/3		6.00E-03 - 7.00E-01	NT	4.35E-01	mg/kg
cis-1,3-Dichloropropene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
p-Terphenyl-d14	0/23		6.64E-01 - 1.65E+01	NT	1.02E+00	mg/kg
trans-1,2-Dichloroethene	0/3		6.00E-03 - 7.00E-01	NT	4.35E-01	mg/kg
trans-1,3-Dichloropropene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/3		5.00E-03 - 6.00E-03	NT	2.83E-03	mg/kg
Alpha activity	40/57	6.03E+00 - 1.75E+02	-3.46E+00 - 7.15E+00	N	1.64E+01	pCi/g

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Americium-241	3/21	2.00E-01 - 1.00E+00	1.00E-01 - 1.00E-01	L	2.90E-02	pCi/g
Beta activity	51/57	9.64E+00 - 2.48E+02	3.48E+00 - 8.46E+00	L	3.90E+01	pCi/g
Cesium-137	12/21	2.00E-01 - 1.50E+00	1.00E-01 - 2.00E-01	L	2.43E-01	pCi/g
Neptunium-237	11/21	2.00E-01 - 3.00E+00	1.00E-01 - 1.00E-01	L	3.23E-01	pCi/g
Plutonium-239	6/21	2.00E-01 - 1.70E+00	1.00E-01 - 1.00E-01	L	9.24E-02	pCi/g
Technetium-99	20/21	3.00E-01 - 5.30E+01	3.00E-01 - 3.00E-01	L	8.47E+00	pCi/g
Thorium-230	21/21	5.00E-01 - 1.09E+01		L	2.53E+00	pCi/g
Uranium-234	21/21	5.00E-01 - 3.11E+01		L	4.56E+00	pCi/g
Uranium-235	11/21	2.00E-01 - 1.90E+00	1.00E-01 - 1.00E-01	L	2.29E-01	pCi/g
Uranium-238	21/21	5.00E-01 - 3.95E+01		L	5.93E+00	pCi/g

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	3/3	4.27E+03 - 7.77E+03		N	3.13E+03	mg/kg
Antimony	1/3	4.50E+00 - 4.50E+00	6.00E-01 - 6.00E-01	N	9.50E-01	mg/kg
Arsenic	3/3	4.15E+00 - 5.71E+00		N	2.39E+00	mg/kg
Barium	3/3	2.31E+01 - 1.33E+02		N	3.55E+01	mg/kg
Beryllium	3/3	3.40E-01 - 4.60E-01		N	2.08E-01	mg/kg
Cadmium	2/3	1.60E-01 - 3.00E-01	2.00E-02 - 2.00E-02	N	8.00E-02	mg/kg
Calcium	3/3	8.31E+02 - 1.45E+03		N	5.82E+02	mg/kg
Chromium	3/3	1.09E+01 - 3.67E+01		N	9.82E+00	mg/kg
Cobalt	3/3	3.81E+00 - 6.29E+00		N	2.48E+00	mg/kg
Copper	3/3	3.80E+00 - 1.27E+01		N	3.98E+00	mg/kg
Cyanide	0/3		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	3/3	1.45E+04 - 2.90E+04		N	1.01E+04	mg/kg
Lead	3/3	3.90E+00 - 9.10E+00		N	3.25E+00	mg/kg
Magnesium	3/3	2.43E+02 - 1.85E+03		N	5.34E+02	mg/kg
Manganese	3/3	1.75E+02 - 3.02E+02		N	1.09E+02	mg/kg
Mercury	3/3	1.59E-02 - 2.73E-02		N	1.15E-02	mg/kg
Nickel	3/3	4.20E+00 - 1.50E+01		N	4.43E+00	mg/kg
Potassium	3/3	1.42E+02 - 3.54E+02		N	1.20E+02	mg/kg
Selenium	0/3		2.00E-01 - 2.00E-01	NT	1.00E-01	mg/kg
Silver	2/3	2.00E-01 - 1.21E+00	8.00E-02 - 8.00E-02	N	2.48E-01	mg/kg
Sodium	3/3	5.67E+02 - 8.32E+02		N	3.36E+02	mg/kg
Thallium	1/3	7.00E-01 - 7.00E-01	6.00E-01 - 6.00E-01	N	3.17E-01	mg/kg
Uranium	6/6	1.19E+00 - 2.39E+00		N	1.84E+00	mg/kg
Vanadium	3/3	1.84E+01 - 3.08E+01		N	1.13E+01	mg/kg
Zinc	3/3	1.19E+01 - 3.47E+01		N	1.06E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,1-Trichloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2-Trichloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethene	0/7		7.00E-01 - 1.20E+00	NT	4.29E-01	mg/kg
1,2,3-Trichloropropane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2,4-Trichlorobenzene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
1,2-Dibromoethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichlorobenzene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
1,2-Dichloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichloropropane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,3-Dichlorobenzene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
1,4-Dichlorobenzene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2,4,5-Trichlorophenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2,4,6-Trichlorophenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2,4-Dichlorophenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2,4-Dimethylphenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2,4-Dinitrophenol	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
2,4-Dinitrotoluene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2,6-Dinitrotoluene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2-Butanone	0/7		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
2-Chloroethyl vinyl ether	0/7		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2-Chlorophenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2-Hexanone	0/7		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
2-Methylnaphthalene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2-Methylphenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2-Nitrobenzenamine	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
2-Nitrophenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
2-Propanol	0/7		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
3,3'-Dichlorobenzidine	0/3		1.50E+00 - 1.60E+00	NT	7.67E-01	mg/kg
3-Nitrobenzenamine	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
4-Bromophenyl phenyl ether	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
4-Chloro-3-methylphenol	0/3		1.50E+00 - 1.60E+00	NT	7.67E-01	mg/kg
4-Chlorobenzenamine	0/3		1.50E+00 - 1.60E+00	NT	7.67E-01	mg/kg
4-Chlorophenyl phenyl ether	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
4-Methyl-2-pentanone	0/7		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
4-Methylphenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
4-Nitrobenzenamine	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
4-Nitrophenol	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
Acenaphthene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Acenaphthylene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Acetone	0/7		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrolein	0/7		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/7		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Anthracene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Benz(a)anthracene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Benzene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Benzenemethanol	0/3		1.50E+00 - 1.60E+00	NT	7.67E-01	mg/kg
Benzo(a)pyrene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Benzo(b)fluoranthene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Benzo(ghi)perylene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Benzo(k)fluoranthene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benzoic acid	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
Bis(2-chloroethoxy)methane	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Bis(2-chloroethyl) ether	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Bis(2-ethylhexyl)phthalate	1/3	4.00E-02 - 4.00E-02	7.60E-01 - 7.90E-01	N	2.65E-01	mg/kg
Bromodichloromethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromoform	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromomethane	0/7		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Carbon disulfide	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Carbon tetrachloride	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chlorobenzene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloroethane	0/7		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chloroform	1/7	1.40E-03 - 1.40E-03	6.00E-03 - 6.00E-03	N	2.67E-03	mg/kg
Chloromethane	0/7		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chrysene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Di-n-butyl phthalate	2/3	1.20E+00 - 1.40E+00	7.90E-01 - 7.90E-01	N	5.65E-01	mg/kg
Di-n-octylphthalate	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Dibenz(a,h)anthracene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Dibenzofuran	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Dibromochloromethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dibromomethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dichlorodifluoromethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diethyl phthalate	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Dimethyl phthalate	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Dimethylbenzene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethyl cyanide	0/7		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethylbenzene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Fluoranthene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Fluorene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Hexachlorobenzene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Hexachlorobutadiene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Hexachlorocyclopentadiene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Hexachloroethane	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Indeno(1,2,3-cd)pyrene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Iodomethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Isophorone	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Methacrylonitrile	0/7		2.80E-02 - 3.00E-02	NT	1.44E-02	mg/kg
Methyl methacrylate	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg

530652

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Methylene chloride	6/7	3.30E-03 - 1.40E-02	6.00E-03 - 6.00E-03	N	4.14E-03	mg/kg
N-Nitroso-di-n-propylamine	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
N-Nitrosodiphenylamine	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Naphthalene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Nitrobenzene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Pentachloroethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Pentachlorophenol	0/3		3.80E+00 - 4.00E+00	NT	1.95E+00	mg/kg
Phenanthrene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Phenol	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Polychlorinated biphenyl	0/4		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Pyrene	0/3		7.60E-01 - 7.90E-01	NT	3.90E-01	mg/kg
Styrene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Tetrachloroethene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Toluene	3/7	1.20E-03 - 1.70E-03	6.00E-03 - 6.00E-03	L	1.52E-03	mg/kg
Trichloroethene	4/7	1.60E-03 - 1.70E-02	8.00E-01 - 1.00E+00	L	8.04E-03	mg/kg
Trichlorofluoromethane	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Vinyl acetate	0/7		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
Vinyl chloride	0/7		7.00E-01 - 1.20E+00	NT	8.57E-01	mg/kg
cis-1,2-Dichloroethene	0/7		7.00E-01 - 1.20E+00	NT	8.57E-01	mg/kg
cis-1,3-Dichloropropene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,2-Dichloroethene	0/7		7.00E-01 - 1.20E+00	NT	8.57E-01	mg/kg
trans-1,3-Dichloropropene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/7		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Alpha activity	7/7	1.04E+01 - 3.04E+01		L	1.95E+01	pCi/g
Americium-241	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	7/7	2.60E+01 - 4.94E+01		L	3.26E+01	pCi/g
Cesium-137	2/6	2.00E-01 - 3.00E-01	1.00E-01 - 2.00E-01	N	1.67E-01	pCi/g
Neptunium-237	1/6	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.17E-01	pCi/g
Plutonium-239	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	5/6	7.00E-01 - 1.80E+00	2.00E-01 - 2.00E-01	N	1.08E+00	pCi/g
Thorium-230	6/6	5.00E-01 - 1.00E+00		N	8.00E-01	pCi/g
Uranium-234	6/6	4.00E-01 - 9.00E-01		N	6.00E-01	pCi/g
Uranium-235	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Uranium-238	6/6	4.00E-01 - 8.00E-01		N	6.17E-01	pCi/g

530653

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium	1/1	1.49E+00 - 1.49E+00		NT	1.49E+00	mg/kg
1,1,1,2-Tetrachloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,1-Trichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2-Trichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethene	0/1		7.00E-01 - 7.00E-01	NT	3.50E-01	mg/kg
1,2,3-Trichloropropane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2,4-Trichlorobenzene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
1,2-Dibromoethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichlorobenzene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
1,2-Dichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichloropropane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,3-Dichlorobenzene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
1,4-Dichlorobenzene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,4,5-Trichlorophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,4,6-Trichlorophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,4-Dichlorophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,4-Dimethylphenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,4-Dinitrophenol	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
2,4-Dinitrotoluene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,6-Dinitrotoluene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Butanone	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
2-Chloroethyl vinyl ether	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Chlorophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Hexanone	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
2-Methylnaphthalene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Methylphenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Nitrobenzenamine	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
2-Nitrophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Propanol	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
3,3'-Dichlorobenzidine	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
3-Nitrobenzenamine	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
4-Bromophenyl phenyl ether	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
4-Chloro-3-methylphenol	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorobenzenamine	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorophenyl phenyl ether	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
4-Methyl-2-pentanone	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Methylphenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
4-Nitrobenzenamine	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
4-Nitrophenol	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
Acenaphthene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Acenaphthylene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Acetone	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrolein	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Anthracene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benz(a)anthracene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Benzenemethanol	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
Benzo(a)pyrene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benzo(b)fluoranthene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benzo(ghi)perylene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benzo(k)fluoranthene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benzoic acid	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
Bis(2-chloroethoxy)methane	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Bis(2-chloroethyl) ether	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Bis(2-ethylhexyl)phthalate	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Bromodichloromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromoform	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromomethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Carbon disulfide	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Carbon tetrachloride	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chlorobenzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloroethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chloroform	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloromethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chrysene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Di-n-butyl phthalate	1/1	1.20E+00 - 1.20E+00		NT	6.00E-01	mg/kg
Di-n-octylphthalate	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Dibenz(a,h)anthracene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Dibenzofuran	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Dibromochloromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dibromomethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dichlorodifluoromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diethyl phthalate	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Dimethyl phthalate	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Dimethylbenzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethyl cyanide	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethylbenzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Fluoranthene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Fluorene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Hexachlorobenzene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Hexachlorobutadiene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Hexachlorocyclopentadiene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Hexachloroethane	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Indeno(1,2,3-cd)pyrene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Iodomethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Isophorone	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Methacrylonitrile	0/1		2.90E-02 - 2.90E-02	NT	1.45E-02	mg/kg
Methyl methacrylate	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Methylene chloride	1/1	1.40E-02 - 1.40E-02		NT	7.00E-03	mg/kg
N-Nitroso-di-n-propylamine	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
N-Nitrosodiphenylamine	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Naphthalene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Nitrobenzene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Pentachloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Pentachlorophenol	0/1		3.80E+00 - 3.80E+00	NT	1.90E+00	mg/kg
Phenanthrene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Phenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Pyrene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Styrene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Tetrachloroethene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Toluene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Trichloroethene	1/1	1.60E-03 - 1.60E-03		NT	1.60E-03	mg/kg
Trichlorofluoromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Vinyl acetate	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
Vinyl chloride	0/1		7.00E-01 - 7.00E-01	NT	7.00E-01	mg/kg
cis-1,2-Dichloroethene	0/1		7.00E-01 - 7.00E-01	NT	7.00E-01	mg/kg
cis-1,3-Dichloropropene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,2-Dichloroethene	0/1		7.00E-01 - 7.00E-01	NT	7.00E-01	mg/kg
trans-1,3-Dichloropropene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Alpha activity	1/1	1.04E+01 - 1.04E+01		NT	1.04E+01	pCi/g
Americium-241	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g

530656

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Central MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Beta activity	1/1	2.68E+01 - 2.68E+01		NT	2.68E+01	pCi/g
Cesium-137	1/1	2.00E-01 - 2.00E-01		NT	2.00E-01	pCi/g
Neptunium-237	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Plutonium-239	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	1/1	1.50E+00 - 1.50E+00		NT	1.50E+00	pCi/g
Thorium-230	1/1	1.00E+00 - 1.00E+00		NT	1.00E+00	pCi/g
Uranium-234	1/1	5.00E-01 - 5.00E-01		NT	5.00E-01	pCi/g
Uranium-235	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Uranium-238	1/1	5.00E-01 - 5.00E-01		NT	5.00E-01	pCi/g

SECTOR=East MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	17/17	6.19E+03 - 2.03E+04		N	6.66E+03	mg/kg
Antimony	3/17	6.00E-01 - 8.00E-01	6.00E-01 - 6.00E-01	N	3.12E-01	mg/kg
Arsenic	17/17	3.27E+00 - 1.81E+01		L	3.11E+00	mg/kg
Barium	17/17	6.54E+01 - 1.56E+02		L	5.54E+01	mg/kg
Beryllium	17/17	2.60E-01 - 6.90E-01		N	2.73E-01	mg/kg
Cadmium	14/17	6.00E-02 - 4.00E-01	2.00E-02 - 2.00E-01	L	1.77E-01	mg/kg
Calcium	17/17	9.49E+02 - 2.03E+04		L	2.04E+03	mg/kg
Chromium	17/17	1.16E+01 - 2.04E+01		N	8.48E+00	mg/kg
Cobalt	17/17	2.90E+00 - 1.86E+01		L	3.60E+00	mg/kg
Copper	17/17	7.70E+00 - 3.46E+01		L	6.52E+00	mg/kg
Cyanide	0/17		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	17/17	1.19E+04 - 2.70E+04		L	9.08E+03	mg/kg
Lead	17/17	5.00E+00 - 2.45E+01		L	4.95E+00	mg/kg
Magnesium	17/17	1.18E+03 - 3.06E+03		N	1.04E+03	mg/kg
Manganese	17/17	1.46E+02 - 9.96E+02		L	2.13E+02	mg/kg
Mercury	10/17	9.50E-03 - 6.28E-02	8.30E-03 - 9.60E-03	L	1.97E-02	mg/kg
Nickel	17/17	8.00E+00 - 2.28E+01		L	6.96E+00	mg/kg
Potassium	17/17	1.76E+02 - 1.07E+03		L	2.66E+02	mg/kg
Selenium	1/17	5.00E-01 - 5.00E-01	2.00E-01 - 1.00E+00	L	1.49E-01	mg/kg
Silver	0/17		8.00E-02 - 3.00E-01	NT	5.12E-02	mg/kg
Sodium	17/17	2.44E+02 - 8.64E+02		N	2.74E+02	mg/kg
Thallium	1/17	1.20E+00 - 1.20E+00	6.00E-01 - 6.00E-01	N	3.18E-01	mg/kg
Uranium	16/16	1.49E+00 - 2.74E+01		L	3.60E+00	mg/kg

530657

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Vanadium	17/17	1.70E+01 - 3.24E+01		N	1.40E+01	mg/kg
Zinc	17/17	1.52E+01 - 5.39E+01		N	1.85E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,1,1-Trichloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,1,2-Trichloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,1-Dichloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,1-Dichloroethene	0/15		5.00E-01 - 1.00E+00	NT	4.40E-01	mg/kg
1,2,3-Trichloropropane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,2,4-Trichlorobenzene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
1,2-Dibromoethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,2-Dichlorobenzene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
1,2-Dichloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,2-Dichloropropane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
1,3-Dichlorobenzene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
1,4-Dichlorobenzene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2,4,5-Trichlorophenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2,4,6-Tribromophenol	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
2,4,6-Trichlorophenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2,4-Dichlorophenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2,4-Dimethylphenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2,4-Dinitrophenol	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
2,4-Dinitrotoluene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2,6-Dinitrotoluene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2-Butanone	0/14		1.00E-01 - 9.00E-01	NT	1.79E-01	mg/kg
2-Chloro-1,3-butadiene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
2-Chloroethyl vinyl ether	0/14		1.00E-02 - 9.00E-02	NT	1.79E-02	mg/kg
2-Chloronaphthalene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2-Chlorophenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
2-Fluorophenol	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
2-Hexanone	0/14		6.00E-02 - 4.00E-01	NT	9.07E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
2-Methylnaphthalene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2-Methylphenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2-Nitrobenzenamine	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
2-Nitrophenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
2-Propanol	0/14		6.00E-02 - 4.00E-01	NT	9.07E-02	mg/kg
3,3'-Dichlorobenzidine	0/18		7.71E-01 - 7.50E+00	NT	9.40E-01	mg/kg
3-Nitrobenzenamine	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg

530658

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Bromophenyl phenyl ether	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
4-Chloro-3-methylphenol	0/18		7.71E-01 - 7.50E+00	NT	9.40E-01	mg/kg
4-Chlorobenzenamine	0/18		7.71E-01 - 7.50E+00	NT	9.40E-01	mg/kg
4-Chlorophenyl phenyl ether	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
4-Methyl-2-pentanone	0/14		6.00E-02 - 4.00E-01	NT	9.07E-02	mg/kg
4-Methylphenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
4-Nitrobenzenamine	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
4-Nitrophenol	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
Acenaphthene	2/18	1.00E-01 - 1.30E-01	7.71E-01 - 3.80E+00	L	1.22E-01	mg/kg
Acenaphthylene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Acetone	4/14	8.20E-01 - 4.30E+00	1.00E-01 - 8.00E-01	L	1.16E-01	mg/kg
Acrolein	0/14		1.00E-01 - 9.00E-01	NT	1.79E-01	mg/kg
Acrylonitrile	0/14		1.00E-01 - 9.00E-01	NT	1.79E-01	mg/kg
Aniline	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
Anthracene	3/18	4.00E-02 - 4.63E-01	7.71E-01 - 3.80E+00	L	2.04E-01	mg/kg
Benz(a)anthracene	4/18	2.50E-01 - 9.68E-01	7.71E-01 - 8.63E-01	N	3.81E-01	mg/kg
Benzene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Benzenemethanol	0/18		7.71E-01 - 7.50E+00	NT	9.40E-01	mg/kg
Benzidine	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
Benzo(a)pyrene	4/18	2.10E-01 - 1.00E+00	7.71E-01 - 8.63E-01	N	3.78E-01	mg/kg
Benzo(b)fluoranthene	4/18	2.00E-01 - 1.40E+00	7.71E-01 - 8.63E-01	N	3.88E-01	mg/kg
Benzo(ghi)perylene	3/18	1.20E-01 - 3.70E-01	7.71E-01 - 3.80E+00	L	2.28E-01	mg/kg
Benzo(k)fluoranthene	5/18	1.80E-01 - 9.47E-01	7.71E-01 - 8.63E-01	N	3.61E-01	mg/kg
Benzoic acid	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
Bis(2-chloroethoxy)methane	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Bis(2-chloroethyl) ether	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Bis(2-ethylhexyl)phthalate	7/18	4.10E-02 - 8.00E-02	7.71E-01 - 3.80E+00	L	7.01E-02	mg/kg
Bromodichloromethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Bromoform	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Bromomethane	0/14		1.00E-02 - 9.00E-02	NT	1.79E-02	mg/kg
Butyl benzyl phthalate	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Carbazole	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
Carbon disulfide	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Carbon tetrachloride	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Chlorobenzene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Chloroethane	0/14		1.00E-02 - 9.00E-02	NT	1.79E-02	mg/kg
Chloroform	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Chloromethane	0/14		1.00E-02 - 9.00E-02	NT	1.79E-02	mg/kg
Chrysene	4/18	2.70E-01 - 1.00E+00	7.71E-01 - 8.63E-01	N	3.82E-01	mg/kg

230622

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Di-n-butyl phthalate	6/18	4.00E-02 - 1.23E+00	7.71E-01 - 3.80E+00	L	3.65E-01	mg/kg
Di-n-octylphthalate	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Dibenz(a,h)anthracene	1/18	1.60E-01 - 1.60E-01	7.50E-01 - 3.80E+00	L	4.61E-01	mg/kg
Dibenzofuran	1/18	5.00E-02 - 5.00E-02	7.71E-01 - 3.80E+00	L	5.28E-01	mg/kg
Dibromochloromethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Dibromomethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Dichlorodifluoromethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Diethyl phthalate	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Dimethyl phthalate	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Dimethylbenzene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Diphenyldiazene	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
Ethyl cyanide	0/14		1.00E-01 - 9.00E-01	NT	1.79E-01	mg/kg
Ethyl methacrylate	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Ethylbenzene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Fluoranthene	7/18	4.00E-02 - 2.10E+00	7.71E-01 - 8.63E-01	N	3.83E-01	mg/kg
Fluorene	2/18	7.00E-02 - 9.00E-02	7.71E-01 - 3.80E+00	L	8.45E-02	mg/kg
Hexachlorobenzene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Hexachlorobutadiene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Hexachlorocyclopentadiene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Hexachloroethane	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Indeno(1,2,3-cd)pyrene	3/18	1.10E-01 - 4.20E-01	7.71E-01 - 3.80E+00	L	2.48E-01	mg/kg
Iodomethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Isophorone	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Methacrylonitrile	0/14		2.90E-02 - 2.20E-01	NT	4.75E-02	mg/kg
Methyl methacrylate	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Methylene chloride	8/14	1.40E-03 - 6.30E-02	6.00E-03 - 4.00E-02	L	8.26E-03	mg/kg
N-Nitroso-di-n-propylamine	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
N-Nitrosodimethylamine	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
N-Nitrosodiphenylamine	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Naphthalene	1/18	4.00E-02 - 4.00E-02	7.71E-01 - 3.80E+00	L	5.41E-01	mg/kg
Nitrobenzene	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Nitrobenzene-d5	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
PCB-1016	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
PCB-1221	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
PCB-1232	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
PCB-1242	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
PCB-1248	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
PCB-1254	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
PCB-1260	4/10	2.10E-02 - 3.30E+00	2.00E-02 - 2.10E-02	L	3.82E-02	mg/kg
PCB-1262	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg

530659

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1268	0/10		1.90E-02 - 9.40E-01	NT	1.12E-01	mg/kg
Pentachloroethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Pentachlorophenol	0/18		7.71E-01 - 1.90E+01	NT	2.32E+00	mg/kg
Phenanthrene	3/18	3.00E-01 - 1.27E+00	7.71E-01 - 8.63E-01	N	4.11E-01	mg/kg
Phenol	0/18		7.50E-01 - 3.80E+00	NT	5.02E-01	mg/kg
Phenol-d5	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
Polychlorinated biphenyl	4/18	2.10E-02 - 1.00E+01	2.00E-02 - 1.00E+00	L	1.13E-01	mg/kg
Pyrene	6/18	5.00E-02 - 1.80E+00	7.71E-01 - 8.63E-01	N	3.90E-01	mg/kg
Pyridine	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
Styrene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Tetrachloroethene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Toluene	3/14	2.00E-03 - 2.70E-01	6.00E-03 - 4.00E-02	L	2.63E-03	mg/kg
Trichloroethene	4/15	5.30E-03 - 2.90E+00	5.00E-01 - 1.00E+00	N	1.01E+00	mg/kg
Trichlorofluoromethane	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Vinyl acetate	0/14		6.00E-02 - 4.00E-01	NT	9.07E-02	mg/kg
Vinyl chloride	0/15		5.00E-01 - 1.00E+00	NT	8.80E-01	mg/kg
cis-1,2-Dichloroethene	2/15	9.70E-03 - 4.60E-02	5.00E-01 - 1.00E+00	N	7.50E-01	mg/kg
cis-1,3-Dichloropropene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
p-Terphenyl-d14	0/11		7.34E-01 - 8.63E-01	NT	3.93E-01	mg/kg
trans-1,2-Dichloroethene	0/15		5.00E-01 - 1.00E+00	NT	8.80E-01	mg/kg
trans-1,3-Dichloropropene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/14		6.00E-03 - 4.00E-02	NT	9.07E-03	mg/kg
Alpha activity	17/18	6.92E+00 - 4.38E+01	7.15E+00 - 7.15E+00	N	2.28E+01	pCi/g
Americium-241	1/16	2.00E-01 - 2.00E-01	1.00E-01 - 2.00E-01	N	1.13E-01	pCi/g
Beta activity	18/18	1.75E+01 - 4.90E+01		N	3.19E+01	pCi/g
Cesium-137	3/16	3.00E-01 - 5.00E-01	1.00E-01 - 1.00E-01	L	5.09E-02	pCi/g
Neptunium-237	3/16	3.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.50E-01	pCi/g
Plutonium-239	0/16		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	12/16	3.00E-01 - 3.50E+00	1.00E-01 - 2.00E-01	L	7.19E-01	pCi/g
Thorium-230	15/16	4.00E-01 - 4.20E+00	2.00E-01 - 2.00E-01	L	1.14E+00	pCi/g
Uranium-234	16/16	5.00E-01 - 7.10E+00		L	1.04E+00	pCi/g
Uranium-235	1/16	4.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.19E-01	pCi/g
Uranium-238	16/16	5.00E-01 - 9.10E+00		L	1.21E+00	pCi/g

530661

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	2/2	1.20E+04 - 1.21E+04		N	6.03E+03	mg/kg
Antimony	0/2		6.00E-01 - 6.00E-01	NT	3.00E-01	mg/kg
Arsenic	2/2	5.21E+00 - 8.10E+00		N	3.33E+00	mg/kg
Barium	2/2	9.11E+01 - 1.32E+02		N	5.58E+01	mg/kg
Beryllium	2/2	4.80E-01 - 5.20E-01		N	2.50E-01	mg/kg
Cadmium	2/2	1.60E-01 - 3.80E-01		N	1.35E-01	mg/kg
Calcium	2/2	3.92E+03 - 2.03E+04		N	6.06E+03	mg/kg
Chromium	2/2	1.48E+01 - 1.82E+01		N	8.25E+00	mg/kg
Cobalt	2/2	7.98E+00 - 8.70E+00		N	4.17E+00	mg/kg
Copper	2/2	1.80E+01 - 3.46E+01		N	1.32E+01	mg/kg
Cyanide	0/2		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	2/2	1.57E+04 - 2.05E+04		N	9.05E+03	mg/kg
Lead	2/2	1.06E+01 - 2.45E+01		N	8.78E+00	mg/kg
Magnesium	2/2	2.00E+03 - 2.43E+03		N	1.11E+03	mg/kg
Manganese	2/2	4.46E+02 - 5.55E+02		N	2.50E+02	mg/kg
Mercury	2/2	3.04E-02 - 6.28E-02		N	2.33E-02	mg/kg
Nickel	2/2	1.82E+01 - 2.28E+01		N	1.03E+01	mg/kg
Potassium	2/2	6.09E+02 - 7.51E+02		N	3.40E+02	mg/kg
Selenium	0/2		2.00E-01 - 2.00E-01	NT	1.00E-01	mg/kg
Silver	0/2		8.00E-02 - 8.00E-02	NT	4.00E-02	mg/kg
Sodium	2/2	5.73E+02 - 6.20E+02		N	2.98E+02	mg/kg
Thallium	1/2	1.20E+00 - 1.20E+00	6.00E-01 - 6.00E-01	N	4.50E-01	mg/kg
Uranium	1/1	2.74E+01 - 2.74E+01		NT	2.74E+01	mg/kg
Vanadium	2/2	2.46E+01 - 2.65E+01		N	1.28E+01	mg/kg
Zinc	2/2	4.07E+01 - 5.39E+01		N	2.37E+01	mg/kg
1,2,4-Trichlorobenzene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
1,2-Dichlorobenzene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
1,3-Dichlorobenzene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
1,4-Dichlorobenzene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2,4,5-Trichlorophenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2,4,6-Tribromophenol	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
2,4,6-Trichlorophenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2,4-Dichlorophenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2,4-Dimethylphenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Surface soil
(continued)

530662

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2,4-Dinitrophenol	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
2,4-Dinitrotoluene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2,6-Dinitrotoluene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2-Chloronaphthalene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2-Chlorophenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
2-Fluorophenol	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
2-Methyl-4,6-dinitrophenol	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
2-Methylnaphthalene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2-Methylphenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
2-Nitrobenzenamine	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
2-Nitrophenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
3,3'-Dichlorobenzidine	0/2		7.78E-01 - 2.90E+00	NT	9.20E-01	mg/kg
3-Nitrobenzenamine	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
4-Bromophenyl phenyl ether	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
4-Chloro-3-methylphenol	0/2		7.78E-01 - 2.90E+00	NT	9.20E-01	mg/kg
4-Chlorobenzenamine	0/2		7.78E-01 - 2.90E+00	NT	9.20E-01	mg/kg
4-Chlorophenyl phenyl ether	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
4-Methylphenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
4-Nitrobenzenamine	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
4-Nitrophenol	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
Acenaphthene	1/2	1.30E-01 - 1.30E-01	7.78E-01 - 7.78E-01	N	2.27E-01	mg/kg
Acenaphthylene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Aniline	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
Anthracene	1/2	2.20E-01 - 2.20E-01	7.78E-01 - 7.78E-01	N	2.50E-01	mg/kg
Benz(a)anthracene	1/2	9.60E-01 - 9.60E-01	7.78E-01 - 7.78E-01	N	4.35E-01	mg/kg
Benzenemethanol	0/2		7.78E-01 - 2.90E+00	NT	9.20E-01	mg/kg
Benzidine	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
Benzo(a)pyrene	1/2	1.00E+00 - 1.00E+00	7.78E-01 - 7.78E-01	N	4.45E-01	mg/kg
Benzo(b)fluoranthene	1/2	1.40E+00 - 1.40E+00	7.78E-01 - 7.78E-01	N	5.45E-01	mg/kg
Benzo(ghi)perylene	1/2	3.70E-01 - 3.70E-01	7.78E-01 - 7.78E-01	N	2.87E-01	mg/kg
Benzo(k)fluoranthene	2/2	2.54E-01 - 8.70E-01		N	2.81E-01	mg/kg
Benzoic acid	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg

530663

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Bis(2-chloroethoxy)methane	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Bis(2-chloroethyl) ether	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Bis(2-ethylhexyl)phthalate	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Butyl benzyl phthalate	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Carbazole	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
Chrysene	1/2	1.00E+00 - 1.00E+00	7.78E-01 - 7.78E-01	N	4.45E-01	mg/kg
Di-n-butyl phthalate	2/2	6.19E-01 - 1.23E+00		N	4.62E-01	mg/kg
Di-n-octylphthalate	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Dibenz(a,h)anthracene	1/2	1.60E-01 - 1.60E-01	7.78E-01 - 7.78E-01	N	2.35E-01	mg/kg
Dibenzofuran	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Diethyl phthalate	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Dimethyl phthalate	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Diphenyldiazene	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
Fluoranthene	2/2	2.24E-01 - 2.10E+00		N	5.81E-01	mg/kg
Fluorene	1/2	9.00E-02 - 9.00E-02	7.78E-01 - 7.78E-01	N	2.17E-01	mg/kg
Hexachlorobenzene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Hexachlorobutadiene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Hexachlorocyclopentadiene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Hexachloroethane	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/2	4.20E-01 - 4.20E-01	7.78E-01 - 7.78E-01	N	3.00E-01	mg/kg
Isophorone	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
N-Nitroso-di-n-propylamine	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
N-Nitrosodimethylamine	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
N-Nitrosodiphenylamine	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Naphthalene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Nitrobenzene	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Nitrobenzene-d5	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
PCB-1016	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
PCB-1221	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
PCB-1232	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
PCB-1242	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
PCB-1248	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg

530664

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=East MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1254	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
PCB-1260	1/1	3.30E+00 - 3.30E+00		NT	3.30E+00	mg/kg
PCB-1262	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
PCB-1268	0/1		9.40E-01 - 9.40E-01	NT	9.40E-01	mg/kg
Pentachlorophenol	0/2		7.78E-01 - 7.30E+00	NT	2.02E+00	mg/kg
Phenanthrene	1/2	1.20E+00 - 1.20E+00	7.78E-01 - 7.78E-01	N	4.95E-01	mg/kg
Phenol	0/2		7.78E-01 - 1.50E+00	NT	5.70E-01	mg/kg
Phenol-d5	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
Polychlorinated biphenyl	1/2	1.00E+01 - 1.00E+01	1.00E+00 - 1.00E+00	N	2.75E+00	mg/kg
Pyrene	2/2	2.27E-01 - 1.80E+00		N	5.07E-01	mg/kg
Pyridine	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
p-Terphenyl-d14	0/2		7.37E-01 - 7.78E-01	NT	3.79E-01	mg/kg
Alpha activity	1/2	3.32E+01 - 3.32E+01	7.15E+00 - 7.15E+00	N	2.02E+01	pCi/g
Americium-241	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	2/2	3.36E+01 - 4.27E+01		N	3.82E+01	pCi/g
Cesium-137	1/1	5.00E-01 - 5.00E-01		NT	5.00E-01	pCi/g
Neptunium-237	1/1	4.00E-01 - 4.00E-01		NT	4.00E-01	pCi/g
Plutonium-239	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	1/1	3.50E+00 - 3.50E+00		NT	3.50E+00	pCi/g
Thorium-230	1/1	4.20E+00 - 4.20E+00		NT	4.20E+00	pCi/g
Uranium-234	1/1	7.10E+00 - 7.10E+00		NT	7.10E+00	pCi/g
Uranium-235	1/1	4.00E-01 - 4.00E-01		NT	4.00E-01	pCi/g
Uranium-238	1/1	9.10E+00 - 9.10E+00		NT	9.10E+00	pCi/g

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	7/7	1.12E+04 - 1.57E+04		L	6.69E+03	mg/kg
Antimony	5/7	6.00E-01 - 2.90E+00	6.00E-01 - 1.00E+00	L	1.51E+00	mg/kg
Arsenic	7/7	6.58E+00 - 1.83E+01		L	5.26E+00	mg/kg
Barium	7/7	9.20E+01 - 1.47E+02		L	5.49E+01	mg/kg
Beryllium	7/7	5.00E-01 - 1.20E+00		L	3.70E-01	mg/kg
Cadmium	3/7	2.20E-01 - 4.10E-01	2.00E-02 - 2.00E-02	N	6.86E-02	mg/kg
Calcium	7/7	1.77E+03 - 9.63E+04		L	2.29E+04	mg/kg
Chromium	7/7	1.53E+01 - 2.49E+01		L	1.00E+01	mg/kg
Cobalt	7/7	5.90E+00 - 1.27E+01		L	4.07E+00	mg/kg

530665

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Copper	7/7	1.04E+01 - 2.03E+01		L	6.80E+00	mg/kg
Cyanide	0/7		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	7/7	1.62E+04 - 3.44E+04		L	1.19E+04	mg/kg
Lead	7/7	1.14E+01 - 2.96E+01		N	9.06E+00	mg/kg
Magnesium	7/7	1.47E+03 - 5.14E+03		L	1.39E+03	mg/kg
Manganese	7/7	3.23E+02 - 1.37E+03		L	4.03E+02	mg/kg
Mercury	3/7	1.82E-02 - 2.38E-02	8.60E-03 - 9.50E-03	N	6.96E-03	mg/kg
Nickel	7/7	9.10E+00 - 1.86E+01		L	6.47E+00	mg/kg
Potassium	7/7	3.42E+02 - 1.14E+03		L	3.70E+02	mg/kg
Selenium	2/7	5.00E-01 - 7.00E-01	2.00E-01 - 2.00E-01	N	1.57E-01	mg/kg
Silver	3/7	1.40E-01 - 6.60E-01	8.00E-02 - 2.00E-01	L	1.51E-01	mg/kg
Sodium	7/7	2.58E+02 - 6.74E+02		N	2.17E+02	mg/kg
Thallium	1/7	9.00E-01 - 9.00E-01	6.00E-01 - 1.00E+00	N	3.50E-01	mg/kg
Uranium	6/6	3.28E+00 - 2.62E+01		N	1.17E+01	mg/kg
Vanadium	7/7	2.83E+01 - 5.98E+01		L	1.93E+01	mg/kg
Zinc	7/7	3.32E+01 - 5.66E+01		N	2.50E+01	mg/kg
1,1-Dichloroethene	0/1		2.00E-01 - 2.00E-01	NT	1.00E-01	mg/kg
1,2,4-Trichlorobenzene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
1,2-Dichlorobenzene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
1,3-Dichlorobenzene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
1,4-Dichlorobenzene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2,4,5-Trichlorophenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2,4,6-Tribromophenol	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
2,4,6-Trichlorophenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2,4-Dichlorophenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2,4-Dimethylphenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2,4-Dinitrophenol	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
2,4-Dinitrotoluene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2,6-Dinitrotoluene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2-Chloronaphthalene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2-Chlorophenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
2-Fluorophenol	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
2-Methyl-4,6-dinitrophenol	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
2-Methylnaphthalene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2-Methylphenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
2-Nitrobenzenamine	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
2-Nitrophenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
3,3'-Dichlorobenzidine	0/7		7.22E-01 - 1.60E+00	NT	7.09E-01	mg/kg
3-Nitrobenzenamine	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Bromophenyl phenyl ether	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
4-Chloro-3-methylphenol	0/7		7.22E-01 - 1.60E+00	NT	7.09E-01	mg/kg
4-Chlorobenzenamine	0/7		7.22E-01 - 1.60E+00	NT	7.09E-01	mg/kg
4-Chlorophenyl phenyl ether	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
4-Methylphenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
4-Nitrobenzenamine	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
4-Nitrophenol	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
Acenaphthene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Acenaphthylene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Aniline	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
Anthracene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Benz(a)anthracene	2/7	4.00E-02 - 1.30E-01	7.22E-01 - 8.10E-01	N	2.90E-01	mg/kg
Benzenemethanol	0/7		7.22E-01 - 1.60E+00	NT	7.09E-01	mg/kg
Benzidine	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
Benzo(a)pyrene	2/7	4.00E-02 - 1.50E-01	7.22E-01 - 8.10E-01	N	2.91E-01	mg/kg
Benzo(b)fluoranthene	2/7	4.00E-02 - 1.80E-01	7.22E-01 - 8.10E-01	N	2.93E-01	mg/kg
Benzo(ghi)perylene	1/7	6.20E-02 - 6.20E-02	7.22E-01 - 8.10E-01	N	3.35E-01	mg/kg
Benzo(k)fluoranthene	2/7	5.00E-02 - 1.50E-01	7.22E-01 - 8.10E-01	N	2.92E-01	mg/kg
Benzoic acid	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
Bis(2-chloroethoxy)methane	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Bis(2-chloroethyl) ether	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Bis(2-ethylhexyl)phthalate	2/7	7.00E-02 - 7.00E-02	7.22E-01 - 8.10E-01	N	2.79E-01	mg/kg
Butyl benzyl phthalate	1/7	4.00E-02 - 4.00E-02	7.22E-01 - 8.10E-01	N	3.29E-01	mg/kg
Carbazole	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
Chrysene	2/7	4.00E-02 - 1.50E-01	7.22E-01 - 8.10E-01	N	2.91E-01	mg/kg
Di-n-butyl phthalate	3/7	5.00E-02 - 1.21E+00	7.40E-01 - 8.10E-01	N	3.13E-01	mg/kg
Di-n-octylphthalate	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Dibenz(a,h)anthracene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Dibenzofuran	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Diethyl phthalate	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Dimethyl phthalate	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Diphenyldiazene	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
Fluoranthene	3/7	6.00E-02 - 2.20E-01	7.22E-01 - 8.10E-01	L	1.39E-01	mg/kg
Fluorene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Hexachlorobenzene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Hexachlorobutadiene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Hexachlorocyclopentadiene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Hexachloroethane	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/7	6.70E-02 - 6.70E-02	7.22E-01 - 8.10E-01	N	3.35E-01	mg/kg

530667

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Isophorone	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
N-Nitroso-di-n-propylamine	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
N-Nitrosodimethylamine	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
N-Nitrosodiphenylamine	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Naphthalene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Nitrobenzene	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Nitrobenzene-d5	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
PCB-1016	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1221	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1232	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1242	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1248	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1254	1/6	3.80E-02 - 3.80E-02	1.90E-02 - 2.10E-02	N	2.30E-02	mg/kg
PCB-1260	2/6	5.60E-03 - 3.80E-02	1.90E-02 - 2.10E-02	N	2.08E-02	mg/kg
PCB-1262	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1268	0/6		1.90E-02 - 2.10E-02	NT	1.98E-02	mg/kg
Pentachlorophenol	0/7		7.22E-01 - 4.10E+00	NT	1.70E+00	mg/kg
Phenanthrene	2/7	4.00E-02 - 7.00E-02	7.22E-01 - 8.10E-01	N	2.85E-01	mg/kg
Phenol	0/7		7.22E-01 - 8.10E-01	NT	3.84E-01	mg/kg
Phenol-d5	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
Polychlorinated biphenyl	2/7	5.60E-03 - 7.60E-02	1.00E+00 - 1.00E+00	L	3.87E-02	mg/kg
Pyrene	3/7	6.00E-02 - 2.20E-01	7.22E-01 - 8.10E-01	L	1.30E-01	mg/kg
Pyridine	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
Trichloroethene	0/1		2.00E-01 - 2.00E-01	NT	2.00E-01	mg/kg
Vinyl chloride	0/1		2.00E-01 - 2.00E-01	NT	2.00E-01	mg/kg
cis-1,2-Dichloroethene	0/1		2.00E-01 - 2.00E-01	NT	2.00E-01	mg/kg
p-Terphenyl-d14	0/7		6.71E-01 - 7.98E-01	NT	3.76E-01	mg/kg
trans-1,2-Dichloroethene	0/1		2.00E-01 - 2.00E-01	NT	2.00E-01	mg/kg
Alpha activity	13/16	6.80E+00 - 4.43E+01	-2.11E-01 - 5.64E+00	N	1.73E+01	pCi/g
Americium-241	3/6	2.00E-01 - 1.30E+00	1.00E-01 - 1.00E-01	N	4.67E-01	pCi/g
Beta activity	13/16	1.72E+01 - 5.57E+01	5.14E+00 - 8.46E+00	N	2.82E+01	pCi/g
Cesium-137	2/6	2.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.67E-01	pCi/g
Neptunium-237	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Plutonium-239	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	6/6	3.00E-01 - 2.90E+00		N	1.00E+00	pCi/g
Thorium-230	6/6	8.00E-01 - 1.40E+00		N	1.12E+00	pCi/g
Uranium-234	6/6	1.00E+00 - 7.90E+00		N	3.45E+00	pCi/g
Uranium-235	2/6	3.00E-01 - 5.00E-01	1.00E-01 - 1.00E-01	N	2.00E-01	pCi/g
Uranium-238	6/6	1.10E+00 - 8.70E+00		N	3.90E+00	pCi/g

530668

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	2/2	1.12E+04 - 1.57E+04		N	6.73E+03	mg/kg
Antimony	2/2	6.00E-01 - 2.90E+00		N	8.75E-01	mg/kg
Arsenic	2/2	7.11E+00 - 7.60E+00		N	3.68E+00	mg/kg
Barium	2/2	9.40E+01 - 1.47E+02		N	6.03E+01	mg/kg
Beryllium	2/2	5.60E-01 - 6.10E-01		N	2.93E-01	mg/kg
Cadmium	0/2		2.00E-02 - 2.00E-02	NT	1.00E-02	mg/kg
Calcium	2/2	4.29E+03 - 1.49E+04		N	4.80E+03	mg/kg
Chromium	2/2	1.53E+01 - 1.68E+01		N	8.03E+00	mg/kg
Cobalt	2/2	6.16E+00 - 9.38E+00		N	3.89E+00	mg/kg
Copper	2/2	1.04E+01 - 1.26E+01		N	5.75E+00	mg/kg
Cyanide	0/2		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	2/2	1.62E+04 - 1.97E+04		N	8.98E+03	mg/kg
Lead	2/2	1.14E+01 - 1.25E+01		N	5.98E+00	mg/kg
Magnesium	2/2	1.47E+03 - 2.25E+03		N	9.30E+02	mg/kg
Manganese	2/2	6.00E+02 - 6.88E+02		N	3.22E+02	mg/kg
Mercury	1/2	1.82E-02 - 1.82E-02	8.60E-03 - 8.60E-03	N	6.70E-03	mg/kg
Nickel	2/2	9.90E+00 - 1.62E+01		N	6.53E+00	mg/kg
Potassium	2/2	3.42E+02 - 9.10E+02		N	3.13E+02	mg/kg
Selenium	0/2		2.00E-01 - 2.00E-01	NT	1.00E-01	mg/kg
Silver	1/2	1.40E-01 - 1.40E-01	8.00E-02 - 8.00E-02	N	5.50E-02	mg/kg
Sodium	2/2	2.58E+02 - 2.58E+02		N	1.29E+02	mg/kg
Thallium	0/2		6.00E-01 - 6.00E-01	NT	3.00E-01	mg/kg
Uranium	2/2	5.97E+00 - 2.62E+01		N	1.61E+01	mg/kg
Vanadium	2/2	2.83E+01 - 2.91E+01		N	1.44E+01	mg/kg
Zinc	2/2	3.32E+01 - 4.55E+01		N	1.97E+01	mg/kg
1,2,4-Trichlorobenzene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
1,2-Dichlorobenzene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
1,3-Dichlorobenzene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
1,4-Dichlorobenzene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2,4,5-Trichlorophenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2,4,6-Tribromophenol	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
2,4,6-Trichlorophenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2,4-Dichlorophenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2,4-Dimethylphenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2,4-Dinitrophenol	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
2,4-Dinitrotoluene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2,6-Dinitrotoluene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2-Chloronaphthalene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2-Chlorophenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
2-Fluorophenol	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2-Methyl-4,6-dinitrophenol	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
2-Methylnaphthalene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2-Methylphenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
2-Nitrobenzenamine	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
2-Nitrophenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
3,3'-Dichlorobenzidine	0/2		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
3-Nitrobenzenamine	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
4-Bromophenyl phenyl ether	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
4-Chloro-3-methylphenol	0/2		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorobenzenamine	0/2		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorophenyl phenyl ether	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
4-Methylphenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
4-Nitrobenzenamine	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
4-Nitrophenol	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
Acenaphthene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Acenaphthylene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Aniline	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
Anthracene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Benz(a)anthracene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Benzenemethanol	0/2		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
Benzidine	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
Benzo(a)pyrene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Benzo(b)fluoranthene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Benzo(ghi)perylene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Benzo(k)fluoranthene	1/2	5.00E-02 - 5.00E-02	7.46E-01 - 7.46E-01	N	1.99E-01	mg/kg
Benzoic acid	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
Bis(2-chloroethoxy)methane	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Bis(2-chloroethyl) ether	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Bis(2-ethylhexyl)phthalate	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Butyl benzyl phthalate	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Carbazole	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
Chrysene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Di-n-butyl phthalate	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Di-n-octylphthalate	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Dibenz(a,h)anthracene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Dibenzofuran	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Diethyl phthalate	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Dimethyl phthalate	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Diphenyldiazene	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg

530670

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Fluoranthene	2/2	6.00E-02 - 9.00E-02		N	3.75E-02	mg/kg
Fluorene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Hexachlorobenzene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Hexachlorobutadiene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Hexachlorocyclopentadiene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Hexachloroethane	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Indeno(1,2,3-cd)pyrene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Isophorone	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
N-Nitroso-di-n-propylamine	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
N-Nitrosodimethylamine	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
N-Nitrosodiphenylamine	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Naphthalene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Nitrobenzene	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Nitrobenzene-d5	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
PCB-1016	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1221	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1232	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1242	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1248	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1254	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1260	1/2	5.60E-03 - 5.60E-03	1.90E-02 - 1.90E-02	N	1.23E-02	mg/kg
PCB-1262	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1268	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
Pentachlorophenol	0/2		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
Phenanthrene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Phenol	0/2		7.40E-01 - 7.46E-01	NT	3.72E-01	mg/kg
Phenol-d5	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
Polychlorinated biphenyl	1/2	5.60E-03 - 5.60E-03	1.00E+00 - 1.00E+00	N	2.51E-01	mg/kg
Pyrene	2/2	6.00E-02 - 7.00E-02		N	3.25E-02	mg/kg
Pyridine	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
p-Terphenyl-d14	0/2		6.71E-01 - 7.46E-01	NT	3.54E-01	mg/kg
Alpha activity	7/10	6.80E+00 - 4.43E+01	-2.11E-01 - 5.64E+00	N	1.43E+01	pCi/g
Americium-241	1/2	1.00E+00 - 1.00E+00	1.00E-01 - 1.00E-01	N	5.50E-01	pCi/g
Beta activity	7/10	1.72E+01 - 5.57E+01	5.14E+00 - 8.46E+00	L	2.47E+01	pCi/g
Cesium-137	1/2	4.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	2.50E-01	pCi/g
Neptunium-237	0/2		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Plutonium-239	0/2		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	2/2	1.00E+00 - 1.00E+00		N	1.00E+00	pCi/g
Thorium-230	2/2	1.20E+00 - 1.30E+00		N	1.25E+00	pCi/g
Uranium-234	2/2	1.90E+00 - 7.90E+00		N	4.90E+00	pCi/g

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

530671

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium-235	1/2	5.00E-01 - 5.00E-01	1.00E-01 - 1.00E-01	N	3.00E-01	pCi/g
Uranium-238	2/2	2.00E+00 - 8.70E+00		N	5.35E+00	pCi/g

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	11/11	7.20E+03 - 1.61E+04		N	6.77E+03	mg/kg
Antimony	9/11	6.00E-01 - 1.40E+00	6.00E-01 - 7.00E-01	L	1.01E+00	mg/kg
Arsenic	11/11	4.66E+00 - 1.08E+01		N	3.94E+00	mg/kg
Barium	11/11	5.96E+01 - 1.66E+02		N	5.40E+01	mg/kg
Beryllium	11/11	4.20E-01 - 9.80E-01		L	3.14E-01	mg/kg
Cadmium	8/11	3.00E-02 - 9.00E-01	2.00E-02 - 3.00E-02	L	1.27E-01	mg/kg
Calcium	11/11	1.55E+03 - 4.16E+04		L	5.54E+03	mg/kg
Chromium	11/11	1.27E+01 - 1.41E+02		L	1.96E+01	mg/kg
Cobalt	11/11	4.80E+00 - 1.60E+01		L	4.19E+00	mg/kg
Copper	11/11	8.40E+00 - 9.52E+03		L	2.17E+02	mg/kg
Cyanide	0/11		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	11/11	1.20E+04 - 5.17E+04		L	1.16E+04	mg/kg
Lead	11/11	6.70E+00 - 8.75E+01		L	9.36E+00	mg/kg
Magnesium	11/11	1.29E+03 - 3.66E+03		L	9.39E+02	mg/kg
Manganese	11/11	2.93E+02 - 8.90E+02		N	3.01E+02	mg/kg
Mercury	9/11	1.36E-02 - 4.57E-01	9.50E-03 - 9.60E-03	L	4.67E-02	mg/kg
Nickel	11/11	8.00E+00 - 1.76E+04		L	3.33E+02	mg/kg
Potassium	11/11	2.84E+02 - 8.42E+02		L	2.30E+02	mg/kg
Selenium	4/11	3.00E-01 - 1.00E+00	2.00E-01 - 2.00E-01	L	2.72E-01	mg/kg
Silver	7/11	1.00E-01 - 4.12E+00	8.00E-02 - 9.00E-02	L	3.77E-01	mg/kg
Sodium	11/11	2.16E+02 - 1.17E+03		L	2.18E+02	mg/kg
Thallium	1/11	6.00E-01 - 6.00E-01	5.00E-01 - 3.00E+00	L	3.91E-01	mg/kg
Uranium	9/9	2.09E+00 - 4.26E+02		L	1.15E+02	mg/kg
Vanadium	11/11	1.94E+01 - 3.61E+01		N	1.46E+01	mg/kg
Zinc	11/11	3.42E+01 - 1.81E+02		L	2.77E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,1,1-Trichloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,1,2-Trichloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,1-Dichloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg

530672

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,1-Dichloroethene	0/12		6.00E-03 - 1.00E+00	NT	3.13E-01	mg/kg
1,2,3-Trichloropropane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,2,4-Trichlorobenzene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
1,2-Dibromoethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,2-Dichlorobenzene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
1,2-Dichloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,2-Dichloropropane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
1,3-Dichlorobenzene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
1,4-Dichlorobenzene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2,4,5-Trichlorophenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2,4,6-Tribromophenol	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
2,4,6-Trichlorophenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2,4-Dichlorophenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2,4-Dimethylphenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2,4-Dinitrophenol	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
2,4-Dinitrotoluene	1/12	4.57E-01 - 4.57E-01	7.00E-01 - 9.16E-01	N	3.82E-01	mg/kg
2,6-Dinitrotoluene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2-Butanone	0/9		1.00E-01 - 9.00E-01	NT	1.33E-01	mg/kg
2-Chloro-1,3-butadiene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
2-Chloroethyl vinyl ether	0/9		1.00E-02 - 9.00E-02	NT	1.33E-02	mg/kg
2-Chloronaphthalene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2-Chlorophenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
2-Fluorophenol	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
2-Hexanone	0/9		5.00E-02 - 4.00E-01	NT	6.78E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
2-Methylnaphthalene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2-Methylphenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2-Nitrobenzenamine	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
2-Nitrophenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
2-Propanol	0/9		5.00E-02 - 4.00E-01	NT	6.78E-02	mg/kg
3,3'-Dichlorobenzidine	0/12		9.16E-01 - 1.70E+00	NT	7.47E-01	mg/kg
3-Nitrobenzenamine	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
4-Bromophenyl phenyl ether	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
4-Chloro-3-methylphenol	0/12		9.16E-01 - 1.70E+00	NT	7.47E-01	mg/kg
4-Chlorobenzenamine	0/12		9.16E-01 - 1.70E+00	NT	7.47E-01	mg/kg
4-Chlorophenyl phenyl ether	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
4-Methyl-2-pentanone	0/9		5.00E-02 - 4.00E-01	NT	6.78E-02	mg/kg
4-Methylphenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
4-Nitrobenzenamine	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg

530673

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Nitrophenol	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
Acenaphthene	1/12	5.00E-02 - 5.00E-02	7.00E-01 - 9.16E-01	N	3.72E-01	mg/kg
Acenaphthylene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Acetone	2/9	8.90E-01 - 1.10E+00	1.00E-01 - 1.00E-01	N	1.49E-01	mg/kg
Acrolein	0/9		1.00E-01 - 9.00E-01	NT	1.33E-01	mg/kg
Acrylonitrile	0/9		1.00E-01 - 9.00E-01	NT	1.33E-01	mg/kg
Aniline	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
Anthracene	1/12	1.60E-01 - 1.60E-01	7.00E-01 - 9.16E-01	N	3.76E-01	mg/kg
Benz(a)anthracene	3/12	8.00E-02 - 3.40E-01	7.00E-01 - 9.16E-01	N	3.28E-01	mg/kg
Benzene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Benzenemethanol	0/12		9.16E-01 - 1.70E+00	NT	7.47E-01	mg/kg
Benzidine	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
Benzo(a)pyrene	3/12	8.00E-02 - 2.80E-01	7.00E-01 - 9.16E-01	N	3.25E-01	mg/kg
Benzo(b)fluoranthene	3/12	9.00E-02 - 2.60E-01	7.00E-01 - 9.16E-01	N	3.24E-01	mg/kg
Benzo(ghi)perylene	3/12	5.50E-02 - 1.30E-01	7.00E-01 - 9.16E-01	N	3.16E-01	mg/kg
Benzo(k)fluoranthene	3/12	7.00E-02 - 2.90E-01	7.00E-01 - 9.16E-01	N	3.25E-01	mg/kg
Benzoic acid	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
Bis(2-chloroethoxy)methane	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Bis(2-chloroethyl) ether	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Bis(2-ethylhexyl)phthalate	8/12	4.00E-02 - 1.20E-01	7.10E-01 - 9.16E-01	L	7.28E-02	mg/kg
Bromodichloromethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Bromoform	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Bromomethane	0/9		1.00E-02 - 9.00E-02	NT	1.33E-02	mg/kg
Butyl benzyl phthalate	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Carbazole	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
Carbon disulfide	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Carbon tetrachloride	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Chlorobenzene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Chloroethane	0/9		1.00E-02 - 9.00E-02	NT	1.33E-02	mg/kg
Chloroform	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Chloromethane	0/9		1.00E-02 - 9.00E-02	NT	1.33E-02	mg/kg
Chrysene	3/12	9.00E-02 - 3.50E-01	7.00E-01 - 9.16E-01	N	3.29E-01	mg/kg
Di-n-butyl phthalate	6/12	4.00E-02 - 1.86E+00	7.00E-01 - 8.70E-01	N	4.84E-01	mg/kg
Di-n-octylphthalate	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Dibenz(a,h)anthracene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Dibenzofuran	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Dibromochloromethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Dibromomethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Dichlorodifluoromethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg

530674

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Diethyl phthalate	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Dimethyl phthalate	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Dimethylbenzene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Diphenyldiazene	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
Ethyl cyanide	0/9		1.00E-01 - 9.00E-01	NT	1.33E-01	mg/kg
Ethyl methacrylate	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Ethylbenzene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Fluoranthene	4/12	4.00E-02 - 8.40E-01	7.00E-01 - 9.16E-01	N	3.31E-01	mg/kg
Fluorene	1/12	5.00E-02 - 5.00E-02	7.00E-01 - 9.16E-01	N	3.72E-01	mg/kg
Hexachlorobenzene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Hexachlorobutadiene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Hexachlorocyclopentadiene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Hexachloroethane	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Indeno(1,2,3-cd)pyrene	3/12	5.00E-02 - 1.40E-01	7.00E-01 - 9.16E-01	N	3.16E-01	mg/kg
Iodomethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Isophorone	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Methacrylonitrile	0/9		2.60E-02 - 2.10E-01	NT	3.50E-02	mg/kg
Methyl methacrylate	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Methylene chloride	5/9	1.40E-03 - 1.70E-02	5.00E-03 - 7.00E-03	L	5.00E-03	mg/kg
N-Nitroso-di-n-propylamine	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
N-Nitrosodimethylamine	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
N-Nitrosodiphenylamine	1/12	8.23E-01 - 8.23E-01	7.00E-01 - 9.16E-01	N	3.99E-01	mg/kg
Naphthalene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Nitrobenzene	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Nitrobenzene-d5	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
PCB-1016	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
PCB-1221	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
PCB-1232	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
PCB-1242	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
PCB-1248	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
PCB-1254	1/9	3.20E-02 - 3.20E-02	1.80E-02 - 2.20E-02	L	2.15E-02	mg/kg
PCB-1260	1/9	6.30E-02 - 6.30E-02	1.80E-02 - 2.20E-02	L	2.48E-02	mg/kg
PCB-1262	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
PCB-1268	0/9		1.80E-02 - 2.20E-02	NT	2.02E-02	mg/kg
Pentachloroethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Pentachlorophenol	0/12		9.16E-01 - 4.40E+00	NT	1.83E+00	mg/kg
Phenanthrene	3/12	1.10E-01 - 7.00E-01	7.00E-01 - 9.16E-01	N	3.45E-01	mg/kg
Phenol	0/12		7.00E-01 - 9.16E-01	NT	3.99E-01	mg/kg
Phenol-d5	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
Polychlorinated biphenyl	2/11	3.20E-02 - 6.30E-02	1.00E+00 - 1.00E+00	L	5.32E-02	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Pyrene	3/12	1.50E-01 - 7.10E-01	7.00E-01 - 9.16E-01	N	3.50E-01	mg/kg
Pyridine	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
Styrene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Tetrachloroethene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Toluene	3/9	1.60E-03 - 3.20E-01	6.00E-03 - 7.00E-03	L	6.69E-03	mg/kg
Trichloroethene	2/12	3.10E-03 - 3.40E-02	1.49E-03 - 1.00E+00	N	4.95E-01	mg/kg
Trichlorofluoromethane	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Vinyl acetate	0/9		5.00E-02 - 4.00E-01	NT	6.78E-02	mg/kg
Vinyl chloride	0/12		1.00E-02 - 1.00E+00	NT	6.26E-01	mg/kg
cis-1,2-Dichloroethene	2/12	4.40E-03 - 1.50E-02	6.00E-03 - 1.00E+00	N	4.94E-01	mg/kg
cis-1,3-Dichloropropene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
p-Terphenyl-d14	0/9		7.09E-01 - 9.16E-01	NT	3.97E-01	mg/kg
trans-1,2-Dichloroethene	0/12		6.00E-03 - 1.00E+00	NT	6.26E-01	mg/kg
trans-1,3-Dichloropropene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/9		5.00E-03 - 4.00E-02	NT	6.78E-03	mg/kg
Alpha activity	17/27	6.03E+00 - 8.78E+02	5.33E-01 - 5.67E+00	L	1.64E+01	pCi/g
Americium-241	2/9	2.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	L	6.45E-02	pCi/g
Beta activity	25/27	9.64E+00 - 8.08E+03	3.48E+00 - 7.90E+00	L	7.30E+01	pCi/g
Cesium-137	6/9	2.00E-01 - 1.11E+01	1.00E-01 - 1.00E-01	L	8.76E-01	pCi/g
Neptunium-237	5/9	2.00E-01 - 5.26E+01	1.00E-01 - 1.00E-01	L	7.50E-01	pCi/g
Plutonium-239	4/9	2.00E-01 - 1.12E+01	1.00E-01 - 1.00E-01	L	2.93E-01	pCi/g
Technetium-99	9/9	3.00E-01 - 4.84E+03		L	1.06E+03	pCi/g
Thorium-230	9/9	7.00E-01 - 1.88E+01		L	2.99E+00	pCi/g
Uranium-234	9/9	7.00E-01 - 1.02E+02		L	1.57E+01	pCi/g
Uranium-235	3/9	2.00E-01 - 4.90E+00	1.00E-01 - 1.00E-01	L	1.40E-01	pCi/g
Uranium-238	9/9	7.00E-01 - 1.42E+02		L	3.85E+01	pCi/g

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	2/2	7.20E+03 - 1.29E+04		N	5.03E+03	mg/kg
Antimony	2/2	6.00E-01 - 1.40E+00		N	5.00E-01	mg/kg
Arsenic	2/2	4.66E+00 - 1.01E+01		N	3.69E+00	mg/kg
Barium	2/2	6.63E+01 - 1.01E+02		N	4.18E+01	mg/kg
Beryllium	2/2	4.20E-01 - 6.90E-01		N	2.78E-01	mg/kg
Cadmium	2/2	5.00E-02 - 3.00E-01		N	8.75E-02	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Calcium	2/2	9.08E+03 - 4.16E+04		N	1.27E+04	mg/kg
Chromium	2/2	1.27E+01 - 2.72E+01		N	9.98E+00	mg/kg
Cobalt	2/2	6.81E+00 - 8.86E+00		N	3.92E+00	mg/kg
Copper	2/2	8.80E+00 - 1.40E+01		N	5.70E+00	mg/kg
Cyanide	0/2		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	2/2	1.20E+04 - 2.13E+04		N	8.33E+03	mg/kg
Lead	2/2	9.40E+00 - 1.60E+01		N	6.35E+00	mg/kg
Magnesium	2/2	1.29E+03 - 3.66E+03		N	1.24E+03	mg/kg
Manganese	2/2	4.25E+02 - 7.36E+02		N	2.90E+02	mg/kg
Mercury	2/2	2.06E-02 - 4.93E-02		N	1.75E-02	mg/kg
Nickel	2/2	9.00E+00 - 1.43E+01		N	5.83E+00	mg/kg
Potassium	2/2	2.84E+02 - 4.77E+02		N	1.90E+02	mg/kg
Selenium	1/2	3.00E-01 - 3.00E-01	2.00E-01 - 2.00E-01	N	1.25E-01	mg/kg
Silver	2/2	1.00E-01 - 3.00E-01		N	1.00E-01	mg/kg
Sodium	2/2	2.51E+02 - 2.54E+02		N	1.26E+02	mg/kg
Thallium	1/2	6.00E-01 - 6.00E-01	6.00E-01 - 6.00E-01	N	3.00E-01	mg/kg
Uranium	2/2	8.06E+00 - 1.38E+01		N	1.09E+01	mg/kg
Vanadium	2/2	1.94E+01 - 3.61E+01		N	1.39E+01	mg/kg
Zinc	2/2	3.42E+01 - 3.78E+01		N	1.80E+01	mg/kg
1,2,4-Trichlorobenzene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
1,2-Dichlorobenzene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
1,3-Dichlorobenzene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
1,4-Dichlorobenzene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2,4,5-Trichlorophenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2,4,6-Tribromophenol	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
2,4,6-Trichlorophenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2,4-Dichlorophenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2,4-Dimethylphenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2,4-Dinitrophenol	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
2,4-Dinitrotoluene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2,6-Dinitrotoluene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2-Chloronaphthalene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2-Chlorophenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
2-Fluorophenol	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
2-Methyl-4,6-dinitrophenol	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
2-Methylnaphthalene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2-Methylphenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
2-Nitrobenzenamine	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
2-Nitrophenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
3,3'-Dichlorobenzidine	0/2		1.40E+00 - 1.40E+00	NT	7.00E-01	mg/kg
3-Nitrobenzenamine	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
4-Bromophenyl phenyl ether	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
4-Chloro-3-methylphenol	0/2		1.40E+00 - 1.40E+00	NT	7.00E-01	mg/kg
4-Chlorobenzenamine	0/2		1.40E+00 - 1.40E+00	NT	7.00E-01	mg/kg
4-Chlorophenyl phenyl ether	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
4-Methylphenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
4-Nitrobenzenamine	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
4-Nitrophenol	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
Acenaphthene	1/2	5.00E-02 - 5.00E-02	7.30E-01 - 7.30E-01	N	1.95E-01	mg/kg
Acenaphthylene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Aniline	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
Anthracene	1/2	1.60E-01 - 1.60E-01	7.30E-01 - 7.30E-01	N	2.23E-01	mg/kg
Benz(a)anthracene	1/2	3.40E-01 - 3.40E-01	7.30E-01 - 7.30E-01	N	2.68E-01	mg/kg
Benzenemethanol	0/2		1.40E+00 - 1.40E+00	NT	7.00E-01	mg/kg
Benzidine	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
Benzo(a)pyrene	1/2	2.80E-01 - 2.80E-01	7.30E-01 - 7.30E-01	N	2.53E-01	mg/kg
Benzo(b)fluoranthene	1/2	2.60E-01 - 2.60E-01	7.30E-01 - 7.30E-01	N	2.48E-01	mg/kg
Benzo(ghi)perylene	1/2	1.30E-01 - 1.30E-01	7.30E-01 - 7.30E-01	N	2.15E-01	mg/kg
Benzo(k)fluoranthene	1/2	2.90E-01 - 2.90E-01	7.30E-01 - 7.30E-01	N	2.55E-01	mg/kg
Benzoic acid	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
Bis(2-chloroethoxy)methane	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Bis(2-chloroethyl) ether	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Bis(2-ethylhexyl)phthalate	1/2	8.00E-02 - 8.00E-02	7.10E-01 - 7.10E-01	N	1.98E-01	mg/kg
Butyl benzyl phthalate	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Carbazole	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
Chrysene	1/2	3.50E-01 - 3.50E-01	7.30E-01 - 7.30E-01	N	2.70E-01	mg/kg
Di-n-butyl phthalate	1/2	4.00E-02 - 4.00E-02	7.10E-01 - 7.10E-01	N	1.88E-01	mg/kg
Di-n-octylphthalate	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Dibenz(a,h)anthracene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Dibenzofuran	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Diethyl phthalate	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Dimethyl phthalate	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Diphenyldiazene	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
Fluoranthene	2/2	4.00E-02 - 8.40E-01		N	2.20E-01	mg/kg
Fluorene	1/2	5.00E-02 - 5.00E-02	7.30E-01 - 7.30E-01	N	1.95E-01	mg/kg
Hexachlorobenzene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Hexachlorobutadiene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Hexachlorocyclopentadiene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Hexachloroethane	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/2	1.40E-01 - 1.40E-01	7.30E-01 - 7.30E-01	N	2.18E-01	mg/kg
Isophorone	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
N-Nitroso-di-n-propylamine	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
N-Nitrosodimethylamine	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
N-Nitrosodiphenylamine	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Naphthalene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Nitrobenzene	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Nitrobenzene-d5	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
PCB-1016	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1221	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1232	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1242	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1248	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1254	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1260	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1262	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
PCB-1268	0/2		1.80E-02 - 1.90E-02	NT	1.85E-02	mg/kg
Pentachlorophenol	0/2		3.50E+00 - 3.60E+00	NT	1.78E+00	mg/kg
Phenanthrene	1/2	7.00E-01 - 7.00E-01	7.30E-01 - 7.30E-01	N	3.58E-01	mg/kg
Phenol	0/2		7.10E-01 - 7.30E-01	NT	3.60E-01	mg/kg
Phenol-d5	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
Polychlorinated biphenyl	0/2		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Pyrene	1/2	7.10E-01 - 7.10E-01	7.30E-01 - 7.30E-01	N	3.60E-01	mg/kg
Pyridine	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
p-Terphenyl-d14	0/2		7.09E-01 - 7.15E-01	NT	3.56E-01	mg/kg
Alpha activity	6/15	6.03E+00 - 2.32E+01	5.33E-01 - 4.46E+00	L	2.84E+00	pCi/g
Americium-241	0/2		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	13/15	9.64E+00 - 8.31E+01	3.48E+00 - 7.90E+00	L	2.43E+01	pCi/g
Cesium-137	2/2	2.00E-01 - 2.00E-01		N	2.00E-01	pCi/g
Neptunium-237	1/2	6.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	N	3.50E-01	pCi/g
Plutonium-239	2/2	2.00E-01 - 4.00E-01		N	3.00E-01	pCi/g
Technetium-99	2/2	3.10E+00 - 1.70E+01		N	1.01E+01	pCi/g
Thorium-230	2/2	1.60E+00 - 1.60E+00		N	1.60E+00	pCi/g
Uranium-234	2/2	1.70E+00 - 3.10E+00		N	2.40E+00	pCi/g
Uranium-235	1/2	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.50E-01	pCi/g
Uranium-238	2/2	2.70E+00 - 4.60E+00		N	3.65E+00	pCi/g

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	3/3	8.13E-01 - 1.39E+02		N	2.89E+01	mg/L
Antimony	0/3		2.77E-02 - 2.77E-02	NT	1.39E-02	mg/L
Arsenic	2/3	3.28E-02 - 4.06E-01	1.11E-03 - 1.11E-03	N	7.33E-02	mg/L
Barium	3/3	1.95E-01 - 5.88E-01		N	1.82E-01	mg/L
Beryllium	3/3	3.33E-04 - 1.30E-02		N	2.83E-03	mg/L
Bromide	16/41	1.40E-02 - 5.20E-02	1.00E+00 - 1.00E+00	L	3.81E-02	mg/L
Cadmium	2/3	5.56E-04 - 2.99E-03	2.67E-04 - 2.67E-04	N	6.36E-04	mg/L
Calcium	3/3	1.74E+01 - 5.45E+01		N	1.79E+01	mg/L
Chloride	41/41	3.20E+00 - 2.24E+01		L	4.81E+00	mg/L
Chromium	3/3	3.52E-02 - 3.87E-01		N	8.80E-02	mg/L
Cobalt	2/3	4.87E-02 - 1.07E-01	1.78E-03 - 1.78E-03	N	2.62E-02	mg/L
Copper	2/3	1.69E-02 - 9.57E-02	9.56E-03 - 9.56E-03	N	2.04E-02	mg/L
Cyanide	0/2		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/L
Fluoride	16/41	5.10E-02 - 2.92E-01	1.00E+00 - 1.00E+00	L	2.10E-01	mg/L
Iron	3/3	1.75E+00 - 3.37E+02		N	6.64E+01	mg/L
Lead	2/3	3.13E-02 - 1.77E-01	1.33E-03 - 1.33E-03	N	3.49E-02	mg/L
Magnesium	3/3	9.78E+00 - 3.19E+01		N	9.38E+00	mg/L
Manganese	3/3	1.77E-02 - 2.44E+00		N	5.12E-01	mg/L
Mercury	0/3		2.10E-04 - 2.10E-04	NT	1.05E-04	mg/L
Nickel	3/3	6.37E-02 - 1.86E-01		N	5.35E-02	mg/L
Nitrate	23/41	7.00E-03 - 2.90E+00	1.00E+00 - 1.00E+00	N	4.33E-01	mg/L
Nitrate/Nitrite	1/16	5.00E-03 - 5.00E-03	1.00E+00 - 1.00E+00	N	4.69E-01	mg/L
Nitrite	0/25		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/L
Orthophosphate	3/41	3.30E-02 - 1.01E-01	1.00E+00 - 1.00E+00	N	4.66E-01	mg/L
Potassium	3/3	3.38E+00 - 2.12E+01		N	5.48E+00	mg/L
Selenium	1/3	4.41E-02 - 4.41E-02	1.44E-03 - 2.30E-02	N	1.14E-02	mg/L
Silver	0/3		5.67E-03 - 5.67E-03	NT	2.84E-03	mg/L
Sodium	3/3	1.34E+01 - 3.67E+01		N	1.09E+01	mg/L
Tetraoxo-sulfate(1-)	41/41	1.23E+01 - 5.34E+01		L	1.52E+01	mg/L
Thallium	2/3	5.00E-04 - 1.03E-03	4.67E-04 - 4.67E-04	N	3.33E-04	mg/L
Uranium	2/3	2.73E-03 - 4.27E-03	8.00E-05 - 8.00E-05	N	2.36E-03	mg/L
Vanadium	3/3	5.44E-03 - 1.57E+00		N	2.82E-01	mg/L
Zinc	3/3	1.80E-02 - 1.21E+01		N	2.12E+00	mg/L
1,1,1,2-Tetrachloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1,1-Trichloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1,2,2-Tetrachloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1,2-Trichloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1-Dichloroethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,1-Dichloroethene	2/54	2.00E-02 - 2.40E-02	4.00E-03 - 2.00E-01	N	4.18E-03	mg/L
1,2,3-Trichloropropane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,2,4-Trichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

530680

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,2-Dibromoethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,2-Dichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,2-Dichloroethane	1/5	1.00E-03 - 1.00E-03	5.00E-03 - 1.30E-02	N	2.90E-03	mg/L
1,2-Dichloropropane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,2-Dimethylbenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
1,3-Dichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,4-Dichlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4,5-Trichlorophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4,6-Trichlorophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dichlorophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dimethylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dinitrophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4-Dinitrotoluene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,6-Dinitrotoluene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Butanone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
2-Chloro-1,3-butadiene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
2-Chloroethyl vinyl ether	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
2-Chloronaphthalene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Chlorophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Hexanone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
2-Methyl-4,6-dinitrophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Methylnaphthalene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Methylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Nitrobenzenamine	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Nitrophenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Propanol	0/4		5.40E-02 - 1.40E-01	NT	3.78E-02	mg/L
3,3'-Dichlorobenzidine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
3-Nitrobenzenamine	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Bromophenyl phenyl ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chloro-3-methylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorobenzenamine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorophenyl phenyl ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Methyl-2-pentanone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
4-Methylphenol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Nitrobenzenamine	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Nitrophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Acenaphthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acenaphthylene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acetone	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Acrolein	0/5		5.00E-02 - 1.30E-01	NT	3.80E-02	mg/L

530681

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Acrylonitrile	0/5		5.00E-02 - 1.30E-01	NT	3.80E-02	mg/L
Anthracene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benz(a)anthracene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Benzenemethanol	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(a)pyrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(b)fluoranthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(ghi)perylene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(k)fluoranthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzoic acid	1/5	1.00E-03 - 1.00E-03	5.00E-02 - 5.00E-02	N	2.01E-02	mg/L
Bis(2-chloroethoxy)methane	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroethyl) ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroisopropyl)ether	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-ethylhexyl)phthalate	3/5	1.00E-03 - 8.00E-03	1.00E-02 - 1.00E-02	N	3.00E-03	mg/L
Bromodichloromethane	2/5	1.00E-03 - 8.00E-03	5.00E-03 - 1.30E-02	N	3.20E-03	mg/L
Bromoform	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Bromomethane	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Butyl benzyl phthalate	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbazole	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbon disulfide	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Carbon tetrachloride	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Chlorobenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Chloroethane	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Chloroform	4/5	1.00E-03 - 1.90E-02	5.00E-03 - 5.00E-03	N	3.30E-03	mg/L
Chloromethane	0/5		1.00E-02 - 2.50E-02	NT	7.50E-03	mg/L
Chrysene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Di-n-butyl phthalate	1/5	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.10E-03	mg/L
Di-n-octylphthalate	2/5	1.00E-03 - 6.00E-03	1.00E-02 - 1.00E-02	N	3.70E-03	mg/L
Dibenz(a,h)anthracene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibenzofuran	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibromochloromethane	2/5	1.00E-03 - 4.00E-03	5.00E-03 - 1.30E-02	N	2.80E-03	mg/L
Dibromomethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Dichlorodifluoromethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Diethyl phthalate	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dimethyl phthalate	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dimethylbenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Ethyl cyanide	0/5		1.00E-01 - 2.50E-01	NT	7.50E-02	mg/L
Ethyl methacrylate	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Ethylbenzene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Fluoranthene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

530682

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Fluorene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobutadiene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorocyclopentadiene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachloroethane	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Indeno(1,2,3-cd)pyrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Iodomethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Isophorone	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Methacrylonitrile	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Methyl methacrylate	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Methylene chloride	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
N-Nitroso-di-n-propylamine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
N-Nitrosodiphenylamine	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Naphthalene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Nitrobenzene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Pentachlorophenol	0/5		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Phenanthrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Phenol	3/5	1.00E-03 - 5.00E-03	1.00E-02 - 1.00E-02	N	2.70E-03	mg/L
Pyrene	0/5		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Styrene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Tetrachloroethene	1/5	2.70E-02 - 2.70E-02	5.00E-03 - 1.00E-02	N	5.20E-03	mg/L
Toluene	3/5	1.00E-03 - 4.00E-03	1.00E-02 - 1.30E-02	N	2.90E-03	mg/L
Trichloroethene	39/54	2.00E-04 - 1.28E+00	4.00E-03 - 4.00E-03	L	9.78E-03	mg/L
Trichlorofluoromethane	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Vinyl acetate	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Vinyl chloride	1/54	2.00E-02 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.94E-03	mg/L
cis-1,2-Dichloroethene	2/54	4.00E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.98E-03	mg/L
cis-1,3-Dichloropropene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
trans-1,2-Dichloroethene	5/54	1.50E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	8.25E-03	mg/L
trans-1,3-Dichloropropene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
trans-1,4-Dichloro-2-butene	0/5		5.00E-03 - 1.30E-02	NT	3.80E-03	mg/L
Actinium-228	1/1	2.72E+01 - 2.72E+01		NT	2.72E+01	pCi/L
Alpha activity	48/51	1.69E+00 - 1.49E+02	2.90E-01 - 1.88E+00	L	2.21E+01	pCi/L
Americium-241	1/6	5.30E-02 - 5.30E-02	0.00E+00 - 3.70E-01	N	1.21E-01	pCi/L
Beta activity	51/51	4.42E+00 - 1.16E+04		L	1.48E+02	pCi/L
Bismuth-212	0/1		8.00E+00 - 8.00E+00	NT	8.00E+00	pCi/L
Bismuth-214	1/1	9.00E+00 - 9.00E+00		NT	9.00E+00	pCi/L
Cesium-134	0/1		-2.00E-01 --2.00E-01	NT	-2.00E-01	pCi/L
Cesium-137	4/6	2.49E+00 - 1.65E+01	-1.70E+00 - 2.29E+00	N	6.57E+00	pCi/L
Cobalt-57	0/1		-3.10E-01 --3.10E-01	NT	-3.10E-01	pCi/L

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Cobalt-60	0/1		5.00E-01 - 5.00E-01	NT	5.00E-01	pCi/L
Lead-210	1/1	4.21E+02 - 4.21E+02		NT	4.21E+02	pCi/L
Lead-212	1/1	2.25E+01 - 2.25E+01		NT	2.25E+01	pCi/L
Lead-214	1/1	1.21E+01 - 1.21E+01		NT	1.21E+01	pCi/L
Neptunium-237	6/6	0.00E+00 - 1.31E+01		N	4.39E+00	pCi/L
Plutonium-238	0/1		4.00E-03 - 4.00E-03	NT	4.00E-03	pCi/L
Plutonium-239	1/5	2.12E+00 - 2.12E+00	-2.00E-02 - 4.00E-02	N	4.30E-01	pCi/L
Plutonium-239/240	0/1		1.30E-02 - 1.30E-02	NT	1.30E-02	pCi/L
Potassium-40	1/1	6.80E+01 - 6.80E+01		NT	6.80E+01	pCi/L
Radium-226	0/1		0.00E+00 - 0.00E+00	NT	0.00E+00	pCi/L
Technetium-99	3/6	6.60E-01 - 6.16E+02	-1.56E+00 - 1.27E+00	N	1.03E+02	pCi/L
Thallium-208	1/1	6.70E+00 - 6.70E+00		NT	6.70E+00	pCi/L
Thorium-228	1/1	1.23E+00 - 1.23E+00		NT	1.23E+00	pCi/L
Thorium-230	6/6	2.40E-01 - 1.88E+00		N	8.55E-01	pCi/L
Thorium-232	1/1	1.15E+00 - 1.15E+00		NT	1.15E+00	pCi/L
Thorium-234	1/1	7.19E+02 - 7.19E+02		NT	7.19E+02	pCi/L
Uranium-233/234	1/1	6.10E-01 - 6.10E-01		NT	6.10E-01	pCi/L
Uranium-234	4/5	1.90E-01 - 2.23E+00	1.50E-01 - 1.50E-01	N	9.84E-01	pCi/L
Uranium-235	1/6	2.30E+01 - 2.30E+01	1.00E-02 - 1.00E-01	N	3.86E+00	pCi/L
Uranium-238	4/6	2.00E-01 - 1.82E+00	1.00E-02 - 1.20E-01	N	6.43E-01	pCi/L

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	25/25	1.46E+03 - 1.71E+04		N	5.56E+03	mg/kg
Antimony	8/25	7.00E-01 - 4.70E+00	6.00E-01 - 6.00E-01	L	6.51E-01	mg/kg
Arsenic	25/25	1.55E+00 - 9.20E+00		L	2.04E+00	mg/kg
Barium	25/25	9.05E+00 - 1.81E+02		N	4.41E+01	mg/kg
Beryllium	25/25	1.50E-01 - 8.10E-01		N	2.59E-01	mg/kg
Cadmium	12/25	1.00E-01 - 4.90E-01	2.00E-02 - 3.00E-02	N	5.68E-02	mg/kg
Calcium	25/25	8.84E+02 - 3.40E+05		L	7.06E+03	mg/kg
Chromium	25/25	5.62E+00 - 3.91E+01		L	9.08E+00	mg/kg
Cobalt	25/25	2.54E+00 - 1.68E+01		L	3.37E+00	mg/kg
Copper	25/25	2.60E+00 - 1.89E+01		L	4.42E+00	mg/kg
Cyanide	0/25		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	25/25	3.17E+03 - 2.60E+04		N	8.29E+03	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Lead	25/25	2.90E+00 - 1.41E+01		N	4.28E+00	mg/kg
Magnesium	25/25	2.67E+02 - 8.04E+03		L	1.13E+03	mg/kg
Manganese	25/25	4.29E+01 - 8.42E+02		N	1.79E+02	mg/kg
Mercury	21/25	1.00E-02 - 8.36E-02	8.10E-03 - 9.30E-03	L	2.49E-02	mg/kg
Nickel	25/25	2.20E+00 - 2.49E+01		L	6.05E+00	mg/kg
Potassium	25/25	1.40E+01 - 1.08E+03		N	1.84E+02	mg/kg
Selenium	2/25	2.00E-01 - 5.00E-01	2.00E-01 - 1.00E+00	L	8.24E-02	mg/kg
Silver	7/25	1.40E-01 - 4.28E+00	8.00E-02 - 9.00E-02	L	7.17E-02	mg/kg
Sodium	25/25	1.58E+02 - 1.67E+03		L	2.00E+02	mg/kg
Thallium	4/25	7.00E-01 - 2.30E+00	5.00E-01 - 6.00E-01	L	3.47E-01	mg/kg
Uranium	6/6	1.79E+00 - 6.06E+01		N	1.62E+01	mg/kg
Vanadium	25/25	4.00E+00 - 3.77E+01		N	1.33E+01	mg/kg
Zinc	25/25	6.99E+00 - 7.02E+01		L	1.47E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,1-Trichloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2-Trichloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethene	0/20		6.00E-03 - 1.00E+00	NT	3.35E-01	mg/kg
1,2,3-Trichloropropane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2,4-Trichlorobenzene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
1,2-Dibromoethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichlorobenzene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
1,2-Dichloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichloropropane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,3-Dichlorobenzene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
1,4-Dichlorobenzene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2,4,5-Trichlorophenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2,4,6-Tribromophenol	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
2,4,6-Trichlorophenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2,4-Dichlorophenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2,4-Dimethylphenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2,4-Dinitrophenol	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
2,4-Dinitrotoluene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2,6-Dinitrotoluene	4/25	3.47E-01 - 4.32E-01	7.04E-01 - 8.40E-01	N	3.60E-01	mg/kg
2-Butanone	0/12		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
2-Chloroethyl vinyl ether	0/12		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2-Chlorophenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2-Fluoro-1,1'-biphenyl	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
2-Fluorophenol	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
2-Hexanone	0/12		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
2-Methylnaphthalene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2-Methylphenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2-Nitrobenzenamine	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
2-Nitrophenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
2-Propanol	0/12		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
3,3'-Dichlorobenzidine	0/25		7.04E-01 - 1.70E+00	NT	6.61E-01	mg/kg
3-Nitrobenzenamine	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
4-Bromophenyl phenyl ether	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
4-Chloro-3-methylphenol	0/25		7.04E-01 - 1.70E+00	NT	6.61E-01	mg/kg
4-Chlorobenzenamine	0/25		7.04E-01 - 1.70E+00	NT	6.61E-01	mg/kg
4-Chlorophenyl phenyl ether	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
4-Methyl-2-pentanone	0/12		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
4-Methylphenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
4-Nitrobenzenamine	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
4-Nitrophenol	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
Acenaphthene	2/25	4.00E-02 - 1.22E+00	6.90E-01 - 8.40E-01	N	3.86E-01	mg/kg
Acenaphthylene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Acetone	4/12	6.10E-03 - 1.00E-01	1.00E-01 - 1.00E-01	L	3.90E-02	mg/kg
Acrolein	0/12		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/12		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Aniline	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
Anthracene	2/25	8.00E-02 - 1.89E+00	6.90E-01 - 8.40E-01	N	4.00E-01	mg/kg
Benz(a)anthracene	2/25	3.50E-01 - 4.13E+00	6.90E-01 - 8.40E-01	L	1.60E-01	mg/kg
Benzene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Benzenemethanol	0/25		7.04E-01 - 1.70E+00	NT	6.61E-01	mg/kg
Benzidine	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
Benzo(a)pyrene	2/25	3.00E-01 - 3.36E+00	6.90E-01 - 8.40E-01	L	1.92E-01	mg/kg
Benzo(b)fluoranthene	2/25	4.30E-01 - 3.42E+00	6.90E-01 - 8.40E-01	L	1.91E-01	mg/kg
Benzo(ghi)perylene	2/25	1.70E-01 - 1.87E+00	6.90E-01 - 8.40E-01	N	4.01E-01	mg/kg
Benzo(k)fluoranthene	2/25	2.80E-01 - 1.98E+00	6.90E-01 - 8.40E-01	L	2.92E-01	mg/kg
Benzoic acid	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
Bis(2-chloroethoxy)methane	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Bis(2-chloroethyl) ether	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Bis(2-ethylhexyl)phthalate	3/25	1.50E-03 - 6.00E-02	6.90E-01 - 8.40E-01	N	3.47E-01	mg/kg
Bromodichloromethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg

530686

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Bromoform	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromomethane	0/12		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Carbazole	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
Carbon disulfide	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Carbon tetrachloride	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chlorobenzene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloroethane	0/12		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chloroform	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloromethane	0/12		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chrysene	2/25	4.00E-01 - 3.97E+00	6.90E-01 - 8.40E-01	L	1.66E-01	mg/kg
Di-n-butyl phthalate	8/25	6.00E-02 - 1.88E+00	6.90E-01 - 8.31E-01	N	3.89E-01	mg/kg
Di-n-octylphthalate	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Dibenz(a,h)anthracene	1/25	4.12E-01 - 4.12E-01	6.90E-01 - 8.40E-01	N	3.84E-01	mg/kg
Dibenzofuran	1/25	5.76E-01 - 5.76E-01	6.90E-01 - 8.40E-01	N	3.87E-01	mg/kg
Dibromochloromethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dibromomethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dichlorodifluoromethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diethyl phthalate	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Dimethyl phthalate	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Dimethylbenzene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diphenyldiazene	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
Ethyl cyanide	0/12		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethylbenzene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Fluoranthene	3/25	8.00E-02 - 8.29E+00	6.90E-01 - 8.40E-01	L	1.60E-01	mg/kg
Fluorene	1/25	9.25E-01 - 9.25E-01	6.90E-01 - 8.40E-01	L	3.94E-01	mg/kg
Hexachlorobenzene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Hexachlorobutadiene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Hexachlorocyclopentadiene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Hexachloroethane	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Indeno(1,2,3-cd)pyrene	2/25	1.80E-01 - 1.89E+00	6.90E-01 - 8.40E-01	L	2.57E-01	mg/kg
Iodomethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Isophorone	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Methacrylonitrile	0/12		2.80E-02 - 3.20E-02	NT	1.50E-02	mg/kg
Methyl methacrylate	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Methylene chloride	11/12	1.80E-03 - 3.70E-03	6.00E-03 - 6.00E-03	L	2.84E-03	mg/kg
N-Nitroso-di-n-propylamine	2/25	4.84E-01 - 6.34E-01	6.90E-01 - 8.40E-01	N	3.81E-01	mg/kg
N-Nitrosodimethylamine	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
N-Nitrosodiphenylamine	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg

530687

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Naphthalene	1/25	5.03E-01 - 5.03E-01	6.90E-01 - 8.40E-01	N	3.86E-01	mg/kg
Nitrobenzene	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Nitrobenzene-d5	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
PCB-1016	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
PCB-1221	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
PCB-1232	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
PCB-1242	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
PCB-1248	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
PCB-1254	1/15	5.20E-03 - 5.20E-03	1.80E-02 - 2.20E-02	N	1.90E-02	mg/kg
PCB-1260	1/15	4.30E-02 - 4.30E-02	1.80E-02 - 2.20E-02	L	2.13E-02	mg/kg
PCB-1262	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
PCB-1268	0/15		1.80E-02 - 2.20E-02	NT	1.99E-02	mg/kg
Pentachloroethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Pentachlorophenol	0/25		7.04E-01 - 4.20E+00	NT	1.50E+00	mg/kg
Phenanthrene	3/25	5.00E-02 - 7.47E+00	6.90E-01 - 8.40E-01	L	1.49E-01	mg/kg
Phenol	0/25		6.90E-01 - 8.40E-01	NT	3.91E-01	mg/kg
Phenol-d5	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
Polychlorinated biphenyl	2/25	5.20E-03 - 4.30E-02	2.10E-02 - 1.00E+00	L	1.95E-02	mg/kg
Pyrene	3/25	6.00E-02 - 7.85E+00	6.90E-01 - 8.40E-01	L	1.53E-01	mg/kg
Pyridine	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
Styrene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Tetrachloroethene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Toluene	3/12	1.50E-03 - 2.30E-03	6.00E-03 - 6.00E-03	L	2.01E-03	mg/kg
Trichloroethene	1/20	2.20E-03 - 2.20E-03	6.00E-03 - 1.00E+00	N	6.35E-01	mg/kg
Trichlorofluoromethane	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Vinyl acetate	1/12	2.80E-02 - 2.80E-02	6.00E-02 - 6.00E-02	N	2.87E-02	mg/kg
Vinyl chloride	0/20		1.00E-02 - 1.00E+00	NT	6.71E-01	mg/kg
cis-1,2-Dichloroethene	0/20		6.00E-03 - 1.00E+00	NT	6.70E-01	mg/kg
cis-1,3-Dichloropropene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
p-Terphenyl-d14	0/25		6.72E-01 - 8.31E-01	NT	3.86E-01	mg/kg
trans-1,2-Dichloroethene	0/20		6.00E-03 - 1.00E+00	NT	6.70E-01	mg/kg
trans-1,3-Dichloropropene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Alpha activity	20/24	7.00E+00 - 7.49E+01	-1.06E+00 - 4.84E+00	N	1.56E+01	pCi/g
Americium-241	0/6		1.00E-01 - 2.00E-01	NT	1.33E-01	pCi/g
Beta activity	23/24	1.24E+01 - 6.22E+01	5.72E+00 - 5.72E+00	N	3.21E+01	pCi/g
Cesium-137	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Neptunium-237	1/6	3.00E-01 - 3.00E-01	1.00E-01 - 1.00E-01	N	1.33E-01	pCi/g
Plutonium-239	0/6		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	6/6	4.00E-01 - 4.00E+00		N	1.55E+00	pCi/g

530688

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Thorium-230	6/6	1.00E+00 - 1.90E+00		N	1.43E+00	pCi/g
Uranium-234	6/6	6.00E-01 - 2.01E+01		N	5.05E+00	pCi/g
Uranium-235	3/6	2.00E-01 - 7.00E-01	1.00E-01 - 1.00E-01	N	2.33E-01	pCi/g
Uranium-238	6/6	6.00E-01 - 2.02E+01		N	5.40E+00	pCi/g

SECTOR=Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	1/1	1.26E+04 - 1.26E+04		NT	6.30E+03	mg/kg
Antimony	0/1		6.00E-01 - 6.00E-01	NT	3.00E-01	mg/kg
Arsenic	1/1	5.35E+00 - 5.35E+00		NT	2.68E+00	mg/kg
Barium	1/1	1.02E+02 - 1.02E+02		NT	5.10E+01	mg/kg
Beryllium	1/1	5.80E-01 - 5.80E-01		NT	2.90E-01	mg/kg
Cadmium	0/1		2.00E-02 - 2.00E-02	NT	1.00E-02	mg/kg
Calcium	1/1	1.02E+04 - 1.02E+04		NT	5.10E+03	mg/kg
Chromium	1/1	1.93E+01 - 1.93E+01		NT	9.65E+00	mg/kg
Cobalt	1/1	9.76E+00 - 9.76E+00		NT	4.88E+00	mg/kg
Copper	1/1	1.89E+01 - 1.89E+01		NT	9.45E+00	mg/kg
Cyanide	0/1		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	1/1	2.60E+04 - 2.60E+04		NT	1.30E+04	mg/kg
Lead	1/1	1.41E+01 - 1.41E+01		NT	7.05E+00	mg/kg
Magnesium	1/1	2.51E+03 - 2.51E+03		NT	1.26E+03	mg/kg
Manganese	1/1	5.20E+02 - 5.20E+02		NT	2.60E+02	mg/kg
Mercury	1/1	2.63E-02 - 2.63E-02		NT	1.32E-02	mg/kg
Nickel	1/1	1.90E+01 - 1.90E+01		NT	9.50E+00	mg/kg
Potassium	1/1	3.54E+02 - 3.54E+02		NT	1.77E+02	mg/kg
Selenium	0/1		2.00E-01 - 2.00E-01	NT	1.00E-01	mg/kg
Silver	0/1		8.00E-02 - 8.00E-02	NT	4.00E-02	mg/kg
Sodium	1/1	2.76E+02 - 2.76E+02		NT	1.38E+02	mg/kg
Thallium	0/1		6.00E-01 - 6.00E-01	NT	3.00E-01	mg/kg
Uranium	1/1	1.38E+01 - 1.38E+01		NT	1.38E+01	mg/kg
Vanadium	1/1	3.04E+01 - 3.04E+01		NT	1.52E+01	mg/kg
Zinc	1/1	7.02E+01 - 7.02E+01		NT	3.51E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,1-Trichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg

530689

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,1,2-Trichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2,3-Trichloropropane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2,4-Trichlorobenzene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
1,2-Dibromoethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichlorobenzene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
1,2-Dichloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichloropropane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,3-Dichlorobenzene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
1,4-Dichlorobenzene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2,4,5-Trichlorophenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2,4,6-Tribromophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2,4,6-Trichlorophenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2,4-Dichlorophenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2,4-Dimethylphenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2,4-Dinitrophenol	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
2,4-Dinitrotoluene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2,6-Dinitrotoluene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2-Butanone	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
2-Chloroethyl vinyl ether	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2-Chlorophenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Fluorophenol	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
2-Hexanone	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
2-Methylnaphthalene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2-Methylphenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2-Nitrobenzenamine	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
2-Nitrophenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
2-Propanol	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
3,3'-Dichlorobenzidine	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
3-Nitrobenzenamine	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
4-Bromophenyl phenyl ether	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
4-Chloro-3-methylphenol	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorobenzenamine	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorophenyl phenyl ether	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
4-Methyl-2-pentanone	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Methylphenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
4-Nitrobenzenamine	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
4-Nitrophenol	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
Acenaphthene	1/1	4.00E-02 - 4.00E-02		NT	2.00E-02	mg/kg
Acenaphthylene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Acetone	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrolein	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Aniline	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Anthracene	1/1	8.00E-02 - 8.00E-02		NT	4.00E-02	mg/kg
Benz(a)anthracene	1/1	3.50E-01 - 3.50E-01		NT	1.75E-01	mg/kg
Benzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Benzenemethanol	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
Benzidine	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Benzo(a)pyrene	1/1	3.00E-01 - 3.00E-01		NT	1.50E-01	mg/kg
Benzo(b)fluoranthene	1/1	4.30E-01 - 4.30E-01		NT	2.15E-01	mg/kg
Benzo(ghi)perylene	1/1	1.70E-01 - 1.70E-01		NT	8.50E-02	mg/kg
Benzo(k)fluoranthene	1/1	2.80E-01 - 2.80E-01		NT	1.40E-01	mg/kg
Benzoic acid	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
Bis(2-chloroethoxy)methane	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Bis(2-chloroethyl) ether	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Bis(2-ethylhexyl)phthalate	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Bromodichloromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromoform	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromomethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Carbazole	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Carbon disulfide	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Carbon tetrachloride	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chlorobenzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloroethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chloroform	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloromethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chrysene	1/1	4.00E-01 - 4.00E-01		NT	2.00E-01	mg/kg
Di-n-butyl phthalate	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Di-n-octylphthalate	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Dibenz(a,h)anthracene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Dibenzofuran	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Dibromochloromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg

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530691

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Dibromomethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dichlorodifluoromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diethyl phthalate	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Dimethyl phthalate	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Dimethylbenzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diphenyldiazene	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Ethyl cyanide	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethylbenzene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Fluoranthene	1/1	8.60E-01 - 8.60E-01		NT	4.30E-01	mg/kg
Fluorene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Hexachlorobenzene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Hexachlorobutadiene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Hexachlorocyclopentadiene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Hexachloroethane	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/1	1.80E-01 - 1.80E-01		NT	9.00E-02	mg/kg
Iodomethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Isophorone	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Methacrylonitrile	0/1		2.90E-02 - 2.90E-02	NT	1.45E-02	mg/kg
Methyl methacrylate	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Methylene chloride	1/1	2.00E-03 - 2.00E-03		NT	1.00E-03	mg/kg
N-Nitroso-di-n-propylamine	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
N-Nitrosodimethylamine	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
N-Nitrosodiphenylamine	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Naphthalene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Nitrobenzene	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg
Nitrobenzene-d5	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
PCB-1016	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1221	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1232	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1242	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1248	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1254	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1260	1/1	4.30E-02 - 4.30E-02		NT	4.30E-02	mg/kg
PCB-1262	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
PCB-1268	0/1		2.00E-02 - 2.00E-02	NT	2.00E-02	mg/kg
Pentachloroethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Pentachlorophenol	0/1		3.90E+00 - 3.90E+00	NT	1.95E+00	mg/kg
Phenanthrene	1/1	4.70E-01 - 4.70E-01		NT	2.35E-01	mg/kg
Phenol	0/1		7.70E-01 - 7.70E-01	NT	3.85E-01	mg/kg

530692

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Phenol-d5	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Polychlorinated biphenyl	1/1	4.30E-02 - 4.30E-02		NT	2.15E-02	mg/kg
Pyrene	1/1	6.80E-01 - 6.80E-01		NT	3.40E-01	mg/kg
Pyridine	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
Styrene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Tetrachloroethene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Toluene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Trichloroethene	0/1		6.00E-03 - 6.00E-03	NT	6.00E-03	mg/kg
Trichlorofluoromethane	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Vinyl acetate	0/1		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
Vinyl chloride	0/1		1.00E-02 - 1.00E-02	NT	1.00E-02	mg/kg
cis-1,2-Dichloroethene	0/1		6.00E-03 - 6.00E-03	NT	6.00E-03	mg/kg
cis-1,3-Dichloropropene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
p-Terphenyl-d14	0/1		7.60E-01 - 7.60E-01	NT	3.80E-01	mg/kg
trans-1,2-Dichloroethene	0/1		6.00E-03 - 6.00E-03	NT	6.00E-03	mg/kg
trans-1,3-Dichloropropene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/1		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Alpha activity	1/1	3.19E+01 - 3.19E+01		NT	3.19E+01	pCi/g
Americium-241	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	1/1	5.08E+01 - 5.08E+01		NT	5.08E+01	pCi/g
Cesium-137	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Neptunium-237	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Plutonium-239	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	1/1	3.60E+00 - 3.60E+00		NT	3.60E+00	pCi/g
Thorium-230	1/1	1.80E+00 - 1.80E+00		NT	1.80E+00	pCi/g
Uranium-234	1/1	3.40E+00 - 3.40E+00		NT	3.40E+00	pCi/g
Uranium-235	1/1	2.00E-01 - 2.00E-01		NT	2.00E-01	pCi/g
Uranium-238	1/1	4.60E+00 - 4.60E+00		NT	4.60E+00	pCi/g

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	25/25	5.11E+03 - 1.74E+04		L	5.42E+03	mg/kg
Antimony	9/25	6.00E-01 - 9.40E+00	6.00E-01 - 1.00E+00	L	6.47E-01	mg/kg
Arsenic	25/25	2.75E-02 - 1.03E+01		N	2.30E+00	mg/kg
Barium	25/25	1.85E+01 - 1.60E+02		N	4.28E+01	mg/kg

230223

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil (continued)

530693

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Beryllium	25/25	3.10E-01 - 1.19E+00		L	3.08E-01	mg/kg
Cadmium	8/25	5.00E-02 - 7.50E-01	2.00E-02 - 3.00E-02	L	2.78E-02	mg/kg
Calcium	25/25	4.11E+02 - 1.10E+05		L	5.24E+03	mg/kg
Chromium	25/25	8.25E+00 - 6.60E+01		L	1.02E+01	mg/kg
Cobalt	25/25	3.40E+00 - 1.77E+01		L	3.49E+00	mg/kg
Copper	25/25	5.50E+00 - 1.79E+01		L	4.72E+00	mg/kg
Cyanide	0/25		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	25/25	1.12E+04 - 3.74E+04		L	9.66E+03	mg/kg
Lead	25/25	4.40E+00 - 4.20E+01		L	5.41E+00	mg/kg
Magnesium	25/25	7.76E+02 - 2.42E+03		N	7.41E+02	mg/kg
Manganese	25/25	1.55E+02 - 8.87E+02		L	1.94E+02	mg/kg
Mercury	20/25	1.47E-02 - 8.30E+00	8.00E-03 - 9.30E-03	L	4.62E-02	mg/kg
Nickel	25/25	5.30E+00 - 2.91E+01		L	5.48E+00	mg/kg
Potassium	25/25	8.80E+01 - 4.61E+02		L	1.13E+02	mg/kg
Selenium	4/25	2.00E-01 - 3.00E-01	2.00E-01 - 3.00E-01	N	1.08E-01	mg/kg
Silver	3/25	3.80E-01 - 1.03E+00	7.00E-02 - 2.00E-01	L	7.52E-03	mg/kg
Sodium	25/25	1.67E+02 - 7.87E+02		L	1.88E+02	mg/kg
Thallium	1/25	7.00E-01 - 7.00E-01	5.00E-01 - 1.00E+00	L	3.16E-01	mg/kg
Uranium	12/12	1.79E+00 - 4.44E+01		L	5.71E+00	mg/kg
Vanadium	25/25	1.55E+01 - 6.72E+01		L	1.49E+01	mg/kg
Zinc	25/25	1.77E+01 - 4.57E+01		L	1.39E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,1,1-Trichloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,1,2-Trichloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,1-Dichloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,1-Dichloroethene	1/16	1.40E-03 - 1.40E-03	4.00E-02 - 1.00E+00	N	3.73E-01	mg/kg
1,2,3-Trichloropropane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,2,4-Trichlorobenzene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
1,2-Dibromoethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,2-Dichlorobenzene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
1,2-Dichloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,2-Dichloropropane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
1,3-Dichlorobenzene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
1,4-Dichlorobenzene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2,4,5-Trichlorophenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2,4,6-Tribromophenol	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
2,4,6-Trichlorophenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2,4-Dichlorophenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2,4-Dimethylphenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg

530694

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2,4-Dinitrophenol	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
2,4-Dinitrotoluene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2,6-Dinitrotoluene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2-Butanone	0/10		1.00E-01 - 8.00E-01	NT	1.90E-01	mg/kg
2-Chloro-1,3-butadiene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
2-Chloroethyl vinyl ether	0/10		1.00E-02 - 8.00E-02	NT	1.90E-02	mg/kg
2-Chloronaphthalene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2-Chlorophenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
2-Fluorophenol	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
2-Hexanone	0/10		6.00E-02 - 4.00E-01	NT	9.80E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
2-Methylnaphthalene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2-Methylphenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2-Nitrobenzenamine	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
2-Nitrophenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
2-Propanol	0/10		6.00E-02 - 4.00E-01	NT	9.80E-02	mg/kg
3,3'-Dichlorobenzidine	0/21		7.25E-01 - 6.80E+00	NT	7.27E-01	mg/kg
3-Nitrobenzenamine	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
4-Bromophenyl phenyl ether	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
4-Chloro-3-methylphenol	0/21		7.25E-01 - 6.80E+00	NT	7.27E-01	mg/kg
4-Chlorobenzenamine	0/21		7.25E-01 - 6.80E+00	NT	7.27E-01	mg/kg
4-Chlorophenyl phenyl ether	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
4-Methyl-2-pentanone	0/10		6.00E-02 - 4.00E-01	NT	9.80E-02	mg/kg
4-Methylphenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
4-Nitrobenzenamine	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
4-Nitrophenol	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
Acenaphthene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Acenaphthylene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Acetone	3/10	7.70E-03 - 1.40E+00	1.00E-01 - 8.00E-01	L	7.20E-02	mg/kg
Acrolein	0/10		1.00E-01 - 8.00E-01	NT	1.90E-01	mg/kg
Acrylonitrile	0/10		1.00E-01 - 8.00E-01	NT	1.90E-01	mg/kg
Aniline	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
Anthracene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Benz(a)anthracene	2/21	7.00E-02 - 3.00E-01	7.25E-01 - 8.30E-01	N	3.63E-01	mg/kg
Benzene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Benzenemethanol	0/21		7.25E-01 - 6.80E+00	NT	7.27E-01	mg/kg
Benzidine	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
Benzo(a)pyrene	2/21	8.00E-02 - 4.00E-01	7.25E-01 - 8.30E-01	N	3.65E-01	mg/kg
Benzo(b)fluoranthene	2/21	1.20E-01 - 6.00E-01	7.25E-01 - 8.30E-01	N	3.71E-01	mg/kg

530695

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benzo(ghi)perylene	0/21		7.03E-01 - 3.40E+00	NT	4.51E-01	mg/kg
Benzo(k)fluoranthene	2/21	7.00E-02 - 3.00E-01	7.25E-01 - 8.30E-01	N	3.63E-01	mg/kg
Benzoic acid	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
Bis(2-chloroethoxy)methane	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Bis(2-chloroethyl) ether	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Bis(2-ethylhexyl)phthalate	4/21	5.00E-02 - 8.00E-02	7.10E-01 - 3.40E+00	L	7.57E-02	mg/kg
Bromodichloromethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Bromoform	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Bromomethane	0/10		1.00E-02 - 8.00E-02	NT	1.90E-02	mg/kg
Butyl benzyl phthalate	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Carbazole	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
Carbon disulfide	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Carbon tetrachloride	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Chlorobenzene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Chloroethane	0/10		1.00E-02 - 8.00E-02	NT	1.90E-02	mg/kg
Chloroform	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Chloromethane	0/10		1.00E-02 - 8.00E-02	NT	1.90E-02	mg/kg
Chrysene	2/21	8.00E-02 - 2.90E-01	7.25E-01 - 8.30E-01	N	3.63E-01	mg/kg
Di-n-butyl phthalate	3/21	4.00E-02 - 4.00E-02	7.10E-01 - 3.40E+00	L	5.21E-01	mg/kg
Di-n-octylphthalate	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Dibenz(a,h)anthracene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Dibenzofuran	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Dibromochloromethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Dibromomethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Dichlorodifluoromethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Diethyl phthalate	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Dimethyl phthalate	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Dimethylbenzene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Diphenyldiazene	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
Ethyl cyanide	0/10		1.00E-01 - 8.00E-01	NT	1.90E-01	mg/kg
Ethyl methacrylate	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Ethylbenzene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Fluoranthene	2/21	1.40E-01 - 4.00E-01	7.25E-01 - 8.30E-01	N	3.67E-01	mg/kg
Fluorene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Hexachlorobenzene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Hexachlorobutadiene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Hexachlorocyclopentadiene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Hexachloroethane	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Indeno(1,2,3-cd)pyrene	0/21		6.98E-01 - 8.30E-01	NT	3.87E-01	mg/kg

530696

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Iodomethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Isophorone	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Methacrylonitrile	0/10		3.00E-02 - 2.10E-01	NT	5.11E-02	mg/kg
Methyl methacrylate	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Methylene chloride	6/10	1.40E-03 - 7.10E-03	4.00E-02 - 4.00E-02	L	3.45E-03	mg/kg
N-Nitroso-di-n-propylamine	1/21	5.22E-01 - 5.22E-01	7.10E-01 - 3.40E+00	L	4.33E-01	mg/kg
N-Nitrosodimethylamine	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
N-Nitrosodiphenylamine	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Naphthalene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Nitrobenzene	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Nitrobenzene-d5	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
PCB-1016	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1221	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1232	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1242	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1248	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1254	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1260	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1262	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
PCB-1268	0/12		1.80E-02 - 2.10E-02	NT	1.98E-02	mg/kg
Pentachloroethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Pentachlorophenol	0/21		7.25E-01 - 1.70E+01	NT	1.59E+00	mg/kg
Phenanthrene	1/21	5.00E-02 - 5.00E-02	7.25E-01 - 3.40E+00	L	4.68E-01	mg/kg
Phenol	0/21		7.10E-01 - 3.40E+00	NT	4.52E-01	mg/kg
Phenol-d5	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
Polychlorinated biphenyl	1/22	1.00E+00 - 1.00E+00	1.00E+00 - 1.00E+00	N	5.00E-01	mg/kg
Pyrene	2/21	1.20E-01 - 4.00E-01	7.25E-01 - 8.30E-01	N	3.66E-01	mg/kg
Pyridine	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
Styrene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Tetrachloroethene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Toluene	1/10	6.00E-03 - 6.00E-03	6.00E-03 - 4.00E-02	N	9.80E-03	mg/kg
Trichloroethene	1/16	4.00E-03 - 4.00E-03	4.00E-02 - 1.00E+00	N	7.47E-01	mg/kg
Trichlorofluoromethane	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Vinyl acetate	0/10		6.00E-02 - 4.00E-01	NT	9.80E-02	mg/kg
Vinyl chloride	0/16		8.00E-02 - 1.00E+00	NT	7.86E-01	mg/kg
cis-1,2-Dichloroethene	0/16		4.00E-02 - 1.00E+00	NT	7.84E-01	mg/kg
cis-1,3-Dichloropropene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
p-Terphenyl-d14	0/19		6.98E-01 - 8.16E-01	NT	3.82E-01	mg/kg
trans-1,2-Dichloroethene	0/16		6.00E-03 - 1.00E+00	NT	7.47E-01	mg/kg
trans-1,3-Dichloropropene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg

250021

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
trans-1,4-Dichloro-2-butene	0/10		6.00E-03 - 4.00E-02	NT	9.80E-03	mg/kg
Alpha activity	23/27	7.24E+00 - 4.02E+01	3.47E+00 - 5.93E+00	L	1.76E+01	pCi/g
Americium-241	2/12	1.20E-01 - 4.00E-01	1.00E-01 - 1.00E-01	L	5.15E-02	pCi/g
Beta activity	27/27	1.25E+01 - 1.48E+02		L	3.38E+01	pCi/g
Cesium-137	2/12	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.17E-01	pCi/g
Neptunium-237	2/12	4.00E-01 - 8.00E-01	1.00E-01 - 1.00E-01	L	3.03E-02	pCi/g
Plutonium-239	1/12	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.08E-01	pCi/g
Technetium-99	12/12	2.00E-01 - 4.33E+01		L	3.51E+00	pCi/g
Thorium-230	12/12	3.00E-01 - 5.60E+00		L	1.45E+00	pCi/g
Uranium-234	12/12	5.00E-01 - 7.40E+00		L	1.37E+00	pCi/g
Uranium-235	2/12	3.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.42E-01	pCi/g
Uranium-238	12/12	6.00E-01 - 1.48E+01		L	1.90E+00	pCi/g

SECTOR=Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	6/6	5.11E+03 - 1.10E+04		N	3.94E+03	mg/kg
Antimony	2/6	6.00E-01 - 1.00E+00	6.00E-01 - 6.00E-01	N	3.33E-01	mg/kg
Arsenic	6/6	3.86E+00 - 7.07E+00		N	2.55E+00	mg/kg
Barium	6/6	5.61E+01 - 8.67E+01		N	3.60E+01	mg/kg
Beryllium	6/6	3.40E-01 - 7.10E-01		N	2.61E-01	mg/kg
Cadmium	3/6	5.00E-02 - 7.50E-01	2.00E-02 - 2.00E-02	N	8.42E-02	mg/kg
Calcium	6/6	1.14E+04 - 1.10E+05		N	1.59E+04	mg/kg
Chromium	6/6	8.25E+00 - 6.60E+01		N	1.12E+01	mg/kg
Cobalt	6/6	3.67E+00 - 8.50E+00		N	2.96E+00	mg/kg
Copper	6/6	7.10E+00 - 1.32E+01		N	4.68E+00	mg/kg
Cyanide	0/6		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	6/6	1.12E+04 - 3.05E+04		N	8.94E+03	mg/kg
Lead	6/6	8.40E+00 - 4.20E+01		N	7.60E+00	mg/kg
Magnesium	6/6	8.20E+02 - 2.42E+03		N	7.18E+02	mg/kg
Manganese	6/6	1.95E+02 - 5.72E+02		N	1.90E+02	mg/kg
Mercury	5/6	2.94E-02 - 8.88E-02	8.00E-03 - 8.00E-03	N	2.19E-02	mg/kg
Nickel	6/6	5.70E+00 - 1.41E+01		N	4.40E+00	mg/kg
Potassium	6/6	1.33E+02 - 2.48E+02		N	9.60E+01	mg/kg
Selenium	3/6	2.00E-01 - 3.00E-01	2.00E-01 - 2.00E-01	N	1.17E-01	mg/kg
Silver	1/6	3.80E-01 - 3.80E-01	8.00E-02 - 1.00E-01	N	6.67E-02	mg/kg

530697

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Sodium	6/6	2.07E+02 - 4.91E+02		N	1.89E+02	mg/kg
Thallium	0/6		6.00E-01 - 1.00E+00	NT	3.33E-01	mg/kg
Uranium	1/1	9.55E+00 - 9.55E+00		NT	9.55E+00	mg/kg
Vanadium	6/6	1.55E+01 - 4.24E+01		N	1.24E+01	mg/kg
Zinc	6/6	1.77E+01 - 3.74E+01		N	1.41E+01	mg/kg
1,2,4-Trichlorobenzene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
1,2-Dichlorobenzene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
1,3-Dichlorobenzene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
1,4-Dichlorobenzene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2,4,5-Trichlorophenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2,4,6-Tribromophenol	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
2,4,6-Trichlorophenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2,4-Dichlorophenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2,4-Dimethylphenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2,4-Dinitrophenol	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
2,4-Dinitrotoluene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2,6-Dinitrotoluene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2-Chloronaphthalene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2-Chlorophenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2-Fluoro-1,1'-biphenyl	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
2-Fluorophenol	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
2-Methyl-4,6-dinitrophenol	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
2-Methylnaphthalene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2-Methylphenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
2-Nitrobenzenamine	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
2-Nitrophenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
3,3'-Dichlorobenzidine	0/2		7.25E-01 - 6.80E+00	NT	1.88E+00	mg/kg
3-Nitrobenzenamine	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
4-Bromophenyl phenyl ether	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
4-Chloro-3-methylphenol	0/2		7.25E-01 - 6.80E+00	NT	1.88E+00	mg/kg
4-Chlorobenzenamine	0/2		7.25E-01 - 6.80E+00	NT	1.88E+00	mg/kg
4-Chlorophenyl phenyl ether	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
4-Methylphenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
4-Nitrobenzenamine	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
4-Nitrophenol	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
Acenaphthene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Acenaphthylene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Aniline	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Anthracene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Benz(a)anthracene	1/2	3.00E-01 - 3.00E-01	7.25E-01 - 7.25E-01	N	2.56E-01	mg/kg

530699

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benzenemethanol	0/2		7.25E-01 - 6.80E+00	NT	1.88E+00	mg/kg
Benzidine	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Benzo(a)pyrene	1/2	4.00E-01 - 4.00E-01	7.25E-01 - 7.25E-01	N	2.81E-01	mg/kg
Benzo(b)fluoranthene	1/2	6.00E-01 - 6.00E-01	7.25E-01 - 7.25E-01	N	3.31E-01	mg/kg
Benzo(ghi)perylene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Benzo(k)fluoranthene	1/2	3.00E-01 - 3.00E-01	7.25E-01 - 7.25E-01	N	2.56E-01	mg/kg
Benzoic acid	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
Bis(2-chloroethoxy)methane	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Bis(2-chloroethyl) ether	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Bis(2-chloroisopropyl)ether	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Bis(2-ethylhexyl)phthalate	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Butyl benzyl phthalate	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Carbazole	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Chrysene	1/2	2.90E-01 - 2.90E-01	7.25E-01 - 7.25E-01	N	2.54E-01	mg/kg
Di-n-butyl phthalate	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Di-n-octylphthalate	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Dibenz(a,h)anthracene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Dibenzofuran	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Diethyl phthalate	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Dimethyl phthalate	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Diphenyldiazene	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Fluoranthene	1/2	4.00E-01 - 4.00E-01	7.25E-01 - 7.25E-01	N	2.81E-01	mg/kg
Fluorene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Hexachlorobenzene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Hexachlorobutadiene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Hexachlorocyclopentadiene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Hexachloroethane	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Indeno(1,2,3-cd)pyrene	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Isophorone	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
N-Nitroso-di-n-propylamine	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
N-Nitrosodimethylamine	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
N-Nitrosodiphenylamine	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Naphthalene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Nitrobenzene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Nitrobenzene-d5	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
PCB-1016	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1221	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1232	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1242	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1248	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg

530700

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1254	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1260	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1262	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
PCB-1268	0/1		1.80E-02 - 1.80E-02	NT	1.80E-02	mg/kg
Pentachlorophenol	0/2		7.25E-01 - 1.70E+01	NT	4.43E+00	mg/kg
Phenanthrene	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Phenol	0/2		7.25E-01 - 3.40E+00	NT	1.03E+00	mg/kg
Phenol-d5	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Polychlorinated biphenyl	0/2		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Pyrene	1/2	4.00E-01 - 4.00E-01	7.25E-01 - 7.25E-01	N	2.81E-01	mg/kg
Pyridine	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
p-Terphenyl-d14	0/2		6.98E-01 - 7.25E-01	NT	3.56E-01	mg/kg
Alpha activity	6/6	7.93E+00 - 2.22E+01		N	1.40E+01	pCi/g
Americium-241	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	6/6	1.91E+01 - 6.11E+01		N	3.65E+01	pCi/g
Cesium-137	1/1	2.00E-01 - 2.00E-01		NT	2.00E-01	pCi/g
Neptunium-237	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Plutonium-239	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	1/1	4.20E+00 - 4.20E+00		NT	4.20E+00	pCi/g
Thorium-230	1/1	1.10E+00 - 1.10E+00		NT	1.10E+00	pCi/g
Uranium-234	1/1	2.80E+00 - 2.80E+00		NT	2.80E+00	pCi/g
Uranium-235	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Uranium-238	1/1	3.20E+00 - 3.20E+00		NT	3.20E+00	pCi/g

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	80/80	9.96E-02 - 2.50E+02		L	3.61E+01	mg/L
Antimony	11/80	1.40E-03 - 4.02E-02	8.00E-04 - 2.77E-01	N	1.10E-02	mg/L
Arsenic	61/80	1.00E-03 - 4.36E-01	1.00E-03 - 1.00E-02	L	1.99E-02	mg/L
Barium	80/80	5.58E-02 - 6.93E+00		L	3.60E-01	mg/L
Beryllium	69/79	2.22E-04 - 1.11E-01	2.22E-04 - 5.00E-03	L	7.40E-03	mg/L
Bromide	10/39	2.90E-02 - 1.40E+00	1.00E+00 - 1.12E+00	N	4.10E-01	mg/L
Cadmium	29/80	3.56E-04 - 1.59E-02	2.67E-04 - 3.22E-03	L	1.02E-03	mg/L
Calcium	80/80	2.27E+01 - 7.87E+01		L	1.91E+01	mg/L
Chloride	39/39	7.01E+00 - 1.25E+02		N	2.99E+01	mg/L

530701

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Chromium	62/80	5.00E-03 - 4.49E+00	6.56E-03 - 1.39E-01	L	7.97E-02	mg/L
Cobalt	76/80	5.33E-03 - 4.84E-01	1.78E-03 - 1.00E-02	L	7.75E-02	mg/L
Copper	58/80	8.10E-03 - 1.05E+01	8.60E-03 - 1.00E-02	N	1.08E-01	mg/L
Cyanide	0/12		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/L
Fluoride	9/39	1.79E-01 - 2.31E-01	1.00E+00 - 1.00E+00	L	2.15E-01	mg/L
Iron	80/80	6.83E-02 - 2.24E+03		L	2.20E+02	mg/L
Lead	63/80	1.96E-03 - 2.63E-01	1.00E-03 - 1.56E-02	L	2.32E-02	mg/L
Magnesium	80/80	7.97E+00 - 3.33E+01		L	7.96E+00	mg/L
Manganese	80/80	7.78E-03 - 5.79E+01		L	2.03E+00	mg/L
Mercury	30/80	3.00E-05 - 6.12E-04	2.00E-04 - 2.10E-04	L	1.40E-04	mg/L
Nickel	74/80	9.67E-03 - 4.88E+00	2.61E-02 - 8.21E-02	L	1.55E-01	mg/L
Nitrate	39/39	9.30E-02 - 1.74E+02		L	2.04E+01	mg/L
Nitrate/Nitrite	3/9	3.20E-02 - 1.14E-01	1.00E+00 - 1.00E+00	L	7.25E-02	mg/L
Nitrite	0/30		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/L
Orthophosphate	2/39	2.50E-02 - 3.60E-02	1.00E+00 - 1.00E+00	N	4.75E-01	mg/L
Potassium	80/80	9.57E-01 - 2.53E+01		L	2.68E+00	mg/L
Selenium	23/80	1.34E-03 - 4.80E-03	1.30E-03 - 4.00E-02	N	7.08E-03	mg/L
Silver	8/80	4.00E-03 - 3.98E-01	1.00E-03 - 5.00E-02	N	8.12E-03	mg/L
Sodium	80/80	2.71E+01 - 8.38E+01		L	2.34E+01	mg/L
Tetraoxo-sulfate(1-)	39/39	3.70E+00 - 5.64E+01		L	1.10E+01	mg/L
Thallium	13/80	4.89E-04 - 4.56E-03	4.20E-04 - 2.00E-03	L	3.79E-04	mg/L
Uranium	45/52	1.30E-04 - 1.21E-02	8.00E-05 - 1.00E-03	L	2.45E-03	mg/L
Vanadium	73/80	4.20E-03 - 1.35E+00	4.00E-03 - 4.00E-03	L	1.09E-01	mg/L
Zinc	77/80	1.58E-02 - 8.18E+01	9.00E-03 - 9.00E-03	L	5.42E-01	mg/L
1,1,1,2-Tetrachloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1,1-Trichloroethane	1/23	1.20E-02 - 1.20E-02	1.00E-02 - 1.30E+01	L	1.01E+00	mg/L
1,1,2,2-Tetrachloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1,2-Trichloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1-Dichloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,1-Dichloroethene	20/155	1.00E-03 - 1.54E-01	4.00E-03 - 3.20E+01	L	4.08E-03	mg/L
1,2,3-Trichloropropane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2,4-Trichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,2-Dibromoethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2-Dichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,2-Dichloroethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2-Dichloropropane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,2-Dimethylbenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
1,3-Dichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
1,4-Dichlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4,5-Trichlorophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2,4,6-Trichlorophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dichlorophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dimethylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,4-Dinitrophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2,4-Dinitrotoluene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2,6-Dinitrotoluene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Butanone	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
2-Chloro-1,3-butadiene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
2-Chloroethyl vinyl ether	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
2-Chloronaphthalene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Chlorophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Hexanone	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
2-Methyl-4,6-dinitrophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Methylnaphthalene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Methylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Nitrobenzenamine	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
2-Nitrophenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
2-Propanol	0/16		1.10E-01 - 5.40E+01	NT	2.66E+00	mg/L
3,3'-Dichlorobenzidine	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
3-Nitrobenzenamine	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Bromophenyl phenyl ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chloro-3-methylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorobenzenamine	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Chlorophenyl phenyl ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Methyl-2-pentanone	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
4-Methylphenol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
4-Nitrobenzenamine	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
4-Nitrophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Acenaphthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acenaphthylene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Acetone	1/23	5.00E-03 - 5.00E-03	2.00E-02 - 2.50E+01	L	2.23E+00	mg/L
Acrolein	0/23		1.00E-01 - 1.30E+02	NT	6.63E+00	mg/L
Acrylonitrile	0/23		1.00E-01 - 1.30E+02	NT	6.63E+00	mg/L
Anthracene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benz(a)anthracene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Benzenemethanol	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(a)pyrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(b)fluoranthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzo(ghi)perylene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

530703

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benzo(k)fluoranthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Benzoic acid	5/16	1.00E-03 - 5.00E-03	5.00E-02 - 5.00E-02	L	2.93E-03	mg/L
Bis(2-chloroethoxy)methane	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroethyl) ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-chloroisopropyl)ether	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03 - 1.00E-03	2.00E-03 - 3.20E-02	L	4.42E-03	mg/L
Bromodichloromethane	2/23	3.00E-03 - 4.00E-03	1.00E-02 - 1.30E+01	L	3.72E-03	mg/L
Bromoform	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Bromomethane	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
Butyl benzyl phthalate	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbazole	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Carbon disulfide	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Carbon tetrachloride	4/23	1.00E-03 - 2.70E-01	1.00E-02 - 1.30E+01	L	1.82E-02	mg/L
Chlorobenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Chloroethane	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
Chloroform	6/23	1.50E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	2.22E-02	mg/L
Chloromethane	0/23		2.00E-02 - 2.50E+01	NT	1.30E+00	mg/L
Chrysene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Di-n-butyl phthalate	8/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	2.75E-03	mg/L
Di-n-octylphthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Dibenz(a,h)anthracene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibenzofuran	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dibromochloromethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Dibromomethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Dichlorodifluoromethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Diethyl phthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Dimethyl phthalate	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Dimethylbenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Ethyl cyanide	0/23		2.00E-01 - 2.50E+02	NT	1.30E+01	mg/L
Ethyl methacrylate	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Ethylbenzene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Fluoranthene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Fluorene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorobutadiene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachlorocyclopentadiene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Hexachloroethane	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Indeno(1,2,3-cd)pyrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Iodomethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Isophorone	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L

530704

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Methacrylonitrile	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Methyl methacrylate	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Methylene chloride	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
N-Nitrosodiphenylamine	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Naphthalene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Nitrobenzene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Pentachlorophenol	0/16		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/L
Phenanthrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Phenol	6/16	1.00E-03 - 4.00E-02	1.00E-02 - 1.00E-02	L	4.61E-03	mg/L
Pyrene	0/16		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/L
Styrene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Tetrachloroethene	6/23	3.00E-03 - 3.00E-02	1.00E-02 - 1.30E+01	L	1.45E-02	mg/L
Toluene	1/23	3.60E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	8.78E-01	mg/L
Trichloroethene	146/155	1.50E-03 - 7.01E+02	4.00E-03 - 4.00E-03	L	5.27E+00	mg/L
Trichlorofluoromethane	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Vinyl acetate	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Vinyl chloride	3/155	1.00E-03 - 1.33E-01	4.00E-03 - 3.20E+01	N	1.15E+00	mg/L
cis-1,2-Dichloroethene	10/155	1.30E-03 - 3.70E-01	4.00E-03 - 3.20E+01	N	1.23E+00	mg/L
cis-1,3-Dichloropropene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
trans-1,2-Dichloroethene	27/155	1.50E-03 - 1.20E+00	4.00E-03 - 3.20E+01	L	7.62E-03	mg/L
trans-1,3-Dichloropropene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
trans-1,4-Dichloro-2-butene	0/23		1.00E-02 - 1.30E+01	NT	6.63E-01	mg/L
Actinium-228	0/1		1.00E+00 - 1.00E+00	NT	1.00E+00	pCi/L
Alpha activity	129/151	6.90E-01 - 1.36E+02	-8.53E-01 - 5.06E+00	N	1.45E+01	pCi/L
Americium-241	2/30	7.70E-02 - 1.68E+00	-1.50E-01 - 1.22E+02	N	1.08E+01	pCi/L
Beta activity	149/151	2.86E+00 - 1.72E+04	1.28E+00 - 1.50E+00	L	2.45E+02	pCi/L
Bismuth-212	1/1	4.20E+01 - 4.20E+01		NT	4.20E+01	pCi/L
Bismuth-214	0/1		5.50E+00 - 5.50E+00	NT	5.50E+00	pCi/L
Cesium-134	0/1		1.10E+00 - 1.10E+00	NT	1.10E+00	pCi/L
Cesium-137	15/31	3.33E+00 - 1.45E+01	-1.19E+00 - 3.38E+01	N	8.31E+00	pCi/L
Cobalt-57	0/1		-1.00E-01 --1.00E-01	NT	-1.00E-01	pCi/L
Cobalt-60	0/4		3.00E-01 - 3.94E+01	NT	2.38E+01	pCi/L
Lead-210	1/1	1.00E+02 - 1.00E+02		NT	1.00E+02	pCi/L
Lead-212	0/1		4.60E+00 - 4.60E+00	NT	4.60E+00	pCi/L
Lead-214	1/1	7.40E+00 - 7.40E+00		NT	7.40E+00	pCi/L
Neptunium-237	23/30	0.00E+00 - 1.44E+01	2.04E+00 - 5.30E+01	N	9.10E+00	pCi/L
Plutonium-238	0/1		2.40E-02 - 2.40E-02	NT	2.40E-02	pCi/L
Plutonium-239	4/27	0.00E+00 - 1.30E-01	-3.00E-02 - 1.10E-01	N	3.22E-02	pCi/L
Plutonium-239/240	0/1		1.70E-02 - 1.70E-02	NT	1.70E-02	pCi/L

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Potassium-40	0/1		1.40E+01 - 1.40E+01	NT	1.40E+01	pCi/L
Radium-226	0/1		4.00E+01 - 4.00E+01	NT	4.00E+01	pCi/L
Technetium-99	26/28	2.00E+00 - 1.70E+04	-1.53E+01 --5.20E+00	N	1.42E+03	pCi/L
Thallium-208	0/1		7.00E-01 - 7.00E-01	NT	7.00E-01	pCi/L
Thorium-228	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Thorium-230	22/28	1.80E-01 - 8.40E+00	6.00E-02 - 2.20E-01	L	6.85E-01	pCi/L
Thorium-232	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Thorium-234	0/1		-1.20E+01 --1.20E+01	NT	-1.20E+01	pCi/L
Uranium-233/234	1/1	6.50E-01 - 6.50E-01		NT	6.50E-01	pCi/L
Uranium-234	17/30	1.70E-01 - 1.70E+01	2.00E-02 - 4.98E+02	L	7.00E-01	pCi/L
Uranium-235	3/28	1.03E-01 - 7.70E-01	-2.00E-02 - 4.10E-01	N	6.55E-02	pCi/L
Uranium-238	13/31	1.90E-01 - 1.66E+01	-1.30E-01 - 5.44E+02	N	4.11E+01	pCi/L

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	57/57	1.18E+03 - 1.74E+04		N	5.61E+03	mg/kg
Antimony	18/57	6.00E-01 - 4.20E+00	6.00E-01 - 6.00E-01	N	4.23E-01	mg/kg
Arsenic	57/57	1.31E+00 - 1.48E+01		L	2.64E+00	mg/kg
Barium	57/57	1.35E+01 - 2.79E+02		N	5.54E+01	mg/kg
Beryllium	57/57	1.60E-01 - 1.00E+00		N	2.98E-01	mg/kg
Cadmium	37/57	2.00E-02 - 5.90E-01	2.00E-02 - 3.00E-02	L	1.02E-01	mg/kg
Calcium	57/57	7.63E+02 - 3.33E+05		L	6.27E+03	mg/kg
Chromium	57/57	5.72E+00 - 5.16E+01		L	8.45E+00	mg/kg
Cobalt	57/57	1.99E+00 - 1.96E+01		L	3.13E+00	mg/kg
Copper	57/57	2.27E+00 - 1.86E+01		N	5.36E+00	mg/kg
Cyanide	0/59		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	57/57	5.97E+03 - 3.12E+04		N	9.30E+03	mg/kg
Lead	57/57	2.40E+00 - 2.45E+01		L	5.08E+00	mg/kg
Magnesium	57/57	7.70E+02 - 2.72E+04		L	1.23E+03	mg/kg
Manganese	57/57	1.44E+02 - 1.02E+03		L	1.85E+02	mg/kg
Mercury	54/57	9.50E-03 - 1.49E-01	8.10E-03 - 9.60E-03	L	2.94E-02	mg/kg
Nickel	57/57	5.10E+00 - 2.33E+01		L	6.43E+00	mg/kg
Potassium	57/57	1.12E+02 - 9.08E+02		L	2.12E+02	mg/kg
Selenium	5/57	2.00E-01 - 3.00E-01	2.00E-01 - 3.00E-01	N	1.04E-01	mg/kg
Silver	10/57	1.70E-01 - 1.58E+00	8.00E-02 - 2.00E-01	L	3.03E-02	mg/kg

530706

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Sodium	57/57	2.29E+02 - 1.00E+03		L	2.77E+02	mg/kg
Thallium	3/57	7.00E-01 - 1.10E+00	5.00E-01 - 3.00E+00	N	3.30E-01	mg/kg
Uranium	53/53	1.49E+00 - 1.28E+01		L	3.05E+00	mg/kg
Vanadium	57/57	5.30E+00 - 5.50E+01		N	1.30E+01	mg/kg
Zinc	57/57	1.42E+01 - 6.52E+01		N	1.75E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
1,1,1-Trichloroethane	3/54	1.20E-02 - 2.40E+00	5.00E-03 - 3.00E-02	N	2.58E-02	mg/kg
1,1,2,2-Tetrachloroethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
1,1,2-Trichloroethane	2/54	2.00E-02 - 5.30E-01	5.00E-03 - 3.00E-02	N	8.42E-03	mg/kg
1,1-Dichloroethane	0/54		5.00E-03 - 9.80E-01	NT	1.25E-02	mg/kg
1,1-Dichloroethene	9/61	1.20E-03 - 9.50E-01	5.00E-01 - 1.40E+00	N	3.15E-01	mg/kg
1,2,3-Trichloropropane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
1,2,4-Trichlorobenzene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
1,2-Dibromoethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
1,2-Dichlorobenzene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
1,2-Dichloroethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
1,2-Dichloropropane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
1,3-Dichlorobenzene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
1,4-Dichlorobenzene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2,4,5-Trichlorophenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2,4,6-Tribromophenol	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
2,4,6-Trichlorophenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2,4-Dichlorophenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2,4-Dimethylphenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2,4-Dinitrophenol	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
2,4-Dinitrotoluene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2,6-Dinitrotoluene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2-Butanone	0/54		1.00E-01 - 6.00E-01	NT	5.93E-02	mg/kg
2-Chloro-1,3-butadiene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
2-Chloroethyl vinyl ether	0/54		1.00E-02 - 6.00E-02	NT	5.93E-03	mg/kg
2-Chloronaphthalene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2-Chlorophenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
2-Fluorophenol	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
2-Hexanone	0/54		5.00E-02 - 3.00E-01	NT	3.44E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
2-Methylnaphthalene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2-Methylphenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
2-Nitrobenzenamine	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
2-Nitrophenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg

101034

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2-Propanol	0/54		5.00E-02 - 3.00E-01	NT	3.44E-02	mg/kg
3,3'-Dichlorobenzidine	0/60		6.91E-01 - 1.60E+01	NT	8.71E-01	mg/kg
3-Nitrobenzenamine	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
4-Bromophenyl phenyl ether	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
4-Chloro-3-methylphenol	0/60		6.91E-01 - 1.60E+01	NT	8.71E-01	mg/kg
4-Chlorobenzenamine	0/60		6.91E-01 - 1.60E+01	NT	8.71E-01	mg/kg
4-Chlorophenyl phenyl ether	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
4-Methyl-2-pentanone	0/54		5.00E-02 - 3.00E-01	NT	3.44E-02	mg/kg
4-Methylphenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
4-Nitrobenzenamine	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
4-Nitrophenol	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
Acenaphthene	5/60	5.00E-02 - 3.30E-01	6.91E-01 - 8.00E+00	N	4.30E-01	mg/kg
Acenaphthylene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Acetone	3/54	1.50E-02 - 8.70E-02	1.00E-01 - 6.00E-01	N	5.76E-02	mg/kg
Acrolein	0/54		1.00E-01 - 6.00E-01	NT	5.93E-02	mg/kg
Acrylonitrile	0/54		1.00E-01 - 6.00E-01	NT	5.93E-02	mg/kg
Aniline	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
Anthracene	9/60	4.00E-02 - 6.10E-01	6.91E-01 - 8.00E+00	N	4.13E-01	mg/kg
Benz(a)anthracene	14/60	5.00E-02 - 2.30E+00	6.91E-01 - 8.00E+00	N	4.26E-01	mg/kg
Benzene	1/54	1.70E-02 - 1.70E-02	5.00E-03 - 3.00E-02	N	3.54E-03	mg/kg
Benzenemethanol	0/60		6.91E-01 - 1.60E+01	NT	8.71E-01	mg/kg
Benzidine	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
Benzo(a)pyrene	14/60	5.00E-02 - 2.40E+00	6.91E-01 - 8.00E+00	N	4.25E-01	mg/kg
Benzo(b)fluoranthene	13/60	6.00E-02 - 2.90E+00	6.91E-01 - 8.00E+00	N	4.36E-01	mg/kg
Benzo(ghi)perylene	10/60	6.50E-02 - 1.00E+00	6.30E-02 - 8.00E+00	N	4.16E-01	mg/kg
Benzo(k)fluoranthene	14/60	5.00E-02 - 1.20E+00	6.91E-01 - 8.00E+00	N	4.07E-01	mg/kg
Benzoic acid	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
Bis(2-chloroethoxy)methane	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Bis(2-chloroethyl) ether	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Bis(2-ethylhexyl)phthalate	23/60	6.30E-03 - 9.00E-02	6.91E-01 - 8.00E+00	L	6.40E-02	mg/kg
Bromodichloromethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Bromoform	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Bromomethane	0/54		1.00E-02 - 6.00E-02	NT	5.93E-03	mg/kg
Butyl benzyl phthalate	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Carbazole	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
Carbon disulfide	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Carbon tetrachloride	3/54	2.00E-03 - 7.10E-01	5.00E-03 - 3.00E-02	N	9.98E-03	mg/kg
Chlorobenzene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Chloroethane	0/54		1.00E-02 - 6.00E-02	NT	5.93E-03	mg/kg

530708

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Chloroform	3/54	1.70E-03 - 1.80E-02	5.00E-03 - 3.00E-02	N	3.47E-03	mg/kg
Chloromethane	0/54		1.00E-02 - 6.00E-02	NT	5.93E-03	mg/kg
Chrysene	14/60	5.00E-02 - 2.60E+00	6.91E-01 - 8.00E+00	N	4.32E-01	mg/kg
Di-n-butyl phthalate	7/60	1.40E-01 - 1.77E+00	6.91E-01 - 8.40E-01	N	3.96E-01	mg/kg
Di-n-octylphthalate	1/60	6.00E-02 - 6.00E-02	6.91E-01 - 8.00E+00	N	4.50E-01	mg/kg
Dibenz(a,h)anthracene	1/60	4.60E-01 - 4.60E-01	6.60E-02 - 8.00E+00	N	4.48E-01	mg/kg
Dibenzofuran	2/60	4.00E-02 - 1.80E-01	6.91E-01 - 8.00E+00	N	4.45E-01	mg/kg
Dibromochloromethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Dibromomethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Dichlorodifluoromethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Diethyl phthalate	5/60	5.00E-02 - 6.10E+00	6.91E-01 - 8.00E+00	N	5.54E-01	mg/kg
Dimethyl phthalate	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Dimethylbenzene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Diphenyldiazene	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
Ethyl cyanide	0/54		1.00E-01 - 6.00E-01	NT	5.93E-02	mg/kg
Ethyl methacrylate	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Ethylbenzene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Fluoranthene	18/60	1.20E-03 - 4.00E+00	6.91E-01 - 8.00E+00	L	2.59E-01	mg/kg
Fluorene	5/60	5.00E-02 - 2.00E-01	6.91E-01 - 8.00E+00	N	4.28E-01	mg/kg
Hexachlorobenzene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Hexachlorobutadiene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Hexachlorocyclopentadiene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Hexachloroethane	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Indeno(1,2,3-cd)pyrene	9/60	7.20E-02 - 1.10E+00	6.60E-02 - 8.00E+00	N	4.15E-01	mg/kg
Iodomethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Isophorone	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Methacrylonitrile	0/54		2.60E-02 - 1.50E-01	NT	1.70E-02	mg/kg
Methyl methacrylate	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Methylene chloride	20/54	1.20E-03 - 2.80E-02	1.30E-03 - 3.00E-02	L	4.10E-03	mg/kg
N-Nitroso-di-n-propylamine	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
N-Nitrosodimethylamine	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
N-Nitrosodiphenylamine	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Naphthalene	2/60	1.00E-01 - 1.60E-01	6.91E-01 - 8.00E+00	N	4.45E-01	mg/kg
Nitrobenzene	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Nitrobenzene-d5	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
PCB-1016	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg
PCB-1221	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg
PCB-1232	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg
PCB-1242	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg
PCB-1248	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1254	1/11	7.30E-01 - 7.30E-01	1.90E-02 - 2.20E-02	L	5.07E-02	mg/kg
PCB-1260	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg
PCB-1262	1/11	3.80E-02 - 3.80E-02	1.90E-02 - 2.20E-02	L	2.22E-02	mg/kg
PCB-1268	0/11		1.90E-02 - 2.20E-02	NT	2.05E-02	mg/kg
Pentachloroethane	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Pentachlorophenol	0/60		6.91E-01 - 4.00E+01	NT	2.15E+00	mg/kg
Phenanthrene	15/60	4.00E-02 - 2.80E+00	6.91E-01 - 8.00E+00	N	4.25E-01	mg/kg
Phenol	0/60		6.91E-01 - 8.00E+00	NT	4.56E-01	mg/kg
Phenol-d5	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
Polychlorinated biphenyl	2/59	3.80E-02 - 7.30E-01	1.00E+00 - 1.00E+00	N	4.90E-01	mg/kg
Pyrene	17/60	5.00E-02 - 3.30E+00	6.91E-01 - 8.00E+00	L	3.21E-01	mg/kg
Pyridine	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
Styrene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Tetrachloroethene	4/54	5.20E-03 - 6.90E-01	5.00E-03 - 3.00E-02	N	9.91E-03	mg/kg
Toluene	2/54	5.40E-03 - 3.30E-02	5.00E-03 - 3.00E-02	N	3.68E-03	mg/kg
Trichloroethene	39/61	1.50E-03 - 1.11E+04	5.00E-01 - 1.00E+00	L	2.24E+00	mg/kg
Trichlorofluoromethane	1/54	1.70E-03 - 1.70E-03	5.00E-03 - 3.00E-02	N	3.40E-03	mg/kg
Vinyl acetate	1/54	1.70E-03 - 1.70E-03	5.00E-02 - 3.00E-01	N	3.38E-02	mg/kg
Vinyl chloride	13/61	1.90E-03 - 2.90E+01	5.00E-01 - 2.30E+01	L	5.28E-02	mg/kg
cis-1,2-Dichloroethene	29/61	1.40E-03 - 2.40E+00	5.00E-01 - 2.30E+01	L	1.37E-01	mg/kg
cis-1,3-Dichloropropene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
p-Terphenyl-d14	0/22		6.91E-01 - 8.34E-01	NT	3.93E-01	mg/kg
trans-1,2-Dichloroethene	13/61	1.40E+00 - 1.02E+02	5.00E-01 - 6.32E+02	N	2.07E+01	mg/kg
trans-1,3-Dichloropropene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/54		5.00E-03 - 3.00E-02	NT	3.44E-03	mg/kg
Alpha activity	60/65	6.28E+00 - 3.52E+01	2.42E+00 - 7.11E+00	N	2.05E+01	pCi/g
Americium-241	7/53	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.13E-01	pCi/g
Beta activity	65/65	1.26E+01 - 4.94E+01		N	3.22E+01	pCi/g
Cesium-137	12/53	2.00E-01 - 6.00E-01	1.00E-01 - 2.00E-01	N	1.62E-01	pCi/g
Neptunium-237	40/53	2.00E-01 - 6.00E-01	1.00E-01 - 2.00E-01	N	2.57E-01	pCi/g
Plutonium-239	3/53	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.06E-01	pCi/g
Technetium-99	29/53	2.00E-01 - 4.70E+00	1.00E-01 - 3.00E-01	L	4.12E-01	pCi/g
Thorium-230	53/53	5.00E-01 - 1.80E+00		L	1.06E+00	pCi/g
Uranium-234	53/53	4.00E-01 - 3.50E+00		L	9.45E-01	pCi/g
Uranium-235	1/53	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.02E-01	pCi/g
Uranium-238	53/53	5.00E-01 - 4.30E+00		L	1.02E+00	pCi/g

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	1/1	1.42E+04 - 1.42E+04		NT	7.10E+03	mg/kg
Antimony	1/1	6.00E-01 - 6.00E-01		NT	3.00E-01	mg/kg
Arsenic	1/1	1.00E+01 - 1.00E+01		NT	5.00E+00	mg/kg
Barium	1/1	8.75E+01 - 8.75E+01		NT	4.38E+01	mg/kg
Beryllium	1/1	6.30E-01 - 6.30E-01		NT	3.15E-01	mg/kg
Cadmium	1/1	3.50E-01 - 3.50E-01		NT	1.75E-01	mg/kg
Calcium	1/1	1.84E+04 - 1.84E+04		NT	9.20E+03	mg/kg
Chromium	1/1	2.36E+01 - 2.36E+01		NT	1.18E+01	mg/kg
Cobalt	1/1	8.06E+00 - 8.06E+00		NT	4.03E+00	mg/kg
Copper	1/1	1.53E+01 - 1.53E+01		NT	7.65E+00	mg/kg
Cyanide	0/1		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	1/1	2.78E+04 - 2.78E+04		NT	1.39E+04	mg/kg
Lead	1/1	1.41E+01 - 1.41E+01		NT	7.05E+00	mg/kg
Magnesium	1/1	2.54E+03 - 2.54E+03		NT	1.27E+03	mg/kg
Manganese	1/1	4.39E+02 - 4.39E+02		NT	2.20E+02	mg/kg
Mercury	0/1		8.70E-03 - 8.70E-03	NT	4.35E-03	mg/kg
Nickel	1/1	1.33E+01 - 1.33E+01		NT	6.65E+00	mg/kg
Potassium	1/1	7.69E+02 - 7.69E+02		NT	3.85E+02	mg/kg
Selenium	0/1		2.00E-01 - 2.00E-01	NT	1.00E-01	mg/kg
Silver	0/1		8.00E-02 - 8.00E-02	NT	4.00E-02	mg/kg
Sodium	1/1	4.00E+02 - 4.00E+02		NT	2.00E+02	mg/kg
Thallium	0/1		6.00E-01 - 6.00E-01	NT	3.00E-01	mg/kg
Uranium	1/1	3.28E+00 - 3.28E+00		NT	3.28E+00	mg/kg
Vanadium	1/1	3.61E+01 - 3.61E+01		NT	1.81E+01	mg/kg
Zinc	1/1	4.88E+01 - 4.88E+01		NT	2.44E+01	mg/kg
1,2,4-Trichlorobenzene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
1,2-Dichlorobenzene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
1,3-Dichlorobenzene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
1,4-Dichlorobenzene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,4,5-Trichlorophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,4,6-Tribromophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,4,6-Trichlorophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,4-Dichlorophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,4-Dimethylphenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,4-Dinitrophenol	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
2,4-Dinitrotoluene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2,6-Dinitrotoluene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2-Chloronaphthalene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2-Chlorophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2-Fluorophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg

530711

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2-Methyl-4,6-dinitrophenol	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
2-Methylnaphthalene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2-Methylphenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
2-Nitrobenzenamine	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
2-Nitrophenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
3,3'-Dichlorobenzidine	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
3-Nitrobenzenamine	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
4-Bromophenyl phenyl ether	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
4-Chloro-3-methylphenol	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorobenzenamine	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
4-Chlorophenyl phenyl ether	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
4-Methylphenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
4-Nitrobenzenamine	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
4-Nitrophenol	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
Acenaphthene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Acenaphthylene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Aniline	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Anthracene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Benz(a)anthracene	1/1	7.00E-02 - 7.00E-02		NT	3.50E-02	mg/kg
Benzenemethanol	0/1		1.50E+00 - 1.50E+00	NT	7.50E-01	mg/kg
Benzidine	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Benzo(a)pyrene	1/1	8.00E-02 - 8.00E-02		NT	4.00E-02	mg/kg
Benzo(b)fluoranthene	1/1	7.00E-02 - 7.00E-02		NT	3.50E-02	mg/kg
Benzo(ghi)perylene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Benzo(k)fluoranthene	1/1	6.00E-02 - 6.00E-02		NT	3.00E-02	mg/kg
Benzoic acid	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
Bis(2-chloroethoxy)methane	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Bis(2-chloroethyl) ether	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Bis(2-ethylhexyl)phthalate	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Butyl benzyl phthalate	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Carbazole	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Chrysene	1/1	8.00E-02 - 8.00E-02		NT	4.00E-02	mg/kg
Di-n-butyl phthalate	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Di-n-octylphthalate	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Dibenz(a,h)anthracene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Dibenzofuran	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Diethyl phthalate	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Dimethyl phthalate	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Diphenyldiazene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg

530712

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Fluoranthene	1/1	1.50E-01 - 1.50E-01		NT	7.50E-02	mg/kg
Fluorene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Hexachlorobenzene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Hexachlorobutadiene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Hexachlorocyclopentadiene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Hexachloroethane	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Indeno(1,2,3-cd)pyrene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Isophorone	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
N-Nitroso-di-n-propylamine	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
N-Nitrosodimethylamine	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
N-Nitrosodiphenylamine	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Naphthalene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Nitrobenzene	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Nitrobenzene-d5	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
PCB-1016	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1221	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1232	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1242	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1248	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1254	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1260	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1262	1/1	3.80E-02 - 3.80E-02		NT	3.80E-02	mg/kg
PCB-1268	0/1		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
Pentachlorophenol	0/1		3.70E+00 - 3.70E+00	NT	1.85E+00	mg/kg
Phenanthrene	1/1	7.00E-02 - 7.00E-02		NT	3.50E-02	mg/kg
Phenol	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Phenol-d5	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Polychlorinated biphenyl	1/1	3.80E-02 - 3.80E-02		NT	1.90E-02	mg/kg
Pyrene	1/1	1.20E-01 - 1.20E-01		NT	6.00E-02	mg/kg
Pyridine	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
p-Terphenyl-d14	0/1		7.52E-01 - 7.52E-01	NT	3.76E-01	mg/kg
Alpha activity	2/2	6.73E+00 - 1.65E+01		N	1.16E+01	pCi/g
Americium-241	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	2/2	1.58E+01 - 2.43E+01		N	2.00E+01	pCi/g
Cesium-137	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Neptunium-237	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Plutonium-239	0/1		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Technetium-99	1/1	2.00E+00 - 2.00E+00		NT	2.00E+00	pCi/g
Thorium-230	1/1	9.00E-01 - 9.00E-01		NT	9.00E-01	pCi/g
Uranium-234	1/1	1.00E+00 - 1.00E+00		NT	1.00E+00	pCi/g

530713

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,1-Dichloroethene	0/41		2.00E-01 - 1.10E+00	NT	3.55E-01	mg/kg
1,2,3-Trichloropropane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
1,2,4-Trichlorobenzene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
1,2-Dibromoethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
1,2-Dichlorobenzene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
1,2-Dichloroethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
1,2-Dichloropropane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
1,3-Dichlorobenzene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
1,4-Dichlorobenzene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2,4,5-Trichlorophenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2,4,6-Tribromophenol	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
2,4,6-Trichlorophenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2,4-Dichlorophenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2,4-Dimethylphenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2,4-Dinitrophenol	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
2,4-Dinitrotoluene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2,6-Dinitrotoluene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2-Butanone	0/30		1.00E-01 - 2.00E+01	NT	5.55E-01	mg/kg
2-Chloro-1,3-butadiene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
2-Chloroethyl vinyl ether	0/30		1.00E-02 - 2.00E+00	NT	5.55E-02	mg/kg
2-Chloronaphthalene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2-Chlorophenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2-Fluoro-1,1'-biphenyl	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
2-Fluorophenol	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
2-Hexanone	1/30	4.40E-03 - 4.40E-03	5.00E-02 - 8.00E+00	L	1.00E-01	mg/kg
2-Methyl-4,6-dinitrophenol	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
2-Methylnaphthalene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2-Methylphenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2-Nitrobenzenamine	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
2-Nitrophenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
2-Propanol	0/30		5.00E-02 - 8.00E+00	NT	2.82E-01	mg/kg
3,3'-Dichlorobenzidine	0/40		7.57E-01 - 1.40E+01	NT	1.16E+00	mg/kg
3-Nitrobenzenamine	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
4-Bromophenyl phenyl ether	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
4-Chloro-3-methylphenol	0/40		7.57E-01 - 1.40E+01	NT	1.16E+00	mg/kg
4-Chlorobenzenamine	0/40		7.57E-01 - 1.40E+01	NT	1.16E+00	mg/kg
4-Chlorophenyl phenyl ether	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
4-Methyl-2-pentanone	0/30		5.00E-02 - 8.00E+00	NT	2.82E-01	mg/kg
4-Methylphenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
4-Nitrobenzenamine	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
4-Nitrophenol	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
Acenaphthene	6/40	6.10E-03 - 2.80E+00	6.70E-01 - 8.41E-01	N	4.00E-01	mg/kg
Acenaphthylene	1/40	2.20E-01 - 2.20E-01	7.20E-01 - 7.30E+00	L	5.55E-01	mg/kg
Acetone	1/30	7.10E-03 - 7.10E-03	1.00E-01 - 2.00E+01	L	1.80E-01	mg/kg
Acrolein	0/30		1.00E-01 - 2.00E+01	NT	5.55E-01	mg/kg
Acrylonitrile	0/30		1.50E-03 - 2.00E+01	NT	5.53E-01	mg/kg
Aniline	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
Anthracene	7/40	1.00E-02 - 5.32E+00	7.50E-01 - 8.41E-01	L	2.14E-01	mg/kg
Benz(a)anthracene	9/40	2.10E-02 - 1.40E+01	7.50E-01 - 8.41E-01	L	2.74E-01	mg/kg
Benzene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Benzenemethanol	0/40		7.57E-01 - 1.40E+01	NT	1.16E+00	mg/kg
Benzidine	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
Benzo(a)pyrene	8/40	1.90E-02 - 1.30E+01	7.50E-01 - 8.41E-01	L	2.47E-01	mg/kg
Benzo(b)fluoranthene	9/40	1.80E-02 - 1.40E+01	7.50E-01 - 8.41E-01	L	2.65E-01	mg/kg
Benzo(ghi)perylene	8/40	1.20E-02 - 6.10E+00	7.50E-01 - 8.41E-01	L	2.19E-01	mg/kg
Benzo(k)fluoranthene	9/40	1.60E-02 - 8.75E+00	7.50E-01 - 8.41E-01	L	2.61E-01	mg/kg
Benzoic acid	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
Bis(2-chloroethoxy)methane	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Bis(2-chloroethyl) ether	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Bis(2-chloroisopropyl)ether	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Bis(2-ethylhexyl)phthalate	19/40	4.00E-02 - 8.77E-01	7.20E-01 - 7.30E+00	L	1.18E-01	mg/kg
Bromodichloromethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Bromoform	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Bromomethane	0/30		1.00E-02 - 2.00E+00	NT	5.55E-02	mg/kg
Butyl benzyl phthalate	4/40	2.00E-01 - 4.34E-01	6.70E-01 - 7.30E+00	L	3.47E-01	mg/kg
Carbazole	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
Carbon disulfide	1/30	3.90E-03 - 3.90E-03	5.00E-03 - 8.00E-01	L	9.39E-03	mg/kg
Carbon tetrachloride	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Chlorobenzene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Chloroethane	0/30		1.00E-02 - 2.00E+00	NT	5.55E-02	mg/kg
Chloroform	1/30	1.90E-03 - 1.90E-03	5.00E-03 - 8.00E-01	L	9.43E-03	mg/kg
Chloromethane	0/30		1.00E-02 - 2.00E+00	NT	5.55E-02	mg/kg
Chrysene	9/40	2.20E-02 - 1.20E+01	7.50E-01 - 8.41E-01	L	2.88E-01	mg/kg
Di-n-butyl phthalate	19/40	2.70E-01 - 3.80E+00	6.70E-01 - 7.30E+00	L	8.76E-01	mg/kg
Di-n-octylphthalate	1/40	6.06E-01 - 6.06E-01	6.70E-01 - 7.30E+00	L	5.54E-01	mg/kg
Dibenz(a,h)anthracene	4/40	7.70E-02 - 1.30E+00	7.50E-01 - 7.30E+00	L	3.04E-01	mg/kg
Dibenzofuran	4/40	2.80E-03 - 7.00E-01	7.50E-01 - 7.20E+00	L	7.06E-02	mg/kg
Dibromochloromethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Dibromomethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Dichlorodifluoromethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Diethyl phthalate	4/40	4.00E-02 - 1.50E-01	6.70E-01 - 7.30E+00	L	8.39E-02	mg/kg
Dimethyl phthalate	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Dimethylbenzene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Diphenyldiazene	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
Ethyl cyanide	0/30		1.00E-01 - 2.00E+01	NT	5.55E-01	mg/kg
Ethyl methacrylate	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Ethylbenzene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Fluoranthene	10/40	4.00E-02 - 3.00E+01	7.50E-01 - 8.41E-01	L	3.17E-01	mg/kg
Fluorene	5/40	4.80E-03 - 1.20E+00	6.70E-01 - 7.20E+00	L	1.15E-01	mg/kg
Hexachlorobenzene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Hexachlorobutadiene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Hexachlorocyclopentadiene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Hexachloroethane	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Indeno(1,2,3-cd)pyrene	7/40	1.10E-02 - 3.90E+00	7.35E-01 - 8.41E-01	L	2.09E-01	mg/kg
Iodomethane	1/30	7.00E-01 - 7.00E-01	5.00E-03 - 8.00E-01	L	9.45E-03	mg/kg
Isophorone	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Methacrylonitrile	0/30		2.70E-02 - 3.80E+00	NT	1.41E-01	mg/kg
Methyl methacrylate	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Methylene chloride	24/30	1.20E-03 - 8.00E-01	5.00E-03 - 6.00E-03	L	1.10E-02	mg/kg
N-Nitroso-di-n-propylamine	1/40	5.82E-01 - 5.82E-01	6.70E-01 - 7.30E+00	L	5.53E-01	mg/kg
N-Nitrosodimethylamine	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
N-Nitrosodiphenylamine	1/40	5.82E-01 - 5.82E-01	6.70E-01 - 7.30E+00	L	5.53E-01	mg/kg
Naphthalene	2/40	2.40E-03 - 1.20E-01	6.70E-01 - 7.30E+00	L	2.67E-02	mg/kg
Nitrobenzene	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Nitrobenzene-d5	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
PCB-1016	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1221	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1232	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1242	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1248	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1254	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1260	3/6	3.00E-03 - 3.80E-02	2.10E-02 - 2.10E-02	N	1.80E-02	mg/kg
PCB-1262	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
PCB-1268	0/6		1.90E-02 - 2.10E-02	NT	2.00E-02	mg/kg
Pentachloroethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Pentachlorophenol	0/40		7.57E-01 - 3.70E+01	NT	2.83E+00	mg/kg
Phenanthrene	8/40	4.60E-02 - 1.60E+01	7.50E-01 - 8.41E-01	L	2.51E-01	mg/kg
Phenol	0/40		6.70E-01 - 7.30E+00	NT	6.38E-01	mg/kg
Phenol-d5	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
Polychlorinated biphenyl	3/42	3.00E-03 - 3.80E-02	1.00E+00 - 1.00E+00	N	4.65E-01	mg/kg

530716

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Pyrene	9/40	4.10E-02 - 2.60E+01	7.50E-01 - 8.41E-01	L	2.99E-01	mg/kg
Pyridine	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
Styrene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Tetrachloroethene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Toluene	9/30	1.60E-03 - 5.50E-03	6.00E-03 - 8.00E-01	L	2.93E-03	mg/kg
Trichloroethene	8/41	1.45E-03 - 3.50E+01	2.00E-01 - 1.10E+00	L	5.75E-02	mg/kg
Trichlorofluoromethane	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Vinyl acetate	1/30	5.50E-02 - 5.50E-02	5.00E-02 - 8.00E+00	L	9.43E-02	mg/kg
Vinyl chloride	3/41	9.40E-03 - 3.50E-02	2.00E-01 - 2.00E+00	N	6.82E-01	mg/kg
cis-1,2-Dichloroethene	9/41	1.50E-03 - 1.00E+00	2.00E-01 - 1.10E+00	N	6.28E-01	mg/kg
cis-1,3-Dichloropropene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
p-Terphenyl-d14	0/23		6.64E-01 - 3.45E+00	NT	4.86E-01	mg/kg
trans-1,2-Dichloroethene	5/41	5.00E+00 - 1.41E+01	2.00E-01 - 1.10E+00	L	3.88E-02	mg/kg
trans-1,3-Dichloropropene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
trans-1,4-Dichloro-2-butene	0/30		5.00E-03 - 8.00E-01	NT	2.82E-02	mg/kg
Alpha activity	40/50	6.95E+00 - 3.98E+01	-3.46E+00 - 7.14E+00	N	1.68E+01	pCi/g
Americium-241	1/28	1.00E+00 - 1.00E+00	1.00E-01 - 1.00E-01	N	1.32E-01	pCi/g
Beta activity	49/50	1.69E+01 - 1.10E+02	4.27E+00 - 4.27E+00	L	3.67E+01	pCi/g
Cesium-137	10/28	2.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	L	1.31E-01	pCi/g
Neptunium-237	12/28	2.00E-01 - 4.00E-01	1.00E-01 - 2.00E-01	N	1.75E-01	pCi/g
Plutonium-239	1/28	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.04E-01	pCi/g
Technetium-99	21/28	2.00E-01 - 3.30E+01	1.00E-01 - 3.00E-01	L	7.89E-01	pCi/g
Thorium-230	28/28	4.00E-01 - 2.20E+00		L	1.12E+00	pCi/g
Uranium-234	28/28	5.00E-01 - 1.09E+01		L	1.12E+00	pCi/g
Uranium-235	2/28	4.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	L	5.15E-03	pCi/g
Uranium-238	28/28	5.00E-01 - 1.67E+01		L	1.27E+00	pCi/g

SECTOR=Southwest MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	4/4	3.25E+03 - 1.09E+04		N	3.88E+03	mg/kg
Antimony	3/4	1.10E+00 - 2.80E+00	6.00E-01 - 6.00E-01	N	8.50E-01	mg/kg
Arsenic	4/4	4.30E+00 - 4.70E+00		N	2.24E+00	mg/kg
Barium	4/4	4.31E+01 - 8.18E+01		N	3.01E+01	mg/kg
Beryllium	4/4	2.40E-01 - 7.90E-01		N	2.38E-01	mg/kg
Cadmium	4/4	2.20E-01 - 7.80E-01		N	2.20E-01	mg/kg

530717

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Calcium	4/4	2.18E+04 - 2.77E+05		N	6.90E+04	mg/kg
Chromium	4/4	1.18E+01 - 4.80E+01		N	1.11E+01	mg/kg
Cobalt	4/4	3.41E+00 - 1.06E+01		N	3.73E+00	mg/kg
Copper	4/4	5.90E+00 - 2.07E+01		N	5.53E+00	mg/kg
Cyanide	0/4		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	4/4	1.37E+04 - 3.70E+04		N	1.07E+04	mg/kg
Lead	4/4	8.00E+00 - 2.88E+01		N	8.76E+00	mg/kg
Magnesium	4/4	1.08E+03 - 1.08E+04		N	2.39E+03	mg/kg
Manganese	4/4	2.16E+02 - 4.73E+02		N	1.62E+02	mg/kg
Mercury	4/4	1.65E-02 - 1.36E-01		N	2.61E-02	mg/kg
Nickel	4/4	7.40E+00 - 2.35E+01		N	6.94E+00	mg/kg
Potassium	4/4	2.17E+02 - 6.00E+02		N	2.27E+02	mg/kg
Selenium	0/4		2.00E-01 - 1.00E+00	NT	3.00E-01	mg/kg
Silver	3/4	1.30E-01 - 1.10E+00	8.00E-02 - 8.00E-02	N	2.66E-01	mg/kg
Sodium	4/4	2.70E+02 - 8.15E+02		N	2.11E+02	mg/kg
Thallium	2/4	9.00E-01 - 1.50E+00	5.00E-01 - 6.00E-01	N	4.38E-01	mg/kg
Uranium	3/3	5.37E+00 - 5.01E+01		N	2.10E+01	mg/kg
Vanadium	4/4	7.40E+00 - 3.35E+01		N	8.96E+00	mg/kg
Zinc	4/4	2.30E+01 - 1.11E+02		N	2.74E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,1,1-Trichloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,1,2-Trichloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,1-Dichloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,1-Dichloroethene	0/1		6.00E-01 - 6.00E-01	NT	3.00E-01	mg/kg
1,2,3-Trichloropropane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,2,4-Trichlorobenzene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
1,2-Dibromoethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,2-Dichlorobenzene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
1,2-Dichloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,2-Dichloropropane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
1,3-Dichlorobenzene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
1,4-Dichlorobenzene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2,4,5-Trichlorophenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2,4,6-Tribromophenol	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
2,4,6-Trichlorophenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2,4-Dichlorophenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2,4-Dimethylphenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2,4-Dinitrophenol	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
2,4-Dinitrotoluene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

530718

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2,6-Dinitrotoluene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2-Butanone	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
2-Chloroethyl vinyl ether	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2-Chlorophenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2-Fluoro-1,1'-biphenyl	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
2-Fluorophenol	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
2-Hexanone	0/1		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
2-Methylnaphthalene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2-Methylphenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2-Nitrobenzenamine	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
2-Nitrophenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
2-Propanol	0/1		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/kg
3,3'-Dichlorobenzidine	0/5		1.30E+00 - 1.40E+01	NT	4.48E+00	mg/kg
3-Nitrobenzenamine	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
4-Bromophenyl phenyl ether	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
4-Chloro-3-methylphenol	0/5		1.30E+00 - 1.40E+01	NT	4.48E+00	mg/kg
4-Chlorobenzenamine	0/5		1.30E+00 - 1.40E+01	NT	4.48E+00	mg/kg
4-Chlorophenyl phenyl ether	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
4-Methyl-2-pentanone	0/1		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/kg
4-Methylphenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
4-Nitrobenzenamine	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
4-Nitrophenol	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
Acenaphthene	4/5	6.10E-03 - 2.80E+00	6.70E-01 - 6.70E-01	N	4.78E-01	mg/kg
Acenaphthylene	1/5	2.20E-01 - 2.20E-01	7.70E-01 - 7.30E+00	N	2.27E+00	mg/kg
Acetone	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrolein	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Aniline	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
Anthracene	5/5	1.00E-02 - 5.32E+00		N	7.93E-01	mg/kg
Benz(a)anthracene	5/5	2.10E-02 - 1.40E+01		N	2.33E+00	mg/kg
Benzene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Benzenemethanol	0/5		1.30E+00 - 1.40E+01	NT	4.48E+00	mg/kg
Benzidine	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
Benzo(a)pyrene	5/5	1.90E-02 - 1.30E+01		N	2.34E+00	mg/kg
Benzo(b)fluoranthene	5/5	1.80E-02 - 1.40E+01		N	2.46E+00	mg/kg
Benzo(ghi)perylene	5/5	1.20E-02 - 6.10E+00		N	1.18E+00	mg/kg
Benzo(k)fluoranthene	5/5	1.60E-02 - 8.75E+00		N	1.72E+00	mg/kg

530719

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benzoic acid	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
Bis(2-chloroethoxy)methane	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Bis(2-chloroethyl) ether	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Bis(2-chloroisopropyl)ether	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Bis(2-ethylhexyl)phthalate	1/5	8.00E-02 - 8.00E-02	7.70E-01 - 7.30E+00	N	2.26E+00	mg/kg
Bromodichloromethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Bromoform	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Bromomethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Carbazole	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
Carbon disulfide	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Carbon tetrachloride	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Chlorobenzene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Chloroethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chloroform	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Chloromethane	0/1		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chrysene	5/5	2.20E-02 - 1.20E+01		N	2.22E+00	mg/kg
Di-n-butyl phthalate	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Di-n-octylphthalate	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Dibenz(a,h)anthracene	3/5	7.70E-02 - 1.30E+00	7.70E-01 - 7.30E+00	N	1.04E+00	mg/kg
Dibenzofuran	3/5	2.80E-03 - 7.00E-01	7.20E+00 - 7.20E+00	N	1.51E+00	mg/kg
Dibromochloromethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Dibromomethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Dichlorodifluoromethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Diethyl phthalate	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Dimethyl phthalate	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Dimethylbenzene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Diphenyldiazene	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
Ethyl cyanide	0/1		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Ethylbenzene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Fluoranthene	5/5	6.00E-02 - 3.00E+01		N	5.11E+00	mg/kg
Fluorene	3/5	4.80E-03 - 1.20E+00	6.70E-01 - 7.20E+00	N	9.57E-01	mg/kg
Hexachlorobenzene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Hexachlorobutadiene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Hexachlorocyclopentadiene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Hexachloroethane	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Indeno(1,2,3-cd)pyrene	5/5	1.10E-02 - 3.90E+00		N	9.63E-01	mg/kg
Iodomethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Isophorone	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg

530720

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Surface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Methacrylonitrile	0/1		2.70E-02 - 2.70E-02	NT	1.35E-02	mg/kg
Methyl methacrylate	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Methylene chloride	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
N-Nitroso-di-n-propylamine	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
N-Nitrosodimethylamine	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
N-Nitrosodiphenylamine	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Naphthalene	1/5	2.40E-03 - 2.40E-03	6.70E-01 - 7.30E+00	N	2.24E+00	mg/kg
Nitrobenzene	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Nitrobenzene-d5	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
PCB-1016	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1221	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1232	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1242	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1248	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1254	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1260	2/2	3.00E-03 - 3.80E-02		N	2.05E-02	mg/kg
PCB-1262	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
PCB-1268	0/2		1.90E-02 - 1.90E-02	NT	1.90E-02	mg/kg
Pentachloroethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Pentachlorophenol	0/5		3.40E+00 - 3.70E+01	NT	1.16E+01	mg/kg
Phenanthrene	5/5	4.60E-02 - 1.60E+01		N	2.60E+00	mg/kg
Phenol	0/5		6.70E-01 - 7.30E+00	NT	2.31E+00	mg/kg
Phenol-d5	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
Polychlorinated biphenyl	2/5	3.00E-03 - 3.80E-02	1.00E+00 - 1.00E+00	N	3.04E-01	mg/kg
Pyrene	5/5	4.10E-02 - 2.60E+01		N	4.19E+00	mg/kg
Pyridine	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
Styrene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Tetrachloroethene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Toluene	1/1	3.10E-03 - 3.10E-03		NT	1.55E-03	mg/kg
Trichloroethene	0/1		6.00E-01 - 6.00E-01	NT	6.00E-01	mg/kg
Trichlorofluoromethane	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Vinyl acetate	0/1		5.00E-02 - 5.00E-02	NT	2.50E-02	mg/kg
Vinyl chloride	0/1		6.00E-01 - 6.00E-01	NT	6.00E-01	mg/kg
cis-1,2-Dichloroethene	0/1		6.00E-01 - 6.00E-01	NT	6.00E-01	mg/kg
cis-1,3-Dichloropropene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
p-Terphenyl-d14	0/4		6.64E-01 - 3.45E+00	NT	9.15E-01	mg/kg
trans-1,2-Dichloroethene	0/1		6.00E-01 - 6.00E-01	NT	6.00E-01	mg/kg
trans-1,3-Dichloropropene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/1		5.00E-03 - 5.00E-03	NT	2.50E-03	mg/kg
Alpha activity	7/11	6.95E+00 - 3.18E+01	-3.46E+00 - 7.09E+00	N	1.08E+01	pCi/g

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Americium-241	0/3		1.00E-01 - 1.00E-01	NT	1.00E-01	pCi/g
Beta activity	10/11	1.80E+01 - 1.10E+02	4.27E+00 - 4.27E+00	L	3.76E+01	pCi/g
Cesium-137	1/3	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.33E-01	pCi/g
Neptunium-237	1/3	3.00E-01 - 3.00E-01	1.00E-01 - 1.00E-01	N	1.67E-01	pCi/g
Plutonium-239	1/3	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.33E-01	pCi/g
Technetium-99	2/3	2.10E+00 - 3.30E+01	3.00E-01 - 3.00E-01	N	1.18E+01	pCi/g
Thorium-230	3/3	5.00E-01 - 2.20E+00		N	1.37E+00	pCi/g
Uranium-234	3/3	1.50E+00 - 1.09E+01		N	4.87E+00	pCi/g
Uranium-235	1/3	6.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	N	2.67E-01	pCi/g
Uranium-238	3/3	1.80E+00 - 1.67E+01		N	7.00E+00	pCi/g

SECTOR=West MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	17/17	6.55E+03 - 2.34E+04		L	6.63E+03	mg/kg
Antimony	6/17	7.00E-01 - 1.30E+00	5.00E-01 - 6.00E-01	L	6.39E-01	mg/kg
Arsenic	17/17	4.56E-02 - 4.52E+01		L	1.28E+01	mg/kg
Barium	17/17	3.33E+01 - 2.35E+02		N	5.41E+01	mg/kg
Beryllium	17/17	2.20E-01 - 8.00E-01		N	2.92E-01	mg/kg
Cadmium	11/17	4.00E-02 - 4.25E+00	2.00E-02 - 2.00E-02	L	1.54E-01	mg/kg
Calcium	17/17	1.15E+03 - 7.15E+04		L	4.68E+03	mg/kg
Chromium	17/17	1.22E+01 - 4.58E+01		L	9.92E+00	mg/kg
Cobalt	17/17	3.00E+00 - 1.43E+01		L	3.48E+00	mg/kg
Copper	17/17	4.70E+00 - 2.79E+01		L	7.05E+00	mg/kg
Cyanide	0/17		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	17/17	1.41E+04 - 2.49E+04		L	9.71E+03	mg/kg
Lead	17/17	4.80E+00 - 1.52E+01		N	5.41E+00	mg/kg
Magnesium	17/17	7.23E+02 - 4.17E+03		L	1.03E+03	mg/kg
Manganese	17/17	1.40E+02 - 5.38E+02		N	1.78E+02	mg/kg
Mercury	16/17	1.11E-02 - 6.76E-02	9.60E-03 - 9.60E-03	L	3.07E-02	mg/kg
Nickel	17/17	5.40E+00 - 2.55E+01		N	7.10E+00	mg/kg
Potassium	17/17	1.37E+02 - 1.00E+03		N	2.41E+02	mg/kg
Selenium	4/17	3.00E-01 - 4.00E-01	2.00E-01 - 1.00E+00	L	1.84E-01	mg/kg
Silver	3/17	2.70E-01 - 6.00E-01	7.00E-02 - 9.00E-02	L	3.19E-02	mg/kg
Sodium	17/17	1.25E+02 - 6.81E+02		N	2.07E+02	mg/kg
Thallium	0/17		5.00E-01 - 6.00E-01	NT	2.91E-01	mg/kg

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Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium	15/15	2.09E+00 - 1.29E+02		L	2.23E+01	mg/kg
Vanadium	17/17	1.91E+01 - 3.91E+01		L	1.39E+01	mg/kg
Zinc	17/17	1.41E+01 - 7.57E+01		N	2.09E+01	mg/kg
1,1,1,2-Tetrachloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,1-Trichloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2,2-Tetrachloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1,2-Trichloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,1-Dichloroethene	0/8		5.00E-01 - 1.00E+00	NT	3.75E-01	mg/kg
1,2,3-Trichloropropane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2,4-Trichlorobenzene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
1,2-Dibromoethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichlorobenzene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
1,2-Dichloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,2-Dichloropropane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
1,3-Dichlorobenzene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
1,4-Dichlorobenzene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2,4,5-Trichlorophenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2,4,6-Tribromophenol	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
2,4,6-Trichlorophenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2,4-Dichlorophenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2,4-Dimethylphenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2,4-Dinitrophenol	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
2,4-Dinitrotoluene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2,6-Dinitrotoluene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2-Butanone	0/6		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
2-Chloro-1,3-butadiene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
2-Chloroethyl vinyl ether	0/6		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
2-Chloronaphthalene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2-Chlorophenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2-Fluoro-1,1'-biphenyl	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
2-Fluorophenol	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
2-Hexanone	0/6		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
2-Methyl-4,6-dinitrophenol	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
2-Methylnaphthalene	2/17	4.40E-02 - 9.00E-01	7.50E-01 - 8.00E+00	L	2.07E-01	mg/kg
2-Methylphenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2-Nitrobenzenamine	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
2-Nitrophenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
2-Propanol	0/6		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
3,3'-Dichlorobenzidine	0/17		8.04E-01 - 1.65E+01	NT	3.86E+00	mg/kg

530723

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
3-Nitrobenzenamine	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
4-Bromophenyl phenyl ether	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
4-Chloro-3-methylphenol	0/17		8.04E-01 - 1.65E+01	NT	3.86E+00	mg/kg
4-Chlorobenzenamine	0/17		8.04E-01 - 1.65E+01	NT	3.86E+00	mg/kg
4-Chlorophenyl phenyl ether	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
4-Methyl-2-pentanone	0/6		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
4-Methylphenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
4-Nitrobenzenamine	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
4-Nitrophenol	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
Acenaphthene	4/17	1.80E+00 - 7.07E+00	7.50E-01 - 7.90E+00	L	8.33E-01	mg/kg
Acenaphthylene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Acetone	1/6	1.00E-01 - 1.00E-01	1.00E-01 - 1.00E-01	N	5.00E-02	mg/kg
Acrolein	0/6		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Acrylonitrile	0/6		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Aniline	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
Anthracene	6/17	3.59E-01 - 8.43E+01	7.50E-01 - 7.50E+00	L	1.14E+00	mg/kg
Benz(a)anthracene	7/17	8.00E-02 - 3.92E+01	7.50E-01 - 7.50E+00	L	1.38E+00	mg/kg
Benzene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Benzenemethanol	0/17		8.04E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Benzidine	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
Benzo(a)pyrene	7/17	9.00E-02 - 3.77E+01	7.50E-01 - 7.50E+00	L	1.34E+00	mg/kg
Benzo(b)fluoranthene	7/17	9.00E-02 - 6.24E+01	7.50E-01 - 7.50E+00	L	1.48E+00	mg/kg
Benzo(ghi)perylene	5/17	6.20E-02 - 8.84E+00	7.50E-01 - 7.90E+00	L	8.11E-01	mg/kg
Benzo(k)fluoranthene	7/17	7.00E-02 - 9.41E+01	7.50E-01 - 7.90E+00	L	1.24E+00	mg/kg
Benzoic acid	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
Bis(2-chloroethoxy)methane	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Bis(2-chloroethyl) ether	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Bis(2-chloroisopropyl)ether	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Bis(2-ethylhexyl)phthalate	4/17	4.00E-02 - 1.00E-01	7.70E-01 - 1.65E+01	L	8.21E-02	mg/kg
Bromodichloromethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromoform	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Bromomethane	0/6		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Butyl benzyl phthalate	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Carbazole	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
Carbon disulfide	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Carbon tetrachloride	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chlorobenzene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloroethane	0/6		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg
Chloroform	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Chloromethane	0/6		1.00E-02 - 1.00E-02	NT	5.00E-03	mg/kg

530724

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Chrysene	7/17	9.00E-02 - 4.37E+01	7.50E-01 - 7.50E+00	L	1.45E+00	mg/kg
Di-n-butyl phthalate	2/17	1.20E-01 - 2.05E-01	7.50E-01 - 1.65E+01	L	1.79E-01	mg/kg
Di-n-octylphthalate	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Dibenz(a,h)anthracene	2/17	3.20E+00 - 4.27E+00	7.50E-01 - 8.00E+00	N	1.75E+00	mg/kg
Dibenzofuran	4/17	1.10E+00 - 3.60E+00	7.50E-01 - 7.90E+00	L	8.08E-01	mg/kg
Dibromochloromethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dibromomethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Dichlorodifluoromethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diethyl phthalate	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Dimethyl phthalate	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Dimethylbenzene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Diphenyldiazene	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
Ethyl cyanide	0/6		1.00E-01 - 1.00E-01	NT	5.00E-02	mg/kg
Ethyl methacrylate	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Ethylbenzene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Fluoranthene	9/17	4.00E-02 - 9.68E+01	7.90E-01 - 7.50E+00	L	2.32E+00	mg/kg
Fluorene	4/17	9.00E-01 - 4.54E+00	7.50E-01 - 7.90E+00	L	7.84E-01	mg/kg
Hexachlorobenzene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Hexachlorobutadiene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Hexachlorocyclopentadiene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Hexachloroethane	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Indeno(1,2,3-cd)pyrene	5/17	6.00E-02 - 9.69E+00	7.50E-01 - 7.90E+00	L	8.12E-01	mg/kg
Iodomethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Isophorone	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Methacrylonitrile	0/6		2.80E-02 - 3.10E-02	NT	1.49E-02	mg/kg
Methyl methacrylate	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Methylene chloride	3/6	1.40E-03 - 1.80E-03	6.00E-03 - 6.00E-03	N	1.91E-03	mg/kg
N-Nitroso-di-n-propylamine	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
N-Nitrosodimethylamine	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
N-Nitrosodiphenylamine	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Naphthalene	4/17	5.00E-01 - 1.90E+00	7.50E-01 - 7.90E+00	L	6.84E-01	mg/kg
Nitrobenzene	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Nitrobenzene-d5	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
PCB-1016	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
PCB-1221	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
PCB-1232	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
PCB-1242	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
PCB-1248	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
PCB-1254	2/9	7.70E-02 - 9.60E-01	1.90E-02 - 2.10E-02	L	7.91E-03	mg/kg
PCB-1260	1/9	1.60E-02 - 1.60E-02	1.80E-02 - 2.10E-01	L	3.48E-02	mg/kg

530725

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1262	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
PCB-1268	0/9		1.80E-02 - 2.10E-01	NT	4.11E-02	mg/kg
Pentachloroethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Pentachlorophenol	0/17		8.04E-01 - 4.00E+01	NT	9.69E+00	mg/kg
Phenanthrene	8/17	1.10E-01 - 7.75E+01	7.50E-01 - 7.50E+00	L	1.95E+00	mg/kg
Phenol	0/17		7.50E-01 - 1.65E+01	NT	2.23E+00	mg/kg
Phenol-d5	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
Polychlorinated biphenyl	3/17	1.60E-02 - 9.60E-01	1.90E-02 - 1.00E+00	L	5.99E-02	mg/kg
Pyrene	8/17	1.30E-01 - 1.11E+02	7.50E-01 - 7.50E+00	L	2.23E+00	mg/kg
Pyridine	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
Styrene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Tetrachloroethene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Toluene	2/6	2.00E-03 - 5.60E-03	6.00E-03 - 6.00E-03	N	2.63E-03	mg/kg
Trichloroethene	1/8	1.40E+00 - 1.40E+00	5.00E-01 - 1.00E+00	L	8.68E-01	mg/kg
Trichlorofluoromethane	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Vinyl acetate	0/6		6.00E-02 - 6.00E-02	NT	3.00E-02	mg/kg
Vinyl chloride	0/8		5.00E-01 - 1.00E+00	NT	7.50E-01	mg/kg
cis-1,2-Dichloroethene	1/8	8.20E-02 - 8.20E-02	5.00E-01 - 1.00E+00	N	6.98E-01	mg/kg
cis-1,3-Dichloropropene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
p-Terphenyl-d14	0/15		7.02E-01 - 1.65E+01	NT	1.24E+00	mg/kg
trans-1,2-Dichloroethene	1/8	2.50E+00 - 2.50E+00	5.00E-01 - 1.00E+00	L	9.96E-01	mg/kg
trans-1,3-Dichloropropene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
trans-1,4-Dichloro-2-butene	0/6		6.00E-03 - 6.00E-03	NT	3.00E-03	mg/kg
Alpha activity	18/18	1.31E+01 - 3.89E+02		L	5.33E+01	pCi/g
Americium-241	3/15	2.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	L	6.46E-02	pCi/g
Beta activity	18/18	3.11E+01 - 7.56E+02		L	9.59E+01	pCi/g
Cesium-137	7/15	2.00E-01 - 1.50E+00	1.00E-01 - 3.00E-01	L	2.19E-01	pCi/g
Neptunium-237	9/15	2.00E-01 - 3.00E+00	1.00E-01 - 1.00E-01	L	4.11E-01	pCi/g
Plutonium-239	3/15	2.00E-01 - 1.70E+00	1.00E-01 - 1.00E-01	L	3.93E-02	pCi/g
Technetium-99	13/15	3.00E-01 - 5.30E+01	3.00E-01 - 3.00E-01	L	6.64E+00	pCi/g
Thorium-230	15/15	8.00E-01 - 1.09E+01		L	2.94E+00	pCi/g
Uranium-234	15/15	7.00E-01 - 4.17E+01		L	5.99E+00	pCi/g
Uranium-235	7/15	2.00E-01 - 2.20E+00	1.00E-01 - 1.00E-01	L	2.25E-01	pCi/g
Uranium-238	15/15	7.00E-01 - 4.28E+01		L	7.42E+00	pCi/g

530725

530726

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	9/9	6.55E+03 - 1.77E+04		N	6.23E+03	mg/kg
Antimony	4/9	7.00E-01 - 1.30E+00	5.00E-01 - 6.00E-01	L	7.18E-01	mg/kg
Arsenic	9/9	5.46E+00 - 4.52E+01		L	7.96E+00	mg/kg
Barium	9/9	3.53E+01 - 1.27E+02		N	4.81E+01	mg/kg
Beryllium	9/9	2.20E-01 - 8.00E-01		N	2.65E-01	mg/kg
Cadmium	8/9	4.00E-02 - 4.25E+00	2.00E-02 - 2.00E-02	L	3.53E-01	mg/kg
Calcium	9/9	2.18E+03 - 7.15E+04		L	9.03E+03	mg/kg
Chromium	9/9	1.27E+01 - 4.58E+01		L	1.02E+01	mg/kg
Cobalt	9/9	3.00E+00 - 1.43E+01		L	3.72E+00	mg/kg
Copper	9/9	1.16E+01 - 2.79E+01		L	8.68E+00	mg/kg
Cyanide	0/9		1.00E+00 - 1.00E+00	NT	5.00E-01	mg/kg
Iron	9/9	1.50E+04 - 2.49E+04		L	1.01E+04	mg/kg
Lead	9/9	1.01E+01 - 1.52E+01		N	6.18E+00	mg/kg
Magnesium	9/9	1.04E+03 - 4.17E+03		L	1.19E+03	mg/kg
Manganese	9/9	1.65E+02 - 5.38E+02		N	1.81E+02	mg/kg
Mercury	9/9	2.15E-02 - 6.76E-02		L	1.66E-02	mg/kg
Nickel	9/9	1.06E+01 - 2.55E+01		L	8.15E+00	mg/kg
Potassium	9/9	3.35E+02 - 1.00E+03		L	3.10E+02	mg/kg
Selenium	3/9	3.00E-01 - 3.00E-01	2.00E-01 - 1.00E+00	L	1.57E-01	mg/kg
Silver	1/9	6.00E-01 - 6.00E-01	7.00E-02 - 9.00E-02	L	6.27E-02	mg/kg
Sodium	9/9	1.80E+02 - 6.81E+02		N	2.39E+02	mg/kg
Thallium	0/9		5.00E-01 - 6.00E-01	NT	2.83E-01	mg/kg
Uranium	9/9	7.76E+00 - 1.19E+02		L	2.14E+01	mg/kg
Vanadium	9/9	1.91E+01 - 3.58E+01		N	1.38E+01	mg/kg
Zinc	9/9	3.30E+01 - 7.57E+01		L	2.56E+01	mg/kg
1,2,4-Trichlorobenzene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
1,2-Dichlorobenzene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
1,3-Dichlorobenzene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
1,4-Dichlorobenzene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2,4,5-Trichlorophenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2,4,6-Tribromophenol	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
2,4,6-Trichlorophenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2,4-Dichlorophenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2,4-Dimethylphenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2,4-Dinitrophenol	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
2,4-Dinitrotoluene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2,6-Dinitrotoluene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2-Chloronaphthalene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2-Chlorophenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2-Fluoro-1,1'-biphenyl	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
2-Fluorophenol	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
2-Methyl-4,6-dinitrophenol	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
2-Methylnaphthalene	2/9	4.40E-02 - 9.00E-01	6.70E+00 - 8.00E+00	N	2.95E+00	mg/kg
2-Methylphenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
2-Nitrobenzenamine	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
2-Nitrophenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
3,3'-Dichlorobenzidine	0/9		1.50E+00 - 1.65E+01	NT	6.67E+00	mg/kg
3-Nitrobenzenamine	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
4-Bromophenyl phenyl ether	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
4-Chloro-3-methylphenol	0/9		1.50E+00 - 1.65E+01	NT	6.67E+00	mg/kg
4-Chlorobenzenamine	0/9		1.50E+00 - 1.65E+01	NT	6.67E+00	mg/kg
4-Chlorophenyl phenyl ether	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
4-Methylphenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
4-Nitrobenzenamine	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
4-Nitrophenol	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
Acenaphthene	4/9	1.80E+00 - 7.07E+00	7.70E-01 - 7.90E+00	N	2.47E+00	mg/kg
Acenaphthylene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Aniline	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
Anthracene	6/9	3.59E-01 - 8.43E+01	7.70E-01 - 7.50E+00	L	4.81E+00	mg/kg
Benz(a)anthracene	7/9	8.00E-02 - 3.92E+01	6.70E+00 - 7.50E+00	L	5.98E+00	mg/kg
Benzenemethanol	0/9		1.50E+00 - 1.65E+01	NT	6.67E+00	mg/kg
Benzidine	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
Benzo(a)pyrene	7/9	9.00E-02 - 3.77E+01	6.70E+00 - 7.50E+00	L	5.56E+00	mg/kg
Benzo(b)fluoranthene	7/9	9.00E-02 - 6.24E+01	6.70E+00 - 7.50E+00	L	6.72E+00	mg/kg
Benzo(ghi)perylene	5/9	6.20E-02 - 8.84E+00	6.70E+00 - 7.90E+00	N	2.82E+00	mg/kg
Benzo(k)fluoranthene	7/9	7.00E-02 - 9.41E+01	7.50E+00 - 7.90E+00	L	5.70E+00	mg/kg
Benzoic acid	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
Bis(2-chloroethoxy)methane	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Bis(2-chloroethyl) ether	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Bis(2-chloroisopropyl)ether	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Bis(2-ethylhexyl)phthalate	1/9	1.00E-01 - 1.00E-01	7.70E-01 - 1.65E+01	N	3.42E+00	mg/kg
Butyl benzyl phthalate	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Carbazole	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
Chrysene	7/9	9.00E-02 - 4.37E+01	6.70E+00 - 7.50E+00	L	6.50E+00	mg/kg
Di-n-butyl phthalate	1/9	2.05E-01 - 2.05E-01	7.70E-01 - 1.65E+01	N	3.50E+00	mg/kg
Di-n-octylphthalate	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Dibenz(a,h)anthracene	2/9	3.20E+00 - 4.27E+00	7.70E-01 - 8.00E+00	N	2.96E+00	mg/kg
Dibenzofuran	4/9	1.10E+00 - 3.60E+00	7.70E-01 - 7.90E+00	L	1.78E+00	mg/kg
Diethyl phthalate	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Dimethyl phthalate	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Diphenyldiazene	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg

530728

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Fluoranthene	8/9	1.70E-01 - 9.68E+01	7.50E+00 - 7.50E+00	L	1.28E+01	mg/kg
Fluorene	4/9	9.00E-01 - 4.54E+00	7.70E-01 - 7.90E+00	N	2.18E+00	mg/kg
Hexachlorobenzene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Hexachlorobutadiene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Hexachlorocyclopentadiene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Hexachloroethane	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Indeno(1,2,3-cd)pyrene	5/9	6.00E-02 - 9.69E+00	6.70E+00 - 7.90E+00	N	2.88E+00	mg/kg
Isophorone	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
N-Nitroso-di-n-propylamine	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
N-Nitrosodimethylamine	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
N-Nitrosodiphenylamine	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Naphthalene	4/9	5.00E-01 - 1.90E+00	7.70E-01 - 7.90E+00	L	9.65E-01	mg/kg
Nitrobenzene	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Nitrobenzene-d5	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
PCB-1016	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
PCB-1221	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
PCB-1232	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
PCB-1242	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
PCB-1248	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
PCB-1254	2/3	7.70E-02 - 9.60E-01	2.00E-02 - 2.00E-02	N	3.52E-01	mg/kg
PCB-1260	1/3	1.60E-02 - 1.60E-02	1.80E-02 - 2.10E-01	N	8.13E-02	mg/kg
PCB-1262	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
PCB-1268	0/3		1.80E-02 - 2.10E-01	NT	8.27E-02	mg/kg
Pentachlorophenol	0/9		3.90E+00 - 4.00E+01	NT	1.69E+01	mg/kg
Phenanthrene	8/9	1.10E-01 - 7.75E+01	7.50E+00 - 7.50E+00	L	9.49E+00	mg/kg
Phenol	0/9		7.70E-01 - 1.65E+01	NT	3.86E+00	mg/kg
Phenol-d5	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
Polychlorinated biphenyl	3/9	1.60E-02 - 9.60E-01	1.00E+00 - 1.00E+00	L	1.67E-01	mg/kg
Pyrene	8/9	1.30E-01 - 1.11E+02	7.50E+00 - 7.50E+00	L	1.13E+01	mg/kg
Pyridine	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
p-Terphenyl-d14	0/9		7.02E-01 - 1.65E+01	NT	1.80E+00	mg/kg
Alpha activity	9/9	1.31E+01 - 1.75E+02		L	4.10E+01	pCi/g
Americium-241	2/9	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.22E-01	pCi/g
Beta activity	9/9	3.11E+01 - 2.48E+02		L	7.68E+01	pCi/g
Cesium-137	5/9	2.00E-01 - 1.50E+00	1.00E-01 - 2.00E-01	L	2.99E-01	pCi/g
Neptunium-237	8/9	2.00E-01 - 3.00E+00	1.00E-01 - 1.00E-01	L	8.37E-01	pCi/g
Plutonium-239	3/9	2.00E-01 - 1.70E+00	1.00E-01 - 1.00E-01	L	1.34E-01	pCi/g
Technetium-99	9/9	3.00E-01 - 5.30E+01		L	2.39E+01	pCi/g
Thorium-230	9/9	1.10E+00 - 1.09E+01		L	4.02E+00	pCi/g
Uranium-234	9/9	2.20E+00 - 3.11E+01		L	5.64E+00	pCi/g

530729

Table 1.13. PGDP WAG 6 data summary for all analytes by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium-235	6/9	2.00E-01 - 1.90E+00	1.00E-01 - 1.00E-01	L	3.20E-01	pCi/g
Uranium-238	9/9	2.60E+00 - 3.95E+01		L	7.11E+00	pCi/g

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	3/3	8.13E-01 - 1.39E+02		N	2.89E+01	mg/L
Arsenic	2/3	3.28E-02 - 4.06E-01	1.11E-03 - 1.11E-03	N	7.33E-02	mg/L
Barium	3/3	1.95E-01 - 5.88E-01		N	1.82E-01	mg/L
Beryllium	3/3	3.33E-04 - 1.30E-02		N	2.83E-03	mg/L
Bromide	16/41	1.40E-02 - 5.20E-02	1.00E+00 - 1.00E+00	L	3.81E-02	mg/L
Cadmium	2/3	5.56E-04 - 2.99E-03	2.67E-04 - 2.67E-04	N	6.36E-04	mg/L
Calcium	3/3	1.74E+01 - 5.45E+01		N	1.79E+01	mg/L
Chloride	41/41	3.20E+00 - 2.24E+01		L	4.81E+00	mg/L
Chromium	3/3	3.52E-02 - 3.87E-01		N	8.80E-02	mg/L
Cobalt	2/3	4.87E-02 - 1.07E-01	1.78E-03 - 1.78E-03	N	2.62E-02	mg/L
Copper	2/3	1.69E-02 - 9.57E-02	9.56E-03 - 9.56E-03	N	2.04E-02	mg/L
Fluoride	16/41	5.10E-02 - 2.92E-01	1.00E+00 - 1.00E+00	L	2.10E-01	mg/L
Iron	3/3	1.75E+00 - 3.37E+02		N	6.64E+01	mg/L
Lead	2/3	3.13E-02 - 1.77E-01	1.33E-03 - 1.33E-03	N	3.49E-02	mg/L
Magnesium	3/3	9.78E+00 - 3.19E+01		N	9.38E+00	mg/L
Manganese	3/3	1.77E-02 - 2.44E+00		N	5.12E-01	mg/L
Nickel	3/3	6.37E-02 - 1.86E-01		N	5.35E-02	mg/L
Nitrate	23/41	7.00E-03 - 2.90E+00	1.00E+00 - 1.00E+00	N	4.33E-01	mg/L
Nitrate/Nitrite	1/16	5.00E-03 - 5.00E-03	1.00E+00 - 1.00E+00	N	4.69E-01	mg/L
Orthophosphate	3/41	3.30E-02 - 1.01E-01	1.00E+00 - 1.00E+00	N	4.66E-01	mg/L
Potassium	3/3	3.38E+00 - 2.12E+01		N	5.48E+00	mg/L
Selenium	1/3	4.41E-02 - 4.41E-02	1.44E-03 - 2.30E-02	N	1.14E-02	mg/L
Sodium	3/3	1.34E+01 - 3.67E+01		N	1.09E+01	mg/L
Tetraoxo-sulfate(1-)	41/41	1.23E+01 - 5.34E+01		L	1.52E+01	mg/L
Thallium	2/3	5.00E-04 - 1.03E-03	4.67E-04 - 4.67E-04	N	3.33E-04	mg/L
Uranium	2/3	2.73E-03 - 4.27E-03	8.00E-05 - 8.00E-05	N	2.36E-03	mg/L
Vanadium	3/3	5.44E-03 - 1.57E+00		N	2.82E-01	mg/L
Zinc	3/3	1.80E-02 - 1.21E+01		N	2.12E+00	mg/L
1,1-Dichloroethene	2/54	2.00E-02 - 2.40E-02	4.00E-03 - 2.00E-01	N	4.18E-03	mg/L
1,2-Dichloroethane	1/5	1.00E-03 - 1.00E-03	5.00E-03 - 1.30E-02	N	2.90E-03	mg/L
Benzoic acid	1/5	1.00E-03 - 1.00E-03	5.00E-02 - 5.00E-02	N	2.01E-02	mg/L
Bis(2-ethylhexyl)phthalate	3/5	1.00E-03 - 8.00E-03	1.00E-02 - 1.00E-02	N	3.00E-03	mg/L
Bromodichloromethane	2/5	1.00E-03 - 8.00E-03	5.00E-03 - 1.30E-02	N	3.20E-03	mg/L
Chloroform	4/5	1.00E-03 - 1.90E-02	5.00E-03 - 5.00E-03	N	3.30E-03	mg/L
Di-n-butyl phthalate	1/5	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.10E-03	mg/L
Di-n-octylphthalate	2/5	1.00E-03 - 6.00E-03	1.00E-02 - 1.00E-02	N	3.70E-03	mg/L
Dibromochloromethane	2/5	1.00E-03 - 4.00E-03	5.00E-03 - 1.30E-02	N	2.80E-03	mg/L
Phenol	3/5	1.00E-03 - 5.00E-03	1.00E-02 - 1.00E-02	N	2.70E-03	mg/L
Tetrachloroethene	1/5	2.70E-02 - 2.70E-02	5.00E-03 - 1.00E-02	N	5.20E-03	mg/L
Toluene	3/5	1.00E-03 - 4.00E-03	1.00E-02 - 1.30E-02	N	2.90E-03	mg/L
Trichloroethene	39/54	2.00E-04 - 1.28E+00	4.00E-03 - 4.00E-03	L	9.78E-03	mg/L

530731

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Vinyl chloride	1/54	2.00E-02 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.94E-03	mg/L
cis-1,2-Dichloroethene	2/54	4.00E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.98E-03	mg/L
trans-1,2-Dichloroethene	5/54	1.50E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	8.25E-03	mg/L
Actinium-228	1/1	2.72E+01 - 2.72E+01		NT	2.72E+01	pCi/L
Alpha activity	48/51	1.69E+00 - 1.49E+02	2.90E-01 - 1.88E+00	L	2.21E+01	pCi/L
Americium-241	1/6	5.30E-02 - 5.30E-02	0.00E+00 - 3.70E-01	N	1.21E-01	pCi/L
Beta activity	51/51	4.42E+00 - 1.16E+04		L	1.48E+02	pCi/L
Bismuth-214	1/1	9.00E+00 - 9.00E+00		NT	9.00E+00	pCi/L
Cesium-137	4/6	2.49E+00 - 1.65E+01	-1.70E+00 - 2.29E+00	N	6.57E+00	pCi/L
Lead-210	1/1	4.21E+02 - 4.21E+02		NT	4.21E+02	pCi/L
Lead-212	1/1	2.25E+01 - 2.25E+01		NT	2.25E+01	pCi/L
Lead-214	1/1	1.21E+01 - 1.21E+01		NT	1.21E+01	pCi/L
Neptunium-237	6/6	0.00E+00 - 1.31E+01		N	4.39E+00	pCi/L
Plutonium-239	1/5	2.12E+00 - 2.12E+00	-2.00E-02 - 4.00E-02	N	4.30E-01	pCi/L
Potassium-40	1/1	6.80E+01 - 6.80E+01		NT	6.80E+01	pCi/L
Technetium-99	3/6	6.60E-01 - 6.16E+02	-1.56E+00 - 1.27E+00	N	1.03E+02	pCi/L
Thallium-208	1/1	6.70E+00 - 6.70E+00		NT	6.70E+00	pCi/L
Thorium-228	1/1	1.23E+00 - 1.23E+00		NT	1.23E+00	pCi/L
Thorium-230	6/6	2.40E-01 - 1.88E+00		N	8.55E-01	pCi/L
Thorium-232	1/1	1.15E+00 - 1.15E+00		NT	1.15E+00	pCi/L
Thorium-234	1/1	7.19E+02 - 7.19E+02		NT	7.19E+02	pCi/L
Uranium-233/234	1/1	6.10E-01 - 6.10E-01		NT	6.10E-01	pCi/L
Uranium-234	4/5	1.90E-01 - 2.23E+00	1.50E-01 - 1.50E-01	N	9.84E-01	pCi/L
Uranium-235	1/6	2.30E+01 - 2.30E+01	1.00E-02 - 1.00E-01	N	3.86E+00	pCi/L
Uranium-238	4/6	2.00E-01 - 1.82E+00	1.00E-02 - 1.20E-01	N	6.43E-01	pCi/L

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	80/80	9.96E-02 - 2.50E+02		L	3.61E+01	mg/L
Antimony	11/80	1.40E-03 - 4.02E-02	8.00E-04 - 2.77E-01	N	1.10E-02	mg/L
Arsenic	61/80	1.00E-03 - 4.36E-01	1.00E-03 - 1.00E-02	L	1.99E-02	mg/L
Barium	80/80	5.58E-02 - 6.93E+00		L	3.60E-01	mg/L
Beryllium	69/79	2.22E-04 - 1.11E-01	2.22E-04 - 5.00E-03	L	7.40E-03	mg/L
Bromide	10/39	2.90E-02 - 1.40E+00	1.00E+00 - 1.12E+00	N	4.10E-01	mg/L
Cadmium	29/80	3.56E-04 - 1.59E-02	2.67E-04 - 3.22E-03	L	1.02E-03	mg/L

530732

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Calcium	80/80	2.27E+01 - 7.87E+01		L	1.91E+01	mg/L
Chloride	39/39	7.01E+00 - 1.25E+02		N	2.99E+01	mg/L
Chromium	62/80	5.00E-03 - 4.49E+00	6.56E-03 - 1.39E-01	L	7.97E-02	mg/L
Cobalt	76/80	5.33E-03 - 4.84E-01	1.78E-03 - 1.00E-02	L	7.75E-02	mg/L
Copper	58/80	8.10E-03 - 1.05E+01	8.60E-03 - 1.00E-02	N	1.08E-01	mg/L
Fluoride	9/39	1.79E-01 - 2.31E-01	1.00E+00 - 1.00E+00	L	2.15E-01	mg/L
Iron	80/80	6.83E-02 - 2.24E+03		L	2.20E+02	mg/L
Lead	63/80	1.96E-03 - 2.63E-01	1.00E-03 - 1.56E-02	L	2.32E-02	mg/L
Magnesium	80/80	7.97E+00 - 3.33E+01		L	7.96E+00	mg/L
Manganese	80/80	7.78E-03 - 5.79E+01		L	2.03E+00	mg/L
Mercury	30/80	3.00E-05 - 6.12E-04	2.00E-04 - 2.10E-04	L	1.40E-04	mg/L
Nickel	74/80	9.67E-03 - 4.88E+00	2.61E-02 - 8.21E-02	L	1.55E-01	mg/L
Nitrate	39/39	9.30E-02 - 1.74E+02		L	2.04E+01	mg/L
Nitrate/Nitrite	3/9	3.20E-02 - 1.14E-01	1.00E+00 - 1.00E+00	L	7.25E-02	mg/L
Orthophosphate	2/39	2.50E-02 - 3.60E-02	1.00E+00 - 1.00E+00	N	4.75E-01	mg/L
Potassium	80/80	9.57E-01 - 2.53E+01		L	2.68E+00	mg/L
Selenium	23/80	1.34E-03 - 4.80E-03	1.30E-03 - 4.00E-02	N	7.08E-03	mg/L
Silver	8/80	4.00E-03 - 3.98E-01	1.00E-03 - 5.00E-02	N	8.12E-03	mg/L
Sodium	80/80	2.71E+01 - 8.38E+01		L	2.34E+01	mg/L
Tetraoxo-sulfate(1-)	39/39	3.70E+00 - 5.64E+01		L	1.10E+01	mg/L
Thallium	13/80	4.89E-04 - 4.56E-03	4.20E-04 - 2.00E-03	L	3.79E-04	mg/L
Uranium	45/52	1.30E-04 - 1.21E-02	8.00E-05 - 1.00E-03	L	2.45E-03	mg/L
Vanadium	73/80	4.20E-03 - 1.35E+00	4.00E-03 - 4.00E-03	L	1.09E-01	mg/L
Zinc	77/80	1.58E-02 - 8.18E+01	9.00E-03 - 9.00E-03	L	5.42E-01	mg/L
1,1,1-Trichloroethane	1/23	1.20E-02 - 1.20E-02	1.00E-02 - 1.30E+01	L	1.01E+00	mg/L
1,1-Dichloroethene	20/155	1.00E-03 - 1.54E-01	4.00E-03 - 3.20E+01	L	4.08E-03	mg/L
Acetone	1/23	5.00E-03 - 5.00E-03	2.00E-02 - 2.50E+01	L	2.23E+00	mg/L
Benzoic acid	5/16	1.00E-03 - 5.00E-03	5.00E-02 - 5.00E-02	L	2.93E-03	mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03 - 1.00E-03	2.00E-03 - 3.20E-02	L	4.42E-03	mg/L
Bromodichloromethane	2/23	3.00E-03 - 4.00E-03	1.00E-02 - 1.30E+01	L	3.72E-03	mg/L
Carbon tetrachloride	4/23	1.00E-03 - 2.70E-01	1.00E-02 - 1.30E+01	L	1.82E-02	mg/L
Chloroform	6/23	1.50E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	2.22E-02	mg/L
Di-n-butyl phthalate	8/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	2.75E-03	mg/L
Di-n-octylphthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Diethyl phthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Phenol	6/16	1.00E-03 - 4.00E-02	1.00E-02 - 1.00E-02	L	4.61E-03	mg/L
Tetrachloroethene	6/23	3.00E-03 - 3.00E-02	1.00E-02 - 1.30E+01	L	1.45E-02	mg/L
Toluene	1/23	3.60E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	8.78E-01	mg/L
Trichloroethene	146/155	1.50E-03 - 7.01E+02	4.00E-03 - 4.00E-03	L	5.27E+00	mg/L

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Vinyl chloride	3/155	1.00E-03 - 1.33E-01	4.00E-03 - 3.20E+01	N	1.15E+00	mg/L
cis-1,2-Dichloroethene	10/155	1.30E-03 - 3.70E-01	4.00E-03 - 3.20E+01	N	1.23E+00	mg/L
trans-1,2-Dichloroethene	27/155	1.50E-03 - 1.20E+00	4.00E-03 - 3.20E+01	L	7.62E-03	mg/L
Alpha activity	129/151	6.90E-01 - 1.36E+02	-8.53E-01 - 5.06E+00	N	1.45E+01	pCi/L
Americium-241	2/30	7.70E-02 - 1.68E+00	-1.50E-01 - 1.22E+02	N	1.08E+01	pCi/L
Beta activity	149/151	2.86E+00 - 1.72E+04	1.28E+00 - 1.50E+00	L	2.45E+02	pCi/L
Bismuth-212	1/1	4.20E+01 - 4.20E+01		NT	4.20E+01	pCi/L
Cesium-137	15/31	3.33E+00 - 1.45E+01	-1.19E+00 - 3.38E+01	N	8.31E+00	pCi/L
Lead-210	1/1	1.00E+02 - 1.00E+02		NT	1.00E+02	pCi/L
Lead-214	1/1	7.40E+00 - 7.40E+00		NT	7.40E+00	pCi/L
Neptunium-237	23/30	0.00E+00 - 1.44E+01	2.04E+00 - 5.30E+01	N	9.10E+00	pCi/L
Plutonium-239	4/27	0.00E+00 - 1.30E-01	-3.00E-02 - 1.10E-01	N	3.22E-02	pCi/L
Technetium-99	26/28	2.00E+00 - 1.70E+04	-1.53E+01 --5.20E+00	N	1.42E+03	pCi/L
Thorium-228	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Thorium-230	22/28	1.80E-01 - 8.40E+00	6.00E-02 - 2.20E-01	L	6.85E-01	pCi/L
Thorium-232	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Uranium-233/234	1/1	6.50E-01 - 6.50E-01		NT	6.50E-01	pCi/L
Uranium-234	17/30	1.70E-01 - 1.70E+01	2.00E-02 - 4.98E+02	L	7.00E-01	pCi/L
Uranium-235	3/28	1.03E-01 - 7.70E-01	-2.00E-02 - 4.10E-01	N	6.55E-02	pCi/L
Uranium-238	13/31	1.90E-01 - 1.66E+01	-1.30E-01 - 5.44E+02	N	4.11E+01	pCi/L

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	196/196	9.13E+01 - 2.34E+04		N	5.71E+03	mg/kg
Antimony	73/196	6.00E-03 - 9.40E+00	5.00E-01 - 6.00E+00	N	4.83E-01	mg/kg
Arsenic	196/196	2.75E-02 - 4.52E+01		N	3.01E+00	mg/kg
Barium	196/196	8.16E-01 - 2.79E+02		N	5.12E+01	mg/kg
Beryllium	196/196	4.20E-03 - 1.20E+00		N	2.92E-01	mg/kg
Cadmium	117/196	1.30E-03 - 4.25E+00	5.00E-03 - 5.00E-01	N	7.61E-02	mg/kg
Calcium	196/196	6.49E+00 - 3.40E+05		N	9.57E+03	mg/kg
Chromium	196/196	1.22E-01 - 1.41E+02		N	9.56E+00	mg/kg
Cobalt	196/196	4.40E-02 - 1.96E+01		N	3.34E+00	mg/kg
Copper	196/196	6.70E-02 - 9.52E+03		N	3.09E+01	mg/kg
Iron	196/196	1.50E+02 - 5.17E+04		N	9.45E+03	mg/kg
Lead	196/196	5.70E-02 - 8.75E+01		N	5.41E+00	mg/kg

530733

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Magnesium	196/196	9.38E+00 - 2.72E+04		N	1.12E+03	mg/kg
Manganese	196/196	2.19E+00 - 1.37E+03		N	1.99E+02	mg/kg
Mercury	166/196	9.50E-03 - 8.30E+00	8.00E-03 - 9.90E-03	N	3.43E-02	mg/kg
Nickel	196/196	7.80E-02 - 1.76E+04		N	5.25E+01	mg/kg
Potassium	196/196	2.20E+00 - 1.14E+03		N	2.02E+02	mg/kg
Selenium	30/196	2.00E-01 - 1.30E+00	2.00E-01 - 1.00E+00	N	1.34E-01	mg/kg
Silver	45/196	7.00E-03 - 2.51E+01	8.00E-04 - 3.00E-01	N	2.03E-01	mg/kg
Sodium	196/196	3.92E+00 - 1.67E+03		N	2.41E+02	mg/kg
Thallium	16/196	7.00E-03 - 2.30E+00	5.00E-01 - 6.00E+00	N	3.40E-01	mg/kg
Uranium	151/151	1.19E+00 - 4.26E+02		N	1.13E+01	mg/kg
Vanadium	196/196	1.76E-01 - 6.72E+01		N	1.35E+01	mg/kg
Zinc	196/196	2.00E-01 - 1.81E+02		N	1.79E+01	mg/kg
1,1,1-Trichloroethane	3/142	1.20E-02 - 2.40E+00	5.00E-03 - 8.00E-01	N	1.83E-02	mg/kg
1,1,2-Trichloroethane	3/142	3.90E-03 - 5.30E-01	5.00E-03 - 8.00E-01	N	1.17E-02	mg/kg
1,1-Dichloroethene	10/181	1.20E-03 - 9.50E-01	6.00E-03 - 1.40E+00	N	3.47E-01	mg/kg
2,4-Dinitrotoluene	1/203	4.57E-01 - 4.57E-01	6.70E-01 - 1.65E+01	N	6.28E-01	mg/kg
2,6-Dinitrotoluene	4/203	3.47E-01 - 4.32E-01	6.70E-01 - 1.65E+01	N	6.25E-01	mg/kg
2-Hexanone	1/142	4.40E-03 - 4.40E-03	5.00E-02 - 8.00E+00	N	9.78E-02	mg/kg
2-Methylnaphthalene	2/203	4.40E-02 - 9.00E-01	6.70E-01 - 8.00E+00	N	5.89E-01	mg/kg
Acenaphthene	20/203	6.10E-03 - 7.07E+00	6.70E-01 - 8.00E+00	N	5.06E-01	mg/kg
Acenaphthylene	1/203	2.20E-01 - 2.20E-01	6.90E-01 - 1.65E+01	N	6.28E-01	mg/kg
Acetone	18/142	6.10E-03 - 4.30E+00	1.00E-01 - 2.00E+01	N	2.09E-01	mg/kg
Anthracene	28/203	1.00E-02 - 8.43E+01	6.90E-01 - 8.00E+00	N	6.83E-01	mg/kg
Benz(a)anthracene	43/203	2.10E-02 - 3.92E+01	6.90E-01 - 8.00E+00	N	6.55E-01	mg/kg
Benzene	1/142	1.70E-02 - 1.70E-02	5.00E-03 - 8.00E-01	N	9.84E-03	mg/kg
Benzo(a)pyrene	42/203	1.90E-02 - 3.77E+01	6.90E-01 - 8.00E+00	N	6.41E-01	mg/kg
Benzo(b)fluoranthene	42/203	1.80E-02 - 6.24E+01	6.90E-01 - 8.00E+00	N	7.18E-01	mg/kg
Benzo(ghi)perylene	32/203	1.20E-02 - 8.84E+00	6.30E-02 - 8.00E+00	N	5.30E-01	mg/kg
Benzo(k)fluoranthene	44/203	1.60E-02 - 9.41E+01	6.90E-01 - 8.00E+00	N	7.36E-01	mg/kg
Bis(2-ethylhexyl)phthalate	71/203	1.50E-03 - 8.77E-01	6.90E-01 - 1.65E+01	N	4.87E-01	mg/kg
Butyl benzyl phthalate	5/203	4.00E-02 - 4.34E-01	6.70E-01 - 1.65E+01	N	6.22E-01	mg/kg
Carbon disulfide	1/142	3.90E-03 - 3.90E-03	5.00E-03 - 8.00E-01	N	9.80E-03	mg/kg
Carbon tetrachloride	3/142	2.00E-03 - 7.10E-01	5.00E-03 - 8.00E-01	N	1.23E-02	mg/kg
Chloroform	5/142	1.40E-03 - 1.80E-02	5.00E-03 - 8.00E-01	N	9.79E-03	mg/kg
Chrysene	43/203	2.20E-02 - 4.37E+01	6.90E-01 - 8.00E+00	N	6.72E-01	mg/kg
Di-n-butyl phthalate	56/203	4.00E-02 - 3.80E+00	6.70E-01 - 1.65E+01	N	6.09E-01	mg/kg
Di-n-octylphthalate	2/203	6.00E-02 - 6.06E-01	6.70E-01 - 1.65E+01	N	6.27E-01	mg/kg
Dibenz(a,h)anthracene	9/203	7.70E-02 - 4.27E+00	6.60E-02 - 8.00E+00	N	5.51E-01	mg/kg
Dibenzofuran	12/203	2.80E-03 - 3.60E+00	6.90E-01 - 8.00E+00	N	5.24E-01	mg/kg
Diethyl phthalate	9/203	4.00E-02 - 6.10E+00	6.70E-01 - 1.65E+01	N	6.51E-01	mg/kg

530735

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Fluoranthene	56/203	1.20E-03 - 9.68E+01	6.90E-01 - 8.00E+00	N	1.03E+00	mg/kg
Fluorene	18/203	4.80E-03 - 4.54E+00	6.70E-01 - 8.00E+00	N	5.04E-01	mg/kg
Indeno(1,2,3-cd)pyrene	30/203	1.10E-02 - 9.69E+00	6.60E-02 - 8.00E+00	N	5.23E-01	mg/kg
Iodomethane	1/142	7.00E-01 - 7.00E-01	5.00E-03 - 8.00E-01	N	9.80E-03	mg/kg
Methylene chloride	83/142	1.20E-03 - 8.00E-01	1.30E-03 - 4.00E-02	N	9.58E-03	mg/kg
N-Nitroso-di-n-propylamine	4/203	4.84E-01 - 6.34E-01	6.70E-01 - 1.65E+01	N	6.26E-01	mg/kg
N-Nitrosodiphenylamine	2/203	5.82E-01 - 8.23E-01	6.70E-01 - 1.65E+01	N	6.28E-01	mg/kg
Naphthalene	10/203	2.40E-03 - 1.90E+00	6.70E-01 - 8.00E+00	N	5.32E-01	mg/kg
PCB-1254	6/78	5.20E-03 - 9.60E-01	1.80E-02 - 9.40E-01	N	5.40E-02	mg/kg
PCB-1260	12/78	3.00E-03 - 3.30E+00	1.80E-02 - 2.10E-01	N	6.69E-02	mg/kg
PCB-1262	1/78	3.80E-02 - 3.80E-02	1.80E-02 - 9.40E-01	N	3.45E-02	mg/kg
Phenanthrene	43/203	4.00E-02 - 7.75E+01	6.90E-01 - 8.00E+00	N	8.50E-01	mg/kg
Polychlorinated biphenyl	19/205	3.00E-03 - 1.00E+01	1.90E-02 - 1.00E+00	N	4.76E-01	mg/kg
Pyrene	51/203	4.10E-02 - 1.11E+02	6.90E-01 - 8.00E+00	N	9.74E-01	mg/kg
Tetrachloroethene	4/142	5.20E-03 - 6.90E-01	5.00E-03 - 8.00E-01	N	1.23E-02	mg/kg
Toluene	26/142	1.20E-03 - 3.20E-01	5.00E-03 - 8.00E-01	N	1.32E-02	mg/kg
Trichloroethene	60/181	1.45E-03 - 1.11E+04	1.49E-03 - 1.10E+00	N	7.46E+01	mg/kg
Trichlorofluoromethane	1/142	1.70E-03 - 1.70E-03	5.00E-03 - 8.00E-01	N	9.79E-03	mg/kg
Vinyl acetate	3/142	1.70E-03 - 5.50E-02	5.00E-02 - 8.00E+00	N	9.77E-02	mg/kg
Vinyl chloride	16/181	1.90E-03 - 2.90E+01	1.00E-02 - 2.30E+01	N	9.71E-01	mg/kg
cis-1,2-Dichloroethene	43/181	1.40E-03 - 2.40E+00	6.00E-03 - 2.30E+01	N	7.62E-01	mg/kg
trans-1,2-Dichloroethene	19/181	1.40E+00 - 1.02E+02	6.00E-03 - 6.32E+02	N	7.69E+00	mg/kg
Alpha activity	215/252	6.03E+00 - 8.78E+02	-3.46E+00 - 7.15E+00	N	2.48E+01	pCi/g
Americium-241	19/151	1.20E-01 - 1.30E+00	1.00E-01 - 2.00E-01	N	1.37E-01	pCi/g
Beta activity	245/252	9.64E+00 - 8.08E+03	3.48E+00 - 8.46E+00	N	7.29E+01	pCi/g
Cesium-137	44/151	2.00E-01 - 1.11E+01	1.00E-01 - 3.00E-01	N	2.75E-01	pCi/g
Neptunium-237	73/151	2.00E-01 - 5.26E+01	1.00E-01 - 2.00E-01	N	5.95E-01	pCi/g
Plutonium-239	12/151	2.00E-01 - 1.12E+01	1.00E-01 - 1.00E-01	N	2.00E-01	pCi/g
Technetium-99	113/151	2.00E-01 - 4.84E+03	1.00E-01 - 3.00E-01	N	3.62E+01	pCi/g
Thorium-230	150/151	3.00E-01 - 1.88E+01	2.00E-01 - 2.00E-01	N	1.44E+00	pCi/g
Uranium-234	151/151	4.00E-01 - 1.02E+02		N	2.83E+00	pCi/g
Uranium-235	21/151	2.00E-01 - 4.90E+00	1.00E-01 - 1.00E-01	N	1.91E-01	pCi/g
Uranium-238	151/151	4.00E-01 - 1.42E+02		N	3.78E+00	pCi/g

530736

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	27/27	3.25E+03 - 1.77E+04		N	5.34E+03	mg/kg
Antimony	14/27	6.00E-01 - 2.90E+00	5.00E-01 - 6.00E-01	L	8.81E-01	mg/kg
Arsenic	27/27	3.86E+00 - 4.52E+01		L	4.32E+00	mg/kg
Barium	27/27	3.53E+01 - 1.47E+02		N	4.37E+01	mg/kg
Beryllium	27/27	2.20E-01 - 8.00E-01		N	2.65E-01	mg/kg
Cadmium	20/27	4.00E-02 - 4.25E+00	2.00E-02 - 2.00E-02	L	2.39E-01	mg/kg
Calcium	27/27	2.18E+03 - 2.77E+05		L	1.82E+04	mg/kg
Chromium	27/27	8.25E+00 - 6.60E+01		L	1.01E+01	mg/kg
Cobalt	27/27	3.00E+00 - 1.43E+01		N	3.65E+00	mg/kg
Copper	27/27	5.90E+00 - 3.46E+01		L	7.21E+00	mg/kg
Iron	27/27	1.12E+04 - 3.70E+04		L	9.89E+03	mg/kg
Lead	27/27	8.00E+00 - 4.20E+01		L	7.06E+00	mg/kg
Magnesium	27/27	8.20E+02 - 1.08E+04		L	1.22E+03	mg/kg
Manganese	27/27	1.65E+02 - 7.36E+02		N	2.08E+02	mg/kg
Mercury	24/27	1.65E-02 - 1.36E-01	8.00E-03 - 8.70E-03	L	4.15E-02	mg/kg
Nickel	27/27	5.70E+00 - 2.55E+01		N	6.99E+00	mg/kg
Potassium	27/27	1.33E+02 - 1.00E+03		L	2.46E+02	mg/kg
Selenium	7/27	2.00E-01 - 3.00E-01	2.00E-01 - 1.00E+00	L	2.00E-01	mg/kg
Silver	8/27	1.00E-01 - 1.10E+00	7.00E-02 - 1.00E-01	L	7.92E-02	mg/kg
Sodium	27/27	1.80E+02 - 8.15E+02		L	2.07E+02	mg/kg
Thallium	4/27	6.00E-01 - 1.50E+00	5.00E-01 - 1.00E+00	L	3.52E-01	mg/kg
Uranium	21/21	1.49E+00 - 1.19E+02		L	1.78E+01	mg/kg
Vanadium	27/27	7.40E+00 - 4.24E+01		N	1.29E+01	mg/kg
Zinc	27/27	1.77E+01 - 1.11E+02		L	2.24E+01	mg/kg
2-Methylnaphthalene	2/25	4.40E-02 - 9.00E-01	6.70E-01 - 8.00E+00	L	1.83E-01	mg/kg
Acenaphthene	11/25	6.10E-03 - 7.07E+00	6.70E-01 - 7.90E+00	L	5.50E-01	mg/kg
Acenaphthylene	1/25	2.20E-01 - 2.20E-01	7.10E-01 - 1.65E+01	L	2.39E+00	mg/kg
Anthracene	14/25	1.00E-02 - 8.43E+01	7.25E-01 - 7.50E+00	L	1.09E+00	mg/kg
Benz(a)anthracene	18/25	2.10E-02 - 3.92E+01	7.25E-01 - 7.50E+00	L	1.73E+00	mg/kg
Benzo(a)pyrene	18/25	1.90E-02 - 3.77E+01	7.25E-01 - 7.50E+00	L	1.71E+00	mg/kg
Benzo(b)fluoranthene	18/25	1.80E-02 - 6.24E+01	7.25E-01 - 7.50E+00	L	1.96E+00	mg/kg
Benzo(ghi)perylene	13/25	1.20E-02 - 8.84E+00	7.25E-01 - 7.90E+00	L	9.93E-01	mg/kg
Benzo(k)fluoranthene	19/25	1.60E-02 - 9.41E+01	7.25E-01 - 7.90E+00	L	1.61E+00	mg/kg
Bis(2-ethylhexyl)phthalate	3/25	8.00E-02 - 1.00E-01	7.10E-01 - 1.65E+01	L	9.08E-02	mg/kg

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Chrysene	18/25	2.20E-02 - 4.37E+01	7.25E-01 - 7.50E+00	L	1.82E+00	mg/kg
Di-n-butyl phthalate	5/25	4.00E-02 - 1.23E+00	6.70E-01 - 1.65E+01	L	3.85E-01	mg/kg
Dibenz(a,h)anthracene	6/25	7.70E-02 - 4.27E+00	7.10E-01 - 8.00E+00	L	5.29E-01	mg/kg
Dibenzofuran	7/25	2.80E-03 - 3.60E+00	7.10E-01 - 7.90E+00	L	3.12E-01	mg/kg
Fluoranthene	22/25	4.00E-02 - 9.68E+01	7.25E-01 - 7.50E+00	L	3.33E+00	mg/kg
Fluorene	9/25	4.80E-03 - 4.54E+00	6.70E-01 - 7.90E+00	L	4.15E-01	mg/kg
Indeno(1,2,3-cd)pyrene	13/25	1.10E-02 - 9.69E+00	6.98E-01 - 7.90E+00	L	9.39E-01	mg/kg
Methylene chloride	2/3	2.00E-03 - 1.40E-02	5.00E-03 - 5.00E-03	N	3.50E-03	mg/kg
Naphthalene	5/25	2.40E-03 - 1.90E+00	6.70E-01 - 7.90E+00	L	2.04E-01	mg/kg
PCB-1254	2/13	7.70E-02 - 9.60E-01	1.80E-02 - 9.40E-01	L	2.60E-03	mg/kg
PCB-1260	6/13	3.00E-03 - 3.30E+00	1.80E-02 - 2.10E-01	L	2.58E-02	mg/kg
PCB-1262	1/13	3.80E-02 - 3.80E-02	1.80E-02 - 9.40E-01	L	6.80E-02	mg/kg
Phenanthrene	18/25	4.00E-02 - 7.75E+01	7.25E-01 - 7.50E+00	L	2.31E+00	mg/kg
Polychlorinated biphenyl	9/24	3.00E-03 - 1.00E+01	1.00E+00 - 1.00E+00	L	1.12E-01	mg/kg
Pyrene	21/25	4.10E-02 - 1.11E+02	7.25E-01 - 7.50E+00	L	3.01E+00	mg/kg
Toluene	1/3	3.10E-03 - 3.10E-03	6.00E-03 - 6.00E-03	N	2.52E-03	mg/kg
Trichloroethene	1/3	1.60E-03 - 1.60E-03	6.00E-03 - 6.00E-01	N	2.03E-01	mg/kg
Alpha activity	40/57	6.03E+00 - 1.75E+02	-3.46E+00 - 7.15E+00	N	1.64E+01	pCi/g
Americium-241	3/21	2.00E-01 - 1.00E+00	1.00E-01 - 1.00E-01	L	2.90E-02	pCi/g
Beta activity	51/57	9.64E+00 - 2.48E+02	3.48E+00 - 8.46E+00	L	3.90E+01	pCi/g
Cesium-137	12/21	2.00E-01 - 1.50E+00	1.00E-01 - 2.00E-01	L	2.43E-01	pCi/g
Neptunium-237	11/21	2.00E-01 - 3.00E+00	1.00E-01 - 1.00E-01	L	3.23E-01	pCi/g
Plutonium-239	6/21	2.00E-01 - 1.70E+00	1.00E-01 - 1.00E-01	L	9.24E-02	pCi/g
Technetium-99	20/21	3.00E-01 - 5.30E+01	3.00E-01 - 3.00E-01	L	8.47E+00	pCi/g
Thorium-230	21/21	5.00E-01 - 1.09E+01		L	2.53E+00	pCi/g
Uranium-234	21/21	5.00E-01 - 3.11E+01		L	4.56E+00	pCi/g
Uranium-235	11/21	2.00E-01 - 1.90E+00	1.00E-01 - 1.00E-01	L	2.29E-01	pCi/g
Uranium-238	21/21	5.00E-01 - 3.95E+01		L	5.93E+00	pCi/g

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

--- SECTOR=Central MEDIA=Subsurface soil ---

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	3/3	4.27E+03 - 7.77E+03		N	3.13E+03	mg/kg
Antimony	1/3	4.50E+00 - 4.50E+00	6.00E-01 - 6.00E-01	N	9.50E-01	mg/kg
Arsenic	3/3	4.15E+00 - 5.71E+00		N	2.39E+00	mg/kg
Barium	3/3	2.31E+01 - 1.33E+02		N	3.55E+01	mg/kg
Beryllium	3/3	3.40E-01 - 4.60E-01		N	2.08E-01	mg/kg
Cadmium	2/3	1.60E-01 - 3.00E-01	2.00E-02 - 2.00E-02	N	8.00E-02	mg/kg
Calcium	3/3	8.31E+02 - 1.45E+03		N	5.82E+02	mg/kg
Chromium	3/3	1.09E+01 - 3.67E+01		N	9.82E+00	mg/kg
Cobalt	3/3	3.81E+00 - 6.29E+00		N	2.48E+00	mg/kg
Copper	3/3	3.80E+00 - 1.27E+01		N	3.98E+00	mg/kg
Iron	3/3	1.45E+04 - 2.90E+04		N	1.01E+04	mg/kg
Lead	3/3	3.90E+00 - 9.10E+00		N	3.25E+00	mg/kg
Magnesium	3/3	2.43E+02 - 1.85E+03		N	5.34E+02	mg/kg
Manganese	3/3	1.75E+02 - 3.02E+02		N	1.09E+02	mg/kg
Mercury	3/3	1.59E-02 - 2.73E-02		N	1.15E-02	mg/kg
Nickel	3/3	4.20E+00 - 1.50E+01		N	4.43E+00	mg/kg
Potassium	3/3	1.42E+02 - 3.54E+02		N	1.20E+02	mg/kg
Silver	2/3	2.00E-01 - 1.21E+00	8.00E-02 - 8.00E-02	N	2.48E-01	mg/kg
Sodium	3/3	5.67E+02 - 8.32E+02		N	3.36E+02	mg/kg
Thallium	1/3	7.00E-01 - 7.00E-01	6.00E-01 - 6.00E-01	N	3.17E-01	mg/kg
Uranium	6/6	1.19E+00 - 2.39E+00		N	1.84E+00	mg/kg
Vanadium	3/3	1.84E+01 - 3.08E+01		N	1.13E+01	mg/kg
Zinc	3/3	1.19E+01 - 3.47E+01		N	1.06E+01	mg/kg
Bis(2-ethylhexyl)phthalate	1/3	4.00E-02 - 4.00E-02	7.60E-01 - 7.90E-01	N	2.65E-01	mg/kg
Chloroform	1/7	1.40E-03 - 1.40E-03	6.00E-03 - 6.00E-03	N	2.67E-03	mg/kg
Di-n-butyl phthalate	2/3	1.20E+00 - 1.40E+00	7.90E-01 - 7.90E-01	N	5.65E-01	mg/kg
Methylene chloride	6/7	3.30E-03 - 1.40E-02	6.00E-03 - 6.00E-03	N	4.14E-03	mg/kg
Toluene	3/7	1.20E-03 - 1.70E-03	6.00E-03 - 6.00E-03	L	1.52E-03	mg/kg
Trichloroethene	4/7	1.60E-03 - 1.70E-02	8.00E-01 - 1.00E+00	L	8.04E-03	mg/kg
Alpha activity	7/7	1.04E+01 - 3.04E+01		L	1.95E+01	pCi/g
Beta activity	7/7	2.60E+01 - 4.94E+01		L	3.26E+01	pCi/g
Cesium-137	2/6	2.00E-01 - 3.00E-01	1.00E-01 - 2.00E-01	N	1.67E-01	pCi/g
Neptunium-237	1/6	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.17E-01	pCi/g
Technetium-99	5/6	7.00E-01 - 1.80E+00	2.00E-01 - 2.00E-01	N	1.08E+00	pCi/g
Thorium-230	6/6	5.00E-01 - 1.00E+00		N	8.00E-01	pCi/g
Uranium-234	6/6	4.00E-01 - 9.00E-01		N	6.00E-01	pCi/g
Uranium-238	6/6	4.00E-01 - 8.00E-01		N	6.17E-01	pCi/g

530739

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Central MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium	1/1	1.49E+00 - 1.49E+00		NT	1.49E+00	mg/kg
Di-n-butyl phthalate	1/1	1.20E+00 - 1.20E+00		NT	6.00E-01	mg/kg
Methylene chloride	1/1	1.40E-02 - 1.40E-02		NT	7.00E-03	mg/kg
Trichloroethene	1/1	1.60E-03 - 1.60E-03		NT	1.60E-03	mg/kg
Alpha activity	1/1	1.04E+01 - 1.04E+01		NT	1.04E+01	pCi/g
Beta activity	1/1	2.68E+01 - 2.68E+01		NT	2.68E+01	pCi/g
Cesium-137	1/1	2.00E-01 - 2.00E-01		NT	2.00E-01	pCi/g
Technetium-99	1/1	1.50E+00 - 1.50E+00		NT	1.50E+00	pCi/g
Thorium-230	1/1	1.00E+00 - 1.00E+00		NT	1.00E+00	pCi/g
Uranium-234	1/1	5.00E-01 - 5.00E-01		NT	5.00E-01	pCi/g
Uranium-238	1/1	5.00E-01 - 5.00E-01		NT	5.00E-01	pCi/g

SECTOR=East MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	17/17	6.19E+03 - 2.03E+04		N	6.66E+03	mg/kg
Antimony	3/17	6.00E-01 - 8.00E-01	6.00E-01 - 6.00E-01	N	3.12E-01	mg/kg
Arsenic	17/17	3.27E+00 - 1.81E+01		L	3.11E+00	mg/kg
Barium	17/17	6.54E+01 - 1.56E+02		L	5.54E+01	mg/kg
Beryllium	17/17	2.60E-01 - 6.90E-01		N	2.73E-01	mg/kg
Cadmium	14/17	6.00E-02 - 4.00E-01	2.00E-02 - 2.00E-01	L	1.77E-01	mg/kg
Calcium	17/17	9.49E+02 - 2.03E+04		L	2.04E+03	mg/kg
Chromium	17/17	1.16E+01 - 2.04E+01		N	8.48E+00	mg/kg
Cobalt	17/17	2.90E+00 - 1.86E+01		L	3.60E+00	mg/kg
Copper	17/17	7.70E+00 - 3.46E+01		L	6.52E+00	mg/kg
Iron	17/17	1.19E+04 - 2.70E+04		L	9.08E+03	mg/kg
Lead	17/17	5.00E+00 - 2.45E+01		L	4.95E+00	mg/kg
Magnesium	17/17	1.18E+03 - 3.06E+03		N	1.04E+03	mg/kg
Manganese	17/17	1.46E+02 - 9.96E+02		L	2.13E+02	mg/kg
Mercury	10/17	9.50E-03 - 6.28E-02	8.30E-03 - 9.60E-03	L	1.97E-02	mg/kg
Nickel	17/17	8.00E+00 - 2.28E+01		L	6.96E+00	mg/kg
Potassium	17/17	1.76E+02 - 1.07E+03		L	2.66E+02	mg/kg
Selenium	1/17	5.00E-01 - 5.00E-01	2.00E-01 - 1.00E+00	L	1.49E-01	mg/kg
Sodium	17/17	2.44E+02 - 8.64E+02		N	2.74E+02	mg/kg
Thallium	1/17	1.20E+00 - 1.20E+00	6.00E-01 - 6.00E-01	N	3.18E-01	mg/kg
Uranium	16/16	1.49E+00 - 2.74E+01		L	3.60E+00	mg/kg
Vanadium	17/17	1.70E+01 - 3.24E+01		N	1.40E+01	mg/kg

530740

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Zinc	17/17	1.52E+01 - 5.39E+01		N	1.85E+01	mg/kg
Acenaphthene	2/18	1.00E-01 - 1.30E-01	7.71E-01 - 3.80E+00	L	1.22E-01	mg/kg
Acetone	4/14	8.20E-01 - 4.30E+00	1.00E-01 - 8.00E-01	L	1.16E-01	mg/kg
Anthracene	3/18	4.00E-02 - 4.63E-01	7.71E-01 - 3.80E+00	L	2.04E-01	mg/kg
Benz(a)anthracene	4/18	2.50E-01 - 9.68E-01	7.71E-01 - 8.63E-01	N	3.81E-01	mg/kg
Benzo(a)pyrene	4/18	2.10E-01 - 1.00E+00	7.71E-01 - 8.63E-01	N	3.78E-01	mg/kg
Benzo(b)fluoranthene	4/18	2.00E-01 - 1.40E+00	7.71E-01 - 8.63E-01	N	3.88E-01	mg/kg
Benzo(ghi)perylene	3/18	1.20E-01 - 3.70E-01	7.71E-01 - 3.80E+00	L	2.28E-01	mg/kg
Benzo(k)fluoranthene	5/18	1.80E-01 - 9.47E-01	7.71E-01 - 8.63E-01	N	3.61E-01	mg/kg
Bis(2-ethylhexyl)phthalate	7/18	4.10E-02 - 8.00E-02	7.71E-01 - 3.80E+00	L	7.01E-02	mg/kg
Chrysene	4/18	2.70E-01 - 1.00E+00	7.71E-01 - 8.63E-01	N	3.82E-01	mg/kg
Di-n-butyl phthalate	6/18	4.00E-02 - 1.23E+00	7.71E-01 - 3.80E+00	L	3.65E-01	mg/kg
Dibenz(a,h)anthracene	1/18	1.60E-01 - 1.60E-01	7.50E-01 - 3.80E+00	L	4.61E-01	mg/kg
Dibenzofuran	1/18	5.00E-02 - 5.00E-02	7.71E-01 - 3.80E+00	L	5.28E-01	mg/kg
Fluoranthene	7/18	4.00E-02 - 2.10E+00	7.71E-01 - 8.63E-01	N	3.83E-01	mg/kg
Fluorene	2/18	7.00E-02 - 9.00E-02	7.71E-01 - 3.80E+00	L	8.45E-02	mg/kg
Indeno(1,2,3-cd)pyrene	3/18	1.10E-01 - 4.20E-01	7.71E-01 - 3.80E+00	L	2.48E-01	mg/kg
Methylene chloride	8/14	1.40E-03 - 6.30E-02	6.00E-03 - 4.00E-02	L	8.26E-03	mg/kg
Naphthalene	1/18	4.00E-02 - 4.00E-02	7.71E-01 - 3.80E+00	L	5.41E-01	mg/kg
PCB-1260	4/10	2.10E-02 - 3.30E+00	2.00E-02 - 2.10E-02	L	3.82E-02	mg/kg
Phenanthrene	3/18	3.00E-01 - 1.27E+00	7.71E-01 - 8.63E-01	N	4.11E-01	mg/kg
Polychlorinated biphenyl	4/18	2.10E-02 - 1.00E+01	2.00E-02 - 1.00E+00	L	1.13E-01	mg/kg
Pyrene	6/18	5.00E-02 - 1.80E+00	7.71E-01 - 8.63E-01	N	3.90E-01	mg/kg
Toluene	3/14	2.00E-03 - 2.70E-01	6.00E-03 - 4.00E-02	L	2.63E-03	mg/kg
Trichloroethene	4/15	5.30E-03 - 2.90E+00	5.00E-01 - 1.00E+00	N	1.01E+00	mg/kg
cis-1,2-Dichloroethene	2/15	9.70E-03 - 4.60E-02	5.00E-01 - 1.00E+00	N	7.50E-01	mg/kg
Alpha activity	17/18	6.92E+00 - 4.38E+01	7.15E+00 - 7.15E+00	N	2.28E+01	pCi/g
Americium-241	1/16	2.00E-01 - 2.00E-01	1.00E-01 - 2.00E-01	N	1.13E-01	pCi/g
Beta activity	18/18	1.75E+01 - 4.90E+01		N	3.19E+01	pCi/g
Cesium-137	3/16	3.00E-01 - 5.00E-01	1.00E-01 - 1.00E-01	L	5.09E-02	pCi/g
Neptunium-237	3/16	3.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.50E-01	pCi/g
Technetium-99	12/16	3.00E-01 - 3.50E+00	1.00E-01 - 2.00E-01	L	7.19E-01	pCi/g
Thorium-230	15/16	4.00E-01 - 4.20E+00	2.00E-01 - 2.00E-01	L	1.14E+00	pCi/g
Uranium-234	16/16	5.00E-01 - 7.10E+00		L	1.04E+00	pCi/g
Uranium-235	1/16	4.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.19E-01	pCi/g
Uranium-238	16/16	5.00E-01 - 9.10E+00		L	1.21E+00	pCi/g

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=East MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	2/2	1.20E+04 - 1.21E+04		N	6.03E+03	mg/kg
Arsenic	2/2	5.21E+00 - 8.10E+00		N	3.33E+00	mg/kg
Barium	2/2	9.11E+01 - 1.32E+02		N	5.58E+01	mg/kg
Beryllium	2/2	4.80E-01 - 5.20E-01		N	2.50E-01	mg/kg
Cadmium	2/2	1.60E-01 - 3.80E-01		N	1.35E-01	mg/kg
Calcium	2/2	3.92E+03 - 2.03E+04		N	6.06E+03	mg/kg
Chromium	2/2	1.48E+01 - 1.82E+01		N	8.25E+00	mg/kg
Cobalt	2/2	7.98E+00 - 8.70E+00		N	4.17E+00	mg/kg
Copper	2/2	1.80E+01 - 3.46E+01		N	1.32E+01	mg/kg
Iron	2/2	1.57E+04 - 2.05E+04		N	9.05E+03	mg/kg
Lead	2/2	1.06E+01 - 2.45E+01		N	8.78E+00	mg/kg
Magnesium	2/2	2.00E+03 - 2.43E+03		N	1.11E+03	mg/kg
Manganese	2/2	4.46E+02 - 5.55E+02		N	2.50E+02	mg/kg
Mercury	2/2	3.04E-02 - 6.28E-02		N	2.33E-02	mg/kg
Nickel	2/2	1.82E+01 - 2.28E+01		N	1.03E+01	mg/kg
Potassium	2/2	6.09E+02 - 7.51E+02		N	3.40E+02	mg/kg
Sodium	2/2	5.73E+02 - 6.20E+02		N	2.98E+02	mg/kg
Thallium	1/2	1.20E+00 - 1.20E+00	6.00E-01 - 6.00E-01	N	4.50E-01	mg/kg
Uranium	1/1	2.74E+01 - 2.74E+01		NT	2.74E+01	mg/kg
Vanadium	2/2	2.46E+01 - 2.65E+01		N	1.28E+01	mg/kg
Zinc	2/2	4.07E+01 - 5.39E+01		N	2.37E+01	mg/kg
Acenaphthene	1/2	1.30E-01 - 1.30E-01	7.78E-01 - 7.78E-01	N	2.27E-01	mg/kg
Anthracene	1/2	2.20E-01 - 2.20E-01	7.78E-01 - 7.78E-01	N	2.50E-01	mg/kg
Benz(a)anthracene	1/2	9.60E-01 - 9.60E-01	7.78E-01 - 7.78E-01	N	4.35E-01	mg/kg
Benzo(a)pyrene	1/2	1.00E+00 - 1.00E+00	7.78E-01 - 7.78E-01	N	4.45E-01	mg/kg
Benzo(b)fluoranthene	1/2	1.40E+00 - 1.40E+00	7.78E-01 - 7.78E-01	N	5.45E-01	mg/kg
Benzo(ghi)perylene	1/2	3.70E-01 - 3.70E-01	7.78E-01 - 7.78E-01	N	2.87E-01	mg/kg
Benzo(k)fluoranthene	2/2	2.54E-01 - 8.70E-01		N	2.81E-01	mg/kg
Chrysene	1/2	1.00E+00 - 1.00E+00	7.78E-01 - 7.78E-01	N	4.45E-01	mg/kg
Di-n-butyl phthalate	2/2	6.19E-01 - 1.23E+00		N	4.62E-01	mg/kg
Dibenz(a,h)anthracene	1/2	1.60E-01 - 1.60E-01	7.78E-01 - 7.78E-01	N	2.35E-01	mg/kg
Fluoranthene	2/2	2.24E-01 - 2.10E+00		N	5.81E-01	mg/kg
Fluorene	1/2	9.00E-02 - 9.00E-02	7.78E-01 - 7.78E-01	N	2.17E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/2	4.20E-01 - 4.20E-01	7.78E-01 - 7.78E-01	N	3.00E-01	mg/kg
PCB-1260	1/1	3.30E+00 - 3.30E+00		NT	3.30E+00	mg/kg
Phenanthrene	1/2	1.20E+00 - 1.20E+00	7.78E-01 - 7.78E-01	N	4.95E-01	mg/kg
Polychlorinated biphenyl	1/2	1.00E+01 - 1.00E+01	1.00E+00 - 1.00E+00	N	2.75E+00	mg/kg
Pyrene	2/2	2.27E-01 - 1.80E+00		N	5.07E-01	mg/kg
Alpha activity	1/2	3.32E+01 - 3.32E+01	7.15E+00 - 7.15E+00	N	2.02E+01	pCi/g
Beta activity	2/2	3.36E+01 - 4.27E+01		N	3.82E+01	pCi/g
Cesium-137	1/1	5.00E-01 - 5.00E-01		NT	5.00E-01	pCi/g

530742

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=East MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Neptunium-237	1/1	4.00E-01 - 4.00E-01		NT	4.00E-01	pCi/g
Technetium-99	1/1	3.50E+00 - 3.50E+00		NT	3.50E+00	pCi/g
Thorium-230	1/1	4.20E+00 - 4.20E+00		NT	4.20E+00	pCi/g
Uranium-234	1/1	7.10E+00 - 7.10E+00		NT	7.10E+00	pCi/g
Uranium-235	1/1	4.00E-01 - 4.00E-01		NT	4.00E-01	pCi/g
Uranium-238	1/1	9.10E+00 - 9.10E+00		NT	9.10E+00	pCi/g

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	7/7	1.12E+04 - 1.57E+04		L	6.69E+03	mg/kg
Antimony	5/7	6.00E-01 - 2.90E+00	6.00E-01 - 1.00E+00	L	1.51E+00	mg/kg
Arsenic	7/7	6.58E+00 - 1.83E+01		L	5.26E+00	mg/kg
Barium	7/7	9.20E+01 - 1.47E+02		L	5.49E+01	mg/kg
Beryllium	7/7	5.00E-01 - 1.20E+00		L	3.70E-01	mg/kg
Cadmium	3/7	2.20E-01 - 4.10E-01	2.00E-02 - 2.00E-02	N	6.86E-02	mg/kg
Calcium	7/7	1.77E+03 - 9.63E+04		L	2.29E+04	mg/kg
Chromium	7/7	1.53E+01 - 2.49E+01		L	1.00E+01	mg/kg
Cobalt	7/7	5.90E+00 - 1.27E+01		L	4.07E+00	mg/kg
Copper	7/7	1.04E+01 - 2.03E+01		L	6.80E+00	mg/kg
Iron	7/7	1.62E+04 - 3.44E+04		L	1.19E+04	mg/kg
Lead	7/7	1.14E+01 - 2.96E+01		N	9.06E+00	mg/kg
Magnesium	7/7	1.47E+03 - 5.14E+03		L	1.39E+03	mg/kg
Manganese	7/7	3.23E+02 - 1.37E+03		L	4.03E+02	mg/kg
Mercury	3/7	1.82E-02 - 2.38E-02	8.60E-03 - 9.50E-03	N	6.96E-03	mg/kg
Nickel	7/7	9.10E+00 - 1.86E+01		L	6.47E+00	mg/kg
Potassium	7/7	3.42E+02 - 1.14E+03		L	3.70E+02	mg/kg
Selenium	2/7	5.00E-01 - 7.00E-01	2.00E-01 - 2.00E-01	N	1.57E-01	mg/kg
Silver	3/7	1.40E-01 - 6.60E-01	8.00E-02 - 2.00E-01	L	1.51E-01	mg/kg
Sodium	7/7	2.58E+02 - 6.74E+02		N	2.17E+02	mg/kg
Thallium	1/7	9.00E-01 - 9.00E-01	6.00E-01 - 1.00E+00	N	3.50E-01	mg/kg
Uranium	6/6	3.28E+00 - 2.62E+01		N	1.17E+01	mg/kg
Vanadium	7/7	2.83E+01 - 5.98E+01		L	1.93E+01	mg/kg
Zinc	7/7	3.32E+01 - 5.66E+01		N	2.50E+01	mg/kg
Benz(a)anthracene	2/7	4.00E-02 - 1.30E-01	7.22E-01 - 8.10E-01	N	2.90E-01	mg/kg
Benzo(a)pyrene	2/7	4.00E-02 - 1.50E-01	7.22E-01 - 8.10E-01	N	2.91E-01	mg/kg

530743

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benzo(b)fluoranthene	2/7	4.00E-02 - 1.80E-01	7.22E-01 - 8.10E-01	N	2.93E-01	mg/kg
Benzo(ghi)perylene	1/7	6.20E-02 - 6.20E-02	7.22E-01 - 8.10E-01	N	3.35E-01	mg/kg
Benzo(k)fluoranthene	2/7	5.00E-02 - 1.50E-01	7.22E-01 - 8.10E-01	N	2.92E-01	mg/kg
Bis(2-ethylhexyl)phthalate	2/7	7.00E-02 - 7.00E-02	7.22E-01 - 8.10E-01	N	2.79E-01	mg/kg
Butyl benzyl phthalate	1/7	4.00E-02 - 4.00E-02	7.22E-01 - 8.10E-01	N	3.29E-01	mg/kg
Chrysene	2/7	4.00E-02 - 1.50E-01	7.22E-01 - 8.10E-01	N	2.91E-01	mg/kg
Di-n-butyl phthalate	3/7	5.00E-02 - 1.21E+00	7.40E-01 - 8.10E-01	N	3.13E-01	mg/kg
Fluoranthene	3/7	6.00E-02 - 2.20E-01	7.22E-01 - 8.10E-01	L	1.39E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/7	6.70E-02 - 6.70E-02	7.22E-01 - 8.10E-01	N	3.35E-01	mg/kg
PCB-1254	1/6	3.80E-02 - 3.80E-02	1.90E-02 - 2.10E-02	N	2.30E-02	mg/kg
PCB-1260	2/6	5.60E-03 - 3.80E-02	1.90E-02 - 2.10E-02	N	2.08E-02	mg/kg
Phenanthrene	2/7	4.00E-02 - 7.00E-02	7.22E-01 - 8.10E-01	N	2.85E-01	mg/kg
Polychlorinated biphenyl	2/7	5.60E-03 - 7.60E-02	1.00E+00 - 1.00E+00	L	3.87E-02	mg/kg
Pyrene	3/7	6.00E-02 - 2.20E-01	7.22E-01 - 8.10E-01	L	1.30E-01	mg/kg
Alpha activity	13/16	6.80E+00 - 4.43E+01	-2.11E-01 - 5.64E+00	N	1.73E+01	pCi/g
Americium-241	3/6	2.00E-01 - 1.30E+00	1.00E-01 - 1.00E-01	N	4.67E-01	pCi/g
Beta activity	13/16	1.72E+01 - 5.57E+01	5.14E+00 - 8.46E+00	N	2.82E+01	pCi/g
Cesium-137	2/6	2.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.67E-01	pCi/g
Technetium-99	6/6	3.00E-01 - 2.90E+00		N	1.00E+00	pCi/g
Thorium-230	6/6	8.00E-01 - 1.40E+00		N	1.12E+00	pCi/g
Uranium-234	6/6	1.00E+00 - 7.90E+00		N	3.45E+00	pCi/g
Uranium-235	2/6	3.00E-01 - 5.00E-01	1.00E-01 - 1.00E-01	N	2.00E-01	pCi/g
Uranium-238	6/6	1.10E+00 - 8.70E+00		N	3.90E+00	pCi/g

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	2/2	1.12E+04 - 1.57E+04		N	6.73E+03	mg/kg
Antimony	2/2	6.00E-01 - 2.90E+00		N	8.75E-01	mg/kg
Arsenic	2/2	7.11E+00 - 7.60E+00		N	3.68E+00	mg/kg
Barium	2/2	9.40E+01 - 1.47E+02		N	6.03E+01	mg/kg
Beryllium	2/2	5.60E-01 - 6.10E-01		N	2.93E-01	mg/kg
Calcium	2/2	4.29E+03 - 1.49E+04		N	4.80E+03	mg/kg
Chromium	2/2	1.53E+01 - 1.68E+01		N	8.03E+00	mg/kg
Cobalt	2/2	6.16E+00 - 9.38E+00		N	3.89E+00	mg/kg
Copper	2/2	1.04E+01 - 1.26E+01		N	5.75E+00	mg/kg

530744

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Iron	2/2	1.62E+04 - 1.97E+04		N	8.98E+03	mg/kg
Lead	2/2	1.14E+01 - 1.25E+01		N	5.98E+00	mg/kg
Magnesium	2/2	1.47E+03 - 2.25E+03		N	9.30E+02	mg/kg
Manganese	2/2	6.00E+02 - 6.88E+02		N	3.22E+02	mg/kg
Mercury	1/2	1.82E-02 - 1.82E-02	8.60E-03 - 8.60E-03	N	6.70E-03	mg/kg
Nickel	2/2	9.90E+00 - 1.62E+01		N	6.53E+00	mg/kg
Potassium	2/2	3.42E+02 - 9.10E+02		N	3.13E+02	mg/kg
Silver	1/2	1.40E-01 - 1.40E-01	8.00E-02 - 8.00E-02	N	5.50E-02	mg/kg
Sodium	2/2	2.58E+02 - 2.58E+02		N	1.29E+02	mg/kg
Uranium	2/2	5.97E+00 - 2.62E+01		N	1.61E+01	mg/kg
Vanadium	2/2	2.83E+01 - 2.91E+01		N	1.44E+01	mg/kg
Zinc	2/2	3.32E+01 - 4.55E+01		N	1.97E+01	mg/kg
Benz(a)anthracene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Benzo(a)pyrene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Benzo(b)fluoranthene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Benzo(k)fluoranthene	1/2	5.00E-02 - 5.00E-02	7.46E-01 - 7.46E-01	N	1.99E-01	mg/kg
Chrysene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Fluoranthene	2/2	6.00E-02 - 9.00E-02		N	3.75E-02	mg/kg
PCB-1260	1/2	5.60E-03 - 5.60E-03	1.90E-02 - 1.90E-02	N	1.23E-02	mg/kg
Phenanthrene	1/2	4.00E-02 - 4.00E-02	7.46E-01 - 7.46E-01	N	1.97E-01	mg/kg
Polychlorinated biphenyl	1/2	5.60E-03 - 5.60E-03	1.00E+00 - 1.00E+00	N	2.51E-01	mg/kg
Pyrene	2/2	6.00E-02 - 7.00E-02		N	3.25E-02	mg/kg
Alpha activity	7/10	6.80E+00 - 4.43E+01	-2.11E-01 - 5.64E+00	N	1.43E+01	pCi/g
Americium-241	1/2	1.00E+00 - 1.00E+00	1.00E-01 - 1.00E-01	N	5.50E-01	pCi/g
Beta activity	7/10	1.72E+01 - 5.57E+01	5.14E+00 - 8.46E+00	L	2.47E+01	pCi/g
Cesium-137	1/2	4.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	2.50E-01	pCi/g
Technetium-99	2/2	1.00E+00 - 1.00E+00		N	1.00E+00	pCi/g
Thorium-230	2/2	1.20E+00 - 1.30E+00		N	1.25E+00	pCi/g
Uranium-234	2/2	1.90E+00 - 7.90E+00		N	4.90E+00	pCi/g
Uranium-235	1/2	5.00E-01 - 5.00E-01	1.00E-01 - 1.00E-01	N	3.00E-01	pCi/g
Uranium-238	2/2	2.00E+00 - 8.70E+00		N	5.35E+00	pCi/g

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	11/11	7.20E+03 - 1.61E+04		N	6.77E+03	mg/kg

230322

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

530745

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Antimony	9/11	6.00E-01 - 1.40E+00	6.00E-01 - 7.00E-01	L	1.01E+00	mg/kg
Arsenic	11/11	4.66E+00 - 1.08E+01		N	3.94E+00	mg/kg
Barium	11/11	5.96E+01 - 1.66E+02		N	5.40E+01	mg/kg
Beryllium	11/11	4.20E-01 - 9.80E-01		L	3.14E-01	mg/kg
Cadmium	8/11	3.00E-02 - 9.00E-01	2.00E-02 - 3.00E-02	L	1.27E-01	mg/kg
Calcium	11/11	1.55E+03 - 4.16E+04		L	5.54E+03	mg/kg
Chromium	11/11	1.27E+01 - 1.41E+02		L	1.96E+01	mg/kg
Cobalt	11/11	4.80E+00 - 1.60E+01		L	4.19E+00	mg/kg
Copper	11/11	8.40E+00 - 9.52E+03		L	2.17E+02	mg/kg
Iron	11/11	1.20E+04 - 5.17E+04		L	1.16E+04	mg/kg
Lead	11/11	6.70E+00 - 8.75E+01		L	9.36E+00	mg/kg
Magnesium	11/11	1.29E+03 - 3.66E+03		L	9.39E+02	mg/kg
Manganese	11/11	2.93E+02 - 8.90E+02		N	3.01E+02	mg/kg
Mercury	9/11	1.36E-02 - 4.57E-01	9.50E-03 - 9.60E-03	L	4.67E-02	mg/kg
Nickel	11/11	8.00E+00 - 1.76E+04		L	3.33E+02	mg/kg
Potassium	11/11	2.84E+02 - 8.42E+02		L	2.30E+02	mg/kg
Selenium	4/11	3.00E-01 - 1.00E+00	2.00E-01 - 2.00E-01	L	2.72E-01	mg/kg
Silver	7/11	1.00E-01 - 4.12E+00	8.00E-02 - 9.00E-02	L	3.77E-01	mg/kg
Sodium	11/11	2.16E+02 - 1.17E+03		L	2.18E+02	mg/kg
Thallium	1/11	6.00E-01 - 6.00E-01	5.00E-01 - 3.00E+00	L	3.91E-01	mg/kg
Uranium	9/9	2.09E+00 - 4.26E+02		L	1.15E+02	mg/kg
Vanadium	11/11	1.94E+01 - 3.61E+01		N	1.46E+01	mg/kg
Zinc	11/11	3.42E+01 - 1.81E+02		L	2.77E+01	mg/kg
2,4-Dinitrotoluene	1/12	4.57E-01 - 4.57E-01	7.00E-01 - 9.16E-01	N	3.82E-01	mg/kg
Acenaphthene	1/12	5.00E-02 - 5.00E-02	7.00E-01 - 9.16E-01	N	3.72E-01	mg/kg
Acetone	2/9	8.90E-01 - 1.10E+00	1.00E-01 - 1.00E-01	N	1.49E-01	mg/kg
Anthracene	1/12	1.60E-01 - 1.60E-01	7.00E-01 - 9.16E-01	N	3.76E-01	mg/kg
Benz(a)anthracene	3/12	8.00E-02 - 3.40E-01	7.00E-01 - 9.16E-01	N	3.28E-01	mg/kg
Benzo(a)pyrene	3/12	8.00E-02 - 2.80E-01	7.00E-01 - 9.16E-01	N	3.25E-01	mg/kg
Benzo(b)fluoranthene	3/12	9.00E-02 - 2.60E-01	7.00E-01 - 9.16E-01	N	3.24E-01	mg/kg
Benzo(ghi)perylene	3/12	5.50E-02 - 1.30E-01	7.00E-01 - 9.16E-01	N	3.16E-01	mg/kg
Benzo(k)fluoranthene	3/12	7.00E-02 - 2.90E-01	7.00E-01 - 9.16E-01	N	3.25E-01	mg/kg
Bis(2-ethylhexyl)phthalate	8/12	4.00E-02 - 1.20E-01	7.10E-01 - 9.16E-01	L	7.28E-02	mg/kg
Chrysene	3/12	9.00E-02 - 3.50E-01	7.00E-01 - 9.16E-01	N	3.29E-01	mg/kg
Di-n-butyl phthalate	6/12	4.00E-02 - 1.86E+00	7.00E-01 - 8.70E-01	N	4.84E-01	mg/kg
Fluoranthene	4/12	4.00E-02 - 8.40E-01	7.00E-01 - 9.16E-01	N	3.31E-01	mg/kg
Fluorene	1/12	5.00E-02 - 5.00E-02	7.00E-01 - 9.16E-01	N	3.72E-01	mg/kg
Indeno(1,2,3-cd)pyrene	3/12	5.00E-02 - 1.40E-01	7.00E-01 - 9.16E-01	N	3.16E-01	mg/kg
Methylene chloride	5/9	1.40E-03 - 1.70E-02	5.00E-03 - 7.00E-03	L	5.00E-03	mg/kg
N-Nitrosodiphenylamine	1/12	8.23E-01 - 8.23E-01	7.00E-01 - 9.16E-01	N	3.99E-01	mg/kg

D5703?

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
PCB-1254	1/9	3.20E-02 - 3.20E-02	1.80E-02 - 2.20E-02	L	2.15E-02	mg/kg
PCB-1260	1/9	6.30E-02 - 6.30E-02	1.80E-02 - 2.20E-02	L	2.48E-02	mg/kg
Phenanthrene	3/12	1.10E-01 - 7.00E-01	7.00E-01 - 9.16E-01	N	3.45E-01	mg/kg
Polychlorinated biphenyl	2/11	3.20E-02 - 6.30E-02	1.00E+00 - 1.00E+00	L	5.32E-02	mg/kg
Pyrene	3/12	1.50E-01 - 7.10E-01	7.00E-01 - 9.16E-01	N	3.50E-01	mg/kg
Toluene	3/9	1.60E-03 - 3.20E-01	6.00E-03 - 7.00E-03	L	6.69E-03	mg/kg
Trichloroethene	2/12	3.10E-03 - 3.40E-02	1.49E-03 - 1.00E+00	N	4.95E-01	mg/kg
cis-1,2-Dichloroethene	2/12	4.40E-03 - 1.50E-02	6.00E-03 - 1.00E+00	N	4.94E-01	mg/kg
Alpha activity	17/27	6.03E+00 - 8.78E+02	5.33E-01 - 5.67E+00	L	1.64E+01	pCi/g
Americium-241	2/9	2.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	L	6.45E-02	pCi/g
Beta activity	25/27	9.64E+00 - 8.08E+03	3.48E+00 - 7.90E+00	L	7.30E+01	pCi/g
Cesium-137	6/9	2.00E-01 - 1.11E+01	1.00E-01 - 1.00E-01	L	8.76E-01	pCi/g
Neptunium-237	5/9	2.00E-01 - 5.26E+01	1.00E-01 - 1.00E-01	L	7.50E-01	pCi/g
Plutonium-239	4/9	2.00E-01 - 1.12E+01	1.00E-01 - 1.00E-01	L	2.93E-01	pCi/g
Technetium-99	9/9	3.00E-01 - 4.84E+03		L	1.06E+03	pCi/g
Thorium-230	9/9	7.00E-01 - 1.88E+01		L	2.99E+00	pCi/g
Uranium-234	9/9	7.00E-01 - 1.02E+02		L	1.57E+01	pCi/g
Uranium-235	3/9	2.00E-01 - 4.90E+00	1.00E-01 - 1.00E-01	L	1.40E-01	pCi/g
Uranium-238	9/9	7.00E-01 - 1.42E+02		L	3.85E+01	pCi/g

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	2/2	7.20E+03 - 1.29E+04		N	5.03E+03	mg/kg
Antimony	2/2	6.00E-01 - 1.40E+00		N	5.00E-01	mg/kg
Arsenic	2/2	4.66E+00 - 1.01E+01		N	3.69E+00	mg/kg
Barium	2/2	6.63E+01 - 1.01E+02		N	4.18E+01	mg/kg
Beryllium	2/2	4.20E-01 - 6.90E-01		N	2.78E-01	mg/kg
Cadmium	2/2	5.00E-02 - 3.00E-01		N	8.75E-02	mg/kg
Calcium	2/2	9.08E+03 - 4.16E+04		N	1.27E+04	mg/kg
Chromium	2/2	1.27E+01 - 2.72E+01		N	9.98E+00	mg/kg
Cobalt	2/2	6.81E+00 - 8.86E+00		N	3.92E+00	mg/kg
Copper	2/2	8.80E+00 - 1.40E+01		N	5.70E+00	mg/kg
Iron	2/2	1.20E+04 - 2.13E+04		N	8.33E+03	mg/kg
Lead	2/2	9.40E+00 - 1.60E+01		N	6.35E+00	mg/kg
Magnesium	2/2	1.29E+03 - 3.66E+03		N	1.24E+03	mg/kg

530747

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Manganese	2/2	4.25E+02 - 7.36E+02		N	2.90E+02	mg/kg
Mercury	2/2	2.06E-02 - 4.93E-02		N	1.75E-02	mg/kg
Nickel	2/2	9.00E+00 - 1.43E+01		N	5.83E+00	mg/kg
Potassium	2/2	2.84E+02 - 4.77E+02		N	1.90E+02	mg/kg
Selenium	1/2	3.00E-01 - 3.00E-01	2.00E-01 - 2.00E-01	N	1.25E-01	mg/kg
Silver	2/2	1.00E-01 - 3.00E-01		N	1.00E-01	mg/kg
Sodium	2/2	2.51E+02 - 2.54E+02		N	1.26E+02	mg/kg
Thallium	1/2	6.00E-01 - 6.00E-01	6.00E-01 - 6.00E-01	N	3.00E-01	mg/kg
Uranium	2/2	8.06E+00 - 1.38E+01		N	1.09E+01	mg/kg
Vanadium	2/2	1.94E+01 - 3.61E+01		N	1.39E+01	mg/kg
Zinc	2/2	3.42E+01 - 3.78E+01		N	1.80E+01	mg/kg
Acenaphthene	1/2	5.00E-02 - 5.00E-02	7.30E-01 - 7.30E-01	N	1.95E-01	mg/kg
Anthracene	1/2	1.60E-01 - 1.60E-01	7.30E-01 - 7.30E-01	N	2.23E-01	mg/kg
Benz(a)anthracene	1/2	3.40E-01 - 3.40E-01	7.30E-01 - 7.30E-01	N	2.68E-01	mg/kg
Benzo(a)pyrene	1/2	2.80E-01 - 2.80E-01	7.30E-01 - 7.30E-01	N	2.53E-01	mg/kg
Benzo(b)fluoranthene	1/2	2.60E-01 - 2.60E-01	7.30E-01 - 7.30E-01	N	2.48E-01	mg/kg
Benzo(ghi)perylene	1/2	1.30E-01 - 1.30E-01	7.30E-01 - 7.30E-01	N	2.15E-01	mg/kg
Benzo(k)fluoranthene	1/2	2.90E-01 - 2.90E-01	7.30E-01 - 7.30E-01	N	2.55E-01	mg/kg
Bis(2-ethylhexyl)phthalate	1/2	8.00E-02 - 8.00E-02	7.10E-01 - 7.10E-01	N	1.98E-01	mg/kg
Chrysene	1/2	3.50E-01 - 3.50E-01	7.30E-01 - 7.30E-01	N	2.70E-01	mg/kg
Di-n-butyl phthalate	1/2	4.00E-02 - 4.00E-02	7.10E-01 - 7.10E-01	N	1.88E-01	mg/kg
Fluoranthene	2/2	4.00E-02 - 8.40E-01		N	2.20E-01	mg/kg
Fluorene	1/2	5.00E-02 - 5.00E-02	7.30E-01 - 7.30E-01	N	1.95E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/2	1.40E-01 - 1.40E-01	7.30E-01 - 7.30E-01	N	2.18E-01	mg/kg
Phenanthrene	1/2	7.00E-01 - 7.00E-01	7.30E-01 - 7.30E-01	N	3.58E-01	mg/kg
Pyrene	1/2	7.10E-01 - 7.10E-01	7.30E-01 - 7.30E-01	N	3.60E-01	mg/kg
Alpha activity	6/15	6.03E+00 - 2.32E+01	5.33E-01 - 4.46E+00	L	2.84E+00	pCi/g
Beta activity	13/15	9.64E+00 - 8.31E+01	3.48E+00 - 7.90E+00	L	2.43E+01	pCi/g
Cesium-137	2/2	2.00E-01 - 2.00E-01		N	2.00E-01	pCi/g
Neptunium-237	1/2	6.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	N	3.50E-01	pCi/g
Plutonium-239	2/2	2.00E-01 - 4.00E-01		N	3.00E-01	pCi/g
Technetium-99	2/2	3.10E+00 - 1.70E+01		N	1.01E+01	pCi/g
Thorium-230	2/2	1.60E+00 - 1.60E+00		N	1.60E+00	pCi/g
Uranium-234	2/2	1.70E+00 - 3.10E+00		N	2.40E+00	pCi/g
Uranium-235	1/2	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.50E-01	pCi/g
Uranium-238	2/2	2.70E+00 - 4.60E+00		N	3.65E+00	pCi/g

530748

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	3/3	8.13E-01 - 1.39E+02		N	2.89E+01	mg/L
Arsenic	2/3	3.28E-02 - 4.06E-01	1.11E-03 - 1.11E-03	N	7.33E-02	mg/L
Barium	3/3	1.95E-01 - 5.88E-01		N	1.82E-01	mg/L
Beryllium	3/3	3.33E-04 - 1.30E-02		N	2.83E-03	mg/L
Bromide	16/41	1.40E-02 - 5.20E-02	1.00E+00 - 1.00E+00	L	3.81E-02	mg/L
Cadmium	2/3	5.56E-04 - 2.99E-03	2.67E-04 - 2.67E-04	N	6.36E-04	mg/L
Calcium	3/3	1.74E+01 - 5.45E+01		N	1.79E+01	mg/L
Chloride	41/41	3.20E+00 - 2.24E+01		L	4.81E+00	mg/L
Chromium	3/3	3.52E-02 - 3.87E-01		N	8.80E-02	mg/L
Cobalt	2/3	4.87E-02 - 1.07E-01	1.78E-03 - 1.78E-03	N	2.62E-02	mg/L
Copper	2/3	1.69E-02 - 9.57E-02	9.56E-03 - 9.56E-03	N	2.04E-02	mg/L
Fluoride	16/41	5.10E-02 - 2.92E-01	1.00E+00 - 1.00E+00	L	2.10E-01	mg/L
Iron	3/3	1.75E+00 - 3.37E+02		N	6.64E+01	mg/L
Lead	2/3	3.13E-02 - 1.77E-01	1.33E-03 - 1.33E-03	N	3.49E-02	mg/L
Magnesium	3/3	9.78E+00 - 3.19E+01		N	9.38E+00	mg/L
Manganese	3/3	1.77E-02 - 2.44E+00		N	5.12E-01	mg/L
Nickel	3/3	6.37E-02 - 1.86E-01		N	5.35E-02	mg/L
Nitrate	23/41	7.00E-03 - 2.90E+00	1.00E+00 - 1.00E+00	N	4.33E-01	mg/L
Nitrate/Nitrite	1/16	5.00E-03 - 5.00E-03	1.00E+00 - 1.00E+00	N	4.69E-01	mg/L
Orthophosphate	3/41	3.30E-02 - 1.01E-01	1.00E+00 - 1.00E+00	N	4.66E-01	mg/L
Potassium	3/3	3.38E+00 - 2.12E+01		N	5.48E+00	mg/L
Selenium	1/3	4.41E-02 - 4.41E-02	1.44E-03 - 2.30E-02	N	1.14E-02	mg/L
Sodium	3/3	1.34E+01 - 3.67E+01		N	1.09E+01	mg/L
Tetraoxo-sulfate(1-)	41/41	1.23E+01 - 5.34E+01		L	1.52E+01	mg/L
Thallium	2/3	5.00E-04 - 1.03E-03	4.67E-04 - 4.67E-04	N	3.33E-04	mg/L
Uranium	2/3	2.73E-03 - 4.27E-03	8.00E-05 - 8.00E-05	N	2.36E-03	mg/L
Vanadium	3/3	5.44E-03 - 1.57E+00		N	2.82E-01	mg/L
Zinc	3/3	1.80E-02 - 1.21E+01		N	2.12E+00	mg/L
1,1-Dichloroethene	2/54	2.00E-02 - 2.40E-02	4.00E-03 - 2.00E-01	N	4.18E-03	mg/L
1,2-Dichloroethane	1/5	1.00E-03 - 1.00E-03	5.00E-03 - 1.30E-02	N	2.90E-03	mg/L
Benzoic acid	1/5	1.00E-03 - 1.00E-03	5.00E-02 - 5.00E-02	N	2.01E-02	mg/L
Bis(2-ethylhexyl)phthalate	3/5	1.00E-03 - 8.00E-03	1.00E-02 - 1.00E-02	N	3.00E-03	mg/L
Bromodichloromethane	2/5	1.00E-03 - 8.00E-03	5.00E-03 - 1.30E-02	N	3.20E-03	mg/L
Chloroform	4/5	1.00E-03 - 1.90E-02	5.00E-03 - 5.00E-03	N	3.30E-03	mg/L
Di-n-butyl phthalate	1/5	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.10E-03	mg/L
Di-n-octylphthalate	2/5	1.00E-03 - 6.00E-03	1.00E-02 - 1.00E-02	N	3.70E-03	mg/L
Dibromochloromethane	2/5	1.00E-03 - 4.00E-03	5.00E-03 - 1.30E-02	N	2.80E-03	mg/L
Phenol	3/5	1.00E-03 - 5.00E-03	1.00E-02 - 1.00E-02	N	2.70E-03	mg/L
Tetrachloroethene	1/5	2.70E-02 - 2.70E-02	5.00E-03 - 1.00E-02	N	5.20E-03	mg/L
Toluene	3/5	1.00E-03 - 4.00E-03	1.00E-02 - 1.30E-02	N	2.90E-03	mg/L
Trichloroethene	39/54	2.00E-04 - 1.28E+00	4.00E-03 - 4.00E-03	L	9.78E-03	mg/L

530749

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Vinyl chloride	1/54	2.00E-02 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.94E-03	mg/L
cis-1,2-Dichloroethene	2/54	4.00E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	7.98E-03	mg/L
trans-1,2-Dichloroethene	5/54	1.50E-03 - 2.00E-02	4.00E-03 - 2.00E-01	N	8.25E-03	mg/L
Actinium-228	1/1	2.72E+01 - 2.72E+01		NT	2.72E+01	pCi/L
Alpha activity	48/51	1.69E+00 - 1.49E+02	2.90E-01 - 1.88E+00	L	2.21E+01	pCi/L
Americium-241	1/6	5.30E-02 - 5.30E-02	0.00E+00 - 3.70E-01	N	1.21E-01	pCi/L
Beta activity	51/51	4.42E+00 - 1.16E+04		L	1.48E+02	pCi/L
Bismuth-214	1/1	9.00E+00 - 9.00E+00		NT	9.00E+00	pCi/L
Cesium-137	4/6	2.49E+00 - 1.65E+01	-1.70E+00 - 2.29E+00	N	6.57E+00	pCi/L
Lead-210	1/1	4.21E+02 - 4.21E+02		NT	4.21E+02	pCi/L
Lead-212	1/1	2.25E+01 - 2.25E+01		NT	2.25E+01	pCi/L
Lead-214	1/1	1.21E+01 - 1.21E+01		NT	1.21E+01	pCi/L
Neptunium-237	6/6	0.00E+00 - 1.31E+01		N	4.39E+00	pCi/L
Plutonium-239	1/5	2.12E+00 - 2.12E+00	-2.00E-02 - 4.00E-02	N	4.30E-01	pCi/L
Potassium-40	1/1	6.80E+01 - 6.80E+01		NT	6.80E+01	pCi/L
Technetium-99	3/6	6.60E-01 - 6.16E+02	-1.56E+00 - 1.27E+00	N	1.03E+02	pCi/L
Thallium-208	1/1	6.70E+00 - 6.70E+00		NT	6.70E+00	pCi/L
Thorium-228	1/1	1.23E+00 - 1.23E+00		NT	1.23E+00	pCi/L
Thorium-230	6/6	2.40E-01 - 1.88E+00		N	8.55E-01	pCi/L
Thorium-232	1/1	1.15E+00 - 1.15E+00		NT	1.15E+00	pCi/L
Thorium-234	1/1	7.19E+02 - 7.19E+02		NT	7.19E+02	pCi/L
Uranium-233/234	1/1	6.10E-01 - 6.10E-01		NT	6.10E-01	pCi/L
Uranium-234	4/5	1.90E-01 - 2.23E+00	1.50E-01 - 1.50E-01	N	9.84E-01	pCi/L
Uranium-235	1/6	2.30E+01 - 2.30E+01	1.00E-02 - 1.00E-01	N	3.86E+00	pCi/L
Uranium-238	4/6	2.00E-01 - 1.82E+00	1.00E-02 - 1.20E-01	N	6.43E-01	pCi/L

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	25/25	1.46E+03 - 1.71E+04		N	5.56E+03	mg/kg
Antimony	8/25	7.00E-01 - 4.70E+00	6.00E-01 - 6.00E-01	L	6.51E-01	mg/kg
Arsenic	25/25	1.55E+00 - 9.20E+00		L	2.04E+00	mg/kg
Barium	25/25	9.05E+00 - 1.81E+02		N	4.41E+01	mg/kg
Beryllium	25/25	1.50E-01 - 8.10E-01		N	2.59E-01	mg/kg
Cadmium	12/25	1.00E-01 - 4.90E-01	2.00E-02 - 3.00E-02	N	5.68E-02	mg/kg
Calcium	25/25	8.84E+02 - 3.40E+05		L	7.06E+03	mg/kg

530750

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Chromium	25/25	5.62E+00 - 3.91E+01		L	9.08E+00	mg/kg
Cobalt	25/25	2.54E+00 - 1.68E+01		L	3.37E+00	mg/kg
Copper	25/25	2.60E+00 - 1.89E+01		L	4.42E+00	mg/kg
Iron	25/25	3.17E+03 - 2.60E+04		N	8.29E+03	mg/kg
Lead	25/25	2.90E+00 - 1.41E+01		N	4.28E+00	mg/kg
Magnesium	25/25	2.67E+02 - 8.04E+03		L	1.13E+03	mg/kg
Manganese	25/25	4.29E+01 - 8.42E+02		N	1.79E+02	mg/kg
Mercury	21/25	1.00E-02 - 8.36E-02	8.10E-03 - 9.30E-03	L	2.49E-02	mg/kg
Nickel	25/25	2.20E+00 - 2.49E+01		L	6.05E+00	mg/kg
Potassium	25/25	1.40E+01 - 1.08E+03		N	1.84E+02	mg/kg
Selenium	2/25	2.00E-01 - 5.00E-01	2.00E-01 - 1.00E+00	L	8.24E-02	mg/kg
Silver	7/25	1.40E-01 - 4.28E+00	8.00E-02 - 9.00E-02	L	7.17E-02	mg/kg
Sodium	25/25	1.58E+02 - 1.67E+03		L	2.00E+02	mg/kg
Thallium	4/25	7.00E-01 - 2.30E+00	5.00E-01 - 6.00E-01	L	3.47E-01	mg/kg
Uranium	6/6	1.79E+00 - 6.06E+01		N	1.62E+01	mg/kg
Vanadium	25/25	4.00E+00 - 3.77E+01		N	1.33E+01	mg/kg
Zinc	25/25	6.99E+00 - 7.02E+01		L	1.47E+01	mg/kg
2,6-Dinitrotoluene	4/25	3.47E-01 - 4.32E-01	7.04E-01 - 8.40E-01	N	3.60E-01	mg/kg
Acenaphthene	2/25	4.00E-02 - 1.22E+00	6.90E-01 - 8.40E-01	N	3.86E-01	mg/kg
Acetone	4/12	6.10E-03 - 1.00E-01	1.00E-01 - 1.00E-01	L	3.90E-02	mg/kg
Anthracene	2/25	8.00E-02 - 1.89E+00	6.90E-01 - 8.40E-01	N	4.00E-01	mg/kg
Benz(a)anthracene	2/25	3.50E-01 - 4.13E+00	6.90E-01 - 8.40E-01	L	1.60E-01	mg/kg
Benzo(a)pyrene	2/25	3.00E-01 - 3.36E+00	6.90E-01 - 8.40E-01	L	1.92E-01	mg/kg
Benzo(b)fluoranthene	2/25	4.30E-01 - 3.42E+00	6.90E-01 - 8.40E-01	L	1.91E-01	mg/kg
Benzo(ghi)perylene	2/25	1.70E-01 - 1.87E+00	6.90E-01 - 8.40E-01	N	4.01E-01	mg/kg
Benzo(k)fluoranthene	2/25	2.80E-01 - 1.98E+00	6.90E-01 - 8.40E-01	L	2.92E-01	mg/kg
Bis(2-ethylhexyl)phthalate	3/25	1.50E-03 - 6.00E-02	6.90E-01 - 8.40E-01	N	3.47E-01	mg/kg
Chrysene	2/25	4.00E-01 - 3.97E+00	6.90E-01 - 8.40E-01	L	1.66E-01	mg/kg
Di-n-butyl phthalate	8/25	6.00E-02 - 1.88E+00	6.90E-01 - 8.31E-01	N	3.89E-01	mg/kg
Dibenz(a,h)anthracene	1/25	4.12E-01 - 4.12E-01	6.90E-01 - 8.40E-01	N	3.84E-01	mg/kg
Dibenzofuran	1/25	5.76E-01 - 5.76E-01	6.90E-01 - 8.40E-01	N	3.87E-01	mg/kg
Fluoranthene	3/25	8.00E-02 - 8.29E+00	6.90E-01 - 8.40E-01	L	1.60E-01	mg/kg
Fluorene	1/25	9.25E-01 - 9.25E-01	6.90E-01 - 8.40E-01	L	3.94E-01	mg/kg
Indeno(1,2,3-cd)pyrene	2/25	1.80E-01 - 1.89E+00	6.90E-01 - 8.40E-01	L	2.57E-01	mg/kg
Methylene chloride	11/12	1.80E-03 - 3.70E-03	6.00E-03 - 6.00E-03	L	2.84E-03	mg/kg
N-Nitroso-di-n-propylamine	2/25	4.84E-01 - 6.34E-01	6.90E-01 - 8.40E-01	N	3.81E-01	mg/kg
Naphthalene	1/25	5.03E-01 - 5.03E-01	6.90E-01 - 8.40E-01	N	3.86E-01	mg/kg
PCB-1254	1/15	5.20E-03 - 5.20E-03	1.80E-02 - 2.20E-02	N	1.90E-02	mg/kg
PCB-1260	1/15	4.30E-02 - 4.30E-02	1.80E-02 - 2.20E-02	L	2.13E-02	mg/kg
Phenanthrene	3/25	5.00E-02 - 7.47E+00	6.90E-01 - 8.40E-01	L	1.49E-01	mg/kg

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Polychlorinated biphenyl	2/25	5.20E-03 - 4.30E-02	2.10E-02 - 1.00E+00	L	1.95E-02	mg/kg
Pyrene	3/25	6.00E-02 - 7.85E+00	6.90E-01 - 8.40E-01	L	1.53E-01	mg/kg
Toluene	3/12	1.50E-03 - 2.30E-03	6.00E-03 - 6.00E-03	L	2.01E-03	mg/kg
Trichloroethene	1/20	2.20E-03 - 2.20E-03	6.00E-03 - 1.00E+00	N	6.35E-01	mg/kg
Vinyl acetate	1/12	2.80E-02 - 2.80E-02	6.00E-02 - 6.00E-02	N	2.87E-02	mg/kg
Alpha activity	20/24	7.00E+00 - 7.49E+01	-1.06E+00 - 4.84E+00	N	1.56E+01	pCi/g
Beta activity	23/24	1.24E+01 - 6.22E+01	5.72E+00 - 5.72E+00	N	3.21E+01	pCi/g
Neptunium-237	1/6	3.00E-01 - 3.00E-01	1.00E-01 - 1.00E-01	N	1.33E-01	pCi/g
Technetium-99	6/6	4.00E-01 - 4.00E+00		N	1.55E+00	pCi/g
Thorium-230	6/6	1.00E+00 - 1.90E+00		N	1.43E+00	pCi/g
Uranium-234	6/6	6.00E-01 - 2.01E+01		N	5.05E+00	pCi/g
Uranium-235	3/6	2.00E-01 - 7.00E-01	1.00E-01 - 1.00E-01	N	2.33E-01	pCi/g
Uranium-238	6/6	6.00E-01 - 2.02E+01		N	5.40E+00	pCi/g

SECTOR=Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	1/1	1.26E+04 - 1.26E+04		NT	6.30E+03	mg/kg
Arsenic	1/1	5.35E+00 - 5.35E+00		NT	2.68E+00	mg/kg
Barium	1/1	1.02E+02 - 1.02E+02		NT	5.10E+01	mg/kg
Beryllium	1/1	5.80E-01 - 5.80E-01		NT	2.90E-01	mg/kg
Calcium	1/1	1.02E+04 - 1.02E+04		NT	5.10E+03	mg/kg
Chromium	1/1	1.93E+01 - 1.93E+01		NT	9.65E+00	mg/kg
Cobalt	1/1	9.76E+00 - 9.76E+00		NT	4.88E+00	mg/kg
Copper	1/1	1.89E+01 - 1.89E+01		NT	9.45E+00	mg/kg
Iron	1/1	2.60E+04 - 2.60E+04		NT	1.30E+04	mg/kg
Lead	1/1	1.41E+01 - 1.41E+01		NT	7.05E+00	mg/kg
Magnesium	1/1	2.51E+03 - 2.51E+03		NT	1.26E+03	mg/kg
Manganese	1/1	5.20E+02 - 5.20E+02		NT	2.60E+02	mg/kg
Mercury	1/1	2.63E-02 - 2.63E-02		NT	1.32E-02	mg/kg
Nickel	1/1	1.90E+01 - 1.90E+01		NT	9.50E+00	mg/kg
Potassium	1/1	3.54E+02 - 3.54E+02		NT	1.77E+02	mg/kg
Sodium	1/1	2.76E+02 - 2.76E+02		NT	1.38E+02	mg/kg
Uranium	1/1	1.38E+01 - 1.38E+01		NT	1.38E+01	mg/kg
Vanadium	1/1	3.04E+01 - 3.04E+01		NT	1.52E+01	mg/kg
Zinc	1/1	7.02E+01 - 7.02E+01		NT	3.51E+01	mg/kg

530752

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Acenaphthene	1/1	4.00E-02 - 4.00E-02		NT	2.00E-02	mg/kg
Anthracene	1/1	8.00E-02 - 8.00E-02		NT	4.00E-02	mg/kg
Benz(a)anthracene	1/1	3.50E-01 - 3.50E-01		NT	1.75E-01	mg/kg
Benzo(a)pyrene	1/1	3.00E-01 - 3.00E-01		NT	1.50E-01	mg/kg
Benzo(b)fluoranthene	1/1	4.30E-01 - 4.30E-01		NT	2.15E-01	mg/kg
Benzo(ghi)perylene	1/1	1.70E-01 - 1.70E-01		NT	8.50E-02	mg/kg
Benzo(k)fluoranthene	1/1	2.80E-01 - 2.80E-01		NT	1.40E-01	mg/kg
Chrysene	1/1	4.00E-01 - 4.00E-01		NT	2.00E-01	mg/kg
Fluoranthene	1/1	8.60E-01 - 8.60E-01		NT	4.30E-01	mg/kg
Indeno(1,2,3-cd)pyrene	1/1	1.80E-01 - 1.80E-01		NT	9.00E-02	mg/kg
Methylene chloride	1/1	2.00E-03 - 2.00E-03		NT	1.00E-03	mg/kg
PCB-1260	1/1	4.30E-02 - 4.30E-02		NT	4.30E-02	mg/kg
Phenanthrene	1/1	4.70E-01 - 4.70E-01		NT	2.35E-01	mg/kg
Polychlorinated biphenyl	1/1	4.30E-02 - 4.30E-02		NT	2.15E-02	mg/kg
Pyrene	1/1	6.80E-01 - 6.80E-01		NT	3.40E-01	mg/kg
Alpha activity	1/1	3.19E+01 - 3.19E+01		NT	3.19E+01	pCi/g
Beta activity	1/1	5.08E+01 - 5.08E+01		NT	5.08E+01	pCi/g
Technetium-99	1/1	3.60E+00 - 3.60E+00		NT	3.60E+00	pCi/g
Thorium-230	1/1	1.80E+00 - 1.80E+00		NT	1.80E+00	pCi/g
Uranium-234	1/1	3.40E+00 - 3.40E+00		NT	3.40E+00	pCi/g
Uranium-235	1/1	2.00E-01 - 2.00E-01		NT	2.00E-01	pCi/g
Uranium-238	1/1	4.60E+00 - 4.60E+00		NT	4.60E+00	pCi/g

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	25/25	5.11E+03 - 1.74E+04		L	5.42E+03	mg/kg
Antimony	9/25	6.00E-01 - 9.40E+00	6.00E-01 - 1.00E+00	L	6.47E-01	mg/kg
Arsenic	25/25	2.75E-02 - 1.03E+01		N	2.30E+00	mg/kg
Barium	25/25	1.85E+01 - 1.60E+02		N	4.28E+01	mg/kg
Beryllium	25/25	3.10E-01 - 1.19E+00		L	3.08E-01	mg/kg
Cadmium	8/25	5.00E-02 - 7.50E-01	2.00E-02 - 3.00E-02	L	2.78E-02	mg/kg
Calcium	25/25	4.11E+02 - 1.10E+05		L	5.24E+03	mg/kg
Chromium	25/25	8.25E+00 - 6.60E+01		L	1.02E+01	mg/kg
Cobalt	25/25	3.40E+00 - 1.77E+01		L	3.49E+00	mg/kg
Copper	25/25	5.50E+00 - 1.79E+01		L	4.72E+00	mg/kg

530753

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Iron	25/25	1.12E+04 - 3.74E+04		L	9.66E+03	mg/kg
Lead	25/25	4.40E+00 - 4.20E+01		L	5.41E+00	mg/kg
Magnesium	25/25	7.76E+02 - 2.42E+03		N	7.41E+02	mg/kg
Manganese	25/25	1.55E+02 - 8.87E+02		L	1.94E+02	mg/kg
Mercury	20/25	1.47E-02 - 8.30E+00	8.00E-03 - 9.30E-03	L	4.62E-02	mg/kg
Nickel	25/25	5.30E+00 - 2.91E+01		L	5.48E+00	mg/kg
Potassium	25/25	8.80E+01 - 4.61E+02		L	1.13E+02	mg/kg
Selenium	4/25	2.00E-01 - 3.00E-01	2.00E-01 - 3.00E-01	N	1.08E-01	mg/kg
Silver	3/25	3.80E-01 - 1.03E+00	7.00E-02 - 2.00E-01	L	7.52E-03	mg/kg
Sodium	25/25	1.67E+02 - 7.87E+02		L	1.88E+02	mg/kg
Thallium	1/25	7.00E-01 - 7.00E-01	5.00E-01 - 1.00E+00	L	3.16E-01	mg/kg
Uranium	12/12	1.79E+00 - 4.44E+01		L	5.71E+00	mg/kg
Vanadium	25/25	1.55E+01 - 6.72E+01		L	1.49E+01	mg/kg
Zinc	25/25	1.77E+01 - 4.57E+01		L	1.39E+01	mg/kg
1,1-Dichloroethene	1/16	1.40E-03 - 1.40E-03	4.00E-02 - 1.00E+00	N	3.73E-01	mg/kg
Acetone	3/10	7.70E-03 - 1.40E+00	1.00E-01 - 8.00E-01	L	7.20E-02	mg/kg
Benz(a)anthracene	2/21	7.00E-02 - 3.00E-01	7.25E-01 - 8.30E-01	N	3.63E-01	mg/kg
Benzo(a)pyrene	2/21	8.00E-02 - 4.00E-01	7.25E-01 - 8.30E-01	N	3.65E-01	mg/kg
Benzo(b)fluoranthene	2/21	1.20E-01 - 6.00E-01	7.25E-01 - 8.30E-01	N	3.71E-01	mg/kg
Benzo(k)fluoranthene	2/21	7.00E-02 - 3.00E-01	7.25E-01 - 8.30E-01	N	3.63E-01	mg/kg
Bis(2-ethylhexyl)phthalate	4/21	5.00E-02 - 8.00E-02	7.10E-01 - 3.40E+00	L	7.57E-02	mg/kg
Chrysene	2/21	8.00E-02 - 2.90E-01	7.25E-01 - 8.30E-01	N	3.63E-01	mg/kg
Di-n-butyl phthalate	3/21	4.00E-02 - 4.00E-02	7.10E-01 - 3.40E+00	L	5.21E-01	mg/kg
Fluoranthene	2/21	1.40E-01 - 4.00E-01	7.25E-01 - 8.30E-01	N	3.67E-01	mg/kg
Methylene chloride	6/10	1.40E-03 - 7.10E-03	4.00E-02 - 4.00E-02	L	3.45E-03	mg/kg
N-Nitroso-di-n-propylamine	1/21	5.22E-01 - 5.22E-01	7.10E-01 - 3.40E+00	L	4.33E-01	mg/kg
Phenanthrene	1/21	5.00E-02 - 5.00E-02	7.25E-01 - 3.40E+00	L	4.68E-01	mg/kg
Polychlorinated biphenyl	1/22	1.00E+00 - 1.00E+00	1.00E+00 - 1.00E+00	N	5.00E-01	mg/kg
Pyrene	2/21	1.20E-01 - 4.00E-01	7.25E-01 - 8.30E-01	N	3.66E-01	mg/kg
Toluene	1/10	6.00E-03 - 6.00E-03	6.00E-03 - 4.00E-02	N	9.80E-03	mg/kg
Trichloroethene	1/16	4.00E-03 - 4.00E-03	4.00E-02 - 1.00E+00	N	7.47E-01	mg/kg
Alpha activity	23/27	7.24E+00 - 4.02E+01	3.47E+00 - 5.93E+00	L	1.76E+01	pCi/g
Americium-241	2/12	1.20E-01 - 4.00E-01	1.00E-01 - 1.00E-01	L	5.15E-02	pCi/g
Beta activity	27/27	1.25E+01 - 1.48E+02		L	3.38E+01	pCi/g
Cesium-137	2/12	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.17E-01	pCi/g
Neptunium-237	2/12	4.00E-01 - 8.00E-01	1.00E-01 - 1.00E-01	L	3.03E-02	pCi/g
Plutonium-239	1/12	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.08E-01	pCi/g
Technetium-99	12/12	2.00E-01 - 4.33E+01		L	3.51E+00	pCi/g
Thorium-230	12/12	3.00E-01 - 5.60E+00		L	1.45E+00	pCi/g
Uranium-234	12/12	5.00E-01 - 7.40E+00		L	1.37E+00	pCi/g

530754

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium-235	2/12	3.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	N	1.42E-01	pCi/g
Uranium-238	12/12	6.00E-01 - 1.48E+01		L	1.90E+00	pCi/g

SECTOR=Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	6/6	5.11E+03 - 1.10E+04		N	3.94E+03	mg/kg
Antimony	2/6	6.00E-01 - 1.00E+00	6.00E-01 - 6.00E-01	N	3.33E-01	mg/kg
Arsenic	6/6	3.86E+00 - 7.07E+00		N	2.55E+00	mg/kg
Barium	6/6	5.61E+01 - 8.67E+01		N	3.60E+01	mg/kg
Beryllium	6/6	3.40E-01 - 7.10E-01		N	2.61E-01	mg/kg
Cadmium	3/6	5.00E-02 - 7.50E-01	2.00E-02 - 2.00E-02	N	8.42E-02	mg/kg
Calcium	6/6	1.14E+04 - 1.10E+05		N	1.59E+04	mg/kg
Chromium	6/6	8.25E+00 - 6.60E+01		N	1.12E+01	mg/kg
Cobalt	6/6	3.67E+00 - 8.50E+00		N	2.96E+00	mg/kg
Copper	6/6	7.10E+00 - 1.32E+01		N	4.68E+00	mg/kg
Iron	6/6	1.12E+04 - 3.05E+04		N	8.94E+03	mg/kg
Lead	6/6	8.40E+00 - 4.20E+01		N	7.60E+00	mg/kg
Magnesium	6/6	8.20E+02 - 2.42E+03		N	7.18E+02	mg/kg
Manganese	6/6	1.95E+02 - 5.72E+02		N	1.90E+02	mg/kg
Mercury	5/6	2.94E-02 - 8.88E-02	8.00E-03 - 8.00E-03	N	2.19E-02	mg/kg
Nickel	6/6	5.70E+00 - 1.41E+01		N	4.40E+00	mg/kg
Potassium	6/6	1.33E+02 - 2.48E+02		N	9.60E+01	mg/kg
Selenium	3/6	2.00E-01 - 3.00E-01	2.00E-01 - 2.00E-01	N	1.17E-01	mg/kg
Silver	1/6	3.80E-01 - 3.80E-01	8.00E-02 - 1.00E-01	N	6.67E-02	mg/kg
Sodium	6/6	2.07E+02 - 4.91E+02		N	1.89E+02	mg/kg
Uranium	1/1	9.55E+00 - 9.55E+00		NT	9.55E+00	mg/kg
Vanadium	6/6	1.55E+01 - 4.24E+01		N	1.24E+01	mg/kg
Zinc	6/6	1.77E+01 - 3.74E+01		N	1.41E+01	mg/kg
Benz(a)anthracene	1/2	3.00E-01 - 3.00E-01	7.25E-01 - 7.25E-01	N	2.56E-01	mg/kg
Benzo(a)pyrene	1/2	4.00E-01 - 4.00E-01	7.25E-01 - 7.25E-01	N	2.81E-01	mg/kg
Benzo(b)fluoranthene	1/2	6.00E-01 - 6.00E-01	7.25E-01 - 7.25E-01	N	3.31E-01	mg/kg
Benzo(k)fluoranthene	1/2	3.00E-01 - 3.00E-01	7.25E-01 - 7.25E-01	N	2.56E-01	mg/kg
Chrysene	1/2	2.90E-01 - 2.90E-01	7.25E-01 - 7.25E-01	N	2.54E-01	mg/kg
Fluoranthene	1/2	4.00E-01 - 4.00E-01	7.25E-01 - 7.25E-01	N	2.81E-01	mg/kg
Pyrene	1/2	4.00E-01 - 4.00E-01	7.25E-01 - 7.25E-01	N	2.81E-01	mg/kg

530755

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Alpha activity	6/6	7.93E+00 - 2.22E+01		N	1.40E+01	pCi/g
Beta activity	6/6	1.91E+01 - 6.11E+01		N	3.65E+01	pCi/g
Cesium-137	1/1	2.00E-01 - 2.00E-01		NT	2.00E-01	pCi/g
Technetium-99	1/1	4.20E+00 - 4.20E+00		NT	4.20E+00	pCi/g
Thorium-230	1/1	1.10E+00 - 1.10E+00		NT	1.10E+00	pCi/g
Uranium-234	1/1	2.80E+00 - 2.80E+00		NT	2.80E+00	pCi/g
Uranium-238	1/1	3.20E+00 - 3.20E+00		NT	3.20E+00	pCi/g

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	80/80	9.96E-02 - 2.50E+02		L	3.61E+01	mg/L
Antimony	11/80	1.40E-03 - 4.02E-02	8.00E-04 - 2.77E-01	N	1.10E-02	mg/L
Arsenic	61/80	1.00E-03 - 4.36E-01	1.00E-03 - 1.00E-02	L	1.99E-02	mg/L
Barium	80/80	5.58E-02 - 6.93E+00		L	3.60E-01	mg/L
Beryllium	69/79	2.22E-04 - 1.11E-01	2.22E-04 - 5.00E-03	L	7.40E-03	mg/L
Bromide	10/39	2.90E-02 - 1.40E+00	1.00E+00 - 1.12E+00	N	4.10E-01	mg/L
Cadmium	29/80	3.56E-04 - 1.59E-02	2.67E-04 - 3.22E-03	L	1.02E-03	mg/L
Calcium	80/80	2.27E+01 - 7.87E+01		L	1.91E+01	mg/L
Chloride	39/39	7.01E+00 - 1.25E+02		N	2.99E+01	mg/L
Chromium	62/80	5.00E-03 - 4.49E+00	6.56E-03 - 1.39E-01	L	7.97E-02	mg/L
Cobalt	76/80	5.33E-03 - 4.84E-01	1.78E-03 - 1.00E-02	L	7.75E-02	mg/L
Copper	58/80	8.10E-03 - 1.05E+01	8.60E-03 - 1.00E-02	N	1.08E-01	mg/L
Fluoride	9/39	1.79E-01 - 2.31E-01	1.00E+00 - 1.00E+00	L	2.15E-01	mg/L
Iron	80/80	6.83E-02 - 2.24E+03		L	2.20E+02	mg/L
Lead	63/80	1.96E-03 - 2.63E-01	1.00E-03 - 1.56E-02	L	2.32E-02	mg/L
Magnesium	80/80	7.97E+00 - 3.33E+01		L	7.96E+00	mg/L
Manganese	80/80	7.78E-03 - 5.79E+01		L	2.03E+00	mg/L
Mercury	30/80	3.00E-05 - 6.12E-04	2.00E-04 - 2.10E-04	L	1.40E-04	mg/L
Nickel	74/80	9.67E-03 - 4.88E+00	2.61E-02 - 8.21E-02	L	1.55E-01	mg/L
Nitrate	39/39	9.30E-02 - 1.74E+02		L	2.04E+01	mg/L
Nitrate/Nitrite	3/9	3.20E-02 - 1.14E-01	1.00E+00 - 1.00E+00	L	7.25E-02	mg/L
Orthophosphate	2/39	2.50E-02 - 3.60E-02	1.00E+00 - 1.00E+00	N	4.75E-01	mg/L
Potassium	80/80	9.57E-01 - 2.53E+01		L	2.68E+00	mg/L
Selenium	23/80	1.34E-03 - 4.80E-03	1.30E-03 - 4.00E-02	N	7.08E-03	mg/L
Silver	8/80	4.00E-03 - 3.98E-01	1.00E-03 - 5.00E-02	N	8.12E-03	mg/L

530756

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Sodium	80/80	2.71E+01 - 8.38E+01		L	2.34E+01	mg/L
Tetraoxo-sulfate(1-)	39/39	3.70E+00 - 5.64E+01		L	1.10E+01	mg/L
Thallium	13/80	4.89E-04 - 4.56E-03	4.20E-04 - 2.00E-03	L	3.79E-04	mg/L
Uranium	45/52	1.30E-04 - 1.21E-02	8.00E-05 - 1.00E-03	L	2.45E-03	mg/L
Vanadium	73/80	4.20E-03 - 1.35E+00	4.00E-03 - 4.00E-03	L	1.09E-01	mg/L
Zinc	77/80	1.58E-02 - 8.18E+01	9.00E-03 - 9.00E-03	L	5.42E-01	mg/L
1,1,1-Trichloroethane	1/23	1.20E-02 - 1.20E-02	1.00E-02 - 1.30E+01	L	1.01E+00	mg/L
1,1-Dichloroethene	20/155	1.00E-03 - 1.54E-01	4.00E-03 - 3.20E+01	L	4.08E-03	mg/L
Acetone	1/23	5.00E-03 - 5.00E-03	2.00E-02 - 2.50E+01	L	2.23E+00	mg/L
Benzoic acid	5/16	1.00E-03 - 5.00E-03	5.00E-02 - 5.00E-02	L	2.93E-03	mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03 - 1.00E-03	2.00E-03 - 3.20E-02	L	4.42E-03	mg/L
Bromodichloromethane	2/23	3.00E-03 - 4.00E-03	1.00E-02 - 1.30E+01	L	3.72E-03	mg/L
Carbon tetrachloride	4/23	1.00E-03 - 2.70E-01	1.00E-02 - 1.30E+01	L	1.82E-02	mg/L
Chloroform	6/23	1.50E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	2.22E-02	mg/L
Di-n-butyl phthalate	8/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	2.75E-03	mg/L
Di-n-octylphthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Diethyl phthalate	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03 - 1.00E-03	1.00E-02 - 1.00E-02	N	4.72E-03	mg/L
Phenol	6/16	1.00E-03 - 4.00E-02	1.00E-02 - 1.00E-02	L	4.61E-03	mg/L
Tetrachloroethene	6/23	3.00E-03 - 3.00E-02	1.00E-02 - 1.30E+01	L	1.45E-02	mg/L
Toluene	1/23	3.60E-02 - 3.60E-02	1.00E-02 - 1.30E+01	L	8.78E-01	mg/L
Trichloroethene	146/155	1.50E-03 - 7.01E+02	4.00E-03 - 4.00E-03	L	5.27E+00	mg/L
Vinyl chloride	3/155	1.00E-03 - 1.33E-01	4.00E-03 - 3.20E+01	N	1.15E+00	mg/L
cis-1,2-Dichloroethene	10/155	1.30E-03 - 3.70E-01	4.00E-03 - 3.20E+01	N	1.23E+00	mg/L
trans-1,2-Dichloroethene	27/155	1.50E-03 - 1.20E+00	4.00E-03 - 3.20E+01	L	7.62E-03	mg/L
Alpha activity	129/151	6.90E-01 - 1.36E+02	-8.53E-01 - 5.06E+00	N	1.45E+01	pCi/L
Americium-241	2/30	7.70E-02 - 1.68E+00	-1.50E-01 - 1.22E+02	N	1.08E+01	pCi/L
Beta activity	149/151	2.86E+00 - 1.72E+04	1.28E+00 - 1.50E+00	L	2.45E+02	pCi/L
Bismuth-212	1/1	4.20E+01 - 4.20E+01		NT	4.20E+01	pCi/L
Cesium-137	15/31	3.33E+00 - 1.45E+01	-1.19E+00 - 3.38E+01	N	8.31E+00	pCi/L
Lead-210	1/1	1.00E+02 - 1.00E+02		NT	1.00E+02	pCi/L
Lead-214	1/1	7.40E+00 - 7.40E+00		NT	7.40E+00	pCi/L
Neptunium-237	23/30	0.00E+00 - 1.44E+01	2.04E+00 - 5.30E+01	N	9.10E+00	pCi/L
Plutonium-239	4/27	0.00E+00 - 1.30E-01	-3.00E-02 - 1.10E-01	N	3.22E-02	pCi/L
Technetium-99	26/28	2.00E+00 - 1.70E+04	-1.53E+01 --5.20E+00	N	1.42E+03	pCi/L
Thorium-228	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Thorium-230	22/28	1.80E-01 - 8.40E+00	6.00E-02 - 2.20E-01	L	6.85E-01	pCi/L
Thorium-232	1/1	7.60E-01 - 7.60E-01		NT	7.60E-01	pCi/L
Uranium-233/234	1/1	6.50E-01 - 6.50E-01		NT	6.50E-01	pCi/L
Uranium-234	17/30	1.70E-01 - 1.70E+01	2.00E-02 - 4.98E+02	L	7.00E-01	pCi/L

530757

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Uranium-235	3/28	1.03E-01 - 7.70E-01	-2.00E-02 - 4.10E-01	N	6.55E-02	pCi/L
Uranium-238	13/31	1.90E-01 - 1.66E+01	-1.30E-01 - 5.44E+02	N	4.11E+01	pCi/L

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	57/57	1.18E+03 - 1.74E+04		N	5.61E+03	mg/kg
Antimony	18/57	6.00E-01 - 4.20E+00	6.00E-01 - 6.00E-01	N	4.23E-01	mg/kg
Arsenic	57/57	1.31E+00 - 1.48E+01		L	2.64E+00	mg/kg
Barium	57/57	1.35E+01 - 2.79E+02		N	5.54E+01	mg/kg
Beryllium	57/57	1.60E-01 - 1.00E+00		N	2.98E-01	mg/kg
Cadmium	37/57	2.00E-02 - 5.90E-01	2.00E-02 - 3.00E-02	L	1.02E-01	mg/kg
Calcium	57/57	7.63E+02 - 3.33E+05		L	6.27E+03	mg/kg
Chromium	57/57	5.72E+00 - 5.16E+01		L	8.45E+00	mg/kg
Cobalt	57/57	1.99E+00 - 1.96E+01		L	3.13E+00	mg/kg
Copper	57/57	2.27E+00 - 1.86E+01		N	5.36E+00	mg/kg
Iron	57/57	5.97E+03 - 3.12E+04		N	9.30E+03	mg/kg
Lead	57/57	2.40E+00 - 2.45E+01		L	5.08E+00	mg/kg
Magnesium	57/57	7.70E+02 - 2.72E+04		L	1.23E+03	mg/kg
Manganese	57/57	1.44E+02 - 1.02E+03		L	1.85E+02	mg/kg
Mercury	54/57	9.50E-03 - 1.49E-01	8.10E-03 - 9.60E-03	L	2.94E-02	mg/kg
Nickel	57/57	5.10E+00 - 2.33E+01		L	6.43E+00	mg/kg
Potassium	57/57	1.12E+02 - 9.08E+02		L	2.12E+02	mg/kg
Selenium	5/57	2.00E-01 - 3.00E-01	2.00E-01 - 3.00E-01	N	1.04E-01	mg/kg
Silver	10/57	1.70E-01 - 1.58E+00	8.00E-02 - 2.00E-01	L	3.03E-02	mg/kg
Sodium	57/57	2.29E+02 - 1.00E+03		L	2.77E+02	mg/kg
Thallium	3/57	7.00E-01 - 1.10E+00	5.00E-01 - 3.00E+00	N	3.30E-01	mg/kg
Uranium	53/53	1.49E+00 - 1.28E+01		L	3.05E+00	mg/kg
Vanadium	57/57	5.30E+00 - 5.50E+01		N	1.30E+01	mg/kg
Zinc	57/57	1.42E+01 - 6.52E+01		N	1.75E+01	mg/kg
1,1,1-Trichloroethane	3/54	1.20E-02 - 2.40E+00	5.00E-03 - 3.00E-02	N	2.58E-02	mg/kg
1,1,2-Trichloroethane	2/54	2.00E-02 - 5.30E-01	5.00E-03 - 3.00E-02	N	8.42E-03	mg/kg
1,1-Dichloroethene	9/61	1.20E-03 - 9.50E-01	5.00E-01 - 1.40E+00	N	3.15E-01	mg/kg
Acenaphthene	5/60	5.00E-02 - 3.30E-01	6.91E-01 - 8.00E+00	N	4.30E-01	mg/kg
Acetone	3/54	1.50E-02 - 8.70E-02	1.00E-01 - 6.00E-01	N	5.76E-02	mg/kg
Anthracene	9/60	4.00E-02 - 6.10E-01	6.91E-01 - 8.00E+00	N	4.13E-01	mg/kg

530758

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Benz(a)anthracene	14/60	5.00E-02 - 2.30E+00	6.91E-01 - 8.00E+00	N	4.26E-01	mg/kg
Benzene	1/54	1.70E-02 - 1.70E-02	5.00E-03 - 3.00E-02	N	3.54E-03	mg/kg
Benzo(a)pyrene	14/60	5.00E-02 - 2.40E+00	6.91E-01 - 8.00E+00	N	4.25E-01	mg/kg
Benzo(b)fluoranthene	13/60	6.00E-02 - 2.90E+00	6.91E-01 - 8.00E+00	N	4.36E-01	mg/kg
Benzo(ghi)perylene	10/60	6.50E-02 - 1.00E+00	6.30E-02 - 8.00E+00	N	4.16E-01	mg/kg
Benzo(k)fluoranthene	14/60	5.00E-02 - 1.20E+00	6.91E-01 - 8.00E+00	N	4.07E-01	mg/kg
Bis(2-ethylhexyl)phthalate	23/60	6.30E-03 - 9.00E-02	6.91E-01 - 8.00E+00	L	6.40E-02	mg/kg
Carbon tetrachloride	3/54	2.00E-03 - 7.10E-01	5.00E-03 - 3.00E-02	N	9.98E-03	mg/kg
Chloroform	3/54	1.70E-03 - 1.80E-02	5.00E-03 - 3.00E-02	N	3.47E-03	mg/kg
Chrysene	14/60	5.00E-02 - 2.60E+00	6.91E-01 - 8.00E+00	N	4.32E-01	mg/kg
Di-n-butyl phthalate	7/60	1.40E-01 - 1.77E+00	6.91E-01 - 8.40E-01	N	3.96E-01	mg/kg
Di-n-octylphthalate	1/60	6.00E-02 - 6.00E-02	6.91E-01 - 8.00E+00	N	4.50E-01	mg/kg
Dibenz(a,h)anthracene	1/60	4.60E-01 - 4.60E-01	6.60E-02 - 8.00E+00	N	4.48E-01	mg/kg
Dibenzofuran	2/60	4.00E-02 - 1.80E-01	6.91E-01 - 8.00E+00	N	4.45E-01	mg/kg
Diethyl phthalate	5/60	5.00E-02 - 6.10E+00	6.91E-01 - 8.00E+00	N	5.54E-01	mg/kg
Fluoranthene	18/60	1.20E-03 - 4.00E+00	6.91E-01 - 8.00E+00	L	2.59E-01	mg/kg
Fluorene	5/60	5.00E-02 - 2.00E-01	6.91E-01 - 8.00E+00	N	4.28E-01	mg/kg
Indeno(1,2,3-cd)pyrene	9/60	7.20E-02 - 1.10E+00	6.60E-02 - 8.00E+00	N	4.15E-01	mg/kg
Methylene chloride	20/54	1.20E-03 - 2.80E-02	1.30E-03 - 3.00E-02	L	4.10E-03	mg/kg
Naphthalene	2/60	1.00E-01 - 1.60E-01	6.91E-01 - 8.00E+00	N	4.45E-01	mg/kg
PCB-1254	1/11	7.30E-01 - 7.30E-01	1.90E-02 - 2.20E-02	L	5.07E-02	mg/kg
PCB-1262	1/11	3.80E-02 - 3.80E-02	1.90E-02 - 2.20E-02	L	2.22E-02	mg/kg
Phenanthrene	15/60	4.00E-02 - 2.80E+00	6.91E-01 - 8.00E+00	N	4.25E-01	mg/kg
Polychlorinated biphenyl	2/59	3.80E-02 - 7.30E-01	1.00E+00 - 1.00E+00	N	4.90E-01	mg/kg
Pyrene	17/60	5.00E-02 - 3.30E+00	6.91E-01 - 8.00E+00	L	3.21E-01	mg/kg
Tetrachloroethene	4/54	5.20E-03 - 6.90E-01	5.00E-03 - 3.00E-02	N	9.91E-03	mg/kg
Toluene	2/54	5.40E-03 - 3.30E-02	5.00E-03 - 3.00E-02	N	3.68E-03	mg/kg
Trichloroethene	39/61	1.50E-03 - 1.11E+04	5.00E-01 - 1.00E+00	L	2.24E+00	mg/kg
Trichlorofluoromethane	1/54	1.70E-03 - 1.70E-03	5.00E-03 - 3.00E-02	N	3.40E-03	mg/kg
Vinyl acetate	1/54	1.70E-03 - 1.70E-03	5.00E-02 - 3.00E-01	N	3.38E-02	mg/kg
Vinyl chloride	13/61	1.90E-03 - 2.90E+01	5.00E-01 - 2.30E+01	L	5.28E-02	mg/kg
cis-1,2-Dichloroethene	29/61	1.40E-03 - 2.40E+00	5.00E-01 - 2.30E+01	L	1.37E-01	mg/kg
trans-1,2-Dichloroethene	13/61	1.40E+00 - 1.02E+02	5.00E-01 - 6.32E+02	N	2.07E+01	mg/kg
Alpha activity	60/65	6.28E+00 - 3.52E+01	2.42E+00 - 7.11E+00	N	2.05E+01	pCi/g
Americium-241	7/53	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.13E-01	pCi/g
Beta activity	65/65	1.26E+01 - 4.94E+01		N	3.22E+01	pCi/g
Cesium-137	12/53	2.00E-01 - 6.00E-01	1.00E-01 - 2.00E-01	N	1.62E-01	pCi/g
Neptunium-237	40/53	2.00E-01 - 6.00E-01	1.00E-01 - 2.00E-01	N	2.57E-01	pCi/g
Plutonium-239	3/53	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.06E-01	pCi/g
Technetium-99	29/53	2.00E-01 - 4.70E+00	1.00E-01 - 3.00E-01	L	4.12E-01	pCi/g

530759

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Thorium-230	53/53	5.00E-01 - 1.80E+00		L	1.06E+00	pCi/g
Uranium-234	53/53	4.00E-01 - 3.50E+00		L	9.45E-01	pCi/g
Uranium-235	1/53	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.02E-01	pCi/g
Uranium-238	53/53	5.00E-01 - 4.30E+00		L	1.02E+00	pCi/g

SECTOR=Southeast MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	1/1	1.42E+04 - 1.42E+04		NT	7.10E+03	mg/kg
Antimony	1/1	6.00E-01 - 6.00E-01		NT	3.00E-01	mg/kg
Arsenic	1/1	1.00E+01 - 1.00E+01		NT	5.00E+00	mg/kg
Barium	1/1	8.75E+01 - 8.75E+01		NT	4.38E+01	mg/kg
Beryllium	1/1	6.30E-01 - 6.30E-01		NT	3.15E-01	mg/kg
Cadmium	1/1	3.50E-01 - 3.50E-01		NT	1.75E-01	mg/kg
Calcium	1/1	1.84E+04 - 1.84E+04		NT	9.20E+03	mg/kg
Chromium	1/1	2.36E+01 - 2.36E+01		NT	1.18E+01	mg/kg
Cobalt	1/1	8.06E+00 - 8.06E+00		NT	4.03E+00	mg/kg
Copper	1/1	1.53E+01 - 1.53E+01		NT	7.65E+00	mg/kg
Iron	1/1	2.78E+04 - 2.78E+04		NT	1.39E+04	mg/kg
Lead	1/1	1.41E+01 - 1.41E+01		NT	7.05E+00	mg/kg
Magnesium	1/1	2.54E+03 - 2.54E+03		NT	1.27E+03	mg/kg
Manganese	1/1	4.39E+02 - 4.39E+02		NT	2.20E+02	mg/kg
Nickel	1/1	1.33E+01 - 1.33E+01		NT	6.65E+00	mg/kg
Potassium	1/1	7.69E+02 - 7.69E+02		NT	3.85E+02	mg/kg
Sodium	1/1	4.00E+02 - 4.00E+02		NT	2.00E+02	mg/kg
Uranium	1/1	3.28E+00 - 3.28E+00		NT	3.28E+00	mg/kg
Vanadium	1/1	3.61E+01 - 3.61E+01		NT	1.81E+01	mg/kg
Zinc	1/1	4.88E+01 - 4.88E+01		NT	2.44E+01	mg/kg
Benz(a)anthracene	1/1	7.00E-02 - 7.00E-02		NT	3.50E-02	mg/kg
Benzo(a)pyrene	1/1	8.00E-02 - 8.00E-02		NT	4.00E-02	mg/kg
Benzo(b)fluoranthene	1/1	7.00E-02 - 7.00E-02		NT	3.50E-02	mg/kg
Benzo(k)fluoranthene	1/1	6.00E-02 - 6.00E-02		NT	3.00E-02	mg/kg
Chrysene	1/1	8.00E-02 - 8.00E-02		NT	4.00E-02	mg/kg
Fluoranthene	1/1	1.50E-01 - 1.50E-01		NT	7.50E-02	mg/kg
PCB-1262	1/1	3.80E-02 - 3.80E-02		NT	3.80E-02	mg/kg
Phenanthrene	1/1	7.00E-02 - 7.00E-02		NT	3.50E-02	mg/kg

530760

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Polychlorinated biphenyl	1/1	3.80E-02 - 3.80E-02		NT	1.90E-02	mg/kg
Pyrene	1/1	1.20E-01 - 1.20E-01		NT	6.00E-02	mg/kg
Alpha activity	2/2	6.73E+00 - 1.65E+01		N	1.16E+01	pCi/g
Beta activity	2/2	1.58E+01 - 2.43E+01		N	2.00E+01	pCi/g
Technetium-99	1/1	2.00E+00 - 2.00E+00		NT	2.00E+00	pCi/g
Thorium-230	1/1	9.00E-01 - 9.00E-01		NT	9.00E-01	pCi/g
Uranium-234	1/1	1.00E+00 - 1.00E+00		NT	1.00E+00	pCi/g
Uranium-238	1/1	1.10E+00 - 1.10E+00		NT	1.10E+00	pCi/g

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	34/34	9.13E+01 - 1.96E+04		N	5.00E+03	mg/kg
Antimony	14/34	6.00E-03 - 7.50E+00	6.00E-01 - 6.00E+00	L	6.40E-01	mg/kg
Arsenic	34/34	1.32E+00 - 2.58E+01		L	3.07E+00	mg/kg
Barium	34/34	8.16E-01 - 1.95E+02		N	5.20E+01	mg/kg
Beryllium	34/34	4.20E-03 - 1.05E+00		N	2.89E-01	mg/kg
Cadmium	22/34	1.30E-03 - 7.80E-01	5.00E-03 - 5.00E-01	L	9.85E-02	mg/kg
Calcium	34/34	6.49E+00 - 2.77E+05		L	1.36E+04	mg/kg
Chromium	34/34	1.22E-01 - 4.80E+01		N	7.91E+00	mg/kg
Cobalt	34/34	4.40E-02 - 1.06E+01		N	2.99E+00	mg/kg
Copper	34/34	6.70E-02 - 2.07E+01		N	4.88E+00	mg/kg
Iron	34/34	1.50E+02 - 3.70E+04		N	9.24E+03	mg/kg
Lead	34/34	5.70E-02 - 2.88E+01		N	4.88E+00	mg/kg
Magnesium	34/34	9.38E+00 - 1.08E+04		L	1.57E+03	mg/kg
Manganese	34/34	2.19E+00 - 8.60E+02		N	1.82E+02	mg/kg
Mercury	30/34	1.04E-02 - 1.36E-01	9.30E-03 - 9.90E-03	L	2.54E-02	mg/kg
Nickel	34/34	7.80E-02 - 2.35E+01		N	5.55E+00	mg/kg
Potassium	34/34	2.20E+00 - 8.00E+02		N	1.83E+02	mg/kg
Selenium	8/34	3.00E-01 - 1.30E+00	2.00E-01 - 1.00E+00	L	1.75E-01	mg/kg
Silver	10/34	7.00E-03 - 2.51E+01	8.00E-04 - 9.00E-02	L	5.02E-02	mg/kg
Sodium	34/34	3.92E+00 - 8.58E+02		N	2.50E+02	mg/kg
Thallium	4/34	7.00E-03 - 1.50E+00	5.00E-01 - 6.00E+00	L	1.04E-01	mg/kg
Uranium	28/28	1.49E+00 - 5.01E+01		L	3.79E+00	mg/kg
Vanadium	34/34	1.76E-01 - 3.87E+01		N	1.16E+01	mg/kg
Zinc	34/34	2.00E-01 - 1.11E+02		N	1.81E+01	mg/kg

530761

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
1,1,2-Trichloroethane	1/30	3.90E-03 - 3.90E-03	5.00E-03 - 8.00E-01	L	9.39E-03	mg/kg
2-Hexanone	1/30	4.40E-03 - 4.40E-03	5.00E-02 - 8.00E+00	L	1.00E-01	mg/kg
Acenaphthene	6/40	6.10E-03 - 2.80E+00	6.70E-01 - 8.41E-01	N	4.00E-01	mg/kg
Acenaphthylene	1/40	2.20E-01 - 2.20E-01	7.20E-01 - 7.30E+00	L	5.55E-01	mg/kg
Acetone	1/30	7.10E-03 - 7.10E-03	1.00E-01 - 2.00E+01	L	1.80E-01	mg/kg
Anthracene	7/40	1.00E-02 - 5.32E+00	7.50E-01 - 8.41E-01	L	2.14E-01	mg/kg
Benz(a)anthracene	9/40	2.10E-02 - 1.40E+01	7.50E-01 - 8.41E-01	L	2.74E-01	mg/kg
Benzo(a)pyrene	8/40	1.90E-02 - 1.30E+01	7.50E-01 - 8.41E-01	L	2.47E-01	mg/kg
Benzo(b)fluoranthene	9/40	1.80E-02 - 1.40E+01	7.50E-01 - 8.41E-01	L	2.65E-01	mg/kg
Benzo(ghi)perylene	8/40	1.20E-02 - 6.10E+00	7.50E-01 - 8.41E-01	L	2.19E-01	mg/kg
Benzo(k)fluoranthene	9/40	1.60E-02 - 8.75E+00	7.50E-01 - 8.41E-01	L	2.61E-01	mg/kg
Bis(2-ethylhexyl)phthalate	19/40	4.00E-02 - 8.77E-01	7.20E-01 - 7.30E+00	L	1.18E-01	mg/kg
Butyl benzyl phthalate	4/40	2.00E-01 - 4.34E-01	6.70E-01 - 7.30E+00	L	3.47E-01	mg/kg
Carbon disulfide	1/30	3.90E-03 - 3.90E-03	5.00E-03 - 8.00E-01	L	9.39E-03	mg/kg
Chloroform	1/30	1.90E-03 - 1.90E-03	5.00E-03 - 8.00E-01	L	9.43E-03	mg/kg
Chrysene	9/40	2.20E-02 - 1.20E+01	7.50E-01 - 8.41E-01	L	2.88E-01	mg/kg
Di-n-butyl phthalate	19/40	2.70E-01 - 3.80E+00	6.70E-01 - 7.30E+00	L	8.76E-01	mg/kg
Di-n-octylphthalate	1/40	6.06E-01 - 6.06E-01	6.70E-01 - 7.30E+00	L	5.54E-01	mg/kg
Dibenz(a,h)anthracene	4/40	7.70E-02 - 1.30E+00	7.50E-01 - 7.30E+00	L	3.04E-01	mg/kg
Dibenzofuran	4/40	2.80E-03 - 7.00E-01	7.50E-01 - 7.20E+00	L	7.06E-02	mg/kg
Diethyl phthalate	4/40	4.00E-02 - 1.50E-01	6.70E-01 - 7.30E+00	L	8.39E-02	mg/kg
Fluoranthene	10/40	4.00E-02 - 3.00E+01	7.50E-01 - 8.41E-01	L	3.17E-01	mg/kg
Fluorene	5/40	4.80E-03 - 1.20E+00	6.70E-01 - 7.20E+00	L	1.15E-01	mg/kg
Indeno(1,2,3-cd)pyrene	7/40	1.10E-02 - 3.90E+00	7.35E-01 - 8.41E-01	L	2.09E-01	mg/kg
Iodomethane	1/30	7.00E-01 - 7.00E-01	5.00E-03 - 8.00E-01	L	9.45E-03	mg/kg
Methylene chloride	24/30	1.20E-03 - 8.00E-01	5.00E-03 - 6.00E-03	L	1.10E-02	mg/kg
N-Nitroso-di-n-propylamine	1/40	5.82E-01 - 5.82E-01	6.70E-01 - 7.30E+00	L	5.53E-01	mg/kg
N-Nitrosodiphenylamine	1/40	5.82E-01 - 5.82E-01	6.70E-01 - 7.30E+00	L	5.53E-01	mg/kg
Naphthalene	2/40	2.40E-03 - 1.20E-01	6.70E-01 - 7.30E+00	L	2.67E-02	mg/kg
PCB-1260	3/6	3.00E-03 - 3.80E-02	2.10E-02 - 2.10E-02	N	1.80E-02	mg/kg
Phenanthrene	8/40	4.60E-02 - 1.60E+01	7.50E-01 - 8.41E-01	L	2.51E-01	mg/kg
Polychlorinated biphenyl	3/42	3.00E-03 - 3.80E-02	1.00E+00 - 1.00E+00	N	4.65E-01	mg/kg
Pyrene	9/40	4.10E-02 - 2.60E+01	7.50E-01 - 8.41E-01	L	2.99E-01	mg/kg
Toluene	9/30	1.60E-03 - 5.50E-03	6.00E-03 - 8.00E-01	L	2.93E-03	mg/kg
Trichloroethene	8/41	1.45E-03 - 3.50E+01	2.00E-01 - 1.10E+00	L	5.75E-02	mg/kg
Vinyl acetate	1/30	5.50E-02 - 5.50E-02	5.00E-02 - 8.00E+00	L	9.43E-02	mg/kg
Vinyl chloride	3/41	9.40E-03 - 3.50E-02	2.00E-01 - 2.00E+00	N	6.82E-01	mg/kg
cis-1,2-Dichloroethene	9/41	1.50E-03 - 1.00E+00	2.00E-01 - 1.10E+00	N	6.28E-01	mg/kg
trans-1,2-Dichloroethene	5/41	5.00E+00 - 1.41E+01	2.00E-01 - 1.10E+00	L	3.88E-02	mg/kg
Alpha activity	40/50	6.95E+00 - 3.98E+01	-3.46E+00 - 7.14E+00	N	1.68E+01	pCi/g

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Americium-241	1/28	1.00E+00 - 1.00E+00	1.00E-01 - 1.00E-01	N	1.32E-01	pCi/g
Beta activity	49/50	1.69E+01 - 1.10E+02	4.27E+00 - 4.27E+00	L	3.67E+01	pCi/g
Cesium-137	10/28	2.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	L	1.31E-01	pCi/g
Neptunium-237	12/28	2.00E-01 - 4.00E-01	1.00E-01 - 2.00E-01	N	1.75E-01	pCi/g
Plutonium-239	1/28	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.04E-01	pCi/g
Technetium-99	21/28	2.00E-01 - 3.30E+01	1.00E-01 - 3.00E-01	L	7.89E-01	pCi/g
Thorium-230	28/28	4.00E-01 - 2.20E+00		L	1.12E+00	pCi/g
Uranium-234	28/28	5.00E-01 - 1.09E+01		L	1.12E+00	pCi/g
Uranium-235	2/28	4.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	L	5.15E-03	pCi/g
Uranium-238	28/28	5.00E-01 - 1.67E+01		L	1.27E+00	pCi/g

SECTOR=Southwest MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	4/4	3.25E+03 - 1.09E+04		N	3.88E+03	mg/kg
Antimony	3/4	1.10E+00 - 2.80E+00	6.00E-01 - 6.00E-01	N	8.50E-01	mg/kg
Arsenic	4/4	4.30E+00 - 4.70E+00		N	2.24E+00	mg/kg
Barium	4/4	4.31E+01 - 8.18E+01		N	3.01E+01	mg/kg
Beryllium	4/4	2.40E-01 - 7.90E-01		N	2.38E-01	mg/kg
Cadmium	4/4	2.20E-01 - 7.80E-01		N	2.20E-01	mg/kg
Calcium	4/4	2.18E+04 - 2.77E+05		N	6.90E+04	mg/kg
Chromium	4/4	1.18E+01 - 4.80E+01		N	1.11E+01	mg/kg
Cobalt	4/4	3.41E+00 - 1.06E+01		N	3.73E+00	mg/kg
Copper	4/4	5.90E+00 - 2.07E+01		N	5.53E+00	mg/kg
Iron	4/4	1.37E+04 - 3.70E+04		N	1.07E+04	mg/kg
Lead	4/4	8.00E+00 - 2.88E+01		N	8.76E+00	mg/kg
Magnesium	4/4	1.08E+03 - 1.08E+04		N	2.39E+03	mg/kg
Manganese	4/4	2.16E+02 - 4.73E+02		N	1.62E+02	mg/kg
Mercury	4/4	1.65E-02 - 1.36E-01		N	2.61E-02	mg/kg
Nickel	4/4	7.40E+00 - 2.35E+01		N	6.94E+00	mg/kg
Potassium	4/4	2.17E+02 - 6.00E+02		N	2.27E+02	mg/kg
Silver	3/4	1.30E-01 - 1.10E+00	8.00E-02 - 8.00E-02	N	2.66E-01	mg/kg
Sodium	4/4	2.70E+02 - 8.15E+02		N	2.11E+02	mg/kg
Thallium	2/4	9.00E-01 - 1.50E+00	5.00E-01 - 6.00E-01	N	4.38E-01	mg/kg
Uranium	3/3	5.37E+00 - 5.01E+01		N	2.10E+01	mg/kg
Vanadium	4/4	7.40E+00 - 3.35E+01		N	8.96E+00	mg/kg

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Zinc	4/4	2.30E+01 - 1.11E+02		N	2.74E+01	mg/kg
Acenaphthene	4/5	6.10E-03 - 2.80E+00	6.70E-01 - 6.70E-01	N	4.78E-01	mg/kg
Acenaphthylene	1/5	2.20E-01 - 2.20E-01	7.70E-01 - 7.30E+00	N	2.27E+00	mg/kg
Anthracene	5/5	1.00E-02 - 5.32E+00		N	7.93E-01	mg/kg
Benz(a)anthracene	5/5	2.10E-02 - 1.40E+01		N	2.33E+00	mg/kg
Benzo(a)pyrene	5/5	1.90E-02 - 1.30E+01		N	2.34E+00	mg/kg
Benzo(b)fluoranthene	5/5	1.80E-02 - 1.40E+01		N	2.46E+00	mg/kg
Benzo(ghi)perylene	5/5	1.20E-02 - 6.10E+00		N	1.18E+00	mg/kg
Benzo(k)fluoranthene	5/5	1.60E-02 - 8.75E+00		N	1.72E+00	mg/kg
Bis(2-ethylhexyl)phthalate	1/5	8.00E-02 - 8.00E-02	7.70E-01 - 7.30E+00	N	2.26E+00	mg/kg
Chrysene	5/5	2.20E-02 - 1.20E+01		N	2.22E+00	mg/kg
Dibenz(a,h)anthracene	3/5	7.70E-02 - 1.30E+00	7.70E-01 - 7.30E+00	N	1.04E+00	mg/kg
Dibenzofuran	3/5	2.80E-03 - 7.00E-01	7.20E+00 - 7.20E+00	N	1.51E+00	mg/kg
Fluoranthene	5/5	6.00E-02 - 3.00E+01		N	5.11E+00	mg/kg
Fluorene	3/5	4.80E-03 - 1.20E+00	6.70E-01 - 7.20E+00	N	9.57E-01	mg/kg
Indeno(1,2,3-cd)pyrene	5/5	1.10E-02 - 3.90E+00		N	9.63E-01	mg/kg
Naphthalene	1/5	2.40E-03 - 2.40E-03	6.70E-01 - 7.30E+00	N	2.24E+00	mg/kg
PCB-1260	2/2	3.00E-03 - 3.80E-02		N	2.05E-02	mg/kg
Phenanthrene	5/5	4.60E-02 - 1.60E+01		N	2.60E+00	mg/kg
Polychlorinated biphenyl	2/5	3.00E-03 - 3.80E-02	1.00E+00 - 1.00E+00	N	3.04E-01	mg/kg
Pyrene	5/5	4.10E-02 - 2.60E+01		N	4.19E+00	mg/kg
Toluene	1/1	3.10E-03 - 3.10E-03		NT	1.55E-03	mg/kg
Alpha activity	7/11	6.95E+00 - 3.18E+01	-3.46E+00 - 7.09E+00	N	1.08E+01	pCi/g
Beta activity	10/11	1.80E+01 - 1.10E+02	4.27E+00 - 4.27E+00	L	3.76E+01	pCi/g
Cesium-137	1/3	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.33E-01	pCi/g
Neptunium-237	1/3	3.00E-01 - 3.00E-01	1.00E-01 - 1.00E-01	N	1.67E-01	pCi/g
Plutonium-239	1/3	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.33E-01	pCi/g
Technetium-99	2/3	2.10E+00 - 3.30E+01	3.00E-01 - 3.00E-01	N	1.18E+01	pCi/g
Thorium-230	3/3	5.00E-01 - 2.20E+00		N	1.37E+00	pCi/g
Uranium-234	3/3	1.50E+00 - 1.09E+01		N	4.87E+00	pCi/g
Uranium-235	1/3	6.00E-01 - 6.00E-01	1.00E-01 - 1.00E-01	N	2.67E-01	pCi/g
Uranium-238	3/3	1.80E+00 - 1.67E+01		N	7.00E+00	pCi/g

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=West MEDIA=Subsurface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	17/17	6.55E+03 - 2.34E+04		L	6.63E+03	mg/kg
Antimony	6/17	7.00E-01 - 1.30E+00	5.00E-01 - 6.00E-01	L	6.39E-01	mg/kg
Arsenic	17/17	4.56E-02 - 4.52E+01		L	1.28E+01	mg/kg
Barium	17/17	3.33E+01 - 2.35E+02		N	5.41E+01	mg/kg
Beryllium	17/17	2.20E-01 - 8.00E-01		N	2.92E-01	mg/kg
Cadmium	11/17	4.00E-02 - 4.25E+00	2.00E-02 - 2.00E-02	L	1.54E-01	mg/kg
Calcium	17/17	1.15E+03 - 7.15E+04		L	4.68E+03	mg/kg
Chromium	17/17	1.22E+01 - 4.58E+01		L	9.92E+00	mg/kg
Cobalt	17/17	3.00E+00 - 1.43E+01		L	3.48E+00	mg/kg
Copper	17/17	4.70E+00 - 2.79E+01		L	7.05E+00	mg/kg
Iron	17/17	1.41E+04 - 2.49E+04		L	9.71E+03	mg/kg
Lead	17/17	4.80E+00 - 1.52E+01		N	5.41E+00	mg/kg
Magnesium	17/17	7.23E+02 - 4.17E+03		L	1.03E+03	mg/kg
Manganese	17/17	1.40E+02 - 5.38E+02		N	1.78E+02	mg/kg
Mercury	16/17	1.11E-02 - 6.76E-02	9.60E-03 - 9.60E-03	L	3.07E-02	mg/kg
Nickel	17/17	5.40E+00 - 2.55E+01		N	7.10E+00	mg/kg
Potassium	17/17	1.37E+02 - 1.00E+03		N	2.41E+02	mg/kg
Selenium	4/17	3.00E-01 - 4.00E-01	2.00E-01 - 1.00E+00	L	1.84E-01	mg/kg
Silver	3/17	2.70E-01 - 6.00E-01	7.00E-02 - 9.00E-02	L	3.19E-02	mg/kg
Sodium	17/17	1.25E+02 - 6.81E+02		N	2.07E+02	mg/kg
Uranium	15/15	2.09E+00 - 1.29E+02		L	2.23E+01	mg/kg
Vanadium	17/17	1.91E+01 - 3.91E+01		L	1.39E+01	mg/kg
Zinc	17/17	1.41E+01 - 7.57E+01		N	2.09E+01	mg/kg
2-Methylnaphthalene	2/17	4.40E-02 - 9.00E-01	7.50E-01 - 8.00E+00	L	2.07E-01	mg/kg
Acenaphthene	4/17	1.80E+00 - 7.07E+00	7.50E-01 - 7.90E+00	L	8.33E-01	mg/kg
Acetone	1/6	1.00E-01 - 1.00E-01	1.00E-01 - 1.00E-01	N	5.00E-02	mg/kg
Anthracene	6/17	3.59E-01 - 8.43E+01	7.50E-01 - 7.50E+00	L	1.14E+00	mg/kg
Benz(a)anthracene	7/17	8.00E-02 - 3.92E+01	7.50E-01 - 7.50E+00	L	1.38E+00	mg/kg
Benzo(a)pyrene	7/17	9.00E-02 - 3.77E+01	7.50E-01 - 7.50E+00	L	1.34E+00	mg/kg
Benzo(b)fluoranthene	7/17	9.00E-02 - 6.24E+01	7.50E-01 - 7.50E+00	L	1.48E+00	mg/kg
Benzo(ghi)perylene	5/17	6.20E-02 - 8.84E+00	7.50E-01 - 7.90E+00	L	8.11E-01	mg/kg
Benzo(k)fluoranthene	7/17	7.00E-02 - 9.41E+01	7.50E-01 - 7.90E+00	L	1.24E+00	mg/kg
Bis(2-ethylhexyl)phthalate	4/17	4.00E-02 - 1.00E-01	7.70E-01 - 1.65E+01	L	8.21E-02	mg/kg
Chrysene	7/17	9.00E-02 - 4.37E+01	7.50E-01 - 7.50E+00	L	1.45E+00	mg/kg

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Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Di-n-butyl phthalate	2/17	1.20E-01 - 2.05E-01	7.50E-01 - 1.65E+01	L	1.79E-01	mg/kg
Dibenz(a,h)anthracene	2/17	3.20E+00 - 4.27E+00	7.50E-01 - 8.00E+00	N	1.75E+00	mg/kg
Dibenzofuran	4/17	1.10E+00 - 3.60E+00	7.50E-01 - 7.90E+00	L	8.08E-01	mg/kg
Fluoranthene	9/17	4.00E-02 - 9.68E+01	7.90E-01 - 7.50E+00	L	2.32E+00	mg/kg
Fluorene	4/17	9.00E-01 - 4.54E+00	7.50E-01 - 7.90E+00	L	7.84E-01	mg/kg
Indeno(1,2,3-cd)pyrene	5/17	6.00E-02 - 9.69E+00	7.50E-01 - 7.90E+00	L	8.12E-01	mg/kg
Methylene chloride	3/6	1.40E-03 - 1.80E-03	6.00E-03 - 6.00E-03	N	1.91E-03	mg/kg
Naphthalene	4/17	5.00E-01 - 1.90E+00	7.50E-01 - 7.90E+00	L	6.84E-01	mg/kg
PCB-1254	2/9	7.70E-02 - 9.60E-01	1.90E-02 - 2.10E-02	L	7.91E-03	mg/kg
PCB-1260	1/9	1.60E-02 - 1.60E-02	1.80E-02 - 2.10E-01	L	3.48E-02	mg/kg
Phenanthrene	8/17	1.10E-01 - 7.75E+01	7.50E-01 - 7.50E+00	L	1.95E+00	mg/kg
Polychlorinated biphenyl	3/17	1.60E-02 - 9.60E-01	1.90E-02 - 1.00E+00	L	5.99E-02	mg/kg
Pyrene	8/17	1.30E-01 - 1.11E+02	7.50E-01 - 7.50E+00	L	2.23E+00	mg/kg
Toluene	2/6	2.00E-03 - 5.60E-03	6.00E-03 - 6.00E-03	N	2.63E-03	mg/kg
Trichloroethene	1/8	1.40E+00 - 1.40E+00	5.00E-01 - 1.00E+00	L	8.68E-01	mg/kg
cis-1,2-Dichloroethene	1/8	8.20E-02 - 8.20E-02	5.00E-01 - 1.00E+00	N	6.98E-01	mg/kg
trans-1,2-Dichloroethene	1/8	2.50E+00 - 2.50E+00	5.00E-01 - 1.00E+00	L	9.96E-01	mg/kg
Alpha activity	18/18	1.31E+01 - 3.89E+02		L	5.33E+01	pCi/g
Americium-241	3/15	2.00E-01 - 4.00E-01	1.00E-01 - 1.00E-01	L	6.46E-02	pCi/g
Beta activity	18/18	3.11E+01 - 7.56E+02		L	9.59E+01	pCi/g
Cesium-137	7/15	2.00E-01 - 1.50E+00	1.00E-01 - 3.00E-01	L	2.19E-01	pCi/g
Neptunium-237	9/15	2.00E-01 - 3.00E+00	1.00E-01 - 1.00E-01	L	4.11E-01	pCi/g
Plutonium-239	3/15	2.00E-01 - 1.70E+00	1.00E-01 - 1.00E-01	L	3.93E-02	pCi/g
Technetium-99	13/15	3.00E-01 - 5.30E+01	3.00E-01 - 3.00E-01	L	6.64E+00	pCi/g
Thorium-230	15/15	8.00E-01 - 1.09E+01		L	2.94E+00	pCi/g
Uranium-234	15/15	7.00E-01 - 4.17E+01		L	5.99E+00	pCi/g
Uranium-235	7/15	2.00E-01 - 2.20E+00	1.00E-01 - 1.00E-01	L	2.25E-01	pCi/g
Uranium-238	15/15	7.00E-01 - 4.28E+01		L	7.42E+00	pCi/g

SECTOR=West MEDIA=Surface soil

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Aluminum	9/9	6.55E+03 - 1.77E+04		N	6.23E+03	mg/kg
Antimony	4/9	7.00E-01 - 1.30E+00	5.00E-01 - 6.00E-01	L	7.18E-01	mg/kg
Arsenic	9/9	5.46E+00 - 4.52E+01		L	7.96E+00	mg/kg
Barium	9/9	3.53E+01 - 1.27E+02		N	4.81E+01	mg/kg

530766

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Beryllium	9/9	2.20E-01 - 8.00E-01		N	2.65E-01	mg/kg
Cadmium	8/9	4.00E-02 - 4.25E+00	2.00E-02 - 2.00E-02	L	3.53E-01	mg/kg
Calcium	9/9	2.18E+03 - 7.15E+04		L	9.03E+03	mg/kg
Chromium	9/9	1.27E+01 - 4.58E+01		L	1.02E+01	mg/kg
Cobalt	9/9	3.00E+00 - 1.43E+01		L	3.72E+00	mg/kg
Copper	9/9	1.16E+01 - 2.79E+01		L	8.68E+00	mg/kg
Iron	9/9	1.50E+04 - 2.49E+04		L	1.01E+04	mg/kg
Lead	9/9	1.01E+01 - 1.52E+01		N	6.18E+00	mg/kg
Magnesium	9/9	1.04E+03 - 4.17E+03		L	1.19E+03	mg/kg
Manganese	9/9	1.65E+02 - 5.38E+02		N	1.81E+02	mg/kg
Mercury	9/9	2.15E-02 - 6.76E-02		L	1.66E-02	mg/kg
Nickel	9/9	1.06E+01 - 2.55E+01		L	8.15E+00	mg/kg
Potassium	9/9	3.35E+02 - 1.00E+03		L	3.10E+02	mg/kg
Selenium	3/9	3.00E-01 - 3.00E-01	2.00E-01 - 1.00E+00	L	1.57E-01	mg/kg
Silver	1/9	6.00E-01 - 6.00E-01	7.00E-02 - 9.00E-02	L	6.27E-02	mg/kg
Sodium	9/9	1.80E+02 - 6.81E+02		N	2.39E+02	mg/kg
Uranium	9/9	7.76E+00 - 1.19E+02		L	2.14E+01	mg/kg
Vanadium	9/9	1.91E+01 - 3.58E+01		N	1.38E+01	mg/kg
Zinc	9/9	3.30E+01 - 7.57E+01		L	2.56E+01	mg/kg
2-Methylnaphthalene	2/9	4.40E-02 - 9.00E-01	6.70E+00 - 8.00E+00	N	2.95E+00	mg/kg
Acenaphthene	4/9	1.80E+00 - 7.07E+00	7.70E-01 - 7.90E+00	N	2.47E+00	mg/kg
Anthracene	6/9	3.59E-01 - 8.43E+01	7.70E-01 - 7.50E+00	L	4.81E+00	mg/kg
Benz(a)anthracene	7/9	8.00E-02 - 3.92E+01	6.70E+00 - 7.50E+00	L	5.98E+00	mg/kg
Benzo(a)pyrene	7/9	9.00E-02 - 3.77E+01	6.70E+00 - 7.50E+00	L	5.56E+00	mg/kg
Benzo(b)fluoranthene	7/9	9.00E-02 - 6.24E+01	6.70E+00 - 7.50E+00	L	6.72E+00	mg/kg
Benzo(ghi)perylene	5/9	6.20E-02 - 8.84E+00	6.70E+00 - 7.90E+00	N	2.82E+00	mg/kg
Benzo(k)fluoranthene	7/9	7.00E-02 - 9.41E+01	7.50E+00 - 7.90E+00	L	5.70E+00	mg/kg
Bis(2-ethylhexyl)phthalate	1/9	1.00E-01 - 1.00E-01	7.70E-01 - 1.65E+01	N	3.42E+00	mg/kg
Chrysene	7/9	9.00E-02 - 4.37E+01	6.70E+00 - 7.50E+00	L	6.50E+00	mg/kg
Di-n-butyl phthalate	1/9	2.05E-01 - 2.05E-01	7.70E-01 - 1.65E+01	N	3.50E+00	mg/kg
Dibenz(a,h)anthracene	2/9	3.20E+00 - 4.27E+00	7.70E-01 - 8.00E+00	N	2.96E+00	mg/kg
Dibenzofuran	4/9	1.10E+00 - 3.60E+00	7.70E-01 - 7.90E+00	L	1.78E+00	mg/kg
Fluoranthene	8/9	1.70E-01 - 9.68E+01	7.50E+00 - 7.50E+00	L	1.28E+01	mg/kg
Fluorene	4/9	9.00E-01 - 4.54E+00	7.70E-01 - 7.90E+00	N	2.18E+00	mg/kg
Indeno(1,2,3-cd)pyrene	5/9	6.00E-02 - 9.69E+00	6.70E+00 - 7.90E+00	N	2.88E+00	mg/kg
Naphthalene	4/9	5.00E-01 - 1.90E+00	7.70E-01 - 7.90E+00	L	9.65E-01	mg/kg
PCB-1254	2/3	7.70E-02 - 9.60E-01	2.00E-02 - 2.00E-02	N	3.52E-01	mg/kg
PCB-1260	1/3	1.60E-02 - 1.60E-02	1.80E-02 - 2.10E-01	N	8.13E-02	mg/kg
Phenanthrene	8/9	1.10E-01 - 7.75E+01	7.50E+00 - 7.50E+00	L	9.49E+00	mg/kg
Polychlorinated biphenyl	3/9	1.60E-02 - 9.60E-01	1.00E+00 - 1.00E+00	L	1.67E-01	mg/kg

530767

Table 1.14. PGDP WAG 6 data summary for detected analytes by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Detected Range	Nondetected Range	Distribution	Arithmetic Mean	Units
Pyrene	8/9	1.30E-01 - 1.11E+02	7.50E+00 - 7.50E+00	L	1.13E+01	mg/kg
Alpha activity	9/9	1.31E+01 - 1.75E+02		L	4.10E+01	pCi/g
Americium-241	2/9	2.00E-01 - 2.00E-01	1.00E-01 - 1.00E-01	N	1.22E-01	pCi/g
Beta activity	9/9	3.11E+01 - 2.48E+02		L	7.68E+01	pCi/g
Cesium-137	5/9	2.00E-01 - 1.50E+00	1.00E-01 - 2.00E-01	L	2.99E-01	pCi/g
Neptunium-237	8/9	2.00E-01 - 3.00E+00	1.00E-01 - 1.00E-01	L	8.37E-01	pCi/g
Plutonium-239	3/9	2.00E-01 - 1.70E+00	1.00E-01 - 1.00E-01	L	1.34E-01	pCi/g
Technetium-99	9/9	3.00E-01 - 5.30E+01		L	2.39E+01	pCi/g
Thorium-230	9/9	1.10E+00 - 1.09E+01		L	4.02E+00	pCi/g
Uranium-234	9/9	2.20E+00 - 3.11E+01		L	5.64E+00	pCi/g
Uranium-235	6/9	2.00E-01 - 1.90E+00	1.00E-01 - 1.00E-01	L	3.20E-01	pCi/g
Uranium-238	9/9	2.60E+00 - 3.95E+01		L	7.11E+00	pCi/g

530768

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	3/3	1.39E+02	1.5E+00		Yes		mg/L
Arsenic	2/3	4.06E-01	4.5E-04	3.5E-06	Yes	Yes	mg/L
Barium	3/3	5.88E-01	1.0E-01		Yes		mg/L
Beryllium	3/3	1.30E-02	6.6E-03	1.0E-06	Yes	Yes	mg/L
Bromide	16/41	5.20E-02					mg/L
Cadmium	2/3	2.99E-03	6.6E-04		Yes		mg/L
Calcium	3/3	5.45E+01					mg/L
Chloride	41/41	2.24E+01					mg/L
Chromium	3/3	3.87E-01	7.1E-03		Yes		mg/L
Cobalt	2/3	1.07E-01	9.1E-02		Yes		mg/L
Copper	2/3	9.57E-02	6.0E-02		Yes		mg/L
Fluoride	16/41	2.92E-01	9.1E-02		Yes		mg/L
Iron	3/3	3.37E+02	4.5E-01		Yes		mg/L
Lead	2/3	1.77E-01	1.5E-07		Yes		mg/L
Magnesium	3/3	3.19E+01					mg/L
Manganese	3/3	2.44E+00	6.7E-02		Yes		mg/L
Nickel	3/3	1.86E-01	3.0E-02		Yes		mg/L
Nitrate	23/41	2.90E+00	2.4E+00		Yes		mg/L
Nitrate/Nitrite	1/16	5.00E-03	2.4E+00		No		mg/L
Orthophosphate	3/41	1.01E-01					mg/L
Potassium	3/3	2.12E+01					mg/L
Selenium	1/3	4.41E-02	7.5E-03		Yes		mg/L
Sodium	3/3	3.67E+01					mg/L
Tetraoxo-sulfate(1-)	41/41	5.34E+01					mg/L
Thallium	2/3	1.03E-03					mg/L
Uranium	2/3	4.27E-03	4.5E-03		No		mg/L
Vanadium	3/3	1.57E+00	9.3E-03		Yes		mg/L
Zinc	3/3	1.21E+01	4.5E-01		Yes		mg/L
1,1-Dichloroethene	2/54	2.40E-02	1.3E-02	9.3E-07	Yes	Yes	mg/L
1,2-Dichloroethane	1/5	1.00E-03	6.7E-04	1.1E-05	Yes	Yes	mg/L
Benzoic acid	1/5	1.00E-03	6.0E+00		No		mg/L
Bis(2-ethylhexyl)phthalate	3/5	8.00E-03	2.6E-02	3.1E-04	No	Yes	mg/L
Bromodichloromethane	2/5	8.00E-03	3.0E-02	8.4E-05	No	Yes	mg/L
Chloroform	4/5	1.90E-02	1.4E-02	1.5E-05	Yes	Yes	mg/L
Di-n-butyl phthalate	1/5	1.00E-03	1.3E-01		No		mg/L
Di-n-octylphthalate	2/5	6.00E-03	6.9E-04		Yes		mg/L
Dibromochloromethane	2/5	4.00E-03	3.0E-02	6.2E-05	No	Yes	mg/L
Phenol	3/5	5.00E-03	9.0E-01		No		mg/L
Tetrachloroethene	1/5	2.70E-02	9.9E-03	5.7E-05	Yes	Yes	mg/L
Toluene	3/5	4.00E-03	2.4E-02		No		mg/L

530769

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Trichloroethene	39/54	1.28E+00	7.9E-03	1.4E-04	Yes	Yes	mg/L
Vinyl chloride	1/54	2.00E-02		1.7E-06		Yes	mg/L
cis-1,2-Dichloroethene	2/54	2.00E-02	1.5E-02		Yes		mg/L
trans-1,2-Dichloroethene	5/54	2.00E-02	3.0E-02		No		mg/L
Actinium-228	1/1	2.72E+01		2.4E+01		Yes	pCi/L
Alpha activity	48/51	1.49E+02					pCi/L
Americium-241	1/6	5.30E-02		1.2E-01		No	pCi/L
Beta activity	51/51	1.16E+04					pCi/L
Bismuth-214	1/1	9.00E+00		2.0E+02		No	pCi/L
Cesium-137	4/6	1.65E+01		1.2E+00		Yes	pCi/L
Lead-210	1/1	4.21E+02		3.8E-02		Yes	pCi/L
Lead-212	1/1	2.25E+01		2.1E+00		Yes	pCi/L
Lead-214	1/1	1.21E+01		1.3E+02		No	pCi/L
Neptunium-237	6/6	1.31E+01		1.3E-01		Yes	pCi/L
Plutonium-239	1/5	2.12E+00		1.2E-01		Yes	pCi/L
Potassium-40	1/1	6.80E+01		3.1E+00		Yes	pCi/L
Technetium-99	3/6	6.16E+02		2.8E+01		Yes	pCi/L
Thallium-208	1/1	6.70E+00		2.2E+03		No	pCi/L
Thorium-228	1/1	1.23E+00		1.7E-01		Yes	pCi/L
Thorium-230	6/6	1.88E+00		1.0E+00		Yes	pCi/L
Thorium-232	1/1	1.15E+00		1.2E+00		No	pCi/L
Thorium-234	1/1	7.19E+02		2.0E+00		Yes	pCi/L
Uranium-233/234	1/1	6.10E-01		8.7E-01		No	pCi/L
Uranium-234	4/5	2.23E+00		8.7E-01		Yes	pCi/L
Uranium-235	1/6	2.30E+01		8.2E-01		Yes	pCi/L
Uranium-238	4/6	1.82E+00		6.2E-01		Yes	pCi/L

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	80/80	2.50E+02	1.5E+00		Yes		mg/L
Antimony	11/80	4.02E-02	5.6E-04		Yes		mg/L
Arsenic	61/80	4.36E-01	4.5E-04	3.5E-06	Yes	Yes	mg/L
Barium	80/80	6.93E+00	1.0E-01		Yes		mg/L
Beryllium	69/79	1.11E-01	6.6E-03	1.0E-06	Yes	Yes	mg/L

530770

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Bromide	10/39	1.40E+00					mg/L
Cadmium	29/80	1.59E-02	6.6E-04		Yes		mg/L
Calcium	80/80	7.87E+01					mg/L
Chloride	39/39	1.25E+02					mg/L
Chromium	62/80	4.49E+00	7.1E-03		Yes		mg/L
Cobalt	76/80	4.84E-01	9.1E-02		Yes		mg/L
Copper	58/80	1.05E+01	6.0E-02		Yes		mg/L
Fluoride	9/39	2.31E-01	9.1E-02		Yes		mg/L
Iron	80/80	2.24E+03	4.5E-01		Yes		mg/L
Lead	63/80	2.63E-01	1.5E-07		Yes		mg/L
Magnesium	80/80	3.33E+01					mg/L
Manganese	80/80	5.79E+01	6.7E-02		Yes		mg/L
Mercury	30/80	6.12E-04	4.4E-04		Yes		mg/L
Nickel	74/80	4.88E+00	3.0E-02		Yes		mg/L
Nitrate	39/39	1.74E+02	2.4E+00		Yes		mg/L
Nitrate/Nitrite	3/9	1.14E-01	2.4E+00		No		mg/L
Orthophosphate	2/39	3.60E-02					mg/L
Potassium	80/80	2.53E+01					mg/L
Selenium	23/80	4.80E-03	7.5E-03		No		mg/L
Silver	8/80	3.98E-01	7.5E-03		Yes		mg/L
Sodium	80/80	8.38E+01					mg/L
Tetraoxo-sulfate(1-)	39/39	5.64E+01					mg/L
Thallium	13/80	4.56E-03					mg/L
Uranium	45/52	1.21E-02	4.5E-03		Yes		mg/L
Vanadium	73/80	1.35E+00	9.3E-03		Yes		mg/L
Zinc	77/80	8.18E+01	4.5E-01		Yes		mg/L
1,1,1-Trichloroethane	1/23	1.20E-02	4.4E-02		No		mg/L
1,1-Dichloroethene	20/155	1.54E-01	1.3E-02	9.3E-07	Yes	Yes	mg/L
Acetone	1/23	5.00E-03	1.5E-01		No		mg/L
Benzoic acid	5/16	5.00E-03	6.0E+00		No		mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03	2.6E-02	3.1E-04	No	Yes	mg/L
Bromodichloromethane	2/23	4.00E-03	3.0E-02	8.4E-05	No	Yes	mg/L
Carbon tetrachloride	4/23	2.70E-01	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chloroform	6/23	3.60E-02	1.4E-02	1.5E-05	Yes	Yes	mg/L
Di-n-butyl phthalate	8/16	1.00E-03	1.3E-01		No		mg/L
Di-n-octylphthalate	1/16	1.00E-03	6.9E-04		Yes		mg/L
Diethyl phthalate	1/16	1.00E-03	1.2E+00		No		mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03		7.4E-07		Yes	mg/L
Phenol	6/16	4.00E-02	9.0E-01		No		mg/L

530771

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Tetrachloroethene	6/23	3.00E-02	9.9E-03	5.7E-05	Yes	Yes	mg/L
Toluene	1/23	3.60E-02	2.4E-02		Yes		mg/L
Trichloroethene	146/155	7.01E+02	7.9E-03	1.4E-04	Yes	Yes	mg/L
Vinyl chloride	3/155	1.33E-01		1.7E-06		Yes	mg/L
cis-1,2-Dichloroethene	10/155	3.70E-01	1.5E-02		Yes		mg/L
trans-1,2-Dichloroethene	27/155	1.20E+00	3.0E-02		Yes		mg/L
Alpha activity	129/151	1.36E+02					pCi/L
Americium-241	2/30	1.68E+00		1.2E-01		Yes	pCi/L
Beta activity	149/151	1.72E+04					pCi/L
Bismuth-212	1/1	4.20E+01		6.2E+01		No	pCi/L
Cesium-137	15/31	1.45E+01		1.2E+00		Yes	pCi/L
Lead-210	1/1	1.00E+02		3.8E-02		Yes	pCi/L
Lead-214	1/1	7.40E+00		1.3E+02		No	pCi/L
Neptunium-237	23/30	1.44E+01		1.3E-01		Yes	pCi/L
Plutonium-239	4/27	1.30E-01		1.2E-01		Yes	pCi/L
Technetium-99	26/28	1.70E+04		2.8E+01		Yes	pCi/L
Thorium-228	1/1	7.60E-01		1.7E-01		Yes	pCi/L
Thorium-230	22/28	8.40E+00		1.0E+00		Yes	pCi/L
Thorium-232	1/1	7.60E-01		1.2E+00		No	pCi/L
Uranium-233/234	1/1	6.50E-01		8.7E-01		No	pCi/L
Uranium-234	17/30	1.70E+01		8.7E-01		Yes	pCi/L
Uranium-235	3/28	7.70E-01		8.2E-01		No	pCi/L
Uranium-238	13/31	1.66E+01		6.2E-01		Yes	pCi/L

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	196/196	2.34E+04	7.3E+02		Yes		mg/kg
Antimony	73/196	9.40E+00	6.4E-02		Yes		mg/kg
Arsenic	196/196	4.52E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	196/196	2.79E+02	3.7E+01		Yes		mg/kg
Beryllium	196/196	1.20E+00	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	117/196	4.25E+00	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	196/196	3.40E+05					mg/kg
Chromium	196/196	1.41E+02	7.9E-01	4.2E+01	Yes	Yes	mg/kg

530772

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cobalt	196/196	1.96E+01	2.1E+02		No		mg/kg
Copper	196/196	9.52E+03	7.4E+01		Yes		mg/kg
Iron	196/196	5.17E+04	3.1E+02		Yes		mg/kg
Lead	196/196	8.75E+01	1.0E-04		Yes		mg/kg
Magnesium	196/196	2.72E+04					mg/kg
Manganese	196/196	1.37E+03	1.4E+01		Yes		mg/kg
Mercury	166/196	8.30E+00	1.6E-01		Yes		mg/kg
Nickel	196/196	1.76E+04	3.4E+01		Yes		mg/kg
Potassium	196/196	1.14E+03					mg/kg
Selenium	30/196	1.30E+00	1.2E+01		No		mg/kg
Silver	45/196	2.51E+01	6.1E+00		Yes		mg/kg
Sodium	196/196	1.67E+03					mg/kg
Thallium	16/196	2.30E+00					mg/kg
Uranium	151/151	4.26E+02	1.1E+01		Yes		mg/kg
Vanadium	196/196	6.72E+01	5.6E-01		Yes		mg/kg
Zinc	196/196	1.81E+02	4.0E+02		No		mg/kg
1,1,1-Trichloroethane	3/142	2.40E+00	8.4E+01		No		mg/kg
1,1,2-Trichloroethane	3/142	5.30E-01	4.5E+00	7.8E-02	No	Yes	mg/kg
1,1-Dichloroethene	10/181	9.50E-01	1.2E+01	1.8E-03	No	Yes	mg/kg
2,4-Dinitrotoluene	1/203	4.57E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	4/203	4.32E-01	2.4E+00	2.1E-02	No	Yes	mg/kg
2-Hexanone	1/142	4.40E-03					mg/kg
2-Methylnaphthalene	2/203	9.00E-01					mg/kg
Acenaphthene	20/203	7.07E+00	6.5E+01		No		mg/kg
Acenaphthylene	1/203	2.20E-01					mg/kg
Acetone	18/142	4.30E+00	1.1E+02		No		mg/kg
Anthracene	28/203	8.43E+01	6.6E+02		No		mg/kg
Benz(a)anthracene	43/203	3.92E+01		8.5E-03		Yes	mg/kg
Benzene	1/142	1.70E-02	2.4E+00	1.3E-01	No	No	mg/kg
Benzo(a)pyrene	42/203	3.77E+01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	42/203	6.24E+01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	32/203	8.84E+00					mg/kg
Benzo(k)fluoranthene	44/203	9.41E+01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	71/203	8.77E-01	1.4E+01	2.8E-01	No	Yes	mg/kg
Butyl benzyl phthalate	5/203	4.34E-01	3.7E+02		No		mg/kg
Carbon disulfide	1/142	3.90E-03	6.9E+01		No		mg/kg
Carbon tetrachloride	3/142	7.10E-01	3.6E-01	3.2E-02	Yes	Yes	mg/kg
Chloroform	5/142	1.80E-02	3.1E+00	6.8E-02	No	No	mg/kg
Chrysene	43/203	4.37E+01		8.5E-01		Yes	mg/kg

530773

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Di-n-butyl phthalate	56/203	3.80E+00	2.6E+02		No		mg/kg
Di-n-octylphthalate	2/203	6.06E-01	4.9E+01		No		mg/kg
Dibenz(a,h)anthracene	9/203	4.27E+00		8.5E-04		Yes	mg/kg
Dibenzofuran	12/203	3.60E+00	6.4E+00		No		mg/kg
Diethyl phthalate	9/203	6.10E+00	2.0E+03		No		mg/kg
Fluoranthene	56/203	9.68E+01	4.3E+01		Yes		mg/kg
Fluorene	18/203	4.54E+00	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	30/203	9.69E+00		8.5E-03		Yes	mg/kg
Iodomethane	1/142	7.00E-01					mg/kg
Methylene chloride	83/142	8.00E-01	6.8E+01	6.9E-01	No	Yes	mg/kg
N-Nitroso-di-n-propylamine	4/203	6.34E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	2/203	8.23E-01		1.0E+00		No	mg/kg
Naphthalene	10/203	1.90E+00	8.1E+01		No		mg/kg
PCB-1254	6/78	9.60E-01	6.7E-02	1.1E-02	Yes	Yes	mg/kg
PCB-1260	12/78	3.30E+00		1.1E-02		Yes	mg/kg
PCB-1262	1/78	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	43/203	7.75E+01					mg/kg
Polychlorinated biphenyl	19/205	1.00E+01		1.1E-02		Yes	mg/kg
Pyrene	51/203	1.11E+02	3.2E+01		Yes		mg/kg
Tetrachloroethene	4/142	6.90E-01	1.3E+01	1.4E-01	No	Yes	mg/kg
Toluene	26/142	3.20E-01	1.1E+02		No		mg/kg
Trichloroethene	60/181	1.11E+04	1.4E+00	1.1E-01	Yes	Yes	mg/kg
Trichlorofluoromethane	1/142	1.70E-03	4.8E+01		No		mg/kg
Vinyl acetate	3/142	5.50E-02	5.4E+01		No		mg/kg
Vinyl chloride	16/181	2.90E+01		1.2E-05		Yes	mg/kg
cis-1,2-Dichloroethene	43/181	2.40E+00	1.3E+01		No		mg/kg
trans-1,2-Dichloroethene	19/181	1.02E+02	2.7E+01		Yes		mg/kg
Alpha activity	215/252	8.78E+02					pCi/g
Americium-241	19/151	1.30E+00		1.5E+00		No	pCi/g
Beta activity	245/252	8.08E+03					pCi/g
Cesium-137	44/151	1.11E+01		1.6E-02		Yes	pCi/g
Neptunium-237	73/151	5.26E+01		6.8E-02		Yes	pCi/g
Plutonium-239	12/151	1.12E+01		2.0E+00		Yes	pCi/g
Technetium-99	113/151	4.84E+03		4.4E+02		Yes	pCi/g
Thorium-230	150/151	1.88E+01		1.6E+01		Yes	pCi/g
Uranium-234	151/151	1.02E+02		1.4E+01		Yes	pCi/g
Uranium-235	21/151	4.90E+00		1.2E-01		Yes	pCi/g
Uranium-238	151/151	1.42E+02		4.7E-01		Yes	pCi/g

530774

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

-- SECTOR=WAG 6 MEDIA=Surface soil --

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	27/27	1.77E+04	7.3E+02		Yes		mg/kg
Antimony	14/27	2.90E+00	6.4E-02		Yes		mg/kg
Arsenic	27/27	4.52E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	27/27	1.47E+02	3.7E+01		Yes		mg/kg
Beryllium	27/27	8.00E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	20/27	4.25E+00	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	27/27	2.77E+05					mg/kg
Chromium	27/27	6.60E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	27/27	1.43E+01	2.1E+02		No		mg/kg
Copper	27/27	3.46E+01	7.4E+01		No		mg/kg
Iron	27/27	3.70E+04	3.1E+02		Yes		mg/kg
Lead	27/27	4.20E+01	1.0E-04		Yes		mg/kg
Magnesium	27/27	1.08E+04					mg/kg
Manganese	27/27	7.36E+02	1.4E+01		Yes		mg/kg
Mercury	24/27	1.36E-01	1.6E-01		No		mg/kg
Nickel	27/27	2.55E+01	3.4E+01		No		mg/kg
Potassium	27/27	1.00E+03					mg/kg
Selenium	7/27	3.00E-01	1.2E+01		No		mg/kg
Silver	8/27	1.10E+00	6.1E+00		No		mg/kg
Sodium	27/27	8.15E+02					mg/kg
Thallium	4/27	1.50E+00					mg/kg
Uranium	21/21	1.19E+02	1.1E+01		Yes		mg/kg
Vanadium	27/27	4.24E+01	5.6E-01		Yes		mg/kg
Zinc	27/27	1.11E+02	4.0E+02		No		mg/kg
2-Methylnaphthalene	2/25	9.00E-01					mg/kg
Acenaphthene	11/25	7.07E+00	6.5E+01		No		mg/kg
Acenaphthylene	1/25	2.20E-01					mg/kg
Anthracene	14/25	8.43E+01	6.6E+02		No		mg/kg
Benz(a)anthracene	18/25	3.92E+01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	18/25	3.77E+01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	18/25	6.24E+01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	13/25	8.84E+00					mg/kg
Benzo(k)fluoranthene	19/25	9.41E+01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	3/25	1.00E-01	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	18/25	4.37E+01		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	5/25	1.23E+00	2.6E+02		No		mg/kg
Dibenz(a,h)anthracene	6/25	4.27E+00		8.5E-04		Yes	mg/kg
Dibenzofuran	7/25	3.60E+00	6.4E+00		No		mg/kg
Fluoranthene	22/25	9.68E+01	4.3E+01		Yes		mg/kg
Fluorene	9/25	4.54E+00	6.4E+01		No		mg/kg

530775

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Indeno(1,2,3-cd)pyrene	13/25	9.69E+00		8.5E-03		Yes	mg/kg
Methylene chloride	2/3	1.40E-02	6.8E+01	6.9E-01	No	No	mg/kg
Naphthalene	5/25	1.90E+00	8.1E+01		No		mg/kg
PCB-1254	2/13	9.60E-01	6.7E-02	1.1E-02	Yes	Yes	mg/kg
PCB-1260	6/13	3.30E+00		1.1E-02		Yes	mg/kg
PCB-1262	1/13	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	18/25	7.75E+01					mg/kg
Polychlorinated biphenyl	9/24	1.00E+01		1.1E-02		Yes	mg/kg
Pyrene	21/25	1.11E+02	3.2E+01		Yes		mg/kg
Toluene	1/3	3.10E-03	1.1E+02		No		mg/kg
Trichloroethene	1/3	1.60E-03	1.4E+00	1.1E-01	No	No	mg/kg
Alpha activity	40/57	1.75E+02					pCi/g
Americium-241	3/21	1.00E+00		1.5E+00		No	pCi/g
Beta activity	51/57	2.48E+02					pCi/g
Cesium-137	12/21	1.50E+00		1.6E-02		Yes	pCi/g
Neptunium-237	11/21	3.00E+00		6.8E-02		Yes	pCi/g
Plutonium-239	6/21	1.70E+00		2.0E+00		No	pCi/g
Technetium-99	20/21	5.30E+01		4.4E+02		No	pCi/g
Thorium-230	21/21	1.09E+01		1.6E+01		No	pCi/g
Uranium-234	21/21	3.11E+01		1.4E+01		Yes	pCi/g
Uranium-235	11/21	1.90E+00		1.2E-01		Yes	pCi/g
Uranium-238	21/21	3.95E+01		4.7E-01		Yes	pCi/g

530776

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Central MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	3/3	7.77E+03	7.3E+02		Yes		mg/kg
Antimony	1/3	4.50E+00	6.4E-02		Yes		mg/kg
Arsenic	3/3	5.71E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	3/3	1.33E+02	3.7E+01		Yes		mg/kg
Beryllium	3/3	4.60E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	2/3	3.00E-01	3.8E-01	2.9E+02	No	No	mg/kg
Calcium	3/3	1.45E+03					mg/kg
Chromium	3/3	3.67E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	3/3	6.29E+00	2.1E+02		No		mg/kg
Copper	3/3	1.27E+01	7.4E+01		No		mg/kg
Iron	3/3	2.90E+04	3.1E+02		Yes		mg/kg
Lead	3/3	9.10E+00	1.0E-04		Yes		mg/kg
Magnesium	3/3	1.85E+03					mg/kg
Manganese	3/3	3.02E+02	1.4E+01		Yes		mg/kg
Mercury	3/3	2.73E-02	1.6E-01		No		mg/kg
Nickel	3/3	1.50E+01	3.4E+01		No		mg/kg
Potassium	3/3	3.54E+02					mg/kg
Silver	2/3	1.21E+00	6.1E+00		No		mg/kg
Sodium	3/3	8.32E+02					mg/kg
Thallium	1/3	7.00E-01					mg/kg
Uranium	6/6	2.39E+00	1.1E+01		No		mg/kg
Vanadium	3/3	3.08E+01	5.6E-01		Yes		mg/kg
Zinc	3/3	3.47E+01	4.0E+02		No		mg/kg
Bis(2-ethylhexyl)phthalate	1/3	4.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Chloroform	1/7	1.40E-03	3.1E+00	6.8E-02	No	No	mg/kg
Di-n-butyl phthalate	2/3	1.40E+00	2.6E+02		No		mg/kg
Methylene chloride	6/7	1.40E-02	6.8E+01	6.9E-01	No	No	mg/kg
Toluene	3/7	1.70E-03	1.1E+02		No		mg/kg
Trichloroethene	4/7	1.70E-02	1.4E+00	1.1E-01	No	No	mg/kg
Alpha activity	7/7	3.04E+01					pCi/g
Beta activity	7/7	4.94E+01					pCi/g
Cesium-137	2/6	3.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	1/6	2.00E-01		6.8E-02		Yes	pCi/g
Technetium-99	5/6	1.80E+00		4.4E+02		No	pCi/g
Thorium-230	6/6	1.00E+00		1.6E+01		No	pCi/g
Uranium-234	6/6	9.00E-01		1.4E+01		No	pCi/g
Uranium-238	6/6	8.00E-01		4.7E-01		Yes	pCi/g

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Central MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Uranium	1/1	1.49E+00	1.1E+01		No		mg/kg
Di-n-butyl phthalate	1/1	1.20E+00	2.6E+02		No		mg/kg
Methylene chloride	1/1	1.40E-02	6.8E+01	6.9E-01	No	No	mg/kg
Trichloroethene	1/1	1.60E-03	1.4E+00	1.1E-01	No	No	mg/kg
Alpha activity	1/1	1.04E+01					pCi/g
Beta activity	1/1	2.68E+01					pCi/g
Cesium-137	1/1	2.00E-01		1.6E-02		Yes	pCi/g
Technetium-99	1/1	1.50E+00		4.4E+02		No	pCi/g
Thorium-230	1/1	1.00E+00		1.6E+01		No	pCi/g
Uranium-234	1/1	5.00E-01		1.4E+01		No	pCi/g
Uranium-238	1/1	5.00E-01		4.7E-01		Yes	pCi/g

SECTOR=East MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	17/17	2.03E+04	7.3E+02		Yes		mg/kg
Antimony	3/17	8.00E-01	6.4E-02		Yes		mg/kg
Arsenic	17/17	1.81E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	17/17	1.56E+02	3.7E+01		Yes		mg/kg
Beryllium	17/17	6.90E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	14/17	4.00E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	17/17	2.03E+04					mg/kg
Chromium	17/17	2.04E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	17/17	1.86E+01	2.1E+02		No		mg/kg
Copper	17/17	3.46E+01	7.4E+01		No		mg/kg
Iron	17/17	2.70E+04	3.1E+02		Yes		mg/kg
Lead	17/17	2.45E+01	1.0E-04		Yes		mg/kg
Magnesium	17/17	3.06E+03					mg/kg
Manganese	17/17	9.96E+02	1.4E+01		Yes		mg/kg
Mercury	10/17	6.28E-02	1.6E-01		No		mg/kg
Nickel	17/17	2.28E+01	3.4E+01		No		mg/kg
Potassium	17/17	1.07E+03					mg/kg
Selenium	1/17	5.00E-01	1.2E+01		No		mg/kg
Sodium	17/17	8.64E+02					mg/kg
Thallium	1/17	1.20E+00					mg/kg
Uranium	16/16	2.74E+01	1.1E+01		Yes		mg/kg

530778

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Vanadium	17/17	3.24E+01	5.6E-01		Yes		mg/kg
Zinc	17/17	5.39E+01	4.0E+02		No		mg/kg
Acenaphthene	2/18	1.30E-01	6.5E+01		No		mg/kg
Acetone	4/14	4.30E+00	1.1E+02		No		mg/kg
Anthracene	3/18	4.63E-01	6.6E+02		No		mg/kg
Benz(a)anthracene	4/18	9.68E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	4/18	1.00E+00		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	4/18	1.40E+00		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	3/18	3.70E-01					mg/kg
Benzo(k)fluoranthene	5/18	9.47E-01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	7/18	8.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	4/18	1.00E+00		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	6/18	1.23E+00	2.6E+02		No		mg/kg
Dibenz(a,h)anthracene	1/18	1.60E-01		8.5E-04		Yes	mg/kg
Dibenzofuran	1/18	5.00E-02	6.4E+00		No		mg/kg
Fluoranthene	7/18	2.10E+00	4.3E+01		No		mg/kg
Fluorene	2/18	9.00E-02	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	3/18	4.20E-01		8.5E-03		Yes	mg/kg
Methylene chloride	8/14	6.30E-02	6.8E+01	6.9E-01	No	No	mg/kg
Naphthalene	1/18	4.00E-02	8.1E+01		No		mg/kg
PCB-1260	4/10	3.30E+00		1.1E-02		Yes	mg/kg
Phenanthrene	3/18	1.27E+00					mg/kg
Polychlorinated biphenyl	4/18	1.00E+01		1.1E-02		Yes	mg/kg
Pyrene	6/18	1.80E+00	3.2E+01		No		mg/kg
Toluene	3/14	2.70E-01	1.1E+02		No		mg/kg
Trichloroethene	4/15	2.90E+00	1.4E+00	1.1E-01	Yes	Yes	mg/kg
cis-1,2-Dichloroethene	2/15	4.60E-02	1.3E+01		No		mg/kg
Alpha activity	17/18	4.38E+01					pCi/g
Americium-241	1/16	2.00E-01		1.5E+00		No	pCi/g
Beta activity	18/18	4.90E+01					pCi/g
Cesium-137	3/16	5.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	3/16	4.00E-01		6.8E-02		Yes	pCi/g
Technetium-99	12/16	3.50E+00		4.4E+02		No	pCi/g
Thorium-230	15/16	4.20E+00		1.6E+01		No	pCi/g
Uranium-234	16/16	7.10E+00		1.4E+01		No	pCi/g
Uranium-235	1/16	4.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	16/16	9.10E+00		4.7E-01		Yes	pCi/g

530779

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=East MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	2/2	1.21E+04	7.3E+02		Yes		mg/kg
Arsenic	2/2	8.10E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	2/2	1.32E+02	3.7E+01		Yes		mg/kg
Beryllium	2/2	5.20E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	2/2	3.80E-01	3.8E-01	2.9E+02	No	No	mg/kg
Calcium	2/2	2.03E+04					mg/kg
Chromium	2/2	1.82E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	2/2	8.70E+00	2.1E+02		No		mg/kg
Copper	2/2	3.46E+01	7.4E+01		No		mg/kg
Iron	2/2	2.05E+04	3.1E+02		Yes		mg/kg
Lead	2/2	2.45E+01	1.0E-04		Yes		mg/kg
Magnesium	2/2	2.43E+03					mg/kg
Manganese	2/2	5.55E+02	1.4E+01		Yes		mg/kg
Mercury	2/2	6.28E-02	1.6E-01		No		mg/kg
Nickel	2/2	2.28E+01	3.4E+01		No		mg/kg
Potassium	2/2	7.51E+02					mg/kg
Sodium	2/2	6.20E+02					mg/kg
Thallium	1/2	1.20E+00					mg/kg
Uranium	1/1	2.74E+01	1.1E+01		Yes		mg/kg
Vanadium	2/2	2.65E+01	5.6E-01		Yes		mg/kg
Zinc	2/2	5.39E+01	4.0E+02		No		mg/kg
Acenaphthene	1/2	1.30E-01	6.5E+01		No		mg/kg
Anthracene	1/2	2.20E-01	6.6E+02		No		mg/kg
Benz(a)anthracene	1/2	9.60E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	1/2	1.00E+00		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	1/2	1.40E+00		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	1/2	3.70E-01					mg/kg
Benzo(k)fluoranthene	2/2	8.70E-01		8.5E-02		Yes	mg/kg
Chrysene	1/2	1.00E+00		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	2/2	1.23E+00	2.6E+02		No		mg/kg
Dibenz(a,h)anthracene	1/2	1.60E-01		8.5E-04		Yes	mg/kg
Fluoranthene	2/2	2.10E+00	4.3E+01		No		mg/kg
Fluorene	1/2	9.00E-02	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	1/2	4.20E-01		8.5E-03		Yes	mg/kg
PCB-1260	1/1	3.30E+00		1.1E-02		Yes	mg/kg
Phenanthrene	1/2	1.20E+00					mg/kg
Polychlorinated biphenyl	1/2	1.00E+01		1.1E-02		Yes	mg/kg
Pyrene	2/2	1.80E+00	3.2E+01		No		mg/kg
Alpha activity	1/2	3.32E+01					pCi/g
Beta activity	2/2	4.27E+01					pCi/g

530780

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=East MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cesium-137	1/1	5.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	1/1	4.00E-01		6.8E-02		Yes	pCi/g
Technetium-99	1/1	3.50E+00		4.4E+02		No	pCi/g
Thorium-230	1/1	4.20E+00		1.6E+01		No	pCi/g
Uranium-234	1/1	7.10E+00		1.4E+01		No	pCi/g
Uranium-235	1/1	4.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	1/1	9.10E+00		4.7E-01		Yes	pCi/g

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	7/7	1.57E+04	7.3E+02		Yes		mg/kg
Antimony	5/7	2.90E+00	6.4E-02		Yes		mg/kg
Arsenic	7/7	1.83E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	7/7	1.47E+02	3.7E+01		Yes		mg/kg
Beryllium	7/7	1.20E+00	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	3/7	4.10E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	7/7	9.63E+04					mg/kg
Chromium	7/7	2.49E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	7/7	1.27E+01	2.1E+02		No		mg/kg
Copper	7/7	2.03E+01	7.4E+01		No		mg/kg
Iron	7/7	3.44E+04	3.1E+02		Yes		mg/kg
Lead	7/7	2.96E+01	1.0E-04		Yes		mg/kg
Magnesium	7/7	5.14E+03					mg/kg
Manganese	7/7	1.37E+03	1.4E+01		Yes		mg/kg
Mercury	3/7	2.38E-02	1.6E-01		No		mg/kg
Nickel	7/7	1.86E+01	3.4E+01		No		mg/kg
Potassium	7/7	1.14E+03					mg/kg
Selenium	2/7	7.00E-01	1.2E+01		No		mg/kg
Silver	3/7	6.60E-01	6.1E+00		No		mg/kg
Sodium	7/7	6.74E+02					mg/kg
Thallium	1/7	9.00E-01					mg/kg
Uranium	6/6	2.62E+01	1.1E+01		Yes		mg/kg
Vanadium	7/7	5.98E+01	5.6E-01		Yes		mg/kg
Zinc	7/7	5.66E+01	4.0E+02		No		mg/kg

530781

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Benz(a)anthracene	2/7	1.30E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	2/7	1.50E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	2/7	1.80E-01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	1/7	6.20E-02					mg/kg
Benzo(k)fluoranthene	2/7	1.50E-01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	2/7	7.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Butyl benzyl phthalate	1/7	4.00E-02	3.7E+02		No		mg/kg
Chrysene	2/7	1.50E-01		8.5E-01		No	mg/kg
Di-n-butyl phthalate	3/7	1.21E+00	2.6E+02		No		mg/kg
Fluoranthene	3/7	2.20E-01	4.3E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	1/7	6.70E-02		8.5E-03		Yes	mg/kg
PCB-1254	1/6	3.80E-02	6.7E-02	1.1E-02	No	Yes	mg/kg
PCB-1260	2/6	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	2/7	7.00E-02					mg/kg
Polychlorinated biphenyl	2/7	7.60E-02		1.1E-02		Yes	mg/kg
Pyrene	3/7	2.20E-01	3.2E+01		No		mg/kg
Alpha activity	13/16	4.43E+01					pCi/g
Americium-241	3/6	1.30E+00		1.5E+00		No	pCi/g
Beta activity	13/16	5.57E+01					pCi/g
Cesium-137	2/6	4.00E-01		1.6E-02		Yes	pCi/g
Technetium-99	6/6	2.90E+00		4.4E+02		No	pCi/g
Thorium-230	6/6	1.40E+00		1.6E+01		No	pCi/g
Uranium-234	6/6	7.90E+00		1.4E+01		No	pCi/g
Uranium-235	2/6	5.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	6/6	8.70E+00		4.7E-01		Yes	pCi/g

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	2/2	1.57E+04	7.3E+02		Yes		mg/kg
Antimony	2/2	2.90E+00	6.4E-02		Yes		mg/kg
Arsenic	2/2	7.60E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	2/2	1.47E+02	3.7E+01		Yes		mg/kg
Beryllium	2/2	6.10E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Calcium	2/2	1.49E+04					mg/kg

530782

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Chromium	2/2	1.68E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	2/2	9.38E+00	2.1E+02		No		mg/kg
Copper	2/2	1.26E+01	7.4E+01		No		mg/kg
Iron	2/2	1.97E+04	3.1E+02		Yes		mg/kg
Lead	2/2	1.25E+01	1.0E-04		Yes		mg/kg
Magnesium	2/2	2.25E+03					mg/kg
Manganese	2/2	6.88E+02	1.4E+01		Yes		mg/kg
Mercury	1/2	1.82E-02	1.6E-01		No		mg/kg
Nickel	2/2	1.62E+01	3.4E+01		No		mg/kg
Potassium	2/2	9.10E+02					mg/kg
Silver	1/2	1.40E-01	6.1E+00		No		mg/kg
Sodium	2/2	2.58E+02					mg/kg
Uranium	2/2	2.62E+01	1.1E+01		Yes		mg/kg
Vanadium	2/2	2.91E+01	5.6E-01		Yes		mg/kg
Zinc	2/2	4.55E+01	4.0E+02		No		mg/kg
Benz(a)anthracene	1/2	4.00E-02		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	1/2	4.00E-02		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	1/2	4.00E-02		8.5E-03		Yes	mg/kg
Benzo(k)fluoranthene	1/2	5.00E-02		8.5E-02		No	mg/kg
Chrysene	1/2	4.00E-02		8.5E-01		No	mg/kg
Fluoranthene	2/2	9.00E-02	4.3E+01		No		mg/kg
PCB-1260	1/2	5.60E-03		1.1E-02		No	mg/kg
Phenanthrene	1/2	4.00E-02					mg/kg
Polychlorinated biphenyl	1/2	5.60E-03		1.1E-02		No	mg/kg
Pyrene	2/2	7.00E-02	3.2E+01		No		mg/kg
Alpha activity	7/10	4.43E+01					pCi/g
Americium-241	1/2	1.00E+00		1.5E+00		No	pCi/g
Beta activity	7/10	5.57E+01					pCi/g
Cesium-137	1/2	4.00E-01		1.6E-02		Yes	pCi/g
Technetium-99	2/2	1.00E+00		4.4E+02		No	pCi/g
Thorium-230	2/2	1.30E+00		1.6E+01		No	pCi/g
Uranium-234	2/2	7.90E+00		1.4E+01		No	pCi/g
Uranium-235	1/2	5.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	2/2	8.70E+00		4.7E-01		Yes	pCi/g

5307783

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	11/11	1.61E+04	7.3E+02		Yes		mg/kg
Antimony	9/11	1.40E+00	6.4E-02		Yes		mg/kg
Arsenic	11/11	1.08E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	11/11	1.66E+02	3.7E+01		Yes		mg/kg
Beryllium	11/11	9.80E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	8/11	9.00E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	11/11	4.16E+04					mg/kg
Chromium	11/11	1.41E+02	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	11/11	1.60E+01	2.1E+02		No		mg/kg
Copper	11/11	9.52E+03	7.4E+01		Yes		mg/kg
Iron	11/11	5.17E+04	3.1E+02		Yes		mg/kg
Lead	11/11	8.75E+01	1.0E-04		Yes		mg/kg
Magnesium	11/11	3.66E+03					mg/kg
Manganese	11/11	8.90E+02	1.4E+01		Yes		mg/kg
Mercury	9/11	4.57E-01	1.6E-01		Yes		mg/kg
Nickel	11/11	1.76E+04	3.4E+01		Yes		mg/kg
Potassium	11/11	8.42E+02					mg/kg
Selenium	4/11	1.00E+00	1.2E+01		No		mg/kg
Silver	7/11	4.12E+00	6.1E+00		No		mg/kg
Sodium	11/11	1.17E+03					mg/kg
Thallium	1/11	6.00E-01					mg/kg
Uranium	9/9	4.26E+02	1.1E+01		Yes		mg/kg
Vanadium	11/11	3.61E+01	5.6E-01		Yes		mg/kg
Zinc	11/11	1.81E+02	4.0E+02		No		mg/kg
2,4-Dinitrotoluene	1/12	4.57E-01	4.7E+00	2.1E-02	No	Yes	mg/kg
Acenaphthene	1/12	5.00E-02	6.5E+01		No		mg/kg
Acetone	2/9	1.10E+00	1.1E+02		No		mg/kg
Anthracene	1/12	1.60E-01	6.6E+02		No		mg/kg
Benz(a)anthracene	3/12	3.40E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	3/12	2.80E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	3/12	2.60E-01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	3/12	1.30E-01					mg/kg
Benzo(k)fluoranthene	3/12	2.90E-01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	8/12	1.20E-01	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	3/12	3.50E-01		8.5E-01		No	mg/kg
Di-n-butyl phthalate	6/12	1.86E+00	2.6E+02		No		mg/kg
Fluoranthene	4/12	8.40E-01	4.3E+01		No		mg/kg
Fluorene	1/12	5.00E-02	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	3/12	1.40E-01		8.5E-03		Yes	mg/kg
Methylene chloride	5/9	1.70E-02	6.8E+01	6.9E-01	No	No	mg/kg

530784

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

------------------------------ SECTOR=Far North/Northwest MEDIA=Subsurface soil ------------------------------
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
N-Nitrosodiphenylamine	1/12	8.23E-01		1.0E+00		No	mg/kg
PCB-1254	1/9	3.20E-02	6.7E-02	1.1E-02	No	Yes	mg/kg
PCB-1260	1/9	6.30E-02		1.1E-02		Yes	mg/kg
Phenanthrene	3/12	7.00E-01					mg/kg
Polychlorinated biphenyl	2/11	6.30E-02		1.1E-02		Yes	mg/kg
Pyrene	3/12	7.10E-01	3.2E+01		No		mg/kg
Toluene	3/9	3.20E-01	1.1E+02		No		mg/kg
Trichloroethene	2/12	3.40E-02	1.4E+00	1.1E-01	No	No	mg/kg
cis-1,2-Dichloroethene	2/12	1.50E-02	1.3E+01		No		mg/kg
Alpha activity	17/27	8.78E+02					pCi/g
Americium-241	2/9	6.00E-01		1.5E+00		No	pCi/g
Beta activity	25/27	8.08E+03					pCi/g
Cesium-137	6/9	1.11E+01		1.6E-02		Yes	pCi/g
Neptunium-237	5/9	5.26E+01		6.8E-02		Yes	pCi/g
Plutonium-239	4/9	1.12E+01		2.0E+00		Yes	pCi/g
Technetium-99	9/9	4.84E+03		4.4E+02		Yes	pCi/g
Thorium-230	9/9	1.88E+01		1.6E+01		Yes	pCi/g
Uranium-234	9/9	1.02E+02		1.4E+01		Yes	pCi/g
Uranium-235	3/9	4.90E+00		1.2E-01		Yes	pCi/g
Uranium-238	9/9	1.42E+02		4.7E-01		Yes	pCi/g

------------------------------ SECTOR=Far North/Northwest MEDIA=Surface soil ------------------------------

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	2/2	1.29E+04	7.3E+02		Yes		mg/kg
Antimony	2/2	1.40E+00	6.4E-02		Yes		mg/kg
Arsenic	2/2	1.01E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	2/2	1.01E+02	3.7E+01		Yes		mg/kg
Beryllium	2/2	6.90E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	2/2	3.00E-01	3.8E-01	2.9E+02	No	No	mg/kg
Calcium	2/2	4.16E+04					mg/kg
Chromium	2/2	2.72E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	2/2	8.86E+00	2.1E+02		No		mg/kg
Copper	2/2	1.40E+01	7.4E+01		No		mg/kg
Iron	2/2	2.13E+04	3.1E+02		Yes		mg/kg

2970023

530785

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Lead	2/2	1.60E+01	1.0E-04		Yes		mg/kg
Magnesium	2/2	3.66E+03					mg/kg
Manganese	2/2	7.36E+02	1.4E+01		Yes		mg/kg
Mercury	2/2	4.93E-02	1.6E-01		No		mg/kg
Nickel	2/2	1.43E+01	3.4E+01		No		mg/kg
Potassium	2/2	4.77E+02					mg/kg
Selenium	1/2	3.00E-01	1.2E+01		No		mg/kg
Silver	2/2	3.00E-01	6.1E+00		No		mg/kg
Sodium	2/2	2.54E+02					mg/kg
Thallium	1/2	6.00E-01					mg/kg
Uranium	2/2	1.38E+01	1.1E+01		Yes		mg/kg
Vanadium	2/2	3.61E+01	5.6E-01		Yes		mg/kg
Zinc	2/2	3.78E+01	4.0E+02		No		mg/kg
Acenaphthene	1/2	5.00E-02	6.5E+01		No		mg/kg
Anthracene	1/2	1.60E-01	6.6E+02		No		mg/kg
Benz(a)anthracene	1/2	3.40E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	1/2	2.80E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	1/2	2.60E-01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	1/2	1.30E-01					mg/kg
Benzo(k)fluoranthene	1/2	2.90E-01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	1/2	8.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	1/2	3.50E-01		8.5E-01		No	mg/kg
Di-n-butyl phthalate	1/2	4.00E-02	2.6E+02		No		mg/kg
Fluoranthene	2/2	8.40E-01	4.3E+01		No		mg/kg
Fluorene	1/2	5.00E-02	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	1/2	1.40E-01		8.5E-03		Yes	mg/kg
Phenanthrene	1/2	7.00E-01					mg/kg
Pyrene	1/2	7.10E-01	3.2E+01		No		mg/kg
Alpha activity	6/15	2.32E+01					pCi/g
Beta activity	13/15	8.31E+01					pCi/g
Cesium-137	2/2	2.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	1/2	6.00E-01		6.8E-02		Yes	pCi/g
Plutonium-239	2/2	4.00E-01		2.0E+00		No	pCi/g
Technetium-99	2/2	1.70E+01		4.4E+02		No	pCi/g
Thorium-230	2/2	1.60E+00		1.6E+01		No	pCi/g
Uranium-234	2/2	3.10E+00		1.4E+01		No	pCi/g
Uranium-235	1/2	2.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	2/2	4.60E+00		4.7E-01		Yes	pCi/g

530786

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	3/3	1.39E+02	1.5E+00		Yes		mg/L
Arsenic	2/3	4.06E-01	4.5E-04	3.5E-06	Yes	Yes	mg/L
Barium	3/3	5.88E-01	1.0E-01		Yes		mg/L
Beryllium	3/3	1.30E-02	6.6E-03	1.0E-06	Yes	Yes	mg/L
Bromide	16/41	5.20E-02					mg/L
Cadmium	2/3	2.99E-03	6.6E-04		Yes		mg/L
Calcium	3/3	5.45E+01					mg/L
Chloride	41/41	2.24E+01					mg/L
Chromium	3/3	3.87E-01	7.1E-03		Yes		mg/L
Cobalt	2/3	1.07E-01	9.1E-02		Yes		mg/L
Copper	2/3	9.57E-02	6.0E-02		Yes		mg/L
Fluoride	16/41	2.92E-01	9.1E-02		Yes		mg/L
Iron	3/3	3.37E+02	4.5E-01		Yes		mg/L
Lead	2/3	1.77E-01	1.5E-07		Yes		mg/L
Magnesium	3/3	3.19E+01					mg/L
Manganese	3/3	2.44E+00	6.7E-02		Yes		mg/L
Nickel	3/3	1.86E-01	3.0E-02		Yes		mg/L
Nitrate	23/41	2.90E+00	2.4E+00		Yes		mg/L
Nitrate/Nitrite	1/16	5.00E-03	2.4E+00		No		mg/L
Orthophosphate	3/41	1.01E-01					mg/L
Potassium	3/3	2.12E+01					mg/L
Selenium	1/3	4.41E-02	7.5E-03		Yes		mg/L
Sodium	3/3	3.67E+01					mg/L
Tetraoxo-sulfate(1-)	41/41	5.34E+01					mg/L
Thallium	2/3	1.03E-03					mg/L
Uranium	2/3	4.27E-03	4.5E-03		No		mg/L
Vanadium	3/3	1.57E+00	9.3E-03		Yes		mg/L
Zinc	3/3	1.21E+01	4.5E-01		Yes		mg/L
1,1-Dichloroethene	2/54	2.40E-02	1.3E-02	9.3E-07	Yes	Yes	mg/L
1,2-Dichloroethane	1/5	1.00E-03	6.7E-04	1.1E-05	Yes	Yes	mg/L
Benzoic acid	1/5	1.00E-03	6.0E+00		No		mg/L
Bis(2-ethylhexyl)phthalate	3/5	8.00E-03	2.6E-02	3.1E-04	No	Yes	mg/L
Bromodichloromethane	2/5	8.00E-03	3.0E-02	8.4E-05	No	Yes	mg/L
Chloroform	4/5	1.90E-02	1.4E-02	1.5E-05	Yes	Yes	mg/L
Di-n-butyl phthalate	1/5	1.00E-03	1.3E-01		No		mg/L
Di-n-octylphthalate	2/5	6.00E-03	6.9E-04		Yes		mg/L
Dibromochloromethane	2/5	4.00E-03	3.0E-02	6.2E-05	No	Yes	mg/L
Phenol	3/5	5.00E-03	9.0E-01		No		mg/L
Tetrachloroethene	1/5	2.70E-02	9.9E-03	5.7E-05	Yes	Yes	mg/L
Toluene	3/5	4.00E-03	2.4E-02		No		mg/L

530787

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Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Trichloroethene	39/54	1.28E+00	7.9E-03	1.4E-04	Yes	Yes	mg/L
Vinyl chloride	1/54	2.00E-02		1.7E-06		Yes	mg/L
cis-1,2-Dichloroethene	2/54	2.00E-02	1.5E-02		Yes		mg/L
trans-1,2-Dichloroethene	5/54	2.00E-02	3.0E-02		No		mg/L
Actinium-228	1/1	2.72E+01		2.4E+01		Yes	pCi/L
Alpha activity	48/51	1.49E+02					pCi/L
Americium-241	1/6	5.30E-02		1.2E-01		No	pCi/L
Beta activity	51/51	1.16E+04					pCi/L
Bismuth-214	1/1	9.00E+00		2.0E+02		No	pCi/L
Cesium-137	4/6	1.65E+01		1.2E+00		Yes	pCi/L
Lead-210	1/1	4.21E+02		3.8E-02		Yes	pCi/L
Lead-212	1/1	2.25E+01		2.1E+00		Yes	pCi/L
Lead-214	1/1	1.21E+01		1.3E+02		No	pCi/L
Neptunium-237	6/6	1.31E+01		1.3E-01		Yes	pCi/L
Plutonium-239	1/5	2.12E+00		1.2E-01		Yes	pCi/L
Potassium-40	1/1	6.80E+01		3.1E+00		Yes	pCi/L
Technetium-99	3/6	6.16E+02		2.8E+01		Yes	pCi/L
Thallium-208	1/1	6.70E+00		2.2E+03		No	pCi/L
Thorium-228	1/1	1.23E+00		1.7E-01		Yes	pCi/L
Thorium-230	6/6	1.88E+00		1.0E+00		Yes	pCi/L
Thorium-232	1/1	1.15E+00		1.2E+00		No	pCi/L
Thorium-234	1/1	7.19E+02		2.0E+00		Yes	pCi/L
Uranium-233/234	1/1	6.10E-01		8.7E-01		No	pCi/L
Uranium-234	4/5	2.23E+00		8.7E-01		Yes	pCi/L
Uranium-235	1/6	2.30E+01		8.2E-01		Yes	pCi/L
Uranium-238	4/6	1.82E+00		6.2E-01		Yes	pCi/L

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	25/25	1.71E+04	7.3E+02		Yes		mg/kg
Antimony	8/25	4.70E+00	6.4E-02		Yes		mg/kg
Arsenic	25/25	9.20E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	25/25	1.81E+02	3.7E+01		Yes		mg/kg
Beryllium	25/25	8.10E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg

530788

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cadmium	12/25	4.90E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	25/25	3.40E+05					mg/kg
Chromium	25/25	3.91E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	25/25	1.68E+01	2.1E+02		No		mg/kg
Copper	25/25	1.89E+01	7.4E+01		No		mg/kg
Iron	25/25	2.60E+04	3.1E+02		Yes		mg/kg
Lead	25/25	1.41E+01	1.0E-04		Yes		mg/kg
Magnesium	25/25	8.04E+03					mg/kg
Manganese	25/25	8.42E+02	1.4E+01		Yes		mg/kg
Mercury	21/25	8.36E-02	1.6E-01		No		mg/kg
Nickel	25/25	2.49E+01	3.4E+01		No		mg/kg
Potassium	25/25	1.08E+03					mg/kg
Selenium	2/25	5.00E-01	1.2E+01		No		mg/kg
Silver	7/25	4.28E+00	6.1E+00		No		mg/kg
Sodium	25/25	1.67E+03					mg/kg
Thallium	4/25	2.30E+00					mg/kg
Uranium	6/6	6.06E+01	1.1E+01		Yes		mg/kg
Vanadium	25/25	3.77E+01	5.6E-01		Yes		mg/kg
Zinc	25/25	7.02E+01	4.0E+02		No		mg/kg
2,6-Dinitrotoluene	4/25	4.32E-01	2.4E+00	2.1E-02	No	Yes	mg/kg
Acenaphthene	2/25	1.22E+00	6.5E+01		No		mg/kg
Acetone	4/12	1.00E-01	1.1E+02		No		mg/kg
Anthracene	2/25	1.89E+00	6.6E+02		No		mg/kg
Benz(a)anthracene	2/25	4.13E+00		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	2/25	3.36E+00		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	2/25	3.42E+00		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	2/25	1.87E+00					mg/kg
Benzo(k)fluoranthene	2/25	1.98E+00		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	3/25	6.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	2/25	3.97E+00		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	8/25	1.88E+00	2.6E+02		No		mg/kg
Dibenz(a,h)anthracene	1/25	4.12E-01		8.5E-04		Yes	mg/kg
Dibenzofuran	1/25	5.76E-01	6.4E+00		No		mg/kg
Fluoranthene	3/25	8.29E+00	4.3E+01		No		mg/kg
Fluorene	1/25	9.25E-01	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	2/25	1.89E+00		8.5E-03		Yes	mg/kg
Methylene chloride	11/12	3.70E-03	6.8E+01	6.9E-01	No	No	mg/kg
N-Nitroso-di-n-propylamine	2/25	6.34E-01		7.3E-04		Yes	mg/kg
Naphthalene	1/25	5.03E-01	8.1E+01		No		mg/kg

530789

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
PCB-1254	1/15	5.20E-03	6.7E-02	1.1E-02	No	No	mg/kg
PCB-1260	1/15	4.30E-02		1.1E-02		Yes	mg/kg
Phenanthrene	3/25	7.47E+00					mg/kg
Polychlorinated biphenyl	2/25	4.30E-02		1.1E-02		Yes	mg/kg
Pyrene	3/25	7.85E+00	3.2E+01		No		mg/kg
Toluene	3/12	2.30E-03	1.1E+02		No		mg/kg
Trichloroethene	1/20	2.20E-03	1.4E+00	1.1E-01	No	No	mg/kg
Vinyl acetate	1/12	2.80E-02	5.4E+01		No		mg/kg
Alpha activity	20/24	7.49E+01					pCi/g
Beta activity	23/24	6.22E+01					pCi/g
Neptunium-237	1/6	3.00E-01		6.8E-02		Yes	pCi/g
Technetium-99	6/6	4.00E+00		4.4E+02		No	pCi/g
Thorium-230	6/6	1.90E+00		1.6E+01		No	pCi/g
Uranium-234	6/6	2.01E+01		1.4E+01		Yes	pCi/g
Uranium-235	3/6	7.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	6/6	2.02E+01		4.7E-01		Yes	pCi/g

SECTOR=Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	1/1	1.26E+04	7.3E+02		Yes		mg/kg
Arsenic	1/1	5.35E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	1/1	1.02E+02	3.7E+01		Yes		mg/kg
Beryllium	1/1	5.80E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Calcium	1/1	1.02E+04					mg/kg
Chromium	1/1	1.93E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	1/1	9.76E+00	2.1E+02		No		mg/kg
Copper	1/1	1.89E+01	7.4E+01		No		mg/kg
Iron	1/1	2.60E+04	3.1E+02		Yes		mg/kg
Lead	1/1	1.41E+01	1.0E-04		Yes		mg/kg
Magnesium	1/1	2.51E+03					mg/kg
Manganese	1/1	5.20E+02	1.4E+01		Yes		mg/kg
Mercury	1/1	2.63E-02	1.6E-01		No		mg/kg
Nickel	1/1	1.90E+01	3.4E+01		No		mg/kg
Potassium	1/1	3.54E+02					mg/kg

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Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Sodium	1/1	2.76E+02					mg/kg
Uranium	1/1	1.38E+01	1.1E+01		Yes		mg/kg
Vanadium	1/1	3.04E+01	5.6E-01		Yes		mg/kg
Zinc	1/1	7.02E+01	4.0E+02		No		mg/kg
Acenaphthene	1/1	4.00E-02	6.5E+01		No		mg/kg
Anthracene	1/1	8.00E-02	6.6E+02		No		mg/kg
Benz(a)anthracene	1/1	3.50E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	1/1	3.00E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	1/1	4.30E-01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	1/1	1.70E-01					mg/kg
Benzo(k)fluoranthene	1/1	2.80E-01		8.5E-02		Yes	mg/kg
Chrysene	1/1	4.00E-01		8.5E-01		No	mg/kg
Fluoranthene	1/1	8.60E-01	4.3E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	1/1	1.80E-01		8.5E-03		Yes	mg/kg
Methylene chloride	1/1	2.00E-03	6.8E+01	6.9E-01	No	No	mg/kg
PCB-1260	1/1	4.30E-02		1.1E-02		Yes	mg/kg
Phenanthrene	1/1	4.70E-01					mg/kg
Polychlorinated biphenyl	1/1	4.30E-02		1.1E-02		Yes	mg/kg
Pyrene	1/1	6.80E-01	3.2E+01		No		mg/kg
Alpha activity	1/1	3.19E+01					pCi/g
Beta activity	1/1	5.08E+01					pCi/g
Technetium-99	1/1	3.60E+00		4.4E+02		No	pCi/g
Thorium-230	1/1	1.80E+00		1.6E+01		No	pCi/g
Uranium-234	1/1	3.40E+00		1.4E+01		No	pCi/g
Uranium-235	1/1	2.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	1/1	4.60E+00		4.7E-01		Yes	pCi/g

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	25/25	1.74E+04	7.3E+02		Yes		mg/kg
Antimony	9/25	9.40E+00	6.4E-02		Yes		mg/kg
Arsenic	25/25	1.03E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	25/25	1.60E+02	3.7E+01		Yes		mg/kg
Beryllium	25/25	1.19E+00	4.0E-01	1.0E-04	Yes	Yes	mg/kg

530791

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cadmium	8/25	7.50E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	25/25	1.10E+05					mg/kg
Chromium	25/25	6.60E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	25/25	1.77E+01	2.1E+02		No		mg/kg
Copper	25/25	1.79E+01	7.4E+01		No		mg/kg
Iron	25/25	3.74E+04	3.1E+02		Yes		mg/kg
Lead	25/25	4.20E+01	1.0E-04		Yes		mg/kg
Magnesium	25/25	2.42E+03					mg/kg
Manganese	25/25	8.87E+02	1.4E+01		Yes		mg/kg
Mercury	20/25	8.30E+00	1.6E-01		Yes		mg/kg
Nickel	25/25	2.91E+01	3.4E+01		No		mg/kg
Potassium	25/25	4.61E+02					mg/kg
Selenium	4/25	3.00E-01	1.2E+01		No		mg/kg
Silver	3/25	1.03E+00	6.1E+00		No		mg/kg
Sodium	25/25	7.87E+02					mg/kg
Thallium	1/25	7.00E-01					mg/kg
Uranium	12/12	4.44E+01	1.1E+01		Yes		mg/kg
Vanadium	25/25	6.72E+01	5.6E-01		Yes		mg/kg
Zinc	25/25	4.57E+01	4.0E+02		No		mg/kg
1,1-Dichloroethene	1/16	1.40E-03	1.2E+01	1.8E-03	No	No	mg/kg
Acetone	3/10	1.40E+00	1.1E+02		No		mg/kg
Benz(a)anthracene	2/21	3.00E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	2/21	4.00E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	2/21	6.00E-01		8.5E-03		Yes	mg/kg
Benzo(k)fluoranthene	2/21	3.00E-01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	4/21	8.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	2/21	2.90E-01		8.5E-01		No	mg/kg
Di-n-butyl phthalate	3/21	4.00E-02	2.6E+02		No		mg/kg
Fluoranthene	2/21	4.00E-01	4.3E+01		No		mg/kg
Methylene chloride	6/10	7.10E-03	6.8E+01	6.9E-01	No	No	mg/kg
N-Nitroso-di-n-propylamine	1/21	5.22E-01		7.3E-04		Yes	mg/kg
Phenanthrene	1/21	5.00E-02					mg/kg
Polychlorinated biphenyl	1/22	1.00E+00		1.1E-02		Yes	mg/kg
Pyrene	2/21	4.00E-01	3.2E+01		No		mg/kg
Toluene	1/10	6.00E-03	1.1E+02		No		mg/kg
Trichloroethene	1/16	4.00E-03	1.4E+00	1.1E-01	No	No	mg/kg
Alpha activity	23/27	4.02E+01					pCi/g
Americium-241	2/12	4.00E-01		1.5E+00		No	pCi/g
Beta activity	27/27	1.48E+02					pCi/g

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Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cesium-137	2/12	2.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	2/12	8.00E-01		6.8E-02		Yes	pCi/g
Plutonium-239	1/12	2.00E-01		2.0E+00		No	pCi/g
Technetium-99	12/12	4.33E+01		4.4E+02		No	pCi/g
Thorium-230	12/12	5.60E+00		1.6E+01		No	pCi/g
Uranium-234	12/12	7.40E+00		1.4E+01		No	pCi/g
Uranium-235	2/12	4.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	12/12	1.48E+01		4.7E-01		Yes	pCi/g

SECTOR=Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	6/6	1.10E+04	7.3E+02		Yes		mg/kg
Antimony	2/6	1.00E+00	6.4E-02		Yes		mg/kg
Arsenic	6/6	7.07E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	6/6	8.67E+01	3.7E+01		Yes		mg/kg
Beryllium	6/6	7.10E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	3/6	7.50E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	6/6	1.10E+05					mg/kg
Chromium	6/6	6.60E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	6/6	8.50E+00	2.1E+02		No		mg/kg
Copper	6/6	1.32E+01	7.4E+01		No		mg/kg
Iron	6/6	3.05E+04	3.1E+02		Yes		mg/kg
Lead	6/6	4.20E+01	1.0E-04		Yes		mg/kg
Magnesium	6/6	2.42E+03					mg/kg
Manganese	6/6	5.72E+02	1.4E+01		Yes		mg/kg
Mercury	5/6	8.88E-02	1.6E-01		No		mg/kg
Nickel	6/6	1.41E+01	3.4E+01		No		mg/kg
Potassium	6/6	2.48E+02					mg/kg
Selenium	3/6	3.00E-01	1.2E+01		No		mg/kg
Silver	1/6	3.80E-01	6.1E+00		No		mg/kg
Sodium	6/6	4.91E+02					mg/kg
Uranium	1/1	9.55E+00	1.1E+01		No		mg/kg
Vanadium	6/6	4.24E+01	5.6E-01		Yes		mg/kg
Zinc	6/6	3.74E+01	4.0E+02		No		mg/kg

530793

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Benz(a)anthracene	1/2	3.00E-01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	1/2	4.00E-01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	1/2	6.00E-01		8.5E-03		Yes	mg/kg
Benzo(k)fluoranthene	1/2	3.00E-01		8.5E-02		Yes	mg/kg
Chrysene	1/2	2.90E-01		8.5E-01		No	mg/kg
Fluoranthene	1/2	4.00E-01	4.3E+01		No		mg/kg
Pyrene	1/2	4.00E-01	3.2E+01		No		mg/kg
Alpha activity	6/6	2.22E+01					pCi/g
Beta activity	6/6	6.11E+01					pCi/g
Cesium-137	1/1	2.00E-01		1.6E-02		Yes	pCi/g
Technetium-99	1/1	4.20E+00		4.4E+02		No	pCi/g
Thorium-230	1/1	1.10E+00		1.6E+01		No	pCi/g
Uranium-234	1/1	2.80E+00		1.4E+01		No	pCi/g
Uranium-238	1/1	3.20E+00		4.7E-01		Yes	pCi/g

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	80/80	2.50E+02	1.5E+00		Yes		mg/L
Antimony	11/80	4.02E-02	5.6E-04		Yes		mg/L
Arsenic	61/80	4.36E-01	4.5E-04	3.5E-06	Yes	Yes	mg/L
Barium	80/80	6.93E+00	1.0E-01		Yes		mg/L
Beryllium	69/79	1.11E-01	6.6E-03	1.0E-06	Yes	Yes	mg/L
Bromide	10/39	1.40E+00					mg/L
Cadmium	29/80	1.59E-02	6.6E-04		Yes		mg/L
Calcium	80/80	7.87E+01					mg/L
Chloride	39/39	1.25E+02					mg/L
Chromium	62/80	4.49E+00	7.1E-03		Yes		mg/L
Cobalt	76/80	4.84E-01	9.1E-02		Yes		mg/L
Copper	58/80	1.05E+01	6.0E-02		Yes		mg/L
Fluoride	9/39	2.31E-01	9.1E-02		Yes		mg/L
Iron	80/80	2.24E+03	4.5E-01		Yes		mg/L
Lead	63/80	2.63E-01	1.5E-07		Yes		mg/L
Magnesium	80/80	3.33E+01					mg/L
Manganese	80/80	5.79E+01	6.7E-02		Yes		mg/L

530325

530794

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Mercury	30/80	6.12E-04	4.4E-04		Yes		mg/L
Nickel	74/80	4.88E+00	3.0E-02		Yes		mg/L
Nitrate	39/39	1.74E+02	2.4E+00		Yes		mg/L
Nitrate/Nitrite	3/9	1.14E-01	2.4E+00		No		mg/L
Orthophosphate	2/39	3.60E-02					mg/L
Potassium	80/80	2.53E+01					mg/L
Selenium	23/80	4.80E-03	7.5E-03		No		mg/L
Silver	8/80	3.98E-01	7.5E-03		Yes		mg/L
Sodium	80/80	8.38E+01					mg/L
Tetraoxo-sulfate(1-)	39/39	5.64E+01					mg/L
Thallium	13/80	4.56E-03					mg/L
Uranium	45/52	1.21E-02	4.5E-03		Yes		mg/L
Vanadium	73/80	1.35E+00	9.3E-03		Yes		mg/L
Zinc	77/80	8.18E+01	4.5E-01		Yes		mg/L
1,1,1-Trichloroethane	1/23	1.20E-02	4.4E-02		No		mg/L
1,1-Dichloroethene	20/155	1.54E-01	1.3E-02	9.3E-07	Yes	Yes	mg/L
Acetone	1/23	5.00E-03	1.5E-01		No		mg/L
Benzoic acid	5/16	5.00E-03	6.0E+00		No		mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03	2.6E-02	3.1E-04	No	Yes	mg/L
Bromodichloromethane	2/23	4.00E-03	3.0E-02	8.4E-05	No	Yes	mg/L
Carbon tetrachloride	4/23	2.70E-01	1.2E-04	1.5E-05	Yes	Yes	mg/L
Chloroform	6/23	3.60E-02	1.4E-02	1.5E-05	Yes	Yes	mg/L
Di-n-butyl phthalate	8/16	1.00E-03	1.3E-01		No		mg/L
Di-n-octylphthalate	1/16	1.00E-03	6.9E-04		Yes		mg/L
Diethyl phthalate	1/16	1.00E-03	1.2E+00		No		mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03		7.4E-07		Yes	mg/L
Phenol	6/16	4.00E-02	9.0E-01		No		mg/L
Tetrachloroethene	6/23	3.00E-02	9.9E-03	5.7E-05	Yes	Yes	mg/L
Toluene	1/23	3.60E-02	2.4E-02		Yes		mg/L
Trichloroethene	146/155	7.01E+02	7.9E-03	1.4E-04	Yes	Yes	mg/L
Vinyl chloride	3/155	1.33E-01		1.7E-06		Yes	mg/L
cis-1,2-Dichloroethene	10/155	3.70E-01	1.5E-02		Yes		mg/L
trans-1,2-Dichloroethene	27/155	1.20E+00	3.0E-02		Yes		mg/L
Alpha activity	129/151	1.36E+02					pCi/L
Americium-241	2/30	1.68E+00		1.2E-01		Yes	pCi/L
Beta activity	149/151	1.72E+04					pCi/L
Bismuth-212	1/1	4.20E+01		6.2E+01		No	pCi/L
Cesium-137	15/31	1.45E+01		1.2E+00		Yes	pCi/L
Lead-210	1/1	1.00E+02		3.8E-02		Yes	pCi/L

530795

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Lead-214	1/1	7.40E+00		1.3E+02		No	pCi/L
Neptunium-237	23/30	1.44E+01		1.3E-01		Yes	pCi/L
Plutonium-239	4/27	1.30E-01		1.2E-01		Yes	pCi/L
Technetium-99	26/28	1.70E+04		2.8E+01		Yes	pCi/L
Thorium-228	1/1	7.60E-01		1.7E-01		Yes	pCi/L
Thorium-230	22/28	8.40E+00		1.0E+00		Yes	pCi/L
Thorium-232	1/1	7.60E-01		1.2E+00		No	pCi/L
Uranium-233/234	1/1	6.50E-01		8.7E-01		No	pCi/L
Uranium-234	17/30	1.70E+01		8.7E-01		Yes	pCi/L
Uranium-235	3/28	7.70E-01		8.2E-01		No	pCi/L
Uranium-238	13/31	1.66E+01		6.2E-01		Yes	pCi/L

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	57/57	1.74E+04	7.3E+02		Yes		mg/kg
Antimony	18/57	4.20E+00	6.4E-02		Yes		mg/kg
Arsenic	57/57	1.48E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	57/57	2.79E+02	3.7E+01		Yes		mg/kg
Beryllium	57/57	1.00E+00	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	37/57	5.90E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	57/57	3.33E+05					mg/kg
Chromium	57/57	5.16E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	57/57	1.96E+01	2.1E+02		No		mg/kg
Copper	57/57	1.86E+01	7.4E+01		No		mg/kg
Iron	57/57	3.12E+04	3.1E+02		Yes		mg/kg
Lead	57/57	2.45E+01	1.0E-04		Yes		mg/kg
Magnesium	57/57	2.72E+04					mg/kg
Manganese	57/57	1.02E+03	1.4E+01		Yes		mg/kg
Mercury	54/57	1.49E-01	1.6E-01		No		mg/kg
Nickel	57/57	2.33E+01	3.4E+01		No		mg/kg
Potassium	57/57	9.08E+02					mg/kg
Selenium	5/57	3.00E-01	1.2E+01		No		mg/kg
Silver	10/57	1.58E+00	6.1E+00		No		mg/kg
Sodium	57/57	1.00E+03					mg/kg

530796

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Thallium	3/57	1.10E+00					mg/kg
Uranium	53/53	1.28E+01	1.1E+01		Yes		mg/kg
Vanadium	57/57	5.50E+01	5.6E-01		Yes		mg/kg
Zinc	57/57	6.52E+01	4.0E+02		No		mg/kg
1,1,1-Trichloroethane	3/54	2.40E+00	8.4E+01		No		mg/kg
1,1,2-Trichloroethane	2/54	5.30E-01	4.5E+00	7.8E-02	No	Yes	mg/kg
1,1-Dichloroethene	9/61	9.50E-01	1.2E+01	1.8E-03	No	Yes	mg/kg
Acenaphthene	5/60	3.30E-01	6.5E+01		No		mg/kg
Acetone	3/54	8.70E-02	1.1E+02		No		mg/kg
Anthracene	9/60	6.10E-01	6.6E+02		No		mg/kg
Benz(a)anthracene	14/60	2.30E+00		8.5E-03		Yes	mg/kg
Benzene	1/54	1.70E-02	2.4E+00	1.3E-01	No	No	mg/kg
Benzo(a)pyrene	14/60	2.40E+00		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	13/60	2.90E+00		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	10/60	1.00E+00					mg/kg
Benzo(k)fluoranthene	14/60	1.20E+00		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	23/60	9.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Carbon tetrachloride	3/54	7.10E-01	3.6E-01	3.2E-02	Yes	Yes	mg/kg
Chloroform	3/54	1.80E-02	3.1E+00	6.8E-02	No	No	mg/kg
Chrysene	14/60	2.60E+00		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	7/60	1.77E+00	2.6E+02		No		mg/kg
Di-n-octylphthalate	1/60	6.00E-02	4.9E+01		No		mg/kg
Dibenz(a,h)anthracene	1/60	4.60E-01		8.5E-04		Yes	mg/kg
Dibenzofuran	2/60	1.80E-01	6.4E+00		No		mg/kg
Diethyl phthalate	5/60	6.10E+00	2.0E+03		No		mg/kg
Fluoranthene	18/60	4.00E+00	4.3E+01		No		mg/kg
Fluorene	5/60	2.00E-01	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	9/60	1.10E+00		8.5E-03		Yes	mg/kg
Methylene chloride	20/54	2.80E-02	6.8E+01	6.9E-01	No	No	mg/kg
Naphthalene	2/60	1.60E-01	8.1E+01		No		mg/kg
PCB-1254	1/11	7.30E-01	6.7E-02	1.1E-02	Yes	Yes	mg/kg
PCB-1262	1/11	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	15/60	2.80E+00					mg/kg
Polychlorinated biphenyl	2/59	7.30E-01		1.1E-02		Yes	mg/kg
Pyrene	17/60	3.30E+00	3.2E+01		No		mg/kg
Tetrachloroethene	4/54	6.90E-01	1.3E+01	1.4E-01	No	Yes	mg/kg
Toluene	2/54	3.30E-02	1.1E+02		No		mg/kg
Trichloroethene	39/61	1.11E+04	1.4E+00	1.1E-01	Yes	Yes	mg/kg
Trichlorofluoromethane	1/54	1.70E-03	4.8E+01		No		mg/kg

530797

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Vinyl acetate	1/54	1.70E-03	5.4E+01		No		mg/kg
Vinyl chloride	13/61	2.90E+01		1.2E-05		Yes	mg/kg
cis-1,2-Dichloroethene	29/61	2.40E+00	1.3E+01		No		mg/kg
trans-1,2-Dichloroethene	13/61	1.02E+02	2.7E+01		Yes		mg/kg
Alpha activity	60/65	3.52E+01					pCi/g
Americium-241	7/53	2.00E-01		1.5E+00		No	pCi/g
Beta activity	65/65	4.94E+01					pCi/g
Cesium-137	12/53	6.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	40/53	6.00E-01		6.8E-02		Yes	pCi/g
Plutonium-239	3/53	2.00E-01		2.0E+00		No	pCi/g
Technetium-99	29/53	4.70E+00		4.4E+02		No	pCi/g
Thorium-230	53/53	1.80E+00		1.6E+01		No	pCi/g
Uranium-234	53/53	3.50E+00		1.4E+01		No	pCi/g
Uranium-235	1/53	2.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	53/53	4.30E+00		4.7E-01		Yes	pCi/g

SECTOR=Southeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	1/1	1.42E+04	7.3E+02		Yes		mg/kg
Antimony	1/1	6.00E-01	6.4E-02		Yes		mg/kg
Arsenic	1/1	1.00E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	1/1	8.75E+01	3.7E+01		Yes		mg/kg
Beryllium	1/1	6.30E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	1/1	3.50E-01	3.8E-01	2.9E+02	No	No	mg/kg
Calcium	1/1	1.84E+04					mg/kg
Chromium	1/1	2.36E+01	7.9E-01	4.2E+01	Yes	No	mg/kg
Cobalt	1/1	8.06E+00	2.1E+02		No		mg/kg
Copper	1/1	1.53E+01	7.4E+01		No		mg/kg
Iron	1/1	2.78E+04	3.1E+02		Yes		mg/kg
Lead	1/1	1.41E+01	1.0E-04		Yes		mg/kg
Magnesium	1/1	2.54E+03					mg/kg
Manganese	1/1	4.39E+02	1.4E+01		Yes		mg/kg
Nickel	1/1	1.33E+01	3.4E+01		No		mg/kg
Potassium	1/1	7.69E+02					mg/kg

530798

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Sodium	1/1	4.00E+02					mg/kg
Uranium	1/1	3.28E+00	1.1E+01		No		mg/kg
Vanadium	1/1	3.61E+01	5.6E-01		Yes		mg/kg
Zinc	1/1	4.88E+01	4.0E+02		No		mg/kg
Benz(a)anthracene	1/1	7.00E-02		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	1/1	8.00E-02		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	1/1	7.00E-02		8.5E-03		Yes	mg/kg
Benzo(k)fluoranthene	1/1	6.00E-02		8.5E-02		No	mg/kg
Chrysene	1/1	8.00E-02		8.5E-01		No	mg/kg
Fluoranthene	1/1	1.50E-01	4.3E+01		No		mg/kg
PCB-1262	1/1	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	1/1	7.00E-02					mg/kg
Polychlorinated biphenyl	1/1	3.80E-02		1.1E-02		Yes	mg/kg
Pyrene	1/1	1.20E-01	3.2E+01		No		mg/kg
Alpha activity	2/2	1.65E+01					pCi/g
Beta activity	2/2	2.43E+01					pCi/g
Technetium-99	1/1	2.00E+00		4.4E+02		No	pCi/g
Thorium-230	1/1	9.00E-01		1.6E+01		No	pCi/g
Uranium-234	1/1	1.00E+00		1.4E+01		No	pCi/g
Uranium-238	1/1	1.10E+00		4.7E-01		Yes	pCi/g

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	34/34	1.96E+04	7.3E+02		Yes		mg/kg
Antimony	14/34	7.50E+00	6.4E-02		Yes		mg/kg
Arsenic	34/34	2.58E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	34/34	1.95E+02	3.7E+01		Yes		mg/kg
Beryllium	34/34	1.05E+00	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	22/34	7.80E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	34/34	2.77E+05					mg/kg
Chromium	34/34	4.80E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	34/34	1.06E+01	2.1E+02		No		mg/kg
Copper	34/34	2.07E+01	7.4E+01		No		mg/kg
Iron	34/34	3.70E+04	3.1E+02		Yes		mg/kg

530799

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Lead	34/34	2.88E+01	1.0E-04		Yes		mg/kg
Magnesium	34/34	1.08E+04					mg/kg
Manganese	34/34	8.60E+02	1.4E+01		Yes		mg/kg
Mercury	30/34	1.36E-01	1.6E-01		No		mg/kg
Nickel	34/34	2.35E+01	3.4E+01		No		mg/kg
Potassium	34/34	8.00E+02					mg/kg
Selenium	8/34	1.30E+00	1.2E+01		No		mg/kg
Silver	10/34	2.51E+01	6.1E+00		Yes		mg/kg
Sodium	34/34	8.58E+02					mg/kg
Thallium	4/34	1.50E+00					mg/kg
Uranium	28/28	5.01E+01	1.1E+01		Yes		mg/kg
Vanadium	34/34	3.87E+01	5.6E-01		Yes		mg/kg
Zinc	34/34	1.11E+02	4.0E+02		No		mg/kg
1,1,2-Trichloroethane	1/30	3.90E-03	4.5E+00	7.8E-02	No	No	mg/kg
2-Hexanone	1/30	4.40E-03					mg/kg
Acenaphthene	6/40	2.80E+00	6.5E+01		No		mg/kg
Acenaphthylene	1/40	2.20E-01					mg/kg
Acetone	1/30	7.10E-03	1.1E+02		No		mg/kg
Anthracene	7/40	5.32E+00	6.6E+02		No		mg/kg
Benz(a)anthracene	9/40	1.40E+01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	8/40	1.30E+01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	9/40	1.40E+01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	8/40	6.10E+00					mg/kg
Benzo(k)fluoranthene	9/40	8.75E+00		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	19/40	8.77E-01	1.4E+01	2.8E-01	No	Yes	mg/kg
Butyl benzyl phthalate	4/40	4.34E-01	3.7E+02		No		mg/kg
Carbon disulfide	1/30	3.90E-03	6.9E+01		No		mg/kg
Chloroform	1/30	1.90E-03	3.1E+00	6.8E-02	No	No	mg/kg
Chrysene	9/40	1.20E+01		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	19/40	3.80E+00	2.6E+02		No		mg/kg
Di-n-octylphthalate	1/40	6.06E-01	4.9E+01		No		mg/kg
Dibenz(a,h)anthracene	4/40	1.30E+00		8.5E-04		Yes	mg/kg
Dibenzofuran	4/40	7.00E-01	6.4E+00		No		mg/kg
Diethyl phthalate	4/40	1.50E-01	2.0E+03		No		mg/kg
Fluoranthene	10/40	3.00E+01	4.3E+01		No		mg/kg
Fluorene	5/40	1.20E+00	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	7/40	3.90E+00		8.5E-03		Yes	mg/kg
Iodomethane	1/30	7.00E-01					mg/kg
Methylene chloride	24/30	8.00E-01	6.8E+01	6.9E-01	No	Yes	mg/kg

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
N-Nitroso-di-n-propylamine	1/40	5.82E-01		7.3E-04		Yes	mg/kg
N-Nitrosodiphenylamine	1/40	5.82E-01		1.0E+00		No	mg/kg
Naphthalene	2/40	1.20E-01	8.1E+01		No		mg/kg
PCB-1260	3/6	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	8/40	1.60E+01					mg/kg
Polychlorinated biphenyl	3/42	3.80E-02		1.1E-02		Yes	mg/kg
Pyrene	9/40	2.60E+01	3.2E+01		No		mg/kg
Toluene	9/30	5.50E-03	1.1E+02		No		mg/kg
Trichloroethene	8/41	3.50E+01	1.4E+00	1.1E-01	Yes	Yes	mg/kg
Vinyl acetate	1/30	5.50E-02	5.4E+01		No		mg/kg
Vinyl chloride	3/41	3.50E-02		1.2E-05		Yes	mg/kg
cis-1,2-Dichloroethene	9/41	1.00E+00	1.3E+01		No		mg/kg
trans-1,2-Dichloroethene	5/41	1.41E+01	2.7E+01		No		mg/kg
Alpha activity	40/50	3.98E+01					pCi/g
Americium-241	1/28	1.00E+00		1.5E+00		No	pCi/g
Beta activity	49/50	1.10E+02					pCi/g
Cesium-137	10/28	4.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	12/28	4.00E-01		6.8E-02		Yes	pCi/g
Plutonium-239	1/28	2.00E-01		2.0E+00		No	pCi/g
Technetium-99	21/28	3.30E+01		4.4E+02		No	pCi/g
Thorium-230	28/28	2.20E+00		1.6E+01		No	pCi/g
Uranium-234	28/28	1.09E+01		1.4E+01		No	pCi/g
Uranium-235	2/28	6.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	28/28	1.67E+01		4.7E-01		Yes	pCi/g

SECTOR=Southwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	4/4	1.09E+04	7.3E+02		Yes		mg/kg
Antimony	3/4	2.80E+00	6.4E-02		Yes		mg/kg
Arsenic	4/4	4.70E+00	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	4/4	8.18E+01	3.7E+01		Yes		mg/kg
Beryllium	4/4	7.90E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	4/4	7.80E-01	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	4/4	2.77E+05					mg/kg

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Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Chromium	4/4	4.80E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	4/4	1.06E+01	2.1E+02		No		mg/kg
Copper	4/4	2.07E+01	7.4E+01		No		mg/kg
Iron	4/4	3.70E+04	3.1E+02		Yes		mg/kg
Lead	4/4	2.88E+01	1.0E-04		Yes		mg/kg
Magnesium	4/4	1.08E+04					mg/kg
Manganese	4/4	4.73E+02	1.4E+01		Yes		mg/kg
Mercury	4/4	1.36E-01	1.6E-01		No		mg/kg
Nickel	4/4	2.35E+01	3.4E+01		No		mg/kg
Potassium	4/4	6.00E+02					mg/kg
Silver	3/4	1.10E+00	6.1E+00		No		mg/kg
Sodium	4/4	8.15E+02					mg/kg
Thallium	2/4	1.50E+00					mg/kg
Uranium	3/3	5.01E+01	1.1E+01		Yes		mg/kg
Vanadium	4/4	3.35E+01	5.6E-01		Yes		mg/kg
Zinc	4/4	1.11E+02	4.0E+02		No		mg/kg
Acenaphthene	4/5	2.80E+00	6.5E+01		No		mg/kg
Acenaphthylene	1/5	2.20E-01					mg/kg
Anthracene	5/5	5.32E+00	6.6E+02		No		mg/kg
Benz(a)anthracene	5/5	1.40E+01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	5/5	1.30E+01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	5/5	1.40E+01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	5/5	6.10E+00					mg/kg
Benzo(k)fluoranthene	5/5	8.75E+00		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	1/5	8.00E-02	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	5/5	1.20E+01		8.5E-01		Yes	mg/kg
Dibenz(a,h)anthracene	3/5	1.30E+00		8.5E-04		Yes	mg/kg
Dibenzofuran	3/5	7.00E-01	6.4E+00		No		mg/kg
Fluoranthene	5/5	3.00E+01	4.3E+01		No		mg/kg
Fluorene	3/5	1.20E+00	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	5/5	3.90E+00		8.5E-03		Yes	mg/kg
Naphthalene	1/5	2.40E-03	8.1E+01		No		mg/kg
PCB-1260	2/2	3.80E-02		1.1E-02		Yes	mg/kg
Phenanthrene	5/5	1.60E+01					mg/kg
Polychlorinated biphenyl	2/5	3.80E-02		1.1E-02		Yes	mg/kg
Pyrene	5/5	2.60E+01	3.2E+01		No		mg/kg
Toluene	1/1	3.10E-03	1.1E+02		No		mg/kg
Alpha activity	7/11	3.18E+01					pCi/g
Beta activity	10/11	1.10E+02					pCi/g

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Cesium-137	1/3	2.00E-01		1.6E-02		Yes	pCi/g
Neptunium-237	1/3	3.00E-01		6.8E-02		Yes	pCi/g
Plutonium-239	1/3	2.00E-01		2.0E+00		No	pCi/g
Technetium-99	2/3	3.30E+01		4.4E+02		No	pCi/g
Thorium-230	3/3	2.20E+00		1.6E+01		No	pCi/g
Uranium-234	3/3	1.09E+01		1.4E+01		No	pCi/g
Uranium-235	1/3	6.00E-01		1.2E-01		Yes	pCi/g
Uranium-238	3/3	1.67E+01		4.7E-01		Yes	pCi/g

SECTOR=West MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	17/17	2.34E+04	7.3E+02		Yes		mg/kg
Antimony	6/17	1.30E+00	6.4E-02		Yes		mg/kg
Arsenic	17/17	4.52E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	17/17	2.35E+02	3.7E+01		Yes		mg/kg
Beryllium	17/17	8.00E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	11/17	4.25E+00	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	17/17	7.15E+04					mg/kg
Chromium	17/17	4.58E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	17/17	1.43E+01	2.1E+02		No		mg/kg
Copper	17/17	2.79E+01	7.4E+01		No		mg/kg
Iron	17/17	2.49E+04	3.1E+02		Yes		mg/kg
Lead	17/17	1.52E+01	1.0E-04		Yes		mg/kg
Magnesium	17/17	4.17E+03					mg/kg
Manganese	17/17	5.38E+02	1.4E+01		Yes		mg/kg
Mercury	16/17	6.76E-02	1.6E-01		No		mg/kg
Nickel	17/17	2.55E+01	3.4E+01		No		mg/kg
Potassium	17/17	1.00E+03					mg/kg
Selenium	4/17	4.00E-01	1.2E+01		No		mg/kg
Silver	3/17	6.00E-01	6.1E+00		No		mg/kg
Sodium	17/17	6.81E+02					mg/kg
Uranium	15/15	1.29E+02	1.1E+01		Yes		mg/kg
Vanadium	17/17	3.91E+01	5.6E-01		Yes		mg/kg
Zinc	17/17	7.57E+01	4.0E+02		No		mg/kg

530803

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
2-Methylnaphthalene	2/17	9.00E-01					mg/kg
Acenaphthene	4/17	7.07E+00	6.5E+01		No		mg/kg
Acetone	1/6	1.00E-01	1.1E+02		No		mg/kg
Anthracene	6/17	8.43E+01	6.6E+02		No		mg/kg
Benz(a)anthracene	7/17	3.92E+01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	7/17	3.77E+01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	7/17	6.24E+01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	5/17	8.84E+00					mg/kg
Benzo(k)fluoranthene	7/17	9.41E+01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	4/17	1.00E-01	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	7/17	4.37E+01		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	2/17	2.05E-01	2.6E+02		No		mg/kg
Dibenz(a,h)anthracene	2/17	4.27E+00		8.5E-04		Yes	mg/kg
Dibenzofuran	4/17	3.60E+00	6.4E+00		No		mg/kg
Fluoranthene	9/17	9.68E+01	4.3E+01		Yes		mg/kg
Fluorene	4/17	4.54E+00	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	5/17	9.69E+00		8.5E-03		Yes	mg/kg
Methylene chloride	3/6	1.80E-03	6.8E+01	6.9E-01	No	No	mg/kg
Naphthalene	4/17	1.90E+00	8.1E+01		No		mg/kg
PCB-1254	2/9	9.60E-01	6.7E-02	1.1E-02	Yes	Yes	mg/kg
PCB-1260	1/9	1.60E-02		1.1E-02		Yes	mg/kg
Phenanthrene	8/17	7.75E+01					mg/kg
Polychlorinated biphenyl	3/17	9.60E-01		1.1E-02		Yes	mg/kg
Pyrene	8/17	1.11E+02	3.2E+01		Yes		mg/kg
Toluene	2/6	5.60E-03	1.1E+02		No		mg/kg
Trichloroethene	1/8	1.40E+00	1.4E+00	1.1E-01	No	Yes	mg/kg
cis-1,2-Dichloroethene	1/8	8.20E-02	1.3E+01		No		mg/kg
trans-1,2-Dichloroethene	1/8	2.50E+00	2.7E+01		No		mg/kg
Alpha activity	18/18	3.89E+02					pCi/g
Americium-241	3/15	4.00E-01		1.5E+00		No	pCi/g
Beta activity	18/18	7.56E+02					pCi/g
Cesium-137	7/15	1.50E+00		1.6E-02		Yes	pCi/g
Neptunium-237	9/15	3.00E+00		6.8E-02		Yes	pCi/g
Plutonium-239	3/15	1.70E+00		2.0E+00		No	pCi/g
Technetium-99	13/15	5.30E+01		4.4E+02		No	pCi/g
Thorium-230	15/15	1.09E+01		1.6E+01		No	pCi/g
Uranium-234	15/15	4.17E+01		1.4E+01		Yes	pCi/g
Uranium-235	7/15	2.20E+00		1.2E-01		Yes	pCi/g
Uranium-238	15/15	4.28E+01		4.7E-01		Yes	pCi/g

530804

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

--- SECTOR=West MEDIA=Surface soil ---

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
Aluminum	9/9	1.77E+04	7.3E+02		Yes		mg/kg
Antimony	4/9	1.30E+00	6.4E-02		Yes		mg/kg
Arsenic	9/9	4.52E+01	6.9E-01	9.2E-03	Yes	Yes	mg/kg
Barium	9/9	1.27E+02	3.7E+01		Yes		mg/kg
Beryllium	9/9	8.00E-01	4.0E-01	1.0E-04	Yes	Yes	mg/kg
Cadmium	8/9	4.25E+00	3.8E-01	2.9E+02	Yes	No	mg/kg
Calcium	9/9	7.15E+04					mg/kg
Chromium	9/9	4.58E+01	7.9E-01	4.2E+01	Yes	Yes	mg/kg
Cobalt	9/9	1.43E+01	2.1E+02		No		mg/kg
Copper	9/9	2.79E+01	7.4E+01		No		mg/kg
Iron	9/9	2.49E+04	3.1E+02		Yes		mg/kg
Lead	9/9	1.52E+01	1.0E-04		Yes		mg/kg
Magnesium	9/9	4.17E+03					mg/kg
Manganese	9/9	5.38E+02	1.4E+01		Yes		mg/kg
Mercury	9/9	6.76E-02	1.6E-01		No		mg/kg
Nickel	9/9	2.55E+01	3.4E+01		No		mg/kg
Potassium	9/9	1.00E+03					mg/kg
Selenium	3/9	3.00E-01	1.2E+01		No		mg/kg
Silver	1/9	6.00E-01	6.1E+00		No		mg/kg
Sodium	9/9	6.81E+02					mg/kg
Uranium	9/9	1.19E+02	1.1E+01		Yes		mg/kg
Vanadium	9/9	3.58E+01	5.6E-01		Yes		mg/kg
Zinc	9/9	7.57E+01	4.0E+02		No		mg/kg
2-Methylnaphthalene	2/9	9.00E-01					mg/kg
Acenaphthene	4/9	7.07E+00	6.5E+01		No		mg/kg
Anthracene	6/9	8.43E+01	6.6E+02		No		mg/kg
Benz(a)anthracene	7/9	3.92E+01		8.5E-03		Yes	mg/kg
Benzo(a)pyrene	7/9	3.77E+01		8.5E-04		Yes	mg/kg
Benzo(b)fluoranthene	7/9	6.24E+01		8.5E-03		Yes	mg/kg
Benzo(ghi)perylene	5/9	8.84E+00					mg/kg
Benzo(k)fluoranthene	7/9	9.41E+01		8.5E-02		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	1/9	1.00E-01	1.4E+01	2.8E-01	No	No	mg/kg
Chrysene	7/9	4.37E+01		8.5E-01		Yes	mg/kg
Di-n-butyl phthalate	1/9	2.05E-01	2.6E+02		No		mg/kg
Dibenz(a,h)anthracene	2/9	4.27E+00		8.5E-04		Yes	mg/kg
Dibenzofuran	4/9	3.60E+00	6.4E+00		No		mg/kg
Fluoranthene	8/9	9.68E+01	4.3E+01		Yes		mg/kg
Fluorene	4/9	4.54E+00	6.4E+01		No		mg/kg
Indeno(1,2,3-cd)pyrene	5/9	9.69E+00		8.5E-03		Yes	mg/kg
Naphthalene	4/9	1.90E+00	8.1E+01		No		mg/kg

230202

530805

Table 1.15. PGDP WAG 6 comparison of maximum detected concentrations and activities to human health risk-based screening criteria by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	HI	ELCR	Exceed HI?	Exceed ELCR?	Units
PCB-1254	2/3	9.60E-01	6.7E-02	1.1E-02	Yes	Yes	mg/kg
PCB-1260	1/3	1.60E-02		1.1E-02		Yes	mg/kg
Phenanthrene	8/9	7.75E+01					mg/kg
Polychlorinated biphenyl	3/9	9.60E-01		1.1E-02		Yes	mg/kg
Pyrene	8/9	1.11E+02	3.2E+01		Yes		mg/kg
Alpha activity	9/9	1.75E+02					pCi/g
Americium-241	2/9	2.00E-01		1.5E+00		No	pCi/g
Beta activity	9/9	2.48E+02					pCi/g
Cesium-137	5/9	1.50E+00		1.6E-02		Yes	pCi/g
Neptunium-237	8/9	3.00E+00		6.8E-02		Yes	pCi/g
Plutonium-239	3/9	1.70E+00		2.0E+00		No	pCi/g
Technetium-99	9/9	5.30E+01		4.4E+02		No	pCi/g
Thorium-230	9/9	1.09E+01		1.6E+01		No	pCi/g
Uranium-234	9/9	3.11E+01		1.4E+01		Yes	pCi/g
Uranium-235	6/9	1.90E+00		1.2E-01		Yes	pCi/g
Uranium-238	9/9	3.95E+01		4.7E-01		Yes	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	3/3	1.39E+02			mg/L
Arsenic	2/3	4.06E-01			mg/L
Barium	3/3	5.88E-01			mg/L
Beryllium	3/3	1.30E-02			mg/L
Bromide	16/41	5.20E-02			mg/L
Cadmium	2/3	2.99E-03			mg/L
Calcium	3/3	5.45E+01			mg/L
Chloride	41/41	2.24E+01			mg/L
Chromium	3/3	3.87E-01			mg/L
Cobalt	2/3	1.07E-01			mg/L
Copper	2/3	9.57E-02			mg/L
Fluoride	16/41	2.92E-01			mg/L
Iron	3/3	3.37E+02			mg/L
Lead	2/3	1.77E-01			mg/L
Magnesium	3/3	3.19E+01			mg/L
Manganese	3/3	2.44E+00			mg/L
Nickel	3/3	1.86E-01			mg/L
Nitrate	23/41	2.90E+00			mg/L
Nitrate/Nitrite	1/16	5.00E-03			mg/L
Orthophosphate	3/41	1.01E-01			mg/L
Potassium	3/3	2.12E+01			mg/L
Selenium	1/3	4.41E-02			mg/L
Sodium	3/3	3.67E+01			mg/L
Tetraoxo-sulfate(1-)	41/41	5.34E+01			mg/L
Thallium	2/3	1.03E-03			mg/L
Uranium	2/3	4.27E-03			mg/L
Vanadium	3/3	1.57E+00			mg/L
Zinc	3/3	1.21E+01			mg/L
1,1-Dichloroethene	2/54	2.40E-02			mg/L
1,2-Dichloroethane	1/5	1.00E-03			mg/L
Benzoic acid	1/5	1.00E-03			mg/L
Bis(2-ethylhexyl)phthalate	3/5	8.00E-03			mg/L
Bromodichloromethane	2/5	8.00E-03			mg/L
Chloroform	4/5	1.90E-02			mg/L
Di-n-butyl phthalate	1/5	1.00E-03			mg/L
Di-n-octylphthalate	2/5	6.00E-03			mg/L
Dibromochloromethane	2/5	4.00E-03			mg/L
Phenol	3/5	5.00E-03			mg/L
Tetrachloroethene	1/5	2.70E-02			mg/L
Toluene	3/5	4.00E-03			mg/L
Trichloroethene	39/54	1.28E+00			mg/L
Vinyl chloride	1/54	2.00E-02			mg/L
cis-1,2-Dichloroethene	2/54	2.00E-02			mg/L
trans-1,2-Dichloroethene	5/54	2.00E-02			mg/L
Actinium-228	1/1	2.72E+01			pCi/L
Alpha activity	48/51	1.49E+02			pCi/L
Americium-241	1/6	5.30E-02			pCi/L
Beta activity	51/51	1.16E+04			pCi/L
Bismuth-214	1/1	9.00E+00			pCi/L
Cesium-137	4/6	1.65E+01			pCi/L
Lead-210	1/1	4.21E+02			pCi/L
Lead-212	1/1	2.25E+01			pCi/L
Lead-214	1/1	1.21E+01			pCi/L
Neptunium-237	6/6	1.31E+01			pCi/L
Plutonium-239	1/5	2.12E+00			pCi/L
Potassium-40	1/1	6.80E+01			pCi/L
Technetium-99	3/6	6.16E+02			pCi/L
Thallium-208	1/1	6.70E+00			pCi/L
Thorium-228	1/1	1.23E+00			pCi/L
Thorium-230	6/6	1.88E+00			pCi/L

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Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Thorium-232	1/1	1.15E+00			pCi/L
Thorium-234	1/1	7.19E+02			pCi/L
Uranium-233/234	1/1	6.10E-01			pCi/L
Uranium-234	4/5	2.23E+00			pCi/L
Uranium-235	1/6	2.30E+01			pCi/L
Uranium-238	4/6	1.82E+00			pCi/L

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	80/80	2.50E+02			mg/L
Antimony	11/80	4.02E-02			mg/L
Arsenic	61/80	4.36E-01			mg/L
Barium	80/80	6.93E+00			mg/L
Beryllium	69/79	1.11E-01			mg/L
Bromide	10/39	1.40E+00			mg/L
Cadmium	29/80	1.59E-02			mg/L
Calcium	80/80	7.87E+01			mg/L
Chloride	39/39	1.25E+02			mg/L
Chromium	62/80	4.49E+00			mg/L
Cobalt	76/80	4.84E-01			mg/L
Copper	58/80	1.05E+01			mg/L
Fluoride	9/39	2.31E-01			mg/L
Iron	80/80	2.24E+03			mg/L
Lead	63/80	2.63E-01			mg/L
Magnesium	80/80	3.33E+01			mg/L
Manganese	80/80	5.79E+01			mg/L
Mercury	30/80	6.12E-04			mg/L
Nickel	74/80	4.88E+00			mg/L
Nitrate	39/39	1.74E+02			mg/L
Nitrate/Nitrite	3/9	1.14E-01			mg/L
Orthophosphate	2/39	3.60E-02			mg/L
Potassium	80/80	2.53E+01			mg/L
Selenium	23/80	4.80E-03			mg/L
Silver	8/80	3.98E-01			mg/L
Sodium	80/80	8.38E+01			mg/L
Tetraoxo-sulfate(1-)	39/39	5.64E+01			mg/L
Thallium	13/80	4.56E-03			mg/L
Uranium	45/52	1.21E-02			mg/L
Vanadium	73/80	1.35E+00			mg/L
Zinc	77/80	8.18E+01			mg/L
1,1,1-Trichloroethane	1/23	1.20E-02			mg/L
1,1-Dichloroethene	20/155	1.54E-01			mg/L
Acetone	1/23	5.00E-03			mg/L
Benzoic acid	5/16	5.00E-03			mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03			mg/L
Bromodichloromethane	2/23	4.00E-03			mg/L
Carbon tetrachloride	4/23	2.70E-01			mg/L
Chloroform	6/23	3.60E-02			mg/L
Di-n-butyl phthalate	8/16	1.00E-03			mg/L
Di-n-octylphthalate	1/16	1.00E-03			mg/L
Diethyl phthalate	1/16	1.00E-03			mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03			mg/L
Phenol	6/16	4.00E-02			mg/
Tetrachloroethene	6/23	3.00E-02			mg/L

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Toluene	1/23	3.60E-02			mg/L
Trichloroethene	146/155	7.01E+02			mg/L
Vinyl chloride	3/155	1.33E-01			mg/L
cis-1,2-Dichloroethene	10/155	3.70E-01			mg/L
trans-1,2-Dichloroethene	27/155	1.20E+00			mg/L
Alpha activity	129/151	1.36E+02			pCi/L
Americium-241	2/30	1.68E+00			pCi/L
Beta activity	149/151	1.72E+04			pCi/L
Bismuth-212	1/1	4.20E+01			pCi/L
Cesium-137	15/31	1.45E+01			pCi/L
Lead-210	1/1	1.00E+02			pCi/L
Lead-214	1/1	7.40E+00			pCi/L
Neptunium-237	23/30	1.44E+01			pCi/L
Plutonium-239	4/27	1.30E-01			pCi/L
Technetium-99	26/28	1.70E+04			pCi/L
Thorium-228	1/1	7.60E-01			pCi/L
Thorium-230	22/28	8.40E+00			pCi/L
Thorium-232	1/1	7.60E-01			pCi/L
Uranium-233/234	1/1	6.50E-01			pCi/L
Uranium-234	17/30	1.70E+01			pCi/L
Uranium-235	3/28	7.70E-01			pCi/L
Uranium-238	13/31	1.66E+01			pCi/L

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	196/196	2.34E+04	12000.00	Yes	mg/kg
Antimony	73/196	9.40E+00	0.21	Yes	mg/kg
Arsenic	196/196	4.52E+01	7.90	Yes	mg/kg
Barium	196/196	2.79E+02	170.00	Yes	mg/kg
Beryllium	196/196	1.20E+00	0.69	Yes	mg/kg
Cadmium	117/196	4.25E+00	0.21	Yes	mg/kg
Calcium	196/196	3.40E+05	6100.00	Yes	mg/kg
Chromium	196/196	1.41E+02			mg/kg
Cobalt	196/196	1.96E+01	13.00	Yes	mg/kg
Copper	196/196	9.52E+03	25.00	Yes	mg/kg
Iron	196/196	5.17E+04	28000.00	Yes	mg/kg
Lead	196/196	8.75E+01	23.00	Yes	mg/kg
Magnesium	196/196	2.72E+04	2100.00	Yes	mg/kg
Manganese	196/196	1.37E+03	820.00	Yes	mg/kg
Mercury	166/196	8.30E+00	0.13	Yes	mg/kg
Nickel	196/196	1.76E+04	22.00	Yes	mg/kg
Potassium	196/196	1.14E+03	950.00	Yes	mg/kg
Selenium	30/196	1.30E+00			mg/kg
Silver	45/196	2.51E+01	2.70	Yes	mg/kg
Sodium	196/196	1.67E+03	340.00	Yes	mg/kg
Thallium	16/196	2.30E+00	0.34	Yes	mg/kg
Uranium	151/151	4.26E+02	4.60	Yes	mg/kg
Vanadium	196/196	6.72E+01	37.00	Yes	mg/kg
Zinc	196/196	1.81E+02	60.00	Yes	mg/kg
1,1,1-Trichloroethane	3/142	2.40E+00			mg/kg
1,1,2-Trichloroethane	3/142	5.30E-01			mg/kg
1,1-Dichloroethene	10/181	9.50E-01			mg/kg
2,4-Dinitrotoluene	1/203	4.57E-01			mg/kg
2,6-Dinitrotoluene	4/203	4.32E-01			mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
2-Hexanone	1/142	4.40E-03			mg/kg
2-Methylnaphthalene	2/203	9.00E-01			mg/kg
Acenaphthene	20/203	7.07E+00			mg/kg
Acenaphthylene	1/203	2.20E-01			mg/kg
Acetone	18/142	4.30E+00			mg/kg
Anthracene	28/203	8.43E+01			mg/kg
Benz(a)anthracene	43/203	3.92E+01			mg/kg
Benzene	1/142	1.70E-02			mg/kg
Benzo(a)pyrene	42/203	3.77E+01			mg/kg
Benzo(b)fluoranthene	42/203	6.24E+01			mg/kg
Benzo(ghi)perylene	32/203	8.84E+00			mg/kg
Benzo(k)fluoranthene	44/203	9.41E+01			mg/kg
Bis(2-ethylhexyl)phthalate	71/203	8.77E-01			mg/kg
Butyl benzyl phthalate	5/203	4.34E-01			mg/kg
Carbon disulfide	1/142	3.90E-03			mg/kg
Carbon tetrachloride	3/142	7.10E-01			mg/kg
Chloroform	5/142	1.80E-02			mg/kg
Chrysene	43/203	4.37E+01			mg/kg
Di-n-butyl phthalate	56/203	3.80E+00			mg/kg
Di-n-octylphthalate	2/203	6.06E-01			mg/kg
Dibenz(a,h)anthracene	9/203	4.27E+00			mg/kg
Dibenzofuran	12/203	3.60E+00			mg/kg
Diethyl phthalate	9/203	6.10E+00			mg/kg
Fluoranthene	56/203	9.68E+01			mg/kg
Fluorene	18/203	4.54E+00			mg/kg
Indeno(1,2,3-cd)pyrene	30/203	9.69E+00			mg/kg
Iodomethane	1/142	7.00E-01			mg/kg
Methylene chloride	83/142	8.00E-01			mg/kg
N-Nitroso-di-n-propylamine	4/203	6.34E-01			mg/kg
N-Nitrosodiphenylamine	2/203	8.23E-01			mg/kg
Naphthalene	10/203	1.90E+00			mg/kg
PCB-1254	6/78	9.60E-01			mg/kg
PCB-1260	12/78	3.30E+00			mg/kg
PCB-1262	1/78	3.80E-02			mg/kg
Phenanthrene	43/203	7.75E+01			mg/kg
Polychlorinated biphenyl	19/205	1.00E+01			mg/kg
Pyrene	51/203	1.11E+02			mg/kg
Tetrachloroethene	4/142	6.90E-01			mg/kg
Toluene	26/142	3.20E-01			mg/kg
Trichloroethene	60/181	1.11E+04			mg/kg
Trichlorofluoromethane	1/142	1.70E-03			mg/kg
Vinyl acetate	3/142	5.50E-02			mg/kg
Vinyl chloride	16/181	2.90E+01			mg/kg
cis-1,2-Dichloroethene	43/181	2.40E+00			mg/kg
trans-1,2-Dichloroethene	19/181	1.02E+02			mg/kg
Alpha activity	215/252	8.78E+02			pCi/g
Americium-241	19/151	1.30E+00			pCi/g
Beta activity	245/252	8.08E+03			pCi/g
Cesium-137	44/151	1.11E+01	0.28	Yes	pCi/g
Neptunium-237	73/151	5.26E+01			pCi/g
Plutonium-239	12/151	1.12E+01			pCi/g
Technetium-99	113/151	4.84E+03	2.80	Yes	pCi/g
Thorium-230	150/151	1.88E+01	1.40	Yes	pCi/g
Uranium-234	151/151	1.02E+02	2.40	Yes	pCi/g
Uranium-235	21/151	4.90E+00	0.14	Yes	pCi/g
Uranium-238	151/151	1.42E+02	1.20	Yes	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	27/27	1.77E+04	13000.00	Yes	mg/kg
Antimony	14/27	2.90E+00	0.21	Yes	mg/kg
Arsenic	27/27	4.52E+01	12.00	Yes	mg/kg
Barium	27/27	1.47E+02	200.00	No	mg/kg
Beryllium	27/27	8.00E-01	0.67	Yes	mg/kg
Cadmium	20/27	4.25E+00	0.21	Yes	mg/kg
Calcium	27/27	2.77E+05	200000.00	Yes	mg/kg
Chromium	27/27	6.60E+01			mg/kg
Cobalt	27/27	1.43E+01	14.00	Yes	mg/kg
Copper	27/27	3.46E+01	19.00	Yes	mg/kg
Iron	27/27	3.70E+04	28000.00	Yes	mg/kg
Lead	27/27	4.20E+01	36.00	Yes	mg/kg
Magnesium	27/27	1.08E+04	7700.00	Yes	mg/kg
Manganese	27/27	7.36E+02	1500.00	No	mg/kg
Mercury	24/27	1.36E-01	0.20	No	mg/kg
Nickel	27/27	2.55E+01			mg/kg
Potassium	27/27	1.00E+03	1300.00	No	mg/kg
Selenium	7/27	3.00E-01			mg/kg
Silver	8/27	1.10E+00			mg/kg
Sodium	27/27	8.15E+02	320.00	Yes	mg/kg
Thallium	4/27	1.50E+00	0.21	Yes	mg/kg
Uranium	21/21	1.19E+02	4.90	Yes	mg/kg
Vanadium	27/27	4.24E+01	38.00	Yes	mg/kg
Zinc	27/27	1.11E+02	65.00	Yes	mg/kg
2-Methylnaphthalene	2/25	9.00E-01			mg/kg
Acenaphthene	11/25	7.07E+00			mg/kg
Acenaphthylene	1/25	2.20E-01			mg/kg
Anthracene	14/25	8.43E+01			mg/kg
Benz(a)anthracene	18/25	3.92E+01			mg/kg
Benzo(a)pyrene	18/25	3.77E+01			mg/kg
Benzo(b)fluoranthene	18/25	6.24E+01			mg/kg
Benzo(ghi)perylene	13/25	8.84E+00			mg/kg
Benzo(k)fluoranthene	19/25	9.41E+01			mg/kg
Bis(2-ethylhexyl)phthalate	3/25	1.00E-01			mg/kg
Chrysene	18/25	4.37E+01			mg/kg
Di-n-butyl phthalate	5/25	1.23E+00			mg/kg
Dibenz(a,h)anthracene	6/25	4.27E+00			mg/kg
Dibenzofuran	7/25	3.60E+00			mg/kg
Fluoranthene	22/25	9.68E+01			mg/kg
Fluorene	9/25	4.54E+00			mg/kg
Indeno(1,2,3-cd)pyrene	13/25	9.69E+00			mg/kg
Methylene chloride	2/3	1.40E-02			mg/kg
Naphthalene	5/25	1.90E+00			mg/kg
PCB-1254	2/13	9.60E-01			mg/kg
PCB-1260	6/13	3.30E+00			mg/kg
PCB-1262	1/13	3.80E-02			mg/kg
Phenanthrene	18/25	7.75E+01			mg/kg
Polychlorinated biphenyl	9/24	1.00E+01			mg/kg
Pyrene	21/25	1.11E+02			mg/kg
Toluene	1/3	3.10E-03			mg/kg
Trichloroethene	1/3	1.60E-03			mg/kg
Alpha activity	40/57	1.75E+02			pCi/g
Americium-241	3/21	1.00E+00			pCi/g
Beta activity	51/57	2.48E+02			pCi/g
Cesium-137	12/21	1.50E+00	0.49	Yes	pCi/g
Neptunium-237	11/21	3.00E+00	0.10	Yes	pCi/g
Plutonium-239	6/21	1.70E+00			pCi/g
Technetium-99	20/21	5.30E+01			pCi/g
Thorium-230	21/21	1.09E+01			pCi/g
Uranium-234	21/21	3.11E+01	2.50	Yes	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Uranium-235	11/21	1.90E+00	0.14	Yes	pCi/g
Uranium-238	21/21	3.95E+01	1.20	Yes	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Central MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	3/3	7.77E+03	12000.00	No	mg/kg
Antimony	1/3	4.50E+00	0.21	Yes	mg/kg
Arsenic	3/3	5.71E+00	7.90	No	mg/kg
Barium	3/3	1.33E+02	170.00	No	mg/kg
Beryllium	3/3	4.60E-01	0.69	No	mg/kg
Cadmium	2/3	3.00E-01	0.21	Yes	mg/kg
Calcium	3/3	1.45E+03	6100.00	No	mg/kg
Chromium	3/3	3.67E+01			mg/kg
Cobalt	3/3	6.29E+00	13.00	No	mg/kg
Copper	3/3	1.27E+01	25.00	No	mg/kg
Iron	3/3	2.90E+04	28000.00	Yes	mg/kg
Lead	3/3	9.10E+00	23.00	No	mg/kg
Magnesium	3/3	1.85E+03	2100.00	No	mg/kg
Manganese	3/3	3.02E+02	820.00	No	mg/kg
Mercury	3/3	2.73E-02	0.13	No	mg/kg
Nickel	3/3	1.50E+01			mg/kg
Potassium	3/3	3.54E+02	950.00	No	mg/kg
Silver	2/3	1.21E+00			mg/kg
Sodium	3/3	8.32E+02	340.00	Yes	mg/kg
Thallium	1/3	7.00E-01	0.34	Yes	mg/kg
Uranium	6/6	2.39E+00			mg/kg
Vanadium	3/3	3.08E+01	37.00	No	mg/kg
Zinc	3/3	3.47E+01	60.00	No	mg/kg
Bis(2-ethylhexyl)phthalate	1/3	4.00E-02			mg/kg
Chloroform	1/7	1.40E-03			mg/kg
Di-n-butyl phthalate	2/3	1.40E+00			mg/kg
Methylene chloride	6/7	1.40E-02			mg/kg
Toluene	3/7	1.70E-03			mg/kg
Trichloroethene	4/7	1.70E-02			mg/kg
Alpha activity	7/7	3.04E+01			pCi/g
Beta activity	7/7	4.94E+01			pCi/g
Cesium-137	2/6	3.00E-01	0.28	Yes	pCi/g
Neptunium-237	1/6	2.00E-01			pCi/g
Technetium-99	5/6	1.80E+00			pCi/g
Thorium-230	6/6	1.00E+00			pCi/g
Uranium-234	6/6	9.00E-01			pCi/g
Uranium-238	6/6	8.00E-01	1.20	No	pCi/g

SECTOR=Central MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Uranium	1/1	1.49E+00			mg/kg
Di-n-butyl phthalate	1/1	1.20E+00			mg/kg
Methylene chloride	1/1	1.40E-02			mg/kg
Trichloroethene	1/1	1.60E-03			mg/kg
Alpha activity	1/1	1.04E+01			pCi/g
Beta activity	1/1	2.68E+01			pCi/g
Cesium-137	1/1	2.00E-01	0.49	No	pCi/g
Technetium-99	1/1	1.50E+00			pCi/g
Thorium-230	1/1	1.00E+00			pCi/g
Uranium-234	1/1	5.00E-01			pCi/g
Uranium-238	1/1	5.00E-01	1.20	No	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=East MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	17/17	2.03E+04	12000.00	Yes	mg/kg
Antimony	3/17	8.00E-01	0.21	Yes	mg/kg
Arsenic	17/17	1.81E+01	7.90	Yes	mg/kg
Barium	17/17	1.56E+02	170.00	No	mg/kg
Beryllium	17/17	6.90E-01	0.69	Yes	mg/kg
Cadmium	14/17	4.00E-01	0.21	Yes	mg/kg
Calcium	17/17	2.03E+04	6100.00	Yes	mg/kg
Chromium	17/17	2.04E+01			mg/kg
Cobalt	17/17	1.86E+01	13.00	Yes	mg/kg
Copper	17/17	3.46E+01	25.00	Yes	mg/kg
Iron	17/17	2.70E+04	28000.00	No	mg/kg
Lead	17/17	2.45E+01	23.00	Yes	mg/kg
Magnesium	17/17	3.06E+03	2100.00	Yes	mg/kg
Manganese	17/17	9.96E+02	820.00	Yes	mg/kg
Mercury	10/17	6.28E-02	0.13	No	mg/kg
Nickel	17/17	2.28E+01			mg/kg
Potassium	17/17	1.07E+03	950.00	Yes	mg/kg
Selenium	1/17	5.00E-01			mg/kg
Sodium	17/17	8.64E+02	340.00	Yes	mg/kg
Thallium	1/17	1.20E+00	0.34	Yes	mg/kg
Uranium	16/16	2.74E+01	4.60	Yes	mg/kg
Vanadium	17/17	3.24E+01	37.00	No	mg/kg
Zinc	17/17	5.39E+01	60.00	No	mg/k
Acenaphthene	2/18	1.30E-01			mg/
Acetone	4/14	4.30E+00			mg/.
Anthracene	3/18	4.63E-01			mg/kg
Benz(a)anthracene	4/18	9.68E-01			mg/kg
Benzo(a)pyrene	4/18	1.00E+00			mg/kg
Benzo(b)fluoranthene	4/18	1.40E+00			mg/kg
Benzo(ghi)perylene	3/18	3.70E-01			mg/kg
Benzo(k)fluoranthene	5/18	9.47E-01			mg/kg
Bis(2-ethylhexyl)phthalate	7/18	8.00E-02			mg/kg
Chrysene	4/18	1.00E+00			mg/kg
Di-n-butyl phthalate	6/18	1.23E+00			mg/kg
Dibenz(a,h)anthracene	1/18	1.60E-01			mg/kg
Dibenzofuran	1/18	5.00E-02			mg/kg
Fluoranthene	7/18	2.10E+00			mg/kg
Fluorene	2/18	9.00E-02			mg/kg
Indeno(1,2,3-cd)pyrene	3/18	4.20E-01			mg/kg
Methylene chloride	8/14	6.30E-02			mg/kg
Naphthalene	1/18	4.00E-02			mg/kg
PCB-1260	4/10	3.30E+00			mg/kg
Phenanthrene	3/18	1.27E+00			mg/kg
Polychlorinated biphenyl	4/18	1.00E+01			mg/kg
Pyrene	6/18	1.80E+00			mg/kg
Toluene	3/14	2.70E-01			mg/kg
Trichloroethene	4/15	2.90E+00			mg/kg
cis-1,2-Dichloroethene	2/15	4.60E-02			mg/kg
Alpha activity	17/18	4.38E+01			pCi/g
Americium-241	1/16	2.00E-01			pCi/g
Beta activity	18/18	4.90E+01			pCi/g
Cesium-137	3/16	5.00E-01	0.28	Yes	pCi/g
Neptunium-237	3/16	4.00E-01			pCi/g
Technetium-99	12/16	3.50E+00			pCi/g
Thorium-230	15/16	4.20E+00			pCi/g
Uranium-234	16/16	7.10E+00			pCi/g
Uranium-235	1/16	4.00E-01	0.14	Yes	pCi/g
Uranium-238	16/16	9.10E+00	1.20	Yes	pCi

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=East MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	2/2	1.21E+04	13000.00	No	mg/kg
Arsenic	2/2	8.10E+00	12.00	No	mg/kg
Barium	2/2	1.32E+02	200.00	No	mg/kg
Beryllium	2/2	5.20E-01	0.67	No	mg/kg
Cadmium	2/2	3.80E-01	0.21	Yes	mg/kg
Calcium	2/2	2.03E+04	200000.00	No	mg/kg
Chromium	2/2	1.82E+01			mg/kg
Cobalt	2/2	8.70E+00	14.00	No	mg/kg
Copper	2/2	3.46E+01	19.00	Yes	mg/kg
Iron	2/2	2.05E+04	28000.00	No	mg/kg
Lead	2/2	2.45E+01	36.00	No	mg/kg
Magnesium	2/2	2.43E+03	7700.00	No	mg/kg
Manganese	2/2	5.55E+02	1500.00	No	mg/kg
Mercury	2/2	6.28E-02	0.20	No	mg/kg
Nickel	2/2	2.28E+01			mg/kg
Potassium	2/2	7.51E+02	1300.00	No	mg/kg
Sodium	2/2	6.20E+02	320.00	Yes	mg/kg
Thallium	1/2	1.20E+00	0.21	Yes	mg/kg
Uranium	1/1	2.74E+01	4.90	Yes	mg/kg
Vanadium	2/2	2.65E+01	38.00	No	mg/kg
Zinc	2/2	5.39E+01	65.00	No	mg/kg
Acenaphthene	1/2	1.30E-01			mg/kg
Anthracene	1/2	2.20E-01			mg/kg
Benz(a)anthracene	1/2	9.60E-01			mg/kg
Benzo(a)pyrene	1/2	1.00E+00			mg/kg
Benzo(b)fluoranthene	1/2	1.40E+00			mg/kg
Benzo(ghi)perylene	1/2	3.70E-01			mg/kg
Benzo(k)fluoranthene	2/2	8.70E-01			mg/kg
Chrysene	1/2	1.00E+00			mg/kg
Di-n-butyl phthalate	2/2	1.23E+00			mg/kg
Dibenz(a,h)anthracene	1/2	1.60E-01			mg/kg
Fluoranthene	2/2	2.10E+00			mg/kg
Fluorene	1/2	9.00E-02			mg/kg
Indeno(1,2,3-cd)pyrene	1/2	4.20E-01			mg/kg
PCB-1260	1/1	3.30E+00			mg/kg
Phenanthrene	1/2	1.20E+00			mg/kg
Polychlorinated biphenyl	1/2	1.00E+01			mg/kg
Pyrene	2/2	1.80E+00			mg/kg
Alpha activity	1/2	3.32E+01			pCi/g
Beta activity	2/2	4.27E+01			pCi/g
Cesium-137	1/1	5.00E-01	0.49	Yes	pCi/g
Neptunium-237	1/1	4.00E-01	0.10	Yes	pCi/g
Technetium-99	1/1	3.50E+00			pCi/g
Thorium-230	1/1	4.20E+00			pCi/g
Uranium-234	1/1	7.10E+00			pCi/g
Uranium-235	1/1	4.00E-01	0.14	Yes	pCi/g
Uranium-238	1/1	9.10E+00	1.20	Yes	pCi/g

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	7/7	1.57E+04	12000.00	Yes	mg/kg
Antimony	5/7	2.90E+00	0.21	Yes	mg/kg
Arsenic	7/7	1.83E+01	7.90	Yes	mg/kg
Barium	7/7	1.47E+02	170.00	No	mg/kg
Beryllium	7/7	1.20E+00	0.69	Yes	mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Cadmium	3/7	4.10E-01	0.21	Yes	mg/kg
Calcium	7/7	9.63E+04	6100.00	Yes	mg/kg
Chromium	7/7	2.49E+01			mg/kg
Cobalt	7/7	1.27E+01	13.00	No	mg/kg
Copper	7/7	2.03E+01	25.00	No	mg/kg
Iron	7/7	3.44E+04	28000.00	Yes	mg/kg
Lead	7/7	2.96E+01	23.00	Yes	mg/kg
Magnesium	7/7	5.14E+03	2100.00	Yes	mg/kg
Manganese	7/7	1.37E+03	820.00	Yes	mg/kg
Mercury	3/7	2.38E-02	0.13	No	mg/kg
Nickel	7/7	1.86E+01			mg/kg
Potassium	7/7	1.14E+03	950.00	Yes	mg/kg
Selenium	2/7	7.00E-01			mg/kg
Silver	3/7	6.60E-01			mg/kg
Sodium	7/7	6.74E+02	340.00	Yes	mg/kg
Thallium	1/7	9.00E-01	0.34	Yes	mg/kg
Uranium	6/6	2.62E+01	4.60	Yes	mg/kg
Vanadium	7/7	5.98E+01	37.00	Yes	mg/kg
Zinc	7/7	5.66E+01	60.00	No	mg/kg
Benz(a)anthracene	2/7	1.30E-01			mg/kg
Benzo(a)pyrene	2/7	1.50E-01			mg/kg
Benzo(b)fluoranthene	2/7	1.80E-01			mg/kg
Benzo(ghi)perylene	1/7	6.20E-02			mg/kg
Benzo(k)fluoranthene	2/7	1.50E-01			mg/kg
Bis(2-ethylhexyl)phthalate	2/7	7.00E-02			mg/kg
Butyl benzyl phthalate	1/7	4.00E-02			mg/kg
Chrysene	2/7	1.50E-01			mg/kg
Di-n-butyl phthalate	3/7	1.21E+00			mg/kg
Fluoranthene	3/7	2.20E-01			mg/kg
Indeno(1,2,3-cd)pyrene	1/7	6.70E-02			mg/kg
PCB-1254	1/6	3.80E-02			mg/kg
PCB-1260	2/6	3.80E-02			mg/kg
Phenanthrene	2/7	7.00E-02			mg/kg
Polychlorinated biphenyl	2/7	7.60E-02			mg/kg
Pyrene	3/7	2.20E-01			mg/kg
Alpha activity	13/16	4.43E+01			pCi/g
Americium-241	3/6	1.30E+00			pCi/g
Beta activity	13/16	5.57E+01			pCi/g
Cesium-137	2/6	4.00E-01	0.28	Yes	pCi/g
Technetium-99	6/6	2.90E+00			pCi/g
Thorium-230	6/6	1.40E+00			pCi/g
Uranium-234	6/6	7.90E+00			pCi/g
Uranium-235	2/6	5.00E-01	0.14	Yes	pCi/g
Uranium-238	6/6	8.70E+00	1.20	Yes	pCi/g

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	2/2	1.57E+04	13000.00	Yes	mg/kg
Antimony	2/2	2.90E+00	0.21	Yes	mg/kg
Arsenic	2/2	7.60E+00	12.00	No	mg/kg
Barium	2/2	1.47E+02	200.00	No	mg/kg
Beryllium	2/2	6.10E-01	0.67	No	mg/kg
Calcium	2/2	1.49E+04	200000.00	No	mg/k
Chromium	2/2	1.68E+01			mg/k

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

------------------------------------ SECTOR=Far East/Northeast MEDIA=Surface soil ------------------------------
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Cobalt	2/2	9.38E+00	14.00	No	mg/kg
Copper	2/2	1.26E+01	19.00	No	mg/kg
Iron	2/2	1.97E+04	28000.00	No	mg/kg
Lead	2/2	1.25E+01	36.00	No	mg/kg
Magnesium	2/2	2.25E+03	7700.00	No	mg/kg
Manganese	2/2	6.88E+02	1500.00	No	mg/kg
Mercury	1/2	1.82E-02	0.20	No	mg/kg
Nickel	2/2	1.62E+01			mg/kg
Potassium	2/2	9.10E+02	1300.00	No	mg/kg
Silver	1/2	1.40E-01			mg/kg
Sodium	2/2	2.58E+02	320.00	No	mg/kg
Uranium	2/2	2.62E+01	4.90	Yes	mg/kg
Vanadium	2/2	2.91E+01	38.00	No	mg/kg
Zinc	2/2	4.55E+01	65.00	No	mg/kg
Benz(a)anthracene	1/2	4.00E-02			mg/kg
Benzo(a)pyrene	1/2	4.00E-02			mg/kg
Benzo(b)fluoranthene	1/2	4.00E-02			mg/kg
Benzo(k)fluoranthene	1/2	5.00E-02			mg/kg
Chrysene	1/2	4.00E-02			mg/kg
Fluoranthene	2/2	9.00E-02			mg/kg
PCB-1260	1/2	5.60E-03			mg/kg
Phenanthrene	1/2	4.00E-02			mg/kg
Polychlorinated biphenyl	1/2	5.60E-03			mg/kg
Pyrene	2/2	7.00E-02			mg/kg
Alpha activity	7/10	4.43E+01			pCi/g
Americium-241	1/2	1.00E+00			pCi/g
Beta activity	7/10	5.57E+01			pCi/g
Cesium-137	1/2	4.00E-01	0.49	No	pCi/g
Technetium-99	2/2	1.00E+00			pCi/g
Thorium-230	2/2	1.30E+00			pCi/g
Uranium-234	2/2	7.90E+00			pCi/g
Uranium-235	1/2	5.00E-01	0.14	Yes	pCi/g
Uranium-238	2/2	8.70E+00	1.20	Yes	pCi/g

------------------------------------ SECTOR=Far North/Northwest MEDIA=Subsurface soil ----------------------------

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	11/11	1.61E+04	12000.00	Yes	mg/kg
Antimony	9/11	1.40E+00	0.21	Yes	mg/kg
Arsenic	11/11	1.08E+01	7.90	Yes	mg/kg
Barium	11/11	1.66E+02	170.00	No	mg/kg
Beryllium	11/11	9.80E-01	0.69	Yes	mg/kg
Cadmium	8/11	9.00E-01	0.21	Yes	mg/kg
Calcium	11/11	4.16E+04	6100.00	Yes	mg/kg
Chromium	11/11	1.41E+02			mg/kg
Cobalt	11/11	1.60E+01	13.00	Yes	mg/kg
Copper	11/11	9.52E+03	25.00	Yes	mg/kg
Iron	11/11	5.17E+04	28000.00	Yes	mg/kg
Lead	11/11	8.75E+01	23.00	Yes	mg/kg
Magnesium	11/11	3.66E+03	2100.00	Yes	mg/kg
Manganese	11/11	8.90E+02	820.00	Yes	mg/kg
Mercury	9/11	4.57E-01	0.13	Yes	mg/kg
Nickel	11/11	1.76E+04	22.00	Yes	mg/kg
Potassium	11/11	8.42E+02	950.00	No	mg/kg
Selenium	4/11	1.00E+00			mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Far North/Northwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Silver	7/11	4.12E+00			mg/kg
Sodium	11/11	1.17E+03	340.00	Yes	mg/kg
Thallium	1/11	6.00E-01	0.34	Yes	mg/kg
Uranium	9/9	4.26E+02	4.60	Yes	mg/kg
Vanadium	11/11	3.61E+01	37.00	No	mg/kg
Zinc	11/11	1.81E+02	60.00	Yes	mg/kg
2,4-Dinitrotoluene	1/12	4.57E-01			mg/kg
Acenaphthene	1/12	5.00E-02			mg/kg
Acetone	2/9	1.10E+00			mg/kg
Anthracene	1/12	1.60E-01			mg/kg
Benz(a)anthracene	3/12	3.40E-01			mg/kg
Benzo(a)pyrene	3/12	2.80E-01			mg/kg
Benzo(b)fluoranthene	3/12	2.60E-01			mg/kg
Benzo(ghi)perylene	3/12	1.30E-01			mg/kg
Benzo(k)fluoranthene	3/12	2.90E-01			mg/kg
Bis(2-ethylhexyl)phthalate	8/12	1.20E-01			mg/kg
Chrysene	3/12	3.50E-01			mg/kg
Di-n-butyl phthalate	6/12	1.86E+00			mg/kg
Fluoranthene	4/12	8.40E-01			mg/kg
Fluorene	1/12	5.00E-02			mg/kg
Indeno(1,2,3-cd)pyrene	3/12	1.40E-01			mg/kg
Methylene chloride	5/9	1.70E-02			mg/k~
N-Nitrosodiphenylamine	1/12	8.23E-01			mg/
PCB-1254	1/9	3.20E-02			mg/.
PCB-1260	1/9	6.30E-02			mg/kg
Phenanthrene	3/12	7.00E-01			mg/kg
Polychlorinated biphenyl	2/11	6.30E-02			mg/kg
Pyrene	3/12	7.10E-01			mg/kg
Toluene	3/9	3.20E-01			mg/kg
Trichloroethene	2/12	3.40E-02			mg/kg
cis-1,2-Dichloroethene	2/12	1.50E-02			mg/kg
Alpha activity	17/27	8.78E+02			pCi/g
Americium-241	2/9	6.00E-01			pCi/g
Beta activity	25/27	8.08E+03			pCi/g
Cesium-137	6/9	1.11E+01	0.28	Yes	pCi/g
Neptunium-237	5/9	5.26E+01			pCi/g
Plutonium-239	4/9	1.12E+01			pCi/g
Technetium-99	9/9	4.84E+03	2.80	Yes	pCi/g
Thorium-230	9/9	1.88E+01	1.40	Yes	pCi/g
Uranium-234	9/9	1.02E+02	2.40	Yes	pCi/g
Uranium-235	3/9	4.90E+00	0.14	Yes	pCi/g
Uranium-238	9/9	1.42E+02	1.20	Yes	pCi/g

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	2/2	1.29E+04	13000.00	No	mg/kg
Antimony	2/2	1.40E+00	0.21	Yes	mg/kg
Arsenic	2/2	1.01E+01	12.00	No	mg/kg
Barium	2/2	1.01E+02	200.00	No	mg/kg
Beryllium	2/2	6.90E-01	0.67	Yes	mg/kg
Cadmium	2/2	3.00E-01	0.21	Yes	mg/kg
Calcium	2/2	4.16E+04	200000.00	No	mg/'
Chromium	2/2	2.72E+01			mg,
Cobalt	2/2	8.86E+00	14.00	No	mg/.

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Far North/Northwest MEDIA=Surface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Copper	2/2	1.40E+01	19.00	No	mg/kg
Iron	2/2	2.13E+04	28000.00	No	mg/kg
Lead	2/2	1.60E+01	36.00	No	mg/kg
Magnesium	2/2	3.66E+03	7700.00	No	mg/kg
Manganese	2/2	7.36E+02	1500.00	No	mg/kg
Mercury	2/2	4.93E-02	0.20	No	mg/kg
Nickel	2/2	1.43E+01			mg/kg
Potassium	2/2	4.77E+02	1300.00	No	mg/kg
Selenium	1/2	3.00E-01			mg/kg
Silver	2/2	3.00E-01			mg/kg
Sodium	2/2	2.54E+02	320.00	No	mg/kg
Thallium	1/2	6.00E-01	0.21	Yes	mg/kg
Uranium	2/2	1.38E+01	4.90	Yes	mg/kg
Vanadium	2/2	3.61E+01	38.00	No	mg/kg
Zinc	2/2	3.78E+01	65.00	No	mg/kg
Acenaphthene	1/2	5.00E-02			mg/kg
Anthracene	1/2	1.60E-01			mg/kg
Benz(a)anthracene	1/2	3.40E-01			mg/kg
Benzo(a)pyrene	1/2	2.80E-01			mg/kg
Benzo(b)fluoranthene	1/2	2.60E-01			mg/kg
Benzo(ghi)perylene	1/2	1.30E-01			mg/kg
Benzo(k)fluoranthene	1/2	2.90E-01			mg/kg
Bis(2-ethylhexyl)phthalate	1/2	8.00E-02			mg/kg
Chrysene	1/2	3.50E-01			mg/kg
Di-n-butyl phthalate	1/2	4.00E-02			mg/kg
Fluoranthene	2/2	8.40E-01			mg/kg
Fluorene	1/2	5.00E-02			mg/kg
Indeno(1,2,3-cd)pyrene	1/2	1.40E-01			mg/kg
Phenanthrene	1/2	7.00E-01			mg/kg
Pyrene	1/2	7.10E-01			mg/kg
Alpha activity	6/15	2.32E+01			pCi/g
Beta activity	13/15	8.31E+01			pCi/g
Cesium-137	2/2	2.00E-01	0.49	No	pCi/g
Neptunium-237	1/2	6.00E-01	0.10	Yes	pCi/g
Plutonium-239	2/2	4.00E-01			pCi/g
Technetium-99	2/2	1.70E+01			pCi/g
Thorium-230	2/2	1.60E+00			pCi/g
Uranium-234	2/2	3.10E+00			pCi/g
Uranium-235	1/2	2.00E-01	0.14	Yes	pCi/g
Uranium-238	2/2	4.60E+00	1.20	Yes	pCi/g

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	3/3	1.39E+02			mg/L
Arsenic	2/3	4.06E-01			mg/L
Barium	3/3	5.88E-01			mg/L
Beryllium	3/3	1.30E-02			mg/L
Bromide	16/41	5.20E-02			mg/L
Cadmium	2/3	2.99E-03			mg/L
Calcium	3/3	5.45E+01			mg/L
Chloride	41/41	2.24E+01			mg/L
Chromium	3/3	3.87E-01			mg/L
Cobalt	2/3	1.07E-01			mg/L
Copper	2/3	9.57E-02			mg/L

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Fluoride	16/41	2.92E-01			mg/L
Iron	3/3	3.37E+02			mg/L
Lead	2/3	1.77E-01			mg/L
Magnesium	3/3	3.19E+01			mg/L
Manganese	3/3	2.44E+00			mg/L
Nickel	3/3	1.86E-01			mg/L
Nitrate	23/41	2.90E+00			mg/L
Nitrate/Nitrite	1/16	5.00E-03			mg/L
Orthophosphate	3/41	1.01E-01			mg/L
Potassium	3/3	2.12E+01			mg/L
Selenium	1/3	4.41E-02			mg/L
Sodium	3/3	3.67E+01			mg/L
Tetraoxo-sulfate(1-)	41/41	5.34E+01			mg/L
Thallium	2/3	1.03E-03			mg/L
Uranium	2/3	4.27E-03			mg/L
Vanadium	3/3	1.57E+00			mg/L
Zinc	3/3	1.21E+01			mg/L
1,1-Dichloroethene	2/54	2.40E-02			mg/L
1,2-Dichloroethane	1/5	1.00E-03			mg/L
Benzoic acid	1/5	1.00E-03			mg/L
Bis(2-ethylhexyl)phthalate	3/5	8.00E-03			mg/L
Bromodichloromethane	2/5	8.00E-03			mg/L
Chloroform	4/5	1.90E-02			mg/
Di-n-butyl phthalate	1/5	1.00E-03			mg/
Di-n-octylphthalate	2/5	6.00E-03			mg/L
Dibromochloromethane	2/5	4.00E-03			mg/L
Phenol	3/5	5.00E-03			mg/L
Tetrachloroethene	1/5	2.70E-02			mg/L
Toluene	3/5	4.00E-03			mg/L
Trichloroethene	39/54	1.28E+00			mg/L
Vinyl chloride	1/54	2.00E-02			mg/L
cis-1,2-Dichloroethene	2/54	2.00E-02			mg/L
trans-1,2-Dichloroethene	5/54	2.00E-02			mg/L
Actinium-228	1/1	2.72E+01			pCi/L
Alpha activity	48/51	1.49E+02			pCi/L
Americium-241	1/6	5.30E-02			pCi/L
Beta activity	51/51	1.16E+04			pCi/L
Bismuth-214	1/1	9.00E+00			pCi/L
Cesium-137	4/6	1.65E+01			pCi/L
Lead-210	1/1	4.21E+02			pCi/L
Lead-212	1/1	2.25E+01			pCi/L
Lead-214	1/1	1.21E+01			pCi/L
Neptunium-237	6/6	1.31E+01			pCi/L
Plutonium-239	1/5	2.12E+00			pCi/L
Potassium-40	1/1	6.80E+01			pCi/L
Technetium-99	3/6	6.16E+02			pCi/L
Thallium-208	1/1	6.70E+00			pCi/L
Thorium-228	1/1	1.23E+00			pCi/L
Thorium-230	6/6	1.88E+00			pCi/L
Thorium-232	1/1	1.15E+00			pCi/L
Thorium-234	1/1	7.19E+02			pCi/L
Uranium-233/234	1/1	6.10E-01			pCi/L
Uranium-234	4/5	2.23E+00			pCi/L
Uranium-235	1/6	2.30E+01			pCi/L
Uranium-238	4/6	1.82E+00			pCi/L

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

-- SECTOR=Northeast MEDIA=Subsurface soil --

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	25/25	1.71E+04	12000.00	Yes	mg/kg
Antimony	8/25	4.70E+00	0.21	Yes	mg/kg
Arsenic	25/25	9.20E+00	7.90	Yes	mg/kg
Barium	25/25	1.81E+02	170.00	Yes	mg/kg
Beryllium	25/25	8.10E-01	0.69	Yes	mg/kg
Cadmium	12/25	4.90E-01	0.21	Yes	mg/kg
Calcium	25/25	3.40E+05	6100.00	Yes	mg/kg
Chromium	25/25	3.91E+01			mg/kg
Cobalt	25/25	1.68E+01	13.00	Yes	mg/kg
Copper	25/25	1.89E+01	25.00	No	mg/kg
Iron	25/25	2.60E+04	28000.00	No	mg/kg
Lead	25/25	1.41E+01	23.00	No	mg/kg
Magnesium	25/25	8.04E+03	2100.00	Yes	mg/kg
Manganese	25/25	8.42E+02	820.00	Yes	mg/kg
Mercury	21/25	8.36E-02	0.13	No	mg/kg
Nickel	25/25	2.49E+01			mg/kg
Potassium	25/25	1.08E+03	950.00	Yes	mg/kg
Selenium	2/25	5.00E-01			mg/kg
Silver	7/25	4.28E+00			mg/kg
Sodium	25/25	1.67E+03	340.00	Yes	mg/kg
Thallium	4/25	2.30E+00	0.34	Yes	mg/kg
Uranium	6/6	6.06E+01	4.60	Yes	mg/kg
Vanadium	25/25	3.77E+01	37.00	Yes	mg/kg
Zinc	25/25	7.02E+01	60.00	Yes	mg/kg
2,6-Dinitrotoluene	4/25	4.32E-01			mg/kg
Acenaphthene	2/25	1.22E+00			mg/kg
Acetone	4/12	1.00E-01			mg/kg
Anthracene	2/25	1.89E+00			mg/kg
Benz(a)anthracene	2/25	4.13E+00			mg/kg
Benzo(a)pyrene	2/25	3.36E+00			mg/kg
Benzo(b)fluoranthene	2/25	3.42E+00			mg/kg
Benzo(ghi)perylene	2/25	1.87E+00			mg/kg
Benzo(k)fluoranthene	2/25	1.98E+00			mg/kg
Bis(2-ethylhexyl)phthalate	3/25	6.00E-02			mg/kg
Chrysene	2/25	3.97E+00			mg/kg
Di-n-butyl phthalate	8/25	1.88E+00			mg/kg
Dibenz(a,h)anthracene	1/25	4.12E-01			mg/kg
Dibenzofuran	1/25	5.76E-01			mg/kg
Fluoranthene	3/25	8.29E+00			mg/kg
Fluorene	1/25	9.25E-01			mg/kg
Indeno(1,2,3-cd)pyrene	2/25	1.89E+00			mg/kg
Methylene chloride	11/12	3.70E-03			mg/kg
N-Nitroso-di-n-propylamine	2/25	6.34E-01			mg/kg
Naphthalene	1/25	5.03E-01			mg/kg
PCB-1254	1/15	5.20E-03			mg/kg
PCB-1260	1/15	4.30E-02			mg/kg
Phenanthrene	3/25	7.47E+00			mg/kg
Polychlorinated biphenyl	2/25	4.30E-02			mg/kg
Pyrene	3/25	7.85E+00			mg/kg
Toluene	3/12	2.30E-03			mg/kg
Trichloroethene	1/20	2.20E-03			mg/kg
Vinyl acetate	1/12	2.80E-02			mg/kg
Alpha activity	20/24	7.49E+01			pCi/g
Beta activity	23/24	6.22E+01			pCi/g
Neptunium-237	1/6	3.00E-01			pCi/g
Technetium-99	6/6	4.00E+00			pCi/g
Thorium-230	6/6	1.90E+00			pCi/g
Uranium-234	6/6	2.01E+01	2.40	Yes	pCi/g
Uranium-235	3/6	7.00E-01	0.14	Yes	pCi/g
Uranium-238	6/6	2.02E+01	1.20	Yes	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	1/1	1.26E+04	13000.00	No	mg/kg
Arsenic	1/1	5.35E+00	12.00	No	mg/kg
Barium	1/1	1.02E+02	200.00	No	mg/kg
Beryllium	1/1	5.80E-01	0.67	No	mg/kg
Calcium	1/1	1.02E+04	200000.00	No	mg/kg
Chromium	1/1	1.93E+01			mg/kg
Cobalt	1/1	9.76E+00	14.00	No	mg/kg
Copper	1/1	1.89E+01	19.00	No	mg/kg
Iron	1/1	2.60E+04	28000.00	No	mg/kg
Lead	1/1	1.41E+01	36.00	No	mg/kg
Magnesium	1/1	2.51E+03	7700.00	No	mg/kg
Manganese	1/1	5.20E+02	1500.00	No	mg/kg
Mercury	1/1	2.63E-02	0.20	No	mg/kg
Nickel	1/1	1.90E+01			mg/kg
Potassium	1/1	3.54E+02	1300.00	No	mg/kg
Sodium	1/1	2.76E+02	320.00	No	mg/kg
Uranium	1/1	1.38E+01	4.90	Yes	mg/kg
Vanadium	1/1	3.04E+01	38.00	No	mg/kg
Zinc	1/1	7.02E+01	65.00	Yes	mg/kg
Acenaphthene	1/1	4.00E-02			mg/kg
Anthracene	1/1	8.00E-02			mg/kg
Benz(a)anthracene	1/1	3.50E-01			mg/kg
Benzo(a)pyrene	1/1	3.00E-01			mg/kg
Benzo(b)fluoranthene	1/1	4.30E-01			mg/k
Benzo(ghi)perylene	1/1	1.70E-01			mg/k
Benzo(k)fluoranthene	1/1	2.80E-01			mg/kg
Chrysene	1/1	4.00E-01			mg/kg
Fluoranthene	1/1	8.60E-01			mg/kg
Indeno(1,2,3-cd)pyrene	1/1	1.80E-01			mg/kg
Methylene chloride	1/1	2.00E-03			mg/kg
PCB-1260	1/1	4.30E-02			mg/kg
Phenanthrene	1/1	4.70E-01			mg/kg
Polychlorinated biphenyl	1/1	4.30E-02			mg/kg
Pyrene	1/1	6.80E-01			mg/kg
Alpha activity	1/1	3.19E+01			pCi/g
Beta activity	1/1	5.08E+01			pCi/g
Technetium-99	1/1	3.60E+00			pCi/g
Thorium-230	1/1	1.80E+00			pCi/g
Uranium-234	1/1	3.40E+00			pCi/g
Uranium-235	1/1	2.00E-01	0.14	Yes	pCi/g
Uranium-238	1/1	4.60E+00	1.20	Yes	pCi/g

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	25/25	1.74E+04	12000.00	Yes	mg/kg
Antimony	9/25	9.40E+00	0.21	Yes	mg/kg
Arsenic	25/25	1.03E+01	7.90	Yes	mg/kg
Barium	25/25	1.60E+02	170.00	No	mg/kg
Beryllium	25/25	1.19E+00	0.69	Yes	mg/kg
Cadmium	8/25	7.50E-01	0.21	Yes	mg/kg
Calcium	25/25	1.10E+05	6100.00	Yes	mg/kg
Chromium	25/25	6.60E+01			mg/kg
Cobalt	25/25	1.77E+01	13.00	Yes	mg/kg
Copper	25/25	1.79E+01	25.00	No	mg/
Iron	25/25	3.74E+04	28000.00	Yes	mg/

530821

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Northwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Lead	25/25	4.20E+01	23.00	Yes	mg/kg
Magnesium	25/25	2.42E+03	2100.00	Yes	mg/kg
Manganese	25/25	8.87E+02	820.00	Yes	mg/kg
Mercury	20/25	8.30E+00	0.13	Yes	mg/kg
Nickel	25/25	2.91E+01			mg/kg
Potassium	25/25	4.61E+02	950.00	No	mg/kg
Selenium	4/25	3.00E-01			mg/kg
Silver	3/25	1.03E+00			mg/kg
Sodium	25/25	7.87E+02	340.00	Yes	mg/kg
Thallium	1/25	7.00E-01	0.34	Yes	mg/kg
Uranium	12/12	4.44E+01	4.60	Yes	mg/kg
Vanadium	25/25	6.72E+01	37.00	Yes	mg/kg
Zinc	25/25	4.57E+01	60.00	No	mg/kg
1,1-Dichloroethene	1/16	1.40E-03			mg/kg
Acetone	3/10	1.40E+00			mg/kg
Benz(a)anthracene	2/21	3.00E-01			mg/kg
Benzo(a)pyrene	2/21	4.00E-01			mg/kg
Benzo(b)fluoranthene	2/21	6.00E-01			mg/kg
Benzo(k)fluoranthene	2/21	3.00E-01			mg/kg
Bis(2-ethylhexyl)phthalate	4/21	8.00E-02			mg/kg
Chrysene	2/21	2.90E-01			mg/kg
Di-n-butyl phthalate	3/21	4.00E-02			mg/kg
Fluoranthene	2/21	4.00E-01			mg/kg
Methylene chloride	6/10	7.10E-03			mg/kg
N-Nitroso-di-n-propylamine	1/21	5.22E-01			mg/kg
Phenanthrene	1/21	5.00E-02			mg/kg
Polychlorinated biphenyl	1/22	1.00E+00			mg/kg
Pyrene	2/21	4.00E-01			mg/kg
Toluene	1/10	6.00E-03			mg/kg
Trichloroethene	1/16	4.00E-03			mg/kg
Alpha activity	23/27	4.02E+01			pCi/g
Americium-241	2/12	4.00E-01			pCi/g
Beta activity	27/27	1.48E+02			pCi/g
Cesium-137	2/12	2.00E-01	0.28	No	pCi/g
Neptunium-237	2/12	8.00E-01			pCi/g
Plutonium-239	1/12	2.00E-01			pCi/g
Technetium-99	12/12	4.33E+01			pCi/g
Thorium-230	12/12	5.60E+00			pCi/g
Uranium-234	12/12	7.40E+00			pCi/g
Uranium-235	2/12	4.00E-01	0.14	Yes	pCi/g
Uranium-238	12/12	1.48E+01	1.20	Yes	pCi/g

SECTOR=Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	6/6	1.10E+04	13000.00	No	mg/kg
Antimony	2/6	1.00E+00	0.21	Yes	mg/kg
Arsenic	6/6	7.07E+00	12.00	No	mg/kg
Barium	6/6	8.67E+01	200.00	No	mg/kg
Beryllium	6/6	7.10E-01	0.67	Yes	mg/kg
Cadmium	3/6	7.50E-01	0.21	Yes	mg/kg
Calcium	6/6	1.10E+05	200000.00	No	mg/kg
Chromium	6/6	6.60E+01			mg/kg
Cobalt	6/6	8.50E+00	14.00	No	mg/kg
Copper	6/6	1.32E+01	19.00	No	mg/kg

530822

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Iron	6/6	3.05E+04	28000.00	Yes	mg/kg
Lead	6/6	4.20E+01	36.00	Yes	mg/kg
Magnesium	6/6	2.42E+03	7700.00	No	mg/kg
Manganese	6/6	5.72E+02	1500.00	No	mg/kg
Mercury	5/6	8.88E-02	0.20	No	mg/kg
Nickel	6/6	1.41E+01			mg/kg
Potassium	6/6	2.48E+02	1300.00	No	mg/kg
Selenium	3/6	3.00E-01			mg/kg
Silver	1/6	3.80E-01			mg/kg
Sodium	6/6	4.91E+02	320.00	Yes	mg/kg
Uranium	1/1	9.55E+00			mg/kg
Vanadium	6/6	4.24E+01	38.00	Yes	mg/kg
Zinc	6/6	3.74E+01	65.00	No	mg/kg
Benz(a)anthracene	1/2	3.00E-01			mg/kg
Benzo(a)pyrene	1/2	4.00E-01			mg/kg
Benzo(b)fluoranthene	1/2	6.00E-01			mg/kg
Benzo(k)fluoranthene	1/2	3.00E-01			mg/kg
Chrysene	1/2	2.90E-01			mg/kg
Fluoranthene	1/2	4.00E-01			mg/kg
Pyrene	1/2	4.00E-01			mg/kg
Alpha activity	6/6	2.22E+01			pCi/g
Beta activity	6/6	6.11E+01			pCi/g
Cesium-137	1/1	2.00E-01	0.49	No	pCi
Technetium-99	1/1	4.20E+00			pCi,
Thorium-230	1/1	1.10E+00			pCi/g
Uranium-234	1/1	2.80E+00			pCi/g
Uranium-238	1/1	3.20E+00	1.20	Yes	pCi/g

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	80/80	2.50E+02			mg/L
Antimony	11/80	4.02E-02			mg/L
Arsenic	61/80	4.36E-01			mg/L
Barium	80/80	6.93E+00			mg/L
Beryllium	69/79	1.11E-01			mg/L
Bromide	10/39	1.40E+00			mg/L
Cadmium	29/80	1.59E-02			mg/L
Calcium	80/80	7.87E+01			mg/L
Chloride	39/39	1.25E+02			mg/L
Chromium	62/80	4.49E+00			mg/L
Cobalt	76/80	4.84E-01			mg/L
Copper	58/80	1.05E+01			mg/L
Fluoride	9/39	2.31E-01			mg/L
Iron	80/80	2.24E+03			mg/L
Lead	63/80	2.63E-01			mg/L
Magnesium	80/80	3.33E+01			mg/L
Manganese	80/80	5.79E+01			mg/L
Mercury	30/80	6.12E-04			mg/L
Nickel	74/80	4.88E+00			mg/L
Nitrate	39/39	1.74E+02			mg/L
Nitrate/Nitrite	3/9	1.14E-01			mg/L
Orthophosphate	2/39	3.60E-02			mg/L
Potassium	80/80	2.53E+01			mg,
Selenium	23/80	4.80E-03			mg/L

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Silver	8/80	3.98E-01			mg/L
Sodium	80/80	8.38E+01			mg/L
Tetraoxo-sulfate(1-)	39/39	5.64E+01			mg/L
Thallium	13/80	4.56E-03			mg/L
Uranium	45/52	1.21E-02			mg/L
Vanadium	73/80	1.35E+00			mg/L
Zinc	77/80	8.18E+01			mg/L
1,1,1-Trichloroethane	1/23	1.20E-02			mg/L
1,1-Dichloroethene	20/155	1.54E-01			mg/L
Acetone	1/23	5.00E-03			mg/L
Benzoic acid	5/16	5.00E-03			mg/L
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03			mg/L
Bromodichloromethane	2/23	4.00E-03			mg/L
Carbon tetrachloride	4/23	2.70E-01			mg/L
Chloroform	6/23	3.60E-02			mg/L
Di-n-butyl phthalate	8/16	1.00E-03			mg/L
Di-n-octylphthalate	1/16	1.00E-03			mg/L
Diethyl phthalate	1/16	1.00E-03			mg/L
N-Nitroso-di-n-propylamine	1/16	1.00E-03			mg/L
Phenol	6/16	4.00E-02			mg/L
Tetrachloroethene	6/23	3.00E-02			mg/L
Toluene	1/23	3.60E-02			mg/L
Trichloroethene	146/155	7.01E+02			mg/L
Vinyl chloride	3/155	1.33E-01			mg/L
cis-1,2-Dichloroethene	10/155	3.70E-01			mg/L
trans-1,2-Dichloroethene	27/155	1.20E+00			mg/L
Alpha activity	129/151	1.36E+02			pCi/L
Americium-241	2/30	1.68E+00			pCi/L
Beta activity	149/151	1.72E+04			pCi/L
Bismuth-212	1/1	4.20E+01			pCi/L
Cesium-137	15/31	1.45E+01			pCi/L
Lead-210	1/1	1.00E+02			pCi/L
Lead-214	1/1	7.40E+00			pCi/L
Neptunium-237	23/30	1.44E+01			pCi/L
Plutonium-239	4/27	1.30E-01			pCi/L
Technetium-99	26/28	1.70E+04			pCi/L
Thorium-228	1/1	7.60E-01			pCi/L
Thorium-230	22/28	8.40E+00			pCi/L
Thorium-232	1/1	7.60E-01			pCi/L
Uranium-233/234	1/1	6.50E-01			pCi/L
Uranium-234	17/30	1.70E+01			pCi/L
Uranium-235	3/28	7.70E-01			pCi/L
Uranium-238	13/31	1.66E+01			pCi/L

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	57/57	1.74E+04	12000.00	Yes	mg/kg
Antimony	18/57	4.20E+00	0.21	Yes	mg/kg
Arsenic	57/57	1.48E+01	7.90	Yes	mg/kg
Barium	57/57	2.79E+02	170.00	Yes	mg/kg
Beryllium	57/57	1.00E+00	0.69	Yes	mg/kg
Cadmium	37/57	5.90E-01	0.21	Yes	mg/kg
Calcium	57/57	3.33E+05	6100.00	Yes	mg/kg
Chromium	57/57	5.16E+01			mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Cobalt	57/57	1.96E+01	13.00	Yes	mg/kg
Copper	57/57	1.86E+01	25.00	No	mg/kg
Iron	57/57	3.12E+04	28000.00	Yes	mg/kg
Lead	57/57	2.45E+01	23.00	Yes	mg/kg
Magnesium	57/57	2.72E+04	2100.00	Yes	mg/kg
Manganese	57/57	1.02E+03	820.00	Yes	mg/kg
Mercury	54/57	1.49E-01	0.13	Yes	mg/kg
Nickel	57/57	2.33E+01			mg/kg
Potassium	57/57	9.08E+02	950.00	No	mg/kg
Selenium	5/57	3.00E-01			mg/kg
Silver	10/57	1.58E+00			mg/kg
Sodium	57/57	1.00E+03	340.00	Yes	mg/kg
Thallium	3/57	1.10E+00	0.34	Yes	mg/kg
Uranium	53/53	1.28E+01	4.60	Yes	mg/kg
Vanadium	57/57	5.50E+01	37.00	Yes	mg/kg
Zinc	57/57	6.52E+01	60.00	Yes	mg/kg
1,1,1-Trichloroethane	3/54	2.40E+00			mg/kg
1,1,2-Trichloroethane	2/54	5.30E-01			mg/kg
1,1-Dichloroethene	9/61	9.50E-01			mg/kg
Acenaphthene	5/60	3.30E-01			mg/kg
Acetone	3/54	8.70E-02			mg/kg
Anthracene	9/60	6.10E-01			mg/k
Benz(a)anthracene	14/60	2.30E+00			mg/
Benzene	1/54	1.70E-02			mg/
Benzo(a)pyrene	14/60	2.40E+00			mg/kg
Benzo(b)fluoranthene	13/60	2.90E+00			mg/kg
Benzo(ghi)perylene	10/60	1.00E+00			mg/kg
Benzo(k)fluoranthene	14/60	1.20E+00			mg/kg
Bis(2-ethylhexyl)phthalate	23/60	9.00E-02			mg/kg
Carbon tetrachloride	3/54	7.10E-01			mg/kg
Chloroform	3/54	1.80E-02			mg/kg
Chrysene	14/60	2.60E+00			mg/kg
Di-n-butyl phthalate	7/60	1.77E+00			mg/kg
Di-n-octylphthalate	1/60	6.00E-02			mg/kg
Dibenz(a,h)anthracene	1/60	4.60E-01			mg/kg
Dibenzofuran	2/60	1.80E-01			mg/kg
Diethyl phthalate	5/60	6.10E+00			mg/kg
Fluoranthene	18/60	4.00E+00			mg/kg
Fluorene	5/60	2.00E-01			mg/kg
Indeno(1,2,3-cd)pyrene	9/60	1.10E+00			mg/kg
Methylene chloride	20/54	2.80E-02			mg/kg
Naphthalene	2/60	1.60E-01			mg/kg
PCB-1254	1/11	7.30E-01			mg/kg
PCB-1262	1/11	3.80E-02			mg/kg
Phenanthrene	15/60	2.80E+00			mg/kg
Polychlorinated biphenyl	2/59	7.30E-01			mg/kg
Pyrene	17/60	3.30E+00			mg/kg
Tetrachloroethene	4/54	6.90E-01			mg/kg
Toluene	2/54	3.30E-02			mg/kg
Trichloroethene	39/61	1.11E+04			mg/kg
Trichlorofluoromethane	1/54	1.70E-03			mg/kg
Vinyl acetate	1/54	1.70E-03			mg/kg
Vinyl chloride	13/61	2.90E+01			mg/kg
cis-1,2-Dichloroethene	29/61	2.40E+00			mg/kg
trans-1,2-Dichloroethene	13/61	1.02E+02			mg/kg
Alpha activity	60/65	3.52E+01			pCi/g
Americium-241	7/53	2.00E-01			pCi
Beta activity	65/65	4.94E+01			pC
Cesium-137	12/53	6.00E-01	0.28	Yes	pCi

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Neptunium-237	40/53	6.00E-01			pCi/g
Plutonium-239	3/53	2.00E-01			pCi/g
Technetium-99	29/53	4.70E+00			pCi/g
Thorium-230	53/53	1.80E+00			pCi/g
Uranium-234	53/53	3.50E+00			pCi/g
Uranium-235	1/53	2.00E-01	0.14	Yes	pCi/g
Uranium-238	53/53	4.30E+00	1.20	Yes	pCi/g

SECTOR=Southeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	1/1	1.42E+04	13000.00	Yes	mg/kg
Antimony	1/1	6.00E-01	0.21	Yes	mg/kg
Arsenic	1/1	1.00E+01	12.00	No	mg/kg
Barium	1/1	8.75E+01	200.00	No	mg/kg
Beryllium	1/1	6.30E-01	0.67	No	mg/kg
Cadmium	1/1	3.50E-01	0.21	Yes	mg/kg
Calcium	1/1	1.84E+04	200000.00	No	mg/kg
Chromium	1/1	2.36E+01			mg/kg
Cobalt	1/1	8.06E+00	14.00	No	mg/kg
Copper	1/1	1.53E+01	19.00	No	mg/kg
Iron	1/1	2.78E+04	28000.00	No	mg/kg
Lead	1/1	1.41E+01	36.00	No	mg/kg
Magnesium	1/1	2.54E+03	7700.00	No	mg/kg
Manganese	1/1	4.39E+02	1500.00	No	mg/kg
Nickel	1/1	1.33E+01			mg/kg
Potassium	1/1	7.69E+02	1300.00	No	mg/kg
Sodium	1/1	4.00E+02	320.00	Yes	mg/kg
Uranium	1/1	3.28E+00			mg/kg
Vanadium	1/1	3.61E+01	38.00	No	mg/kg
Zinc	1/1	4.88E+01	65.00	No	mg/kg
Benz(a)anthracene	1/1	7.00E-02			mg/kg
Benzo(a)pyrene	1/1	8.00E-02			mg/kg
Benzo(b)fluoranthene	1/1	7.00E-02			mg/kg
Benzo(k)fluoranthene	1/1	6.00E-02			mg/kg
Chrysene	1/1	8.00E-02			mg/kg
Fluoranthene	1/1	1.50E-01			mg/kg
PCB-1262	1/1	3.80E-02			mg/kg
Phenanthrene	1/1	7.00E-02			mg/kg
Polychlorinated biphenyl	1/1	3.80E-02			mg/kg
Pyrene	1/1	1.20E-01			mg/kg
Alpha activity	2/2	1.65E+01			pCi/g
Beta activity	2/2	2.43E+01			pCi/g
Technetium-99	1/1	2.00E+00			pCi/g
Thorium-230	1/1	9.00E-01			pCi/g
Uranium-234	1/1	1.00E+00			pCi/g
Uranium-238	1/1	1.10E+00	1.20	No	pCi/g

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	34/34	1.96E+04	12000.00	Yes	mg/kg
Antimony	14/34	7.50E+00	0.21	Yes	mg/kg
Arsenic	34/34	2.58E+01	7.90	Yes	mg/kg
Barium	34/34	1.95E+02	170.00	Yes	mg/kg
Beryllium	34/34	1.05E+00	0.69	Yes	mg/kg
Cadmium	22/34	7.80E-01	0.21	Yes	mg/kg
Calcium	34/34	2.77E+05	6100.00	Yes	mg/kg
Chromium	34/34	4.80E+01			mg/kg
Cobalt	34/34	1.06E+01	13.00	No	mg/kg
Copper	34/34	2.07E+01	25.00	No	mg/kg
Iron	34/34	3.70E+04	28000.00	Yes	mg/kg
Lead	34/34	2.88E+01	23.00	Yes	mg/kg
Magnesium	34/34	1.08E+04	2100.00	Yes	mg/kg
Manganese	34/34	8.60E+02	820.00	Yes	mg/kg
Mercury	30/34	1.36E-01	0.13	Yes	mg/kg
Nickel	34/34	2.35E+01			mg/kg
Potassium	34/34	8.00E+02	950.00	No	mg/kg
Selenium	8/34	1.30E+00			mg/kg
Silver	10/34	2.51E+01	2.70	Yes	mg/kg
Sodium	34/34	8.58E+02	340.00	Yes	mg/kg
Thallium	4/34	1.50E+00	0.34	Yes	mg/kg
Uranium	28/28	5.01E+01	4.60	Yes	mg/kg
Vanadium	34/34	3.87E+01	37.00	Yes	mg/kg
Zinc	34/34	1.11E+02	60.00	Yes	mg/
1,1,2-Trichloroethane	1/30	3.90E-03			mg/
2-Hexanone	1/30	4.40E-03			mg/kg
Acenaphthene	6/40	2.80E+00			mg/kg
Acenaphthylene	1/40	2.20E-01			mg/kg
Acetone	1/30	7.10E-03			mg/kg
Anthracene	7/40	5.32E+00			mg/kg
Benz(a)anthracene	9/40	1.40E+01			mg/kg
Benzo(a)pyrene	8/40	1.30E+01			mg/kg
Benzo(b)fluoranthene	9/40	1.40E+01			mg/kg
Benzo(ghi)perylene	8/40	6.10E+00			mg/kg
Benzo(k)fluoranthene	9/40	8.75E+00			mg/kg
Bis(2-ethylhexyl)phthalate	19/40	8.77E-01			mg/kg
Butyl benzyl phthalate	4/40	4.34E-01			mg/kg
Carbon disulfide	1/30	3.90E-03			mg/kg
Chloroform	1/30	1.90E-03			mg/kg
Chrysene	9/40	1.20E+01			mg/kg
Di-n-butyl phthalate	19/40	3.80E+00			mg/kg
Di-n-octylphthalate	1/40	6.06E-01			mg/kg
Dibenz(a,h)anthracene	4/40	1.30E+00			mg/kg
Dibenzofuran	4/40	7.00E-01			mg/kg
Diethyl phthalate	4/40	1.50E-01			mg/kg
Fluoranthene	10/40	3.00E+01			mg/kg
Fluorene	5/40	1.20E+00			mg/kg
Indeno(1,2,3-cd)pyrene	7/40	3.90E+00			mg/kg
Iodomethane	1/30	7.00E-01			mg/kg
Methylene chloride	24/30	8.00E-01			mg/kg
N-Nitroso-di-n-propylamine	1/40	5.82E-01			mg/kg
N-Nitrosodiphenylamine	1/40	5.82E-01			mg/kg
Naphthalene	2/40	1.20E-01			mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
PCB-1260	3/6	3.80E-02			mg/kg
Phenanthrene	8/40	1.60E+01			mg/kg
Polychlorinated biphenyl	3/42	3.80E-02			mg/kg
Pyrene	9/40	2.60E+01			mg/kg
Toluene	9/30	5.50E-03			mg/kg
Trichloroethene	8/41	3.50E+01			mg/kg
Vinyl acetate	1/30	5.50E-02			mg/kg
Vinyl chloride	3/41	3.50E-02			mg/kg
cis-1,2-Dichloroethene	9/41	1.00E+00			mg/kg
trans-1,2-Dichloroethene	5/41	1.41E+01			mg/kg
Alpha activity	40/50	3.98E+01			pCi/g
Americium-241	1/28	1.00E+00			pCi/g
Beta activity	49/50	1.10E+02			pCi/g
Cesium-137	10/28	4.00E-01	0.28	Yes	pCi/g
Neptunium-237	12/28	4.00E-01			pCi/g
Plutonium-239	1/28	2.00E-01			pCi/g
Technetium-99	21/28	3.30E+01			pCi/g
Thorium-230	28/28	2.20E+00			pCi/g
Uranium-234	28/28	1.09E+01			pCi/g
Uranium-235	2/28	6.00E-01	0.14	Yes	pCi/g
Uranium-238	28/28	1.67E+01	1.20	Yes	pCi/g

SECTOR=Southwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	4/4	1.09E+04	13000.00	No	mg/kg
Antimony	3/4	2.80E+00	0.21	Yes	mg/kg
Arsenic	4/4	4.70E+00	12.00	No	mg/kg
Barium	4/4	8.18E+01	200.00	No	mg/kg
Beryllium	4/4	7.90E-01	0.67	Yes	mg/kg
Cadmium	4/4	7.80E-01	0.21	Yes	mg/kg
Calcium	4/4	2.77E+05	200000.00	Yes	mg/kg
Chromium	4/4	4.80E+01			mg/kg
Cobalt	4/4	1.06E+01	14.00	No	mg/kg
Copper	4/4	2.07E+01	19.00	Yes	mg/kg
Iron	4/4	3.70E+04	28000.00	Yes	mg/kg
Lead	4/4	2.88E+01	36.00	No	mg/kg
Magnesium	4/4	1.08E+04	7700.00	Yes	mg/kg
Manganese	4/4	4.73E+02	1500.00	No	mg/kg
Mercury	4/4	1.36E-01	0.20	No	mg/kg
Nickel	4/4	2.35E+01			mg/kg
Potassium	4/4	6.00E+02	1300.00	No	mg/kg
Silver	3/4	1.10E+00			mg/kg
Sodium	4/4	8.15E+02	320.00	Yes	mg/kg
Thallium	2/4	1.50E+00	0.21	Yes	mg/kg
Uranium	3/3	5.01E+01	4.90	Yes	mg/kg
Vanadium	4/4	3.35E+01	38.00	No	mg/kg
Zinc	4/4	1.11E+02	65.00	Yes	mg/kg
Acenaphthene	4/5	2.80E+00			mg/kg
Acenaphthylene	1/5	2.20E-01			mg/kg
Anthracene	5/5	5.32E+00			mg/kg
Benz(a)anthracene	5/5	1.40E+01			mg/kg
Benzo(a)pyrene	5/5	1.30E+01			mg/kg
Benzo(b)fluoranthene	5/5	1.40E+01			mg/kg
Benzo(ghi)perylene	5/5	6.10E+00			mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Benzo(k)fluoranthene	5/5	8.75E+00			mg/kg
Bis(2-ethylhexyl)phthalate	1/5	8.00E-02			mg/kg
Chrysene	5/5	1.20E+01			mg/kg
Dibenz(a,h)anthracene	3/5	1.30E+00			mg/kg
Dibenzofuran	3/5	7.00E-01			mg/kg
Fluoranthene	5/5	3.00E+01			mg/kg
Fluorene	3/5	1.20E+00			mg/kg
Indeno(1,2,3-cd)pyrene	5/5	3.90E+00			mg/kg
Naphthalene	1/5	2.40E-03			mg/kg
PCB-1260	2/2	3.80E-02			mg/kg
Phenanthrene	5/5	1.60E+01			mg/kg
Polychlorinated biphenyl	2/5	3.80E-02			mg/kg
Pyrene	5/5	2.60E+01			mg/kg
Toluene	1/1	3.10E-03			mg/kg
Alpha activity	7/11	3.18E+01			pCi/g
Beta activity	10/11	1.10E+02			pCi/g
Cesium-137	1/3	2.00E-01	0.49	No	pCi/g
Neptunium-237	1/3	3.00E-01	0.10	Yes	pCi/g
Plutonium-239	1/3	2.00E-01			pCi/g
Technetium-99	2/3	3.30E+01			pCi/g
Thorium-230	3/3	2.20E+00			pCi/g
Uranium-234	3/3	1.09E+01			pCi/
Uranium-235	1/3	6.00E-01	0.14	Yes	pCi
Uranium-238	3/3	1.67E+01	1.20	Yes	pCi,

SECTOR=West MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	17/17	2.34E+04	12000.00	Yes	mg/kg
Antimony	6/17	1.30E+00	0.21	Yes	mg/kg
Arsenic	17/17	4.52E+01	7.90	Yes	mg/kg
Barium	17/17	2.35E+02	170.00	Yes	mg/kg
Beryllium	17/17	8.00E-01	0.69	Yes	mg/kg
Cadmium	11/17	4.25E+00	0.21	Yes	mg/kg
Calcium	17/17	7.15E+04	6100.00	Yes	mg/kg
Chromium	17/17	4.58E+01			mg/kg
Cobalt	17/17	1.43E+01	13.00	Yes	mg/kg
Copper	17/17	2.79E+01	25.00	Yes	mg/kg
Iron	17/17	2.49E+04	28000.00	No	mg/kg
Lead	17/17	1.52E+01	23.00	No	mg/kg
Magnesium	17/17	4.17E+03	2100.00	Yes	mg/kg
Manganese	17/17	5.38E+02	820.00	No	mg/kg
Mercury	16/17	6.76E-02	0.13	No	mg/kg
Nickel	17/17	2.55E+01			mg/kg
Potassium	17/17	1.00E+03	950.00	Yes	mg/kg
Selenium	4/17	4.00E-01			mg/kg
Silver	3/17	6.00E-01			mg/kg
Sodium	17/17	6.81E+02	340.00	Yes	mg/kg
Uranium	15/15	1.29E+02	4.60	Yes	mg/kg
Vanadium	17/17	3.91E+01	37.00	Yes	mg/kg
Zinc	17/17	7.57E+01	60.00	Yes	mg/kg
2-Methylnaphthalene	2/17	9.00E-01			mg/kg
Acenaphthene	4/17	7.07E+00			mg/
Acetone	1/6	1.00E-01			mg,
Anthracene	6/17	8.43E+01			mg/

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Benz(a)anthracene	7/17	3.92E+01			mg/kg
Benzo(a)pyrene	7/17	3.77E+01			mg/kg
Benzo(b)fluoranthene	7/17	6.24E+01			mg/kg
Benzo(ghi)perylene	5/17	8.84E+00			mg/kg
Benzo(k)fluoranthene	7/17	9.41E+01			mg/kg
Bis(2-ethylhexyl)phthalate	4/17	1.00E-01			mg/kg
Chrysene	7/17	4.37E+01			mg/kg
Di-n-butyl phthalate	2/17	2.05E-01			mg/kg
Dibenz(a,h)anthracene	2/17	4.27E+00			mg/kg
Dibenzofuran	4/17	3.60E+00			mg/kg
Fluoranthene	9/17	9.68E+01			mg/kg
Fluorene	4/17	4.54E+00			mg/kg
Indeno(1,2,3-cd)pyrene	5/17	9.69E+00			mg/kg
Methylene chloride	3/6	1.80E-03			mg/kg
Naphthalene	4/17	1.90E+00			mg/kg
PCB-1254	2/9	9.60E-01			mg/kg
PCB-1260	1/9	1.60E-02			mg/kg
Phenanthrene	8/17	7.75E+01			mg/kg
Polychlorinated biphenyl	3/17	9.60E-01			mg/kg
Pyrene	8/17	1.11E+02			mg/kg
Toluene	2/6	5.60E-03			mg/kg
Trichloroethene	1/8	1.40E+00			mg/kg
cis-1,2-Dichloroethene	1/8	8.20E-02			mg/kg
trans-1,2-Dichloroethene	1/8	2.50E+00			mg/kg
Alpha activity	18/18	3.89E+02			pCi/g
Americium-241	3/15	4.00E-01			pCi/g
Beta activity	18/18	7.56E+02			pCi/g
Cesium-137	7/15	1.50E+00	0.28	Yes	pCi/g
Neptunium-237	9/15	3.00E+00			pCi/g
Plutonium-239	3/15	1.70E+00			pCi/g
Technetium-99	13/15	5.30E+01			pCi/g
Thorium-230	15/15	1.09E+01			pCi/g
Uranium-234	15/15	4.17E+01	2.40	Yes	pCi/g
Uranium-235	7/15	2.20E+00	0.14	Yes	pCi/g
Uranium-238	15/15	4.28E+01	1.20	Yes	pCi/g

SECTOR=West MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Aluminum	9/9	1.77E+04	13000.00	Yes	mg/kg
Antimony	4/9	1.30E+00	0.21	Yes	mg/kg
Arsenic	9/9	4.52E+01	12.00	Yes	mg/kg
Barium	9/9	1.27E+02	200.00	No	mg/kg
Beryllium	9/9	8.00E-01	0.67	Yes	mg/kg
Cadmium	8/9	4.25E+00	0.21	Yes	mg/kg
Calcium	9/9	7.15E+04	200000.00	No	mg/kg
Chromium	9/9	4.58E+01			mg/kg
Cobalt	9/9	1.43E+01	14.00	Yes	mg/kg
Copper	9/9	2.79E+01	19.00	Yes	mg/kg
Iron	9/9	2.49E+04	28000.00	No	mg/kg
Lead	9/9	1.52E+01	36.00	No	mg/kg
Magnesium	9/9	4.17E+03	7700.00	No	mg/kg
Manganese	9/9	5.38E+02	1500.00	No	mg/kg
Mercury	9/9	6.76E-02	0.20	No	mg/kg
Nickel	9/9	2.55E+01			mg/kg

Table 1.16. PGDP WAG 6 comparison of maximum detected concentrations and activities to background concentrations by sector and medium

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Background concentration	Exceed Background?	Units
Potassium	9/9	1.00E+03	1300.00	No	mg/kg
Selenium	3/9	3.00E-01			mg/kg
Silver	1/9	6.00E-01			mg/kg
Sodium	9/9	6.81E+02	320.00	Yes	mg/kg
Uranium	9/9	1.19E+02	4.90	Yes	mg/kg
Vanadium	9/9	3.58E+01	38.00	No	mg/kg
Zinc	9/9	7.57E+01	65.00	Yes	mg/kg
2-Methylnaphthalene	2/9	9.00E-01			mg/kg
Acenaphthene	4/9	7.07E+00			mg/kg
Anthracene	6/9	8.43E+01			mg/kg
Benz(a)anthracene	7/9	3.92E+01			mg/kg
Benzo(a)pyrene	7/9	3.77E+01			mg/kg
Benzo(b)fluoranthene	7/9	6.24E+01			mg/kg
Benzo(ghi)perylene	5/9	8.84E+00			mg/kg
Benzo(k)fluoranthene	7/9	9.41E+01			mg/kg
Bis(2-ethylhexyl)phthalate	1/9	1.00E-01			mg/kg
Chrysene	7/9	4.37E+01			mg/kg
Di-n-butyl phthalate	1/9	2.05E-01			mg/kg
Dibenz(a,h)anthracene	2/9	4.27E+00			mg/kg
Dibenzofuran	4/9	3.60E+00			mg/kg
Fluoranthene	8/9	9.68E+01			mg/kg
Fluorene	4/9	4.54E+00			mg/k
Indeno(1,2,3-cd)pyrene	5/9	9.69E+00			mg
Naphthalene	4/9	1.90E+00			mg/
PCB-1254	2/3	9.60E-01			mg/kg
PCB-1260	1/3	1.60E-02			mg/kg
Phenanthrene	8/9	7.75E+01			mg/kg
Polychlorinated biphenyl	3/9	9.60E-01			mg/kg
Pyrene	8/9	1.11E+02			mg/kg
Alpha activity	9/9	1.75E+02			pCi/g
Americium-241	2/9	2.00E-01			pCi/g
Beta activity	9/9	2.48E+02			pCi/g
Cesium-137	5/9	1.50E+00	0.49	Yes	pCi/g
Neptunium-237	8/9	3.00E+00	0.10	Yes	pCi/g
Plutonium-239	3/9	1.70E+00			pCi/g
Technetium-99	9/9	5.30E+01			pCi/g
Thorium-230	9/9	1.09E+01			pCi/g
Uranium-234	9/9	3.11E+01	2.50	Yes	pCi/g
Uranium-235	6/9	1.90E+00	0.14	Yes	pCi/g
Uranium-238	9/9	3.95E+01	1.20	Yes	pCi/g

Table 1.17 Recommended dietary allowances of essential human nutrients

Analyte	**Recommended Dietary Allowance[a] (mg/d)**
Calcium	800
Chloride	600[b]
Copper	1.0-2.0
Fluoride	1.5-2.5
Iodine	0.12
Iron	10
Magnesium	170
Molybdenum	0.05-0.15
Phosphorus	800
Potassium	1600[b]
Selenium	0.03
Sodium	400[b]

[a] Taken from National Research Council (NRC), 1989. *Recommended Dietary Allowances*. 10[th] ed. RDAs listed are those for children agese 7 to 10.

[b] Estimated minimum requirements of health persons ages 6 to 9.

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	3/3	1.39E+02	mg/L	1.39E+02			
Arsenic	2/3	4.06E-01	mg/L	4.06E-01			
Barium	3/3	5.88E-01	mg/L	5.88E-01			
Beryllium	3/3	1.30E-02	mg/L	1.30E-02			
Bromide	16/41	5.20E-02	mg/L	5.20E-02			
Cadmium	2/3	2.99E-03	mg/L	2.99E-03			
Calcium	3/3	5.45E+01	mg/L	5.45E+01	8.00E+02	1.60E+02	No
Chloride	41/41	2.24E+01	mg/L	2.24E+01	6.00E+02	1.20E+02	No
Chromium	3/3	3.87E-01	mg/L	3.87E-01			
Cobalt	2/3	1.07E-01	mg/L	1.07E-01			
Copper	2/3	9.57E-02	mg/L	9.57E-02	1.00E+00	2.00E-01	No
Fluoride	16/41	2.92E-01	mg/L	2.92E-01	1.50E+00	3.00E-01	No
Iron	3/3	3.37E+02	mg/L	3.37E+02	1.00E+01	2.00E+00	Yes
Lead	2/3	1.77E-01	mg/L	1.77E-01			
Magnesium	3/3	3.19E+01	mg/L	3.19E+01	1.70E+02	3.40E+01	No
Manganese	3/3	2.44E+00	mg/L	2.44E+00			
Nickel	3/3	1.86E-01	mg/L	1.86E-01			
Nitrate	23/41	2.90E+00	mg/L	2.90E+00			
Nitrate/Nitrite	1/16	5.00E-03	mg/L	5.00E-03			
Orthophosphate	3/41	1.01E-01	mg/L	1.01E-01			
Potassium	3/3	2.12E+01	mg/L	2.12E+01	1.60E+03	3.20E+02	No
Selenium	1/3	4.41E-02	mg/L	4.41E-02	3.00E-02	6.00E-03	Yes
Sodium	3/3	3.67E+01	mg/L	3.67E+01			
Tetraoxo-sulfate(1-)	41/41	5.34E+01	mg/L	5.34E+01			
Thallium	2/3	1.03E-03	mg/L	1.03E-03			
Uranium	2/3	4.27E-03	mg/L	4.27E-03			
Vanadium	3/3	1.57E+00	mg/L	1.57E+00			
Zinc	3/3	1.21E+01	mg/L	1.21E+01			
1,1-Dichloroethene	2/54	2.40E-02	mg/L	2.40E-02			
1,2-Dichloroethane	1/5	1.00E-03	mg/L	1.00E-03			
Benzoic acid	1/5	1.00E-03	mg/L	1.00E-03			
Bis(2-ethylhexyl)phthalate	3/5	8.00E-03	mg/L	8.00E-03			
Bromodichloromethane	2/5	8.00E-03	mg/L	8.00E-03			
Chloroform	4/5	1.90E-02	mg/L	1.90E-02			
Di-n-butyl phthalate	1/5	1.00E-03	mg/L	1.00E-03			
Di-n-octylphthalate	2/5	6.00E-03	mg/L	6.00E-03			
Dibromochloromethane	2/5	4.00E-03	mg/L	4.00E-03			
Phenol	3/5	5.00E-03	mg/L	5.00E-03			
Tetrachloroethene	1/5	2.70E-02	mg/L	2.70E-02			
Toluene	3/5	4.00E-03	mg/L	4.00E-03			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=McNairy MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Trichloroethene	39/54	1.28E+00	mg/L	1.28E+00			
Vinyl chloride	1/54	2.00E-02	mg/L	2.00E-02			
cis-1,2-Dichloroethene	2/54	2.00E-02	mg/L	2.00E-02			
trans-1,2-Dichloroethene	5/54	2.00E-02	mg/L	2.00E-02			
Actinium-228	1/1	2.72E+01	pCi/L				
Alpha activity	48/51	1.49E+02	pCi/L				
Americium-241	1/6	5.30E-02	pCi/L				
Beta activity	51/51	1.16E+04	pCi/L				
Bismuth-214	1/1	9.00E+00	pCi/L				
Cesium-137	4/6	1.65E+01	pCi/L				
Lead-210	1/1	4.21E+02	pCi/L				
Lead-212	1/1	2.25E+01	pCi/L				
Lead-214	1/1	1.21E+01	pCi/L				
Neptunium-237	6/6	1.31E+01	pCi/L				
Plutonium-239	1/5	2.12E+00	pCi/L				
Potassium-40	1/1	6.80E+01	pCi/L				
Technetium-99	3/6	6.16E+02	pCi/L				
Thallium-208	1/1	6.70E+00	pCi/L				
Thorium-228	1/1	1.23E+00	pCi/L				
Thorium-230	6/6	1.88E+00	pCi/L				
Thorium-232	1/1	1.15E+00	pCi/L				
Thorium-234	1/1	7.19E+02	pCi/L				
Uranium-233/234	1/1	6.10E-01	pCi/L				
Uranium-234	4/5	2.23E+00	pCi/L				
Uranium-235	1/6	2.30E+01	pCi/L				
Uranium-238	4/6	1.82E+00	pCi/L				

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	80/80	2.50E+02	mg/L	2.50E+02			
Antimony	11/80	4.02E-02	mg/L	4.02E-02			
Arsenic	61/80	4.36E-01	mg/L	4.36E-01			
Barium	80/80	6.93E+00	mg/L	6.93E+00			
Beryllium	69/79	1.11E-01	mg/L	1.11E-01			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Bromide	10/39	1.40E+00	mg/L	1.40E+00			
Cadmium	29/80	1.59E-02	mg/L	1.59E-02			
Calcium	80/80	7.87E+01	mg/L	7.87E+01	8.00E+02	1.60E+02	No
Chloride	39/39	1.25E+02	mg/L	1.25E+02	6.00E+02	1.20E+02	Yes
Chromium	62/80	4.49E+00	mg/L	4.49E+00			
Cobalt	76/80	4.84E-01	mg/L	4.84E-01			
Copper	58/80	1.05E+01	mg/L	1.05E+01	1.00E+00	2.00E-01	Yes
Fluoride	9/39	2.31E-01	mg/L	2.31E-01	1.50E+00	3.00E-01	No
Iron	80/80	2.24E+03	mg/L	2.24E+03	1.00E+01	2.00E+00	Yes
Lead	63/80	2.63E-01	mg/L	2.63E-01			
Magnesium	80/80	3.33E+01	mg/L	3.33E+01	1.70E+02	3.40E+01	No
Manganese	80/80	5.79E+01	mg/L	5.79E+01			
Mercury	30/80	6.12E-04	mg/L	6.12E-04			
Nickel	74/80	4.88E+00	mg/L	4.88E+00			
Nitrate	39/39	1.74E+02	mg/L	1.74E+02			
Nitrate/Nitrite	3/9	1.14E-01	mg/L	1.14E-01			
Orthophosphate	2/39	3.60E-02	mg/L	3.60E-02			
Potassium	80/80	2.53E+01	mg/L	2.53E+01	1.60E+03	3.20E+02	No
Selenium	23/80	4.80E-03	mg/L	4.80E-03			
Silver	8/80	3.98E-01	mg/L	3.98E-01			
Sodium	80/80	8.38E+01	mg/L	8.38E+01			
Tetraoxo-sulfate(1-)	39/39	5.64E+01	mg/L	5.64E+01			
Thallium	13/80	4.56E-03	mg/L	4.56E-03			
Uranium	45/52	1.21E-02	mg/L	1.21E-02			
Vanadium	73/80	1.35E+00	mg/L	1.35E+00			
Zinc	77/80	8.18E+01	mg/L	8.18E+01			
1,1,1-Trichloroethane	1/23	1.20E-02	mg/L	1.20E-02			
1,1-Dichloroethene	20/155	1.54E-01	mg/L	1.54E-01			
Acetone	1/23	5.00E-03	mg/L	5.00E-03			
Benzoic acid	5/16	5.00E-03	mg/L	5.00E-03			
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03	mg/L	1.00E-03			
Bromodichloromethane	2/23	4.00E-03	mg/L	4.00E-03			
Carbon tetrachloride	4/23	2.70E-01	mg/L	2.70E-01			
Chloroform	6/23	3.60E-02	mg/L	3.60E-02			
Di-n-butyl phthalate	8/16	1.00E-03	mg/L	1.00E-03			
Di-n-octylphthalate	1/16	1.00E-03	mg/L	1.00E-03			
Diethyl phthalate	1/16	1.00E-03	mg/L	1.00E-03			
N-Nitroso-di-n-propylamine	1/16	1.00E-03	mg/L	1.00E-03			
Phenol	6/16	4.00E-02	mg/L	4.00E-02			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Tetrachloroethene	6/23	3.00E-02	mg/L	3.00E-02			
Toluene	1/23	3.60E-02	mg/L	3.60E-02			
Trichloroethene	146/155	7.01E+02	mg/L	7.01E+02			
Vinyl chloride	3/155	1.33E-01	mg/L	1.33E-01			
cis-1,2-Dichloroethene	10/155	3.70E-01	mg/L	3.70E-01			
trans-1,2-Dichloroethene	27/155	1.20E+00	mg/L	1.20E+00			
Alpha activity	129/151	1.36E+02	pCi/L				
Americium-241	2/30	1.68E+00	pCi/L				
Beta activity	149/151	1.72E+04	pCi/L				
Bismuth-212	1/1	4.20E+01	pCi/L				
Cesium-137	15/31	1.45E+01	pCi/L				
Lead-210	1/1	1.00E+02	pCi/L				
Lead-214	1/1	7.40E+00	pCi/L				
Neptunium-237	23/30	1.44E+01	pCi/L				
Plutonium-239	4/27	1.30E-01	pCi/L				
Technetium-99	26/28	1.70E+04	pCi/L				
Thorium-228	1/1	7.60E-01	pCi/L				
Thorium-230	22/28	8.40E+00	pCi/L				
Thorium-232	1/1	7.60E-01	pCi/L				
Uranium-233/234	1/1	6.50E-01	pCi/L				
Uranium-234	17/30	1.70E+01	pCi/L				
Uranium-235	3/28	7.70E-01	pCi/L				
Uranium-238	13/31	1.66E+01	pCi/L				

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	196/196	2.34E+04	mg/kg	4.68E+00			
Antimony	73/196	9.40E+00	mg/kg	1.88E-03			
Arsenic	196/196	4.52E+01	mg/kg	9.04E-03			
Barium	196/196	2.79E+02	mg/kg	5.58E-02			
Beryllium	196/196	1.20E+00	mg/kg	2.40E-04			
Cadmium	117/196	4.25E+00	mg/kg	8.50E-04			
Calcium	196/196	3.40E+05	mg/kg	6.80E+01	8.00E+02	1.60E+02	No
Chromium	196/196	1.41E+02	mg/kg	2.82E-02			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Cobalt	196/196	1.96E+01	mg/kg	3.92E-03			
Copper	196/196	9.52E+03	mg/kg	1.90E+00	1.00E+00	2.00E-01	Yes
Iron	196/196	5.17E+04	mg/kg	1.03E+01	1.00E+01	2.00E+00	Yes
Lead	196/196	8.75E+01	mg/kg	1.75E-02			
Magnesium	196/196	2.72E+04	mg/kg	5.44E+00	1.50E+02	3.00E+01	No
Manganese	196/196	1.37E+03	mg/kg	2.74E-01			
Mercury	166/196	8.30E+00	mg/kg	1.66E-03			
Nickel	196/196	1.76E+04	mg/kg	3.52E+00			
Potassium	196/196	1.14E+03	mg/kg	2.28E-01	1.60E+03	3.20E+02	No
Selenium	30/196	1.30E+00	mg/kg	2.60E-04			
Silver	45/196	2.51E+01	mg/kg	5.02E-03			
Sodium	196/196	1.67E+03	mg/kg	3.34E-01			
Thallium	16/196	2.30E+00	mg/kg	4.60E-04			
Uranium	151/151	4.26E+02	mg/kg	8.52E-02			
Vanadium	196/196	6.72E+01	mg/kg	1.34E-02			
Zinc	196/196	1.81E+02	mg/kg	3.62E-02			
1,1,1-Trichloroethane	3/142	2.40E+00	mg/kg	4.80E-04			
1,1,2-Trichloroethane	3/142	5.30E-01	mg/kg	1.06E-04			
1,1-Dichloroethene	10/181	9.50E-01	mg/kg	1.90E-04			
2,4-Dinitrotoluene	1/203	4.57E-01	mg/kg	9.14E-05			
2,6-Dinitrotoluene	4/203	4.32E-01	mg/kg	8.64E-05			
2-Hexanone	1/142	4.40E-03	mg/kg	8.80E-07			
2-Methylnaphthalene	2/203	9.00E-01	mg/kg	1.80E-04			
Acenaphthene	20/203	7.07E+00	mg/kg	1.41E-03			
Acenaphthylene	1/203	2.20E-01	mg/kg	4.40E-05			
Acetone	18/142	4.30E+00	mg/kg	8.60E-04			
Anthracene	28/203	8.43E+01	mg/kg	1.69E-02			
Benz(a)anthracene	43/203	3.92E+01	mg/kg	7.84E-03			
Benzene	1/142	1.70E-02	mg/kg	3.40E-06			
Benzo(a)pyrene	42/203	3.77E+01	mg/kg	7.54E-03			
Benzo(b)fluoranthene	42/203	6.24E+01	mg/kg	1.25E-02			
Benzo(ghi)perylene	32/203	8.84E+00	mg/kg	1.77E-03			
Benzo(k)fluoranthene	44/203	9.41E+01	mg/kg	1.88E-02			
Bis(2-ethylhexyl)phthalate	71/203	8.77E-01	mg/kg	1.75E-04			
Butyl benzyl phthalate	5/203	4.34E-01	mg/kg	8.68E-05			
Carbon disulfide	1/142	3.90E-03	mg/kg	7.80E-07			
Carbon tetrachloride	3/142	7.10E-01	mg/kg	1.42E-04			
Chloroform	5/142	1.80E-02	mg/kg	3.60E-06			
Chrysene	43/203	4.37E+01	mg/kg	8.73E-03			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Di-n-butyl phthalate	56/203	3.80E+00	mg/kg	7.60E-04			
Di-n-octylphthalate	2/203	6.06E-01	mg/kg	1.21E-04			
Dibenz(a,h)anthracene	9/203	4.27E+00	mg/kg	8.54E-04			
Dibenzofuran	12/203	3.60E+00	mg/kg	7.20E-04			
Diethyl phthalate	9/203	6.10E+00	mg/kg	1.22E-03			
Fluoranthene	56/203	9.68E+01	mg/kg	1.94E-02			
Fluorene	18/203	4.54E+00	mg/kg	9.08E-04			
Indeno(1,2,3-cd)pyrene	30/203	9.69E+00	mg/kg	1.94E-03			
Iodomethane	1/142	7.00E-01	mg/kg	1.40E-04			
Methylene chloride	83/142	8.00E-01	mg/kg	1.60E-04			
N-Nitroso-di-n-propylamine	4/203	6.34E-01	mg/kg	1.27E-04			
N-Nitrosodiphenylamine	2/203	8.23E-01	mg/kg	1.65E-04			
Naphthalene	10/203	1.90E+00	mg/kg	3.80E-04			
PCB-1254	6/78	9.60E-01	mg/kg	1.92E-04			
PCB-1260	12/78	3.30E+00	mg/kg	6.60E-04			
PCB-1262	1/78	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	43/203	7.75E+01	mg/kg	1.55E-02			
Polychlorinated biphenyl	19/205	1.00E+01	mg/kg	2.00E-03			
Pyrene	51/203	1.11E+02	mg/kg	2.21E-02			
Tetrachloroethene	4/142	6.90E-01	mg/kg	1.38E-04			
Toluene	26/142	3.20E-01	mg/kg	6.40E-05			
Trichloroethene	60/181	1.11E+04	mg/kg	2.21E+00			
Trichlorofluoromethane	1/142	1.70E-03	mg/kg	3.40E-07			
Vinyl acetate	3/142	5.50E-02	mg/kg	1.10E-05			
Vinyl chloride	16/181	2.90E+01	mg/kg	5.80E-03			
cis-1,2-Dichloroethene	43/181	2.40E+00	mg/kg	4.80E-04			
trans-1,2-Dichloroethene	19/181	1.02E+02	mg/kg	2.04E-02			
Alpha activity	215/252	8.78E+02	pCi/g				
Americium-241	19/151	1.30E+00	pCi/g				
Beta activity	245/252	8.08E+03	pCi/g				
Cesium-137	44/151	1.11E+01	pCi/g				
Neptunium-237	73/151	5.26E+01	pCi/g				
Plutonium-239	12/151	1.12E+01	pCi/g				
Technetium-99	113/151	4.84E+03	pCi/g				
Thorium-230	150/151	1.88E+01	pCi/g				
Uranium-234	151/151	1.02E+02	pCi/g				
Uranium-235	21/151	4.90E+00	pCi/g				
Uranium-238	151/151	1.42E+02	pCi/g				

290332

530839

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	27/27	1.77E+04	mg/kg	3.54E+00			
Antimony	14/27	2.90E+00	mg/kg	5.80E-04			
Arsenic	27/27	4.52E+01	mg/kg	9.04E-03			
Barium	27/27	1.47E+02	mg/kg	2.94E-02			
Beryllium	27/27	8.00E-01	mg/kg	1.60E-04			
Cadmium	20/27	4.25E+00	mg/kg	8.50E-04			
Calcium	27/27	2.77E+05	mg/kg	5.54E+01	8.00E+02	1.60E+02	No
Chromium	27/27	6.60E+01	mg/kg	1.32E-02			
Cobalt	27/27	1.43E+01	mg/kg	2.86E-03			
Copper	27/27	3.46E+01	mg/kg	6.92E-03	1.00E+00	2.00E-01	No
Iron	27/27	3.70E+04	mg/kg	7.40E+00	1.00E+01	2.00E+00	Yes
Lead	27/27	4.20E+01	mg/kg	8.40E-03			
Magnesium	27/27	1.08E+04	mg/kg	2.16E+00	1.50E+02	3.00E+01	No
Manganese	27/27	7.36E+02	mg/kg	1.47E-01			
Mercury	24/27	1.36E-01	mg/kg	2.72E-05			
Nickel	27/27	2.55E+01	mg/kg	5.10E-03			
Potassium	27/27	1.00E+03	mg/kg	2.00E-01			
Selenium	7/27	3.00E-01	mg/kg	6.00E-05			
Silver	8/27	1.10E+00	mg/kg	2.20E-04			
Sodium	27/27	8.15E+02	mg/kg	1.63E-01			
Thallium	4/27	1.50E+00	mg/kg	3.00E-04			
Uranium	21/21	1.19E+02	mg/kg	2.38E-02			
Vanadium	27/27	4.24E+01	mg/kg	8.48E-03			
Zinc	27/27	1.11E+02	mg/kg	2.22E-02			
2-Methylnaphthalene	2/25	9.00E-01	mg/kg	1.80E-04			
Acenaphthene	11/25	7.07E+00	mg/kg	1.41E-03			
Acenaphthylene	1/25	2.20E-01	mg/kg	4.40E-05			
Anthracene	14/25	8.43E+01	mg/kg	1.69E-02			
Benz(a)anthracene	18/25	3.92E+01	mg/kg	7.84E-03			
Benzo(a)pyrene	18/25	3.77E+01	mg/kg	7.54E-03			
Benzo(b)fluoranthene	18/25	6.24E+01	mg/kg	1.25E-02			
Benzo(ghi)perylene	13/25	8.84E+00	mg/kg	1.77E-03			
Benzo(k)fluoranthene	19/25	9.41E+01	mg/kg	1.88E-02			
Bis(2-ethylhexyl)phthalate	3/25	1.00E-01	mg/kg	2.00E-05			
Chrysene	18/25	4.37E+01	mg/kg	8.73E-03			
Di-n-butyl phthalate	5/25	1.23E+00	mg/kg	2.46E-04			
Dibenz(a,h)anthracene	6/25	4.27E+00	mg/kg	8.54E-04			
Dibenzofuran	7/25	3.60E+00	mg/kg	7.20E-04			
Fluoranthene	22/25	9.68E+01	mg/kg	1.94E-02			
Fluorene	9/25	4.54E+00	mg/kg	9.08E-04			

530840

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Indeno(1,2,3-cd)pyrene	13/25	9.69E+00	mg/kg	1.94E-03			
Methylene chloride	2/3	1.40E-02	mg/kg	2.80E-06			
Naphthalene	5/25	1.90E+00	mg/kg	3.80E-04			
PCB-1254	2/13	9.60E-01	mg/kg	1.92E-04			
PCB-1260	6/13	3.30E+00	mg/kg	6.60E-04			
PCB-1262	1/13	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	18/25	7.75E+01	mg/kg	1.55E-02			
Polychlorinated biphenyl	9/24	1.00E+01	mg/kg	2.00E-03			
Pyrene	21/25	1.11E+02	mg/kg	2.21E-02			
Toluene	1/3	3.10E-03	mg/kg	6.20E-07			
Trichloroethene	1/3	1.60E-03	mg/kg	3.20E-07			
Alpha activity	40/57	1.75E+02	pCi/g				
Americium-241	3/21	1.00E+00	pCi/g				
Beta activity	51/57	2.48E+02	pCi/g				
Cesium-137	12/21	1.50E+00	pCi/g				
Neptunium-237	11/21	3.00E+00	pCi/g				
Plutonium-239	6/21	1.70E+00	pCi/g				
Technetium-99	20/21	5.30E+01	pCi/g				
Thorium-230	21/21	1.09E+01	pCi/g				
Uranium-234	21/21	3.11E+01	pCi/g				
Uranium-235	11/21	1.90E+00	pCi/g				
Uranium-238	21/21	3.95E+01	pCi/g				

230841

530841

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Central MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	3/3	7.77E+03	mg/kg	1.55E+00			
Antimony	1/3	4.50E+00	mg/kg	9.00E-04			
Arsenic	3/3	5.71E+00	mg/kg	1.14E-03			
Barium	3/3	1.33E+02	mg/kg	2.66E-02			
Beryllium	3/3	4.60E-01	mg/kg	9.20E-05			
Cadmium	2/3	3.00E-01	mg/kg	6.00E-05			
Calcium	3/3	1.45E+03	mg/kg	2.90E-01			
Chromium	3/3	3.67E+01	mg/kg	7.34E-03			
Cobalt	3/3	6.29E+00	mg/kg	1.26E-03			
Copper	3/3	1.27E+01	mg/kg	2.54E-03			
Iron	3/3	2.90E+04	mg/kg	5.80E+00	1.00E+01	2.00E+00	Yes
Lead	3/3	9.10E+00	mg/kg	1.82E-03			
Magnesium	3/3	1.85E+03	mg/kg	3.70E-01			
Manganese	3/3	3.02E+02	mg/kg	6.04E-02			
Mercury	3/3	2.73E-02	mg/kg	5.46E-06			
Nickel	3/3	1.50E+01	mg/kg	3.00E-03			
Potassium	3/3	3.54E+02	mg/kg	7.08E-02			
Silver	2/3	1.21E+00	mg/kg	2.42E-04			
Sodium	3/3	8.32E+02	mg/kg	1.66E-01			
Thallium	1/3	7.00E-01	mg/kg	1.40E-04			
Uranium	6/6	2.39E+00	mg/kg	4.78E-04			
Vanadium	3/3	3.08E+01	mg/kg	6.16E-03			
Zinc	3/3	3.47E+01	mg/kg	6.94E-03			
Bis(2-ethylhexyl)phthalate	1/3	4.00E-02	mg/kg	8.00E-06			
Chloroform	1/7	1.40E-03	mg/kg	2.80E-07			
Di-n-butyl phthalate	2/3	1.40E+00	mg/kg	2.80E-04			
Methylene chloride	6/7	1.40E-02	mg/kg	2.80E-06			
Toluene	3/7	1.70E-03	mg/kg	3.40E-07			
Trichloroethene	4/7	1.70E-02	mg/kg	3.40E-06			
Alpha activity	7/7	3.04E+01	pCi/g				
Beta activity	7/7	4.94E+01	pCi/g				
Cesium-137	2/6	3.00E-01	pCi/g				
Neptunium-237	1/6	2.00E-01	pCi/g				
Technetium-99	5/6	1.80E+00	pCi/g				
Thorium-230	6/6	1.00E+00	pCi/g				
Uranium-234	6/6	9.00E-01	pCi/g				
Uranium-238	6/6	8.00E-01	pCi/g				

530832

530842

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Central MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Uranium	1/1	1.49E+00	mg/kg	2.99E-04			
Di-n-butyl phthalate	1/1	1.20E+00	mg/kg	2.40E-04			
Methylene chloride	1/1	1.40E-02	mg/kg	2.80E-06			
Trichloroethene	1/1	1.60E-03	mg/kg	3.20E-07			
Alpha activity	1/1	1.04E+01	pCi/g				
Beta activity	1/1	2.68E+01	pCi/g				
Cesium-137	1/1	2.00E-01	pCi/g				
Technetium-99	1/1	1.50E+00	pCi/g				
Thorium-230	1/1	1.00E+00	pCi/g				
Uranium-234	1/1	5.00E-01	pCi/g				
Uranium-238	1/1	5.00E-01	pCi/g				

SECTOR=East MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	17/17	2.03E+04	mg/kg	4.06E+00			
Antimony	3/17	8.00E-01	mg/kg	1.60E-04			
Arsenic	17/17	1.81E+01	mg/kg	3.62E-03			
Barium	17/17	1.56E+02	mg/kg	3.12E-02			
Beryllium	17/17	6.90E-01	mg/kg	1.38E-04			
Cadmium	14/17	4.00E-01	mg/kg	8.00E-05			
Calcium	17/17	2.03E+04	mg/kg	4.06E+00	8.00E+02	1.60E+02	No
Chromium	17/17	2.04E+01	mg/kg	4.08E-03			
Cobalt	17/17	1.86E+01	mg/kg	3.72E-03			
Copper	17/17	3.46E+01	mg/kg	6.92E-03	1.00E+00	2.00E-01	No
Iron	17/17	2.70E+04	mg/kg	5.40E+00			
Lead	17/17	2.45E+01	mg/kg	4.90E-03			
Magnesium	17/17	3.06E+03	mg/kg	6.12E-01	1.50E+02	3.00E+01	No
Manganese	17/17	9.96E+02	mg/kg	1.99E-01			
Mercury	10/17	6.28E-02	mg/kg	1.26E-05			
Nickel	17/17	2.28E+01	mg/kg	4.56E-03			
Potassium	17/17	1.07E+03	mg/kg	2.14E-01	1.60E+03	3.20E+02	No
Selenium	1/17	5.00E-01	mg/kg	1.00E-04			
Sodium	17/17	8.64E+02	mg/kg	1.73E-01			
Thallium	1/17	1.20E+00	mg/kg	2.40E-04			
Uranium	16/16	2.74E+01	mg/kg	5.47E-03			

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

530843

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Vanadium	17/17	3.24E+01	mg/kg	6.48E-03			
Zinc	17/17	5.39E+01	mg/kg	1.08E-02			
Acenaphthene	2/18	1.30E-01	mg/kg	2.60E-05			
Acetone	4/14	4.30E+00	mg/kg	8.60E-04			
Anthracene	3/18	4.63E-01	mg/kg	9.26E-05			
Benz(a)anthracene	4/18	9.68E-01	mg/kg	1.94E-04			
Benzo(a)pyrene	4/18	1.00E+00	mg/kg	2.00E-04			
Benzo(b)fluoranthene	4/18	1.40E+00	mg/kg	2.80E-04			
Benzo(ghi)perylene	3/18	3.70E-01	mg/kg	7.40E-05			
Benzo(k)fluoranthene	5/18	9.47E-01	mg/kg	1.89E-04			
Bis(2-ethylhexyl)phthalate	7/18	8.00E-02	mg/kg	1.60E-05			
Chrysene	4/18	1.00E+00	mg/kg	2.00E-04			
Di-n-butyl phthalate	6/18	1.23E+00	mg/kg	2.46E-04			
Dibenz(a,h)anthracene	1/18	1.60E-01	mg/kg	3.20E-05			
Dibenzofuran	1/18	5.00E-02	mg/kg	1.00E-05			
Fluoranthene	7/18	2.10E+00	mg/kg	4.20E-04			
Fluorene	2/18	9.00E-02	mg/kg	1.80E-05			
Indeno(1,2,3-cd)pyrene	3/18	4.20E-01	mg/kg	8.40E-05			
Methylene chloride	8/14	6.30E-02	mg/kg	1.26E-05			
Naphthalene	1/18	4.00E-02	mg/kg	8.00E-06			
PCB-1260	4/10	3.30E+00	mg/kg	6.60E-04			
Phenanthrene	3/18	1.27E+00	mg/kg	2.54E-04			
Polychlorinated biphenyl	4/18	1.00E+01	mg/kg	2.00E-03			
Pyrene	6/18	1.80E+00	mg/kg	3.60E-04			
Toluene	3/14	2.70E-01	mg/kg	5.40E-05			
Trichloroethene	4/15	2.90E+00	mg/kg	5.80E-04			
cis-1,2-Dichloroethene	2/15	4.60E-02	mg/kg	9.20E-06			
Alpha activity	17/18	4.38E+01	pCi/g				
Americium-241	1/16	2.00E-01	pCi/g				
Beta activity	18/18	4.90E+01	pCi/g				
Cesium-137	3/16	5.00E-01	pCi/g				
Neptunium-237	3/16	4.00E-01	pCi/g				
Technetium-99	12/16	3.50E+00	pCi/g				
Thorium-230	15/16	4.20E+00	pCi/g				
Uranium-234	16/16	7.10E+00	pCi/g				
Uranium-235	1/16	4.00E-01	pCi/g				
Uranium-238	16/16	9.10E+00	pCi/g				

530844

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=East MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	2/2	1.21E+04	mg/kg	2.42E+00			
Arsenic	2/2	8.10E+00	mg/kg	1.62E-03			
Barium	2/2	1.32E+02	mg/kg	2.64E-02			
Beryllium	2/2	5.20E-01	mg/kg	1.04E-04			
Cadmium	2/2	3.80E-01	mg/kg	7.60E-05			
Calcium	2/2	2.03E+04	mg/kg	4.06E+00			
Chromium	2/2	1.82E+01	mg/kg	3.64E-03			
Cobalt	2/2	8.70E+00	mg/kg	1.74E-03			
Copper	2/2	3.46E+01	mg/kg	6.92E-03	1.00E+00	2.00E-01	No
Iron	2/2	2.05E+04	mg/kg	4.10E+00			
Lead	2/2	2.45E+01	mg/kg	4.90E-03			
Magnesium	2/2	2.43E+03	mg/kg	4.86E-01			
Manganese	2/2	5.55E+02	mg/kg	1.11E-01			
Mercury	2/2	6.28E-02	mg/kg	1.26E-05			
Nickel	2/2	2.28E+01	mg/kg	4.56E-03			
Potassium	2/2	7.51E+02	mg/kg	1.50E-01			
Sodium	2/2	6.20E+02	mg/kg	1.24E-01			
Thallium	1/2	1.20E+00	mg/kg	2.40E-04			
Uranium	1/1	2.74E+01	mg/kg	5.47E-03			
Vanadium	2/2	2.65E+01	mg/kg	5.30E-03			
Zinc	2/2	5.39E+01	mg/kg	1.08E-02			
Acenaphthene	1/2	1.30E-01	mg/kg	2.60E-05			
Anthracene	1/2	2.20E-01	mg/kg	4.40E-05			
Benz(a)anthracene	1/2	9.60E-01	mg/kg	1.92E-04			
Benzo(a)pyrene	1/2	1.00E+00	mg/kg	2.00E-04			
Benzo(b)fluoranthene	1/2	1.40E+00	mg/kg	2.80E-04			
Benzo(ghi)perylene	1/2	3.70E-01	mg/kg	7.40E-05			
Benzo(k)fluoranthene	2/2	8.70E-01	mg/kg	1.74E-04			
Chrysene	1/2	1.00E+00	mg/kg	2.00E-04			
Di-n-butyl phthalate	2/2	1.23E+00	mg/kg	2.46E-04			
Dibenz(a,h)anthracene	1/2	1.60E-01	mg/kg	3.20E-05			
Fluoranthene	2/2	2.10E+00	mg/kg	4.20E-04			
Fluorene	1/2	9.00E-02	mg/kg	1.80E-05			
Indeno(1,2,3-cd)pyrene	1/2	4.20E-01	mg/kg	8.40E-05			
PCB-1260	1/1	3.30E+00	mg/kg	6.60E-04			
Phenanthrene	1/2	1.20E+00	mg/kg	2.40E-04			
Polychlorinated biphenyl	1/2	1.00E+01	mg/kg	2.00E-03			
Pyrene	2/2	1.80E+00	mg/kg	3.60E-04			
Alpha activity	1/2	3.32E+01	pCi/g				
Beta activity	2/2	4.27E+01	pCi/g				

530845

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=East MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Cesium-137	1/1	5.00E-01	pCi/g				
Neptunium-237	1/1	4.00E-01	pCi/g				
Technetium-99	1/1	3.50E+00	pCi/g				
Thorium-230	1/1	4.20E+00	pCi/g				
Uranium-234	1/1	7.10E+00	pCi/g				
Uranium-235	1/1	4.00E-01	pCi/g				
Uranium-238	1/1	9.10E+00	pCi/g				

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	7/7	1.57E+04	mg/kg	3.14E+00			
Antimony	5/7	2.90E+00	mg/kg	5.80E-04			
Arsenic	7/7	1.83E+01	mg/kg	3.66E-03			
Barium	7/7	1.47E+02	mg/kg	2.94E-02			
Beryllium	7/7	1.20E+00	mg/kg	2.40E-04			
Cadmium	3/7	4.10E-01	mg/kg	8.20E-05			
Calcium	7/7	9.63E+04	mg/kg	1.93E+01	8.00E+02	1.60E+02	No
Chromium	7/7	2.49E+01	mg/kg	4.98E-03			
Cobalt	7/7	1.27E+01	mg/kg	2.54E-03			
Copper	7/7	2.03E+01	mg/kg	4.06E-03			
Iron	7/7	3.44E+04	mg/kg	6.88E+00	1.00E+01	2.00E+00	Yes
Lead	7/7	2.96E+01	mg/kg	5.92E-03			
Magnesium	7/7	5.14E+03	mg/kg	1.03E+00	1.50E+02	3.00E+01	No
Manganese	7/7	1.37E+03	mg/kg	2.74E-01			
Mercury	3/7	2.38E-02	mg/kg	4.76E-06			
Nickel	7/7	1.86E+01	mg/kg	3.72E-03			
Potassium	7/7	1.14E+03	mg/kg	2.28E-01	1.60E+03	3.20E+02	No
Selenium	2/7	7.00E-01	mg/kg	1.40E-04			
Silver	3/7	6.60E-01	mg/kg	1.32E-04			
Sodium	7/7	6.74E+02	mg/kg	1.35E-01			
Thallium	1/7	9.00E-01	mg/kg	1.80E-04			
Uranium	6/6	2.62E+01	mg/kg	5.24E-03			
Vanadium	7/7	5.98E+01	mg/kg	1.20E-02			
Zinc	7/7	5.66E+01	mg/kg	1.13E-02			

530846

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Far East/Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Benz(a)anthracene	2/7	1.30E-01	mg/kg	2.60E-05			
Benzo(a)pyrene	2/7	1.50E-01	mg/kg	3.00E-05			
Benzo(b)fluoranthene	2/7	1.80E-01	mg/kg	3.60E-05			
Benzo(ghi)perylene	1/7	6.20E-02	mg/kg	1.24E-05			
Benzo(k)fluoranthene	2/7	1.50E-01	mg/kg	3.00E-05			
Bis(2-ethylhexyl)phthalate	2/7	7.00E-02	mg/kg	1.40E-05			
Butyl benzyl phthalate	1/7	4.00E-02	mg/kg	8.00E-06			
Chrysene	2/7	1.50E-01	mg/kg	3.00E-05			
Di-n-butyl phthalate	3/7	1.21E+00	mg/kg	2.43E-04			
Fluoranthene	3/7	2.20E-01	mg/kg	4.40E-05			
Indeno(1,2,3-cd)pyrene	1/7	6.70E-02	mg/kg	1.34E-05			
PCB-1254	1/6	3.80E-02	mg/kg	7.60E-06			
PCB-1260	2/6	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	2/7	7.00E-02	mg/kg	1.40E-05			
Polychlorinated biphenyl	2/7	7.60E-02	mg/kg	1.52E-05			
Pyrene	3/7	2.20E-01	mg/kg	4.40E-05			
Alpha activity	13/16	4.43E+01	pCi/g				
Americium-241	3/6	1.30E+00	pCi/g				
Beta activity	13/16	5.57E+01	pCi/g				
Cesium-137	2/6	4.00E-01	pCi/g				
Technetium-99	6/6	2.90E+00	pCi/g				
Thorium-230	6/6	1.40E+00	pCi/g				
Uranium-234	6/6	7.90E+00	pCi/g				
Uranium-235	2/6	5.00E-01	pCi/g				
Uranium-238	6/6	8.70E+00	pCi/g				

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	2/2	1.57E+04	mg/kg	3.14E+00			
Antimony	2/2	2.90E+00	mg/kg	5.80E-04			
Arsenic	2/2	7.60E+00	mg/kg	1.52E-03			
Barium	2/2	1.47E+02	mg/kg	2.94E-02			
Beryllium	2/2	6.10E-01	mg/kg	1.22E-04			
Calcium	2/2	1.49E+04	mg/kg	2.98E+00			

530847

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Chromium	2/2	1.68E+01	mg/kg	3.36E-03			
Cobalt	2/2	9.38E+00	mg/kg	1.88E-03			
Copper	2/2	1.26E+01	mg/kg	2.52E-03			
Iron	2/2	1.97E+04	mg/kg	3.94E+00			
Lead	2/2	1.25E+01	mg/kg	2.50E-03			
Magnesium	2/2	2.25E+03	mg/kg	4.50E-01			
Manganese	2/2	6.88E+02	mg/kg	1.38E-01			
Mercury	1/2	1.82E-02	mg/kg	3.64E-06			
Nickel	2/2	1.62E+01	mg/kg	3.24E-03			
Potassium	2/2	9.10E+02	mg/kg	1.82E-01			
Silver	1/2	1.40E-01	mg/kg	2.80E-05			
Sodium	2/2	2.58E+02	mg/kg	5.16E-02			
Uranium	2/2	2.62E+01	mg/kg	5.24E-03			
Vanadium	2/2	2.91E+01	mg/kg	5.82E-03			
Zinc	2/2	4.55E+01	mg/kg	9.10E-03			
Benz(a)anthracene	1/2	4.00E-02	mg/kg	8.00E-06			
Benzo(a)pyrene	1/2	4.00E-02	mg/kg	8.00E-06			
Benzo(b)fluoranthene	1/2	4.00E-02	mg/kg	8.00E-06			
Benzo(k)fluoranthene	1/2	5.00E-02	mg/kg	1.00E-05			
Chrysene	1/2	4.00E-02	mg/kg	8.00E-06			
Fluoranthene	2/2	9.00E-02	mg/kg	1.80E-05			
PCB-1260	1/2	5.60E-03	mg/kg	1.12E-06			
Phenanthrene	1/2	4.00E-02	mg/kg	8.00E-06			
Polychlorinated biphenyl	1/2	5.60E-03	mg/kg	1.12E-06			
Pyrene	2/2	7.00E-02	mg/kg	1.40E-05			
Alpha activity	7/10	4.43E+01	pCi/g				
Americium-241	1/2	1.00E+00	pCi/g				
Beta activity	7/10	5.57E+01	pCi/g				
Cesium-137	1/2	4.00E-01	pCi/g				
Technetium-99	2/2	1.00E+00	pCi/g				
Thorium-230	2/2	1.30E+00	pCi/g				
Uranium-234	2/2	7.90E+00	pCi/g				
Uranium-235	1/2	5.00E-01	pCi/g				
Uranium-238	2/2	8.70E+00	pCi/g				

530848

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	11/11	1.61E+04	mg/kg	3.22E+00			
Antimony	9/11	1.40E+00	mg/kg	2.80E-04			
Arsenic	11/11	1.08E+01	mg/kg	2.16E-03			
Barium	11/11	1.66E+02	mg/kg	3.32E-02			
Beryllium	11/11	9.80E-01	mg/kg	1.96E-04			
Cadmium	8/11	9.00E-01	mg/kg	1.80E-04			
Calcium	11/11	4.16E+04	mg/kg	8.32E+00	8.00E+02	1.60E+02	No
Chromium	11/11	1.41E+02	mg/kg	2.82E-02			
Cobalt	11/11	1.60E+01	mg/kg	3.20E-03			
Copper	11/11	9.52E+03	mg/kg	1.90E+00	1.00E+00	2.00E-01	Yes
Iron	11/11	5.17E+04	mg/kg	1.03E+01	1.00E+01	2.00E+00	Yes
Lead	11/11	8.75E+01	mg/kg	1.75E-02			
Magnesium	11/11	3.66E+03	mg/kg	7.32E-01	1.50E+02	3.00E+01	No
Manganese	11/11	8.90E+02	mg/kg	1.78E-01			
Mercury	9/11	4.57E-01	mg/kg	9.14E-05			
Nickel	11/11	1.76E+04	mg/kg	3.52E+00			
Potassium	11/11	8.42E+02	mg/kg	1.68E-01			
Selenium	4/11	1.00E+00	mg/kg	2.00E-04			
Silver	7/11	4.12E+00	mg/kg	8.24E-04			
Sodium	11/11	1.17E+03	mg/kg	2.34E-01			
Thallium	1/11	6.00E-01	mg/kg	1.20E-04			
Uranium	9/9	4.26E+02	mg/kg	8.52E-02			
Vanadium	11/11	3.61E+01	mg/kg	7.22E-03			
Zinc	11/11	1.81E+02	mg/kg	3.62E-02			
2,4-Dinitrotoluene	1/12	4.57E-01	mg/kg	9.14E-05			
Acenaphthene	1/12	5.00E-02	mg/kg	1.00E-05			
Acetone	2/9	1.10E+00	mg/kg	2.20E-04			
Anthracene	1/12	1.60E-01	mg/kg	3.20E-05			
Benz(a)anthracene	3/12	3.40E-01	mg/kg	6.80E-05			
Benzo(a)pyrene	3/12	2.80E-01	mg/kg	5.60E-05			
Benzo(b)fluoranthene	3/12	2.60E-01	mg/kg	5.20E-05			
Benzo(ghi)perylene	3/12	1.30E-01	mg/kg	2.60E-05			
Benzo(k)fluoranthene	3/12	2.90E-01	mg/kg	5.80E-05			
Bis(2-ethylhexyl)phthalate	8/12	1.20E-01	mg/kg	2.40E-05			
Chrysene	3/12	3.50E-01	mg/kg	7.00E-05			
Di-n-butyl phthalate	6/12	1.86E+00	mg/kg	3.71E-04			
Fluoranthene	4/12	8.40E-01	mg/kg	1.68E-04			
Fluorene	1/12	5.00E-02	mg/kg	1.00E-05			
Indeno(1,2,3-cd)pyrene	3/12	1.40E-01	mg/kg	2.80E-05			
Methylene chloride	5/9	1.70E-02	mg/kg	3.40E-06			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
N-Nitrosodiphenylamine	1/12	8.23E-01	mg/kg	1.65E-04			
PCB-1254	1/9	3.20E-02	mg/kg	6.40E-06			
PCB-1260	1/9	6.30E-02	mg/kg	1.26E-05			
Phenanthrene	3/12	7.00E-01	mg/kg	1.40E-04			
Polychlorinated biphenyl	2/11	6.30E-02	mg/kg	1.26E-05			
Pyrene	3/12	7.10E-01	mg/kg	1.42E-04			
Toluene	3/9	3.20E-01	mg/kg	6.40E-05			
Trichloroethene	2/12	3.40E-02	mg/kg	6.80E-06			
cis-1,2-Dichloroethene	2/12	1.50E-02	mg/kg	3.00E-06			
Alpha activity	17/27	8.78E+02	pCi/g				
Americium-241	2/9	6.00E-01	pCi/g				
Beta activity	25/27	8.08E+03	pCi/g				
Cesium-137	6/9	1.11E+01	pCi/g				
Neptunium-237	5/9	5.26E+01	pCi/g				
Plutonium-239	4/9	1.12E+01	pCi/g				
Technetium-99	9/9	4.84E+03	pCi/g				
Thorium-230	9/9	1.88E+01	pCi/g				
Uranium-234	9/9	1.02E+02	pCi/g				
Uranium-235	3/9	4.90E+00	pCi/g				
Uranium-238	9/9	1.42E+02	pCi/g				

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	2/2	1.29E+04	mg/kg	2.58E+00			
Antimony	2/2	1.40E+00	mg/kg	2.80E-04			
Arsenic	2/2	1.01E+01	mg/kg	2.02E-03			
Barium	2/2	1.01E+02	mg/kg	2.02E-02			
Beryllium	2/2	6.90E-01	mg/kg	1.38E-04			
Cadmium	2/2	3.00E-01	mg/kg	6.00E-05			
Calcium	2/2	4.16E+04	mg/kg	8.32E+00			
Chromium	2/2	2.72E+01	mg/kg	5.44E-03			
Cobalt	2/2	8.86E+00	mg/kg	1.77E-03			
Copper	2/2	1.40E+01	mg/kg	2.80E-03			
Iron	2/2	2.13E+04	mg/kg	4.26E+00			

530850

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Lead	2/2	1.60E+01	mg/kg	3.20E-03			
Magnesium	2/2	3.66E+03	mg/kg	7.32E-01			
Manganese	2/2	7.36E+02	mg/kg	1.47E-01			
Mercury	2/2	4.93E-02	mg/kg	9.86E-06			
Nickel	2/2	1.43E+01	mg/kg	2.86E-03			
Potassium	2/2	4.77E+02	mg/kg	9.54E-02			
Selenium	1/2	3.00E-01	mg/kg	6.00E-05			
Silver	2/2	3.00E-01	mg/kg	6.00E-05			
Sodium	2/2	2.54E+02	mg/kg	5.08E-02			
Thallium	1/2	6.00E-01	mg/kg	1.20E-04			
Uranium	2/2	1.38E+01	mg/kg	2.76E-03			
Vanadium	2/2	3.61E+01	mg/kg	7.22E-03			
Zinc	2/2	3.78E+01	mg/kg	7.56E-03			
Acenaphthene	1/2	5.00E-02	mg/kg	1.00E-05			
Anthracene	1/2	1.60E-01	mg/kg	3.20E-05			
Benz(a)anthracene	1/2	3.40E-01	mg/kg	6.80E-05			
Benzo(a)pyrene	1/2	2.80E-01	mg/kg	5.60E-05			
Benzo(b)fluoranthene	1/2	2.60E-01	mg/kg	5.20E-05			
Benzo(ghi)perylene	1/2	1.30E-01	mg/kg	2.60E-05			
Benzo(k)fluoranthene	1/2	2.90E-01	mg/kg	5.80E-05			
Bis(2-ethylhexyl)phthalate	1/2	8.00E-02	mg/kg	1.60E-05			
Chrysene	1/2	3.50E-01	mg/kg	7.00E-05			
Di-n-butyl phthalate	1/2	4.00E-02	mg/kg	8.00E-06			
Fluoranthene	2/2	8.40E-01	mg/kg	1.68E-04			
Fluorene	1/2	5.00E-02	mg/kg	1.00E-05			
Indeno(1,2,3-cd)pyrene	1/2	1.40E-01	mg/kg	2.80E-05			
Phenanthrene	1/2	7.00E-01	mg/kg	1.40E-04			
Pyrene	1/2	7.10E-01	mg/kg	1.42E-04			
Alpha activity	6/15	2.32E+01	pCi/g				
Beta activity	13/15	8.31E+01	pCi/g				
Cesium-137	2/2	2.00E-01	pCi/g				
Neptunium-237	1/2	6.00E-01	pCi/g				
Plutonium-239	2/2	4.00E-01	pCi/g				
Technetium-99	2/2	1.70E+01	pCi/g				
Thorium-230	2/2	1.60E+00	pCi/g				
Uranium-234	2/2	3.10E+00	pCi/g				
Uranium-235	1/2	2.00E-01	pCi/g				
Uranium-238	2/2	4.60E+00	pCi/g				

230931

530851

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	3/3	1.39E+02	mg/L	1.39E+02			
Arsenic	2/3	4.06E-01	mg/L	4.06E-01			
Barium	3/3	5.88E-01	mg/L	5.88E-01			
Beryllium	3/3	1.30E-02	mg/L	1.30E-02			
Bromide	16/41	5.20E-02	mg/L	5.20E-02			
Cadmium	2/3	2.99E-03	mg/L	2.99E-03			
Calcium	3/3	5.45E+01	mg/L	5.45E+01	8.00E+02	1.60E+02	No
Chloride	41/41	2.24E+01	mg/L	2.24E+01	6.00E+02	1.20E+02	No
Chromium	3/3	3.87E-01	mg/L	3.87E-01			
Cobalt	2/3	1.07E-01	mg/L	1.07E-01			
Copper	2/3	9.57E-02	mg/L	9.57E-02	1.00E+00	2.00E-01	No
Fluoride	16/41	2.92E-01	mg/L	2.92E-01	1.50E+00	3.00E-01	No
Iron	3/3	3.37E+02	mg/L	3.37E+02	1.00E+01	2.00E+00	Yes
Lead	2/3	1.77E-01	mg/L	1.77E-01			
Magnesium	3/3	3.19E+01	mg/L	3.19E+01	1.70E+02	3.40E+01	No
Manganese	3/3	2.44E+00	mg/L	2.44E+00			
Nickel	3/3	1.86E-01	mg/L	1.86E-01			
Nitrate	23/41	2.90E+00	mg/L	2.90E+00			
Nitrate/Nitrite	1/16	5.00E-03	mg/L	5.00E-03			
Orthophosphate	3/41	1.01E-01	mg/L	1.01E-01			
Potassium	3/3	2.12E+01	mg/L	2.12E+01	1.60E+03	3.20E+02	No
Selenium	1/3	4.41E-02	mg/L	4.41E-02	3.00E-02	6.00E-03	Yes
Sodium	3/3	3.67E+01	mg/L	3.67E+01			
Tetraoxo-sulfate(1-)	41/41	5.34E+01	mg/L	5.34E+01			
Thallium	2/3	1.03E-03	mg/L	1.03E-03			
Uranium	2/3	4.27E-03	mg/L	4.27E-03			
Vanadium	3/3	1.57E+00	mg/L	1.57E+00			
Zinc	3/3	1.21E+01	mg/L	1.21E+01			
1,1-Dichloroethene	2/54	2.40E-02	mg/L	2.40E-02			
1,2-Dichloroethane	1/5	1.00E-03	mg/L	1.00E-03			
Benzoic acid	1/5	1.00E-03	mg/L	1.00E-03			
Bis(2-ethylhexyl)phthalate	3/5	8.00E-03	mg/L	8.00E-03			
Bromodichloromethane	2/5	8.00E-03	mg/L	8.00E-03			
Chloroform	4/5	1.90E-02	mg/L	1.90E-02			
Di-n-butyl phthalate	1/5	1.00E-03	mg/L	1.00E-03			
Di-n-octylphthalate	2/5	6.00E-03	mg/L	6.00E-03			
Dibromochloromethane	2/5	4.00E-03	mg/L	4.00E-03			
Phenol	3/5	5.00E-03	mg/L	5.00E-03			
Tetrachloroethene	1/5	2.70E-02	mg/L	2.70E-02			
Toluene	3/5	4.00E-03	mg/L	4.00E-03			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Trichloroethene	39/54	1.28E+00	mg/L	1.28E+00			
Vinyl chloride	1/54	2.00E-02	mg/L	2.00E-02			
cis-1,2-Dichloroethene	2/54	2.00E-02	mg/L	2.00E-02			
trans-1,2-Dichloroethene	5/54	2.00E-02	mg/L	2.00E-02			
Actinium-228	1/1	2.72E+01	pCi/L				
Alpha activity	48/51	1.49E+02	pCi/L				
Americium-241	1/6	5.30E-02	pCi/L				
Beta activity	51/51	1.16E+04	pCi/L				
Bismuth-214	1/1	9.00E+00	pCi/L				
Cesium-137	4/6	1.65E+01	pCi/L				
Lead-210	1/1	4.21E+02	pCi/L				
Lead-212	1/1	2.25E+01	pCi/L				
Lead-214	1/1	1.21E+01	pCi/L				
Neptunium-237	6/6	1.31E+01	pCi/L				
Plutonium-239	1/5	2.12E+00	pCi/L				
Potassium-40	1/1	6.80E+01	pCi/L				
Technetium-99	3/6	6.16E+02	pCi/L				
Thallium-208	1/1	6.70E+00	pCi/L				
Thorium-228	1/1	1.23E+00	pCi/L				
Thorium-230	6/6	1.88E+00	pCi/L				
Thorium-232	1/1	1.15E+00	pCi/L				
Thorium-234	1/1	7.19E+02	pCi/L				
Uranium-233/234	1/1	6.10E-01	pCi/L				
Uranium-234	4/5	2.23E+00	pCi/L				
Uranium-235	1/6	2.30E+01	pCi/L				
Uranium-238	4/6	1.82E+00	pCi/L				

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	25/25	1.71E+04	mg/kg	3.42E+00			
Antimony	8/25	4.70E+00	mg/kg	9.40E-04			
Arsenic	25/25	9.20E+00	mg/kg	1.84E-03			
Barium	25/25	1.81E+02	mg/kg	3.62E-02			
Beryllium	25/25	8.10E-01	mg/kg	1.62E-04			

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530853

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Cadmium	12/25	4.90E-01	mg/kg	9.80E-05			
Calcium	25/25	3.40E+05	mg/kg	6.80E+01	8.00E+02	1.60E+02	No
Chromium	25/25	3.91E+01	mg/kg	7.82E-03			
Cobalt	25/25	1.68E+01	mg/kg	3.36E-03			
Copper	25/25	1.89E+01	mg/kg	3.78E-03			
Iron	25/25	2.60E+04	mg/kg	5.20E+00			
Lead	25/25	1.41E+01	mg/kg	2.82E-03			
Magnesium	25/25	8.04E+03	mg/kg	1.61E+00	1.50E+02	3.00E+01	No
Manganese	25/25	8.42E+02	mg/kg	1.68E-01			
Mercury	21/25	8.36E-02	mg/kg	1.67E-05			
Nickel	25/25	2.49E+01	mg/kg	4.98E-03			
Potassium	25/25	1.08E+03	mg/kg	2.16E-01	1.60E+03	3.20E+02	No
Selenium	2/25	5.00E-01	mg/kg	1.00E-04			
Silver	7/25	4.28E+00	mg/kg	8.56E-04			
Sodium	25/25	1.67E+03	mg/kg	3.34E-01			
Thallium	4/25	2.30E+00	mg/kg	4.60E-04			
Uranium	6/6	6.06E+01	mg/kg	1.21E-02			
Vanadium	25/25	3.77E+01	mg/kg	7.54E-03			
Zinc	25/25	7.02E+01	mg/kg	1.40E-02			
2,6-Dinitrotoluene	4/25	4.32E-01	mg/kg	8.64E-05			
Acenaphthene	2/25	1.22E+00	mg/kg	2.44E-04			
Acetone	4/12	1.00E-01	mg/kg	2.00E-05			
Anthracene	2/25	1.89E+00	mg/kg	3.79E-04			
Benz(a)anthracene	2/25	4.13E+00	mg/kg	8.27E-04			
Benzo(a)pyrene	2/25	3.36E+00	mg/kg	6.72E-04			
Benzo(b)fluoranthene	2/25	3.42E+00	mg/kg	6.85E-04			
Benzo(ghi)perylene	2/25	1.87E+00	mg/kg	3.73E-04			
Benzo(k)fluoranthene	2/25	1.98E+00	mg/kg	3.96E-04			
Bis(2-ethylhexyl)phthalate	3/25	6.00E-02	mg/kg	1.20E-05			
Chrysene	2/25	3.97E+00	mg/kg	7.94E-04			
Di-n-butyl phthalate	8/25	1.88E+00	mg/kg	3.75E-04			
Dibenz(a,h)anthracene	1/25	4.12E-01	mg/kg	8.24E-05			
Dibenzofuran	1/25	5.76E-01	mg/kg	1.15E-04			
Fluoranthene	3/25	8.29E+00	mg/kg	1.66E-03			
Fluorene	1/25	9.25E-01	mg/kg	1.85E-04			
Indeno(1,2,3-cd)pyrene	2/25	1.89E+00	mg/kg	3.78E-04			
Methylene chloride	11/12	3.70E-03	mg/kg	7.40E-07			
N-Nitroso-di-n-propylamine	2/25	6.34E-01	mg/kg	1.27E-04			
Naphthalene	1/25	5.03E-01	mg/kg	1.01E-04			

530854

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
PCB-1254	1/15	5.20E-03	mg/kg	1.04E-06			
PCB-1260	1/15	4.30E-02	mg/kg	8.60E-06			
Phenanthrene	3/25	7.47E+00	mg/kg	1.49E-03			
Polychlorinated biphenyl	2/25	4.30E-02	mg/kg	8.60E-06			
Pyrene	3/25	7.85E+00	mg/kg	1.57E-03			
Toluene	3/12	2.30E-03	mg/kg	4.60E-07			
Trichloroethene	1/20	2.20E-03	mg/kg	4.40E-07			
Vinyl acetate	1/12	2.80E-02	mg/kg	5.60E-06			
Alpha activity	20/24	7.49E+01	pCi/g				
Beta activity	23/24	6.22E+01	pCi/g				
Neptunium-237	1/6	3.00E-01	pCi/g				
Technetium-99	6/6	4.00E+00	pCi/g				
Thorium-230	6/6	1.90E+00	pCi/g				
Uranium-234	6/6	2.01E+01	pCi/g				
Uranium-235	3/6	7.00E-01	pCi/g				
Uranium-238	6/6	2.02E+01	pCi/g				

SECTOR=Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	1/1	1.26E+04	mg/kg	2.52E+00			
Arsenic	1/1	5.35E+00	mg/kg	1.07E-03			
Barium	1/1	1.02E+02	mg/kg	2.04E-02			
Beryllium	1/1	5.80E-01	mg/kg	1.16E-04			
Calcium	1/1	1.02E+04	mg/kg	2.04E+00			
Chromium	1/1	1.93E+01	mg/kg	3.86E-03			
Cobalt	1/1	9.76E+00	mg/kg	1.95E-03			
Copper	1/1	1.89E+01	mg/kg	3.78E-03			
Iron	1/1	2.60E+04	mg/kg	5.20E+00			
Lead	1/1	1.41E+01	mg/kg	2.82E-03			
Magnesium	1/1	2.51E+03	mg/kg	5.02E-01			
Manganese	1/1	5.20E+02	mg/kg	1.04E-01			
Mercury	1/1	2.63E-02	mg/kg	5.26E-06			
Nickel	1/1	1.90E+01	mg/kg	3.80E-03			
Potassium	1/1	3.54E+02	mg/kg	7.08E-02			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Sodium	1/1	2.76E+02	mg/kg	5.52E-02			
Uranium	1/1	1.38E+01	mg/kg	2.76E-03			
Vanadium	1/1	3.04E+01	mg/kg	6.08E-03			
Zinc	1/1	7.02E+01	mg/kg	1.40E-02			
Acenaphthene	1/1	4.00E-02	mg/kg	8.00E-06			
Anthracene	1/1	8.00E-02	mg/kg	1.60E-05			
Benz(a)anthracene	1/1	3.50E-01	mg/kg	7.00E-05			
Benzo(a)pyrene	1/1	3.00E-01	mg/kg	6.00E-05			
Benzo(b)fluoranthene	1/1	4.30E-01	mg/kg	8.60E-05			
Benzo(ghi)perylene	1/1	1.70E-01	mg/kg	3.40E-05			
Benzo(k)fluoranthene	1/1	2.80E-01	mg/kg	5.60E-05			
Chrysene	1/1	4.00E-01	mg/kg	8.00E-05			
Fluoranthene	1/1	8.60E-01	mg/kg	1.72E-04			
Indeno(1,2,3-cd)pyrene	1/1	1.80E-01	mg/kg	3.60E-05			
Methylene chloride	1/1	2.00E-03	mg/kg	4.00E-07			
PCB-1260	1/1	4.30E-02	mg/kg	8.60E-06			
Phenanthrene	1/1	4.70E-01	mg/kg	9.40E-05			
Polychlorinated biphenyl	1/1	4.30E-02	mg/kg	8.60E-06			
Pyrene	1/1	6.80E-01	mg/kg	1.36E-04			
Alpha activity	1/1	3.19E+01	pCi/g				
Beta activity	1/1	5.08E+01	pCi/g				
Technetium-99	1/1	3.60E+00	pCi/g				
Thorium-230	1/1	1.80E+00	pCi/g				
Uranium-234	1/1	3.40E+00	pCi/g				
Uranium-235	1/1	2.00E-01	pCi/g				
Uranium-238	1/1	4.60E+00	pCi/g				

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	25/25	1.74E+04	mg/kg	3.48E+00			
Antimony	9/25	9.40E+00	mg/kg	1.88E-03			
Arsenic	25/25	1.03E+01	mg/kg	2.06E-03			
Barium	25/25	1.60E+02	mg/kg	3.20E-02			
Beryllium	25/25	1.19E+00	mg/kg	2.38E-04			

530856

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Cadmium	8/25	7.50E-01	mg/kg	1.50E-04			
Calcium	25/25	1.10E+05	mg/kg	2.20E+01	8.00E+02	1.60E+02	No
Chromium	25/25	6.60E+01	mg/kg	1.32E-02			
Cobalt	25/25	1.77E+01	mg/kg	3.54E-03			
Copper	25/25	1.79E+01	mg/kg	3.58E-03			
Iron	25/25	3.74E+04	mg/kg	7.48E+00	1.00E+01	2.00E+00	Yes
Lead	25/25	4.20E+01	mg/kg	8.40E-03			
Magnesium	25/25	2.42E+03	mg/kg	4.84E-01	1.50E+02	3.00E+01	No
Manganese	25/25	8.87E+02	mg/kg	1.77E-01			
Mercury	20/25	8.30E+00	mg/kg	1.66E-03			
Nickel	25/25	2.91E+01	mg/kg	5.82E-03			
Potassium	25/25	4.61E+02	mg/kg	9.22E-02			
Selenium	4/25	3.00E-01	mg/kg	6.00E-05			
Silver	3/25	1.03E+00	mg/kg	2.06E-04			
Sodium	25/25	7.87E+02	mg/kg	1.57E-01			
Thallium	1/25	7.00E-01	mg/kg	1.40E-04			
Uranium	12/12	4.44E+01	mg/kg	8.87E-03			
Vanadium	25/25	6.72E+01	mg/kg	1.34E-02			
Zinc	25/25	4.57E+01	mg/kg	9.14E-03			
1,1-Dichloroethene	1/16	1.40E-03	mg/kg	2.80E-07			
Acetone	3/10	1.40E+00	mg/kg	2.80E-04			
Benz(a)anthracene	2/21	3.00E-01	mg/kg	6.00E-05			
Benzo(a)pyrene	2/21	4.00E-01	mg/kg	8.00E-05			
Benzo(b)fluoranthene	2/21	6.00E-01	mg/kg	1.20E-04			
Benzo(k)fluoranthene	2/21	3.00E-01	mg/kg	6.00E-05			
Bis(2-ethylhexyl)phthalate	4/21	8.00E-02	mg/kg	1.60E-05			
Chrysene	2/21	2.90E-01	mg/kg	5.80E-05			
Di-n-butyl phthalate	3/21	4.00E-02	mg/kg	8.00E-06			
Fluoranthene	2/21	4.00E-01	mg/kg	8.00E-05			
Methylene chloride	6/10	7.10E-03	mg/kg	1.42E-06			
N-Nitroso-di-n-propylamine	1/21	5.22E-01	mg/kg	1.04E-04			
Phenanthrene	1/21	5.00E-02	mg/kg	1.00E-05			
Polychlorinated biphenyl	1/22	1.00E+00	mg/kg	2.00E-04			
Pyrene	2/21	4.00E-01	mg/kg	8.00E-05			
Toluene	1/10	6.00E-03	mg/kg	1.20E-06			
Trichloroethene	1/16	4.00E-03	mg/kg	8.00E-07			
Alpha activity	23/27	4.02E+01	pCi/g				
Americium-241	2/12	4.00E-01	pCi/g				
Beta activity	27/27	1.48E+02	pCi/g				

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Northwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Cesium-137	2/12	2.00E-01	pCi/g				
Neptunium-237	2/12	8.00E-01	pCi/g				
Plutonium-239	1/12	2.00E-01	pCi/g				
Technetium-99	12/12	4.33E+01	pCi/g				
Thorium-230	12/12	5.60E+00	pCi/g				
Uranium-234	12/12	7.40E+00	pCi/g				
Uranium-235	2/12	4.00E-01	pCi/g				
Uranium-238	12/12	1.48E+01	pCi/g				

SECTOR=Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	6/6	1.10E+04	mg/kg	2.20E+00			
Antimony	2/6	1.00E+00	mg/kg	2.00E-04			
Arsenic	6/6	7.07E+00	mg/kg	1.41E-03			
Barium	6/6	8.67E+01	mg/kg	1.73E-02			
Beryllium	6/6	7.10E-01	mg/kg	1.42E-04			
Cadmium	3/6	7.50E-01	mg/kg	1.50E-04			
Calcium	6/6	1.10E+05	mg/kg	2.20E+01			
Chromium	6/6	6.60E+01	mg/kg	1.32E-02			
Cobalt	6/6	8.50E+00	mg/kg	1.70E-03			
Copper	6/6	1.32E+01	mg/kg	2.64E-03			
Iron	6/6	3.05E+04	mg/kg	6.10E+00	1.00E+01	2.00E+00	Yes
Lead	6/6	4.20E+01	mg/kg	8.40E-03			
Magnesium	6/6	2.42E+03	mg/kg	4.84E-01			
Manganese	6/6	5.72E+02	mg/kg	1.14E-01			
Mercury	5/6	8.88E-02	mg/kg	1.78E-05			
Nickel	6/6	1.41E+01	mg/kg	2.82E-03			
Potassium	6/6	2.48E+02	mg/kg	4.96E-02			
Selenium	3/6	3.00E-01	mg/kg	6.00E-05			
Silver	1/6	3.80E-01	mg/kg	7.60E-05			
Sodium	6/6	4.91E+02	mg/kg	9.82E-02			
Uranium	1/1	9.55E+00	mg/kg	1.91E-03			
Vanadium	6/6	4.24E+01	mg/kg	8.48E-03			
Zinc	6/6	3.74E+01	mg/kg	7.48E-03			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Northwest MEDIA=Surface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Benz(a)anthracene	1/2	3.00E-01	mg/kg	6.00E-05			
Benzo(a)pyrene	1/2	4.00E-01	mg/kg	8.00E-05			
Benzo(b)fluoranthene	1/2	6.00E-01	mg/kg	1.20E-04			
Benzo(k)fluoranthene	1/2	3.00E-01	mg/kg	6.00E-05			
Chrysene	1/2	2.90E-01	mg/kg	5.80E-05			
Fluoranthene	1/2	4.00E-01	mg/kg	8.00E-05			
Pyrene	1/2	4.00E-01	mg/kg	8.00E-05			
Alpha activity	6/6	2.22E+01	pCi/g				
Beta activity	6/6	6.11E+01	pCi/g				
Cesium-137	1/1	2.00E-01	pCi/g				
Technetium-99	1/1	4.20E+00	pCi/g				
Thorium-230	1/1	1.10E+00	pCi/g				
Uranium-234	1/1	2.80E+00	pCi/g				
Uranium-238	1/1	3.20E+00	pCi/g				

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	80/80	2.50E+02	mg/L	2.50E+02			
Antimony	11/80	4.02E-02	mg/L	4.02E-02			
Arsenic	61/80	4.36E-01	mg/L	4.36E-01			
Barium	80/80	6.93E+00	mg/L	6.93E+00			
Beryllium	69/79	1.11E-01	mg/L	1.11E-01			
Bromide	10/39	1.40E+00	mg/L	1.40E+00			
Cadmium	29/80	1.59E-02	mg/L	1.59E-02			
Calcium	80/80	7.87E+01	mg/L	7.87E+01	8.00E+02	1.60E+02	No
Chloride	39/39	1.25E+02	mg/L	1.25E+02	6.00E+02	1.20E+02	Yes
Chromium	62/80	4.49E+00	mg/L	4.49E+00			
Cobalt	76/80	4.84E-01	mg/L	4.84E-01			
Copper	58/80	1.05E+01	mg/L	1.05E+01	1.00E+00	2.00E-01	Yes
Fluoride	9/39	2.31E-01	mg/L	2.31E-01	1.50E+00	3.00E-01	No
Iron	80/80	2.24E+03	mg/L	2.24E+03	1.00E+01	2.00E+00	Yes
Lead	63/80	2.63E-01	mg/L	2.63E-01			
Magnesium	80/80	3.33E+01	mg/L	3.33E+01	1.70E+02	3.40E+01	No
Manganese	80/80	5.79E+01	mg/L	5.79E+01			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Mercury	30/80	6.12E-04	mg/L	6.12E-04			
Nickel	74/80	4.88E+00	mg/L	4.88E+00			
Nitrate	39/39	1.74E+02	mg/L	1.74E+02			
Nitrate/Nitrite	3/9	1.14E-01	mg/L	1.14E-01			
Orthophosphate	2/39	3.60E-02	mg/L	3.60E-02			
Potassium	80/80	2.53E+01	mg/L	2.53E+01	1.60E+03	3.20E+02	No
Selenium	23/80	4.80E-03	mg/L	4.80E-03			
Silver	8/80	3.98E-01	mg/L	3.98E-01			
Sodium	80/80	8.38E+01	mg/L	8.38E+01			
Tetraoxo-sulfate(1-)	39/39	5.64E+01	mg/L	5.64E+01			
Thallium	13/80	4.56E-03	mg/L	4.56E-03			
Uranium	45/52	1.21E-02	mg/L	1.21E-02			
Vanadium	73/80	1.35E+00	mg/L	1.35E+00			
Zinc	77/80	8.18E+01	mg/L	8.18E+01			
1,1,1-Trichloroethane	1/23	1.20E-02	mg/L	1.20E-02			
1,1-Dichloroethene	20/155	1.54E-01	mg/L	1.54E-01			
Acetone	1/23	5.00E-03	mg/L	5.00E-03			
Benzoic acid	5/16	5.00E-03	mg/L	5.00E-03			
Bis(2-ethylhexyl)phthalate	6/16	1.00E-03	mg/L	1.00E-03			
Bromodichloromethane	2/23	4.00E-03	mg/L	4.00E-03			
Carbon tetrachloride	4/23	2.70E-01	mg/L	2.70E-01			
Chloroform	6/23	3.60E-02	mg/L	3.60E-02			
Di-n-butyl phthalate	8/16	1.00E-03	mg/L	1.00E-03			
Di-n-octylphthalate	1/16	1.00E-03	mg/L	1.00E-03			
Diethyl phthalate	1/16	1.00E-03	mg/L	1.00E-03			
N-Nitroso-di-n-propylamine	1/16	1.00E-03	mg/L	1.00E-03			
Phenol	6/16	4.00E-02	mg/L	4.00E-02			
Tetrachloroethene	6/23	3.00E-02	mg/L	3.00E-02			
Toluene	1/23	3.60E-02	mg/L	3.60E-02			
Trichloroethene	146/155	7.01E+02	mg/L	7.01E+02			
Vinyl chloride	3/155	1.33E-01	mg/L	1.33E-01			
cis-1,2-Dichloroethene	10/155	3.70E-01	mg/L	3.70E-01			
trans-1,2-Dichloroethene	27/155	1.20E+00	mg/L	1.20E+00			
Alpha activity	129/151	1.36E+02	pCi/L				
Americium-241	2/30	1.68E+00	pCi/L				
Beta activity	149/151	1.72E+04	pCi/L				
Bismuth-212	1/1	4.20E+01	pCi/L				
Cesium-137	15/31	1.45E+01	pCi/L				
Lead-210	1/1	1.00E+02	pCi/L				

530860

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Lead-214	1/1	7.40E+00	pCi/L				
Neptunium-237	23/30	1.44E+01	pCi/L				
Plutonium-239	4/27	1.30E-01	pCi/L				
Technetium-99	26/28	1.70E+04	pCi/L				
Thorium-228	1/1	7.60E-01	pCi/L				
Thorium-230	22/28	8.40E+00	pCi/L				
Thorium-232	1/1	7.60E-01	pCi/L				
Uranium-233/234	1/1	6.50E-01	pCi/L				
Uranium-234	17/30	1.70E+01	pCi/L				
Uranium-235	3/28	7.70E-01	pCi/L				
Uranium-238	13/31	1.66E+01	pCi/L				

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	57/57	1.74E+04	mg/kg	3.48E+00			
Antimony	18/57	4.20E+00	mg/kg	8.40E-04			
Arsenic	57/57	1.48E+01	mg/kg	2.96E-03			
Barium	57/57	2.79E+02	mg/kg	5.58E-02			
Beryllium	57/57	1.00E+00	mg/kg	2.00E-04			
Cadmium	37/57	5.90E-01	mg/kg	1.18E-04			
Calcium	57/57	3.33E+05	mg/kg	6.66E+01	8.00E+02	1.60E+02	No
Chromium	57/57	5.16E+01	mg/kg	1.03E-02			
Cobalt	57/57	1.96E+01	mg/kg	3.92E-03			
Copper	57/57	1.86E+01	mg/kg	3.72E-03			
Iron	57/57	3.12E+04	mg/kg	6.24E+00	1.00E+01	2.00E+00	Yes
Lead	57/57	2.45E+01	mg/kg	4.90E-03			
Magnesium	57/57	2.72E+04	mg/kg	5.44E+00	1.50E+02	3.00E+01	No
Manganese	57/57	1.02E+03	mg/kg	2.04E-01			
Mercury	54/57	1.49E-01	mg/kg	2.98E-05			
Nickel	57/57	2.33E+01	mg/kg	4.66E-03			
Potassium	57/57	9.08E+02	mg/kg	1.82E-01			
Selenium	5/57	3.00E-01	mg/kg	6.00E-05			
Silver	10/57	1.58E+00	mg/kg	3.16E-04			
Sodium	57/57	1.00E+03	mg/kg	2.00E-01			

230834

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Thallium	3/57	1.10E+00	mg/kg	2.20E-04			
Uranium	53/53	1.28E+01	mg/kg	2.57E-03			
Vanadium	57/57	5.50E+01	mg/kg	1.10E-02			
Zinc	57/57	6.52E+01	mg/kg	1.30E-02			
1,1,1-Trichloroethane	3/54	2.40E+00	mg/kg	4.80E-04			
1,1,2-Trichloroethane	2/54	5.30E-01	mg/kg	1.06E-04			
1,1-Dichloroethene	9/61	9.50E-01	mg/kg	1.90E-04			
Acenaphthene	5/60	3.30E-01	mg/kg	6.60E-05			
Acetone	3/54	8.70E-02	mg/kg	1.74E-05			
Anthracene	9/60	6.10E-01	mg/kg	1.22E-04			
Benz(a)anthracene	14/60	2.30E+00	mg/kg	4.60E-04			
Benzene	1/54	1.70E-02	mg/kg	3.40E-06			
Benzo(a)pyrene	14/60	2.40E+00	mg/kg	4.80E-04			
Benzo(b)fluoranthene	13/60	2.90E+00	mg/kg	5.80E-04			
Benzo(ghi)perylene	10/60	1.00E+00	mg/kg	2.00E-04			
Benzo(k)fluoranthene	14/60	1.20E+00	mg/kg	2.40E-04			
Bis(2-ethylhexyl)phthalate	23/60	9.00E-02	mg/kg	1.80E-05			
Carbon tetrachloride	3/54	7.10E-01	mg/kg	1.42E-04			
Chloroform	3/54	1.80E-02	mg/kg	3.60E-06			
Chrysene	14/60	2.60E+00	mg/kg	5.20E-04			
Di-n-butyl phthalate	7/60	1.77E+00	mg/kg	3.55E-04			
Di-n-octylphthalate	1/60	6.00E-02	mg/kg	1.20E-05			
Dibenz(a,h)anthracene	1/60	4.60E-01	mg/kg	9.20E-05			
Dibenzofuran	2/60	1.80E-01	mg/kg	3.60E-05			
Diethyl phthalate	5/60	6.10E+00	mg/kg	1.22E-03			
Fluoranthene	18/60	4.00E+00	mg/kg	8.00E-04			
Fluorene	5/60	2.00E-01	mg/kg	4.00E-05			
Indeno(1,2,3-cd)pyrene	9/60	1.10E+00	mg/kg	2.20E-04			
Methylene chloride	20/54	2.80E-02	mg/kg	5.60E-06			
Naphthalene	2/60	1.60E-01	mg/kg	3.20E-05			
PCB-1254	1/11	7.30E-01	mg/kg	1.46E-04			
PCB-1262	1/11	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	15/60	2.80E+00	mg/kg	5.60E-04			
Polychlorinated biphenyl	2/59	7.30E-01	mg/kg	1.46E-04			
Pyrene	17/60	3.30E+00	mg/kg	6.60E-04			
Tetrachloroethene	4/54	6.90E-01	mg/kg	1.38E-04			
Toluene	2/54	3.30E-02	mg/kg	6.60E-06			
Trichloroethene	39/61	1.11E+04	mg/kg	2.21E+00			
Trichlorofluoromethane	1/54	1.70E-03	mg/kg	3.40E-07			

530862

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Vinyl acetate	1/54	1.70E-03	mg/kg	3.40E-07			
Vinyl chloride	13/61	2.90E+01	mg/kg	5.80E-03			
cis-1,2-Dichloroethene	29/61	2.40E+00	mg/kg	4.80E-04			
trans-1,2-Dichloroethene	13/61	1.02E+02	mg/kg	2.04E-02			
Alpha activity	60/65	3.52E+01	pCi/g				
Americium-241	7/53	2.00E-01	pCi/g				
Beta activity	65/65	4.94E+01	pCi/g				
Cesium-137	12/53	6.00E-01	pCi/g				
Neptunium-237	40/53	6.00E-01	pCi/g				
Plutonium-239	3/53	2.00E-01	pCi/g				
Technetium-99	29/53	4.70E+00	pCi/g				
Thorium-230	53/53	1.80E+00	pCi/g				
Uranium-234	53/53	3.50E+00	pCi/g				
Uranium-235	1/53	2.00E-01	pCi/g				
Uranium-238	53/53	4.30E+00	pCi/g				

SECTOR=Southeast MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	1/1	1.42E+04	mg/kg	2.84E+00			
Antimony	1/1	6.00E-01	mg/kg	1.20E-04			
Arsenic	1/1	1.00E+01	mg/kg	2.00E-03			
Barium	1/1	8.75E+01	mg/kg	1.75E-02			
Beryllium	1/1	6.30E-01	mg/kg	1.26E-04			
Cadmium	1/1	3.50E-01	mg/kg	7.00E-05			
Calcium	1/1	1.84E+04	mg/kg	3.68E+00			
Chromium	1/1	2.36E+01	mg/kg	4.72E-03			
Cobalt	1/1	8.06E+00	mg/kg	1.61E-03			
Copper	1/1	1.53E+01	mg/kg	3.06E-03			
Iron	1/1	2.78E+04	mg/kg	5.56E+00			
Lead	1/1	1.41E+01	mg/kg	2.82E-03			
Magnesium	1/1	2.54E+03	mg/kg	5.08E-01			
Manganese	1/1	4.39E+02	mg/kg	8.78E-02			
Nickel	1/1	1.33E+01	mg/kg	2.66E-03			
Potassium	1/1	7.69E+02	mg/kg	1.54E-01			

230883

530863

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Sodium	1/1	4.00E+02	mg/kg	8.00E-02			
Uranium	1/1	3.28E+00	mg/kg	6.57E-04			
Vanadium	1/1	3.61E+01	mg/kg	7.22E-03			
Zinc	1/1	4.88E+01	mg/kg	9.76E-03			
Benz(a)anthracene	1/1	7.00E-02	mg/kg	1.40E-05			
Benzo(a)pyrene	1/1	8.00E-02	mg/kg	1.60E-05			
Benzo(b)fluoranthene	1/1	7.00E-02	mg/kg	1.40E-05			
Benzo(k)fluoranthene	1/1	6.00E-02	mg/kg	1.20E-05			
Chrysene	1/1	8.00E-02	mg/kg	1.60E-05			
Fluoranthene	1/1	1.50E-01	mg/kg	3.00E-05			
PCB-1262	1/1	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	1/1	7.00E-02	mg/kg	1.40E-05			
Polychlorinated biphenyl	1/1	3.80E-02	mg/kg	7.60E-06			
Pyrene	1/1	1.20E-01	mg/kg	2.40E-05			
Alpha activity	2/2	1.65E+01	pCi/g				
Beta activity	2/2	2.43E+01	pCi/g				
Technetium-99	1/1	2.00E+00	pCi/g				
Thorium-230	1/1	9.00E-01	pCi/g				
Uranium-234	1/1	1.00E+00	pCi/g				
Uranium-238	1/1	1.10E+00	pCi/g				

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	34/34	1.96E+04	mg/kg	3.92E+00			
Antimony	14/34	7.50E+00	mg/kg	1.50E-03			
Arsenic	34/34	2.58E+01	mg/kg	5.16E-03			
Barium	34/34	1.95E+02	mg/kg	3.90E-02			
Beryllium	34/34	1.05E+00	mg/kg	2.10E-04			
Cadmium	22/34	7.80E-01	mg/kg	1.56E-04			
Calcium	34/34	2.77E+05	mg/kg	5.54E+01	8.00E+02	1.60E+02	No
Chromium	34/34	4.80E+01	mg/kg	9.60E-03			
Cobalt	34/34	1.06E+01	mg/kg	2.12E-03			
Copper	34/34	2.07E+01	mg/kg	4.14E-03			
Iron	34/34	3.70E+04	mg/kg	7.40E+00	1.00E+01	2.00E+00	Yes

530864

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Lead	34/34	2.88E+01	mg/kg	5.76E-03			
Magnesium	34/34	1.08E+04	mg/kg	2.16E+00	1.50E+02	3.00E+01	No
Manganese	34/34	8.60E+02	mg/kg	1.72E-01			
Mercury	30/34	1.36E-01	mg/kg	2.72E-05			
Nickel	34/34	2.35E+01	mg/kg	4.70E-03			
Potassium	34/34	8.00E+02	mg/kg	1.60E-01			
Selenium	8/34	1.30E+00	mg/kg	2.60E-04			
Silver	10/34	2.51E+01	mg/kg	5.02E-03			
Sodium	34/34	8.58E+02	mg/kg	1.72E-01			
Thallium	4/34	1.50E+00	mg/kg	3.00E-04			
Uranium	28/28	5.01E+01	mg/kg	1.00E-02			
Vanadium	34/34	3.87E+01	mg/kg	7.74E-03			
Zinc	34/34	1.11E+02	mg/kg	2.22E-02			
1,1,2-Trichloroethane	1/30	3.90E-03	mg/kg	7.80E-07			
2-Hexanone	1/30	4.40E-03	mg/kg	8.80E-07			
Acenaphthene	6/40	2.80E+00	mg/kg	5.60E-04			
Acenaphthylene	1/40	2.20E-01	mg/kg	4.40E-05			
Acetone	1/30	7.10E-03	mg/kg	1.42E-06			
Anthracene	7/40	5.32E+00	mg/kg	1.06E-03			
Benz(a)anthracene	9/40	1.40E+01	mg/kg	2.80E-03			
Benzo(a)pyrene	8/40	1.30E+01	mg/kg	2.60E-03			
Benzo(b)fluoranthene	9/40	1.40E+01	mg/kg	2.80E-03			
Benzo(ghi)perylene	8/40	6.10E+00	mg/kg	1.22E-03			
Benzo(k)fluoranthene	9/40	8.75E+00	mg/kg	1.75E-03			
Bis(2-ethylhexyl)phthalate	19/40	8.77E-01	mg/kg	1.75E-04			
Butyl benzyl phthalate	4/40	4.34E-01	mg/kg	8.68E-05			
Carbon disulfide	1/30	3.90E-03	mg/kg	7.80E-07			
Chloroform	1/30	1.90E-03	mg/kg	3.80E-07			
Chrysene	9/40	1.20E+01	mg/kg	2.40E-03			
Di-n-butyl phthalate	19/40	3.80E+00	mg/kg	7.60E-04			
Di-n-octylphthalate	1/40	6.06E-01	mg/kg	1.21E-04			
Dibenz(a,h)anthracene	4/40	1.30E+00	mg/kg	2.60E-04			
Dibenzofuran	4/40	7.00E-01	mg/kg	1.40E-04			
Diethyl phthalate	4/40	1.50E-01	mg/kg	3.00E-05			
Fluoranthene	10/40	3.00E+01	mg/kg	6.00E-03			
Fluorene	5/40	1.20E+00	mg/kg	2.40E-04			
Indeno(1,2,3-cd)pyrene	7/40	3.90E+00	mg/kg	7.80E-04			
Iodomethane	1/30	7.00E-01	mg/kg	1.40E-04			
Methylene chloride	24/30	8.00E-01	mg/kg	1.60E-04			

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southwest MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
N-Nitroso-di-n-propylamine	1/40	5.82E-01	mg/kg	1.16E-04			
N-Nitrosodiphenylamine	1/40	5.82E-01	mg/kg	1.16E-04			
Naphthalene	2/40	1.20E-01	mg/kg	2.40E-05			
PCB-1260	3/6	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	8/40	1.60E+01	mg/kg	3.20E-03			
Polychlorinated biphenyl	3/42	3.80E-02	mg/kg	7.60E-06			
Pyrene	9/40	2.60E+01	mg/kg	5.20E-03			
Toluene	9/30	5.50E-03	mg/kg	1.10E-06			
Trichloroethene	8/41	3.50E+01	mg/kg	7.00E-03			
Vinyl acetate	1/30	5.50E-02	mg/kg	1.10E-05			
Vinyl chloride	3/41	3.50E-02	mg/kg	7.00E-06			
cis-1,2-Dichloroethene	9/41	1.00E+00	mg/kg	2.00E-04			
trans-1,2-Dichloroethene	5/41	1.41E+01	mg/kg	2.82E-03			
Alpha activity	40/50	3.98E+01	pCi/g				
Americium-241	1/28	1.00E+00	pCi/g				
Beta activity	49/50	1.10E+02	pCi/g				
Cesium-137	10/28	4.00E-01	pCi/g				
Neptunium-237	12/28	4.00E-01	pCi/g				
Plutonium-239	1/28	2.00E-01	pCi/g				
Technetium-99	21/28	3.30E+01	pCi/g				
Thorium-230	28/28	2.20E+00	pCi/g				
Uranium-234	28/28	1.09E+01	pCi/g				
Uranium-235	2/28	6.00E-01	pCi/g				
Uranium-238	28/28	1.67E+01	pCi/g				

SECTOR=Southwest MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	4/4	1.09E+04	mg/kg	2.18E+00			
Antimony	3/4	2.80E+00	mg/kg	5.60E-04			
Arsenic	4/4	4.70E+00	mg/kg	9.40E-04			
Barium	4/4	8.18E+01	mg/kg	1.64E-02			
Beryllium	4/4	7.90E-01	mg/kg	1.58E-04			
Cadmium	4/4	7.80E-01	mg/kg	1.56E-04			
Calcium	4/4	2.77E+05	mg/kg	5.54E+01	8.00E+02	1.60E+02	No

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Chromium	4/4	4.80E+01	mg/kg	9.60E-03			
Cobalt	4/4	1.06E+01	mg/kg	2.12E-03			
Copper	4/4	2.07E+01	mg/kg	4.14E-03	1.00E+00	2.00E-01	No
Iron	4/4	3.70E+04	mg/kg	7.40E+00	1.00E+01	2.00E+00	Yes
Lead	4/4	2.88E+01	mg/kg	5.76E-03			
Magnesium	4/4	1.08E+04	mg/kg	2.16E+00	1.50E+02	3.00E+01	No
Manganese	4/4	4.73E+02	mg/kg	9.46E-02			
Mercury	4/4	1.36E-01	mg/kg	2.72E-05			
Nickel	4/4	2.35E+01	mg/kg	4.70E-03			
Potassium	4/4	6.00E+02	mg/kg	1.20E-01			
Silver	3/4	1.10E+00	mg/kg	2.20E-04			
Sodium	4/4	8.15E+02	mg/kg	1.63E-01			
Thallium	2/4	1.50E+00	mg/kg	3.00E-04			
Uranium	3/3	5.01E+01	mg/kg	1.00E-02			
Vanadium	4/4	3.35E+01	mg/kg	6.70E-03			
Zinc	4/4	1.11E+02	mg/kg	2.22E-02			
Acenaphthene	4/5	2.80E+00	mg/kg	5.60E-04			
Acenaphthylene	1/5	2.20E-01	mg/kg	4.40E-05			
Anthracene	5/5	5.32E+00	mg/kg	1.06E-03			
Benz(a)anthracene	5/5	1.40E+01	mg/kg	2.80E-03			
Benzo(a)pyrene	5/5	1.30E+01	mg/kg	2.60E-03			
Benzo(b)fluoranthene	5/5	1.40E+01	mg/kg	2.80E-03			
Benzo(ghi)perylene	5/5	6.10E+00	mg/kg	1.22E-03			
Benzo(k)fluoranthene	5/5	8.75E+00	mg/kg	1.75E-03			
Bis(2-ethylhexyl)phthalate	1/5	8.00E-02	mg/kg	1.60E-05			
Chrysene	5/5	1.20E+01	mg/kg	2.40E-03			
Dibenz(a,h)anthracene	3/5	1.30E+00	mg/kg	2.60E-04			
Dibenzofuran	3/5	7.00E-01	mg/kg	1.40E-04			
Fluoranthene	5/5	3.00E+01	mg/kg	6.00E-03			
Fluorene	3/5	1.20E+00	mg/kg	2.40E-04			
Indeno(1,2,3-cd)pyrene	5/5	3.90E+00	mg/kg	7.80E-04			
Naphthalene	1/5	2.40E-03	mg/kg	4.80E-07			
PCB-1260	2/2	3.80E-02	mg/kg	7.60E-06			
Phenanthrene	5/5	1.60E+01	mg/kg	3.20E-03			
Polychlorinated biphenyl	2/5	3.80E-02	mg/kg	7.60E-06			
Pyrene	5/5	2.60E+01	mg/kg	5.20E-03			
Toluene	1/1	3.10E-03	mg/kg	6.20E-07			
Alpha activity	7/11	3.18E+01	pCi/g				
Beta activity	10/11	1.10E+02	pCi/g				

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Cesium-137	1/3	2.00E-01	pCi/g				
Neptunium-237	1/3	3.00E-01	pCi/g				
Plutonium-239	1/3	2.00E-01	pCi/g				
Technetium-99	2/3	3.30E+01	pCi/g				
Thorium-230	3/3	2.20E+00	pCi/g				
Uranium-234	3/3	1.09E+01	pCi/g				
Uranium-235	1/3	6.00E-01	pCi/g				
Uranium-238	3/3	1.67E+01	pCi/g				

SECTOR=West MEDIA=Subsurface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	17/17	2.34E+04	mg/kg	4.68E+00			
Antimony	6/17	1.30E+00	mg/kg	2.60E-04			
Arsenic	17/17	4.52E+01	mg/kg	9.04E-03			
Barium	17/17	2.35E+02	mg/kg	4.70E-02			
Beryllium	17/17	8.00E-01	mg/kg	1.60E-04			
Cadmium	11/17	4.25E+00	mg/kg	8.50E-04			
Calcium	17/17	7.15E+04	mg/kg	1.43E+01	8.00E+02	1.60E+02	No
Chromium	17/17	4.58E+01	mg/kg	9.16E-03			
Cobalt	17/17	1.43E+01	mg/kg	2.86E-03			
Copper	17/17	2.79E+01	mg/kg	5.58E-03	1.00E+00	2.00E-01	No
Iron	17/17	2.49E+04	mg/kg	4.98E+00			
Lead	17/17	1.52E+01	mg/kg	3.04E-03			
Magnesium	17/17	4.17E+03	mg/kg	8.34E-01	1.50E+02	3.00E+01	No
Manganese	17/17	5.38E+02	mg/kg	1.08E-01			
Mercury	16/17	6.76E-02	mg/kg	1.35E-05			
Nickel	17/17	2.55E+01	mg/kg	5.10E-03			
Potassium	17/17	1.00E+03	mg/kg	2.00E-01	1.60E+03	3.20E+02	No
Selenium	4/17	4.00E-01	mg/kg	8.00E-05			
Silver	3/17	6.00E-01	mg/kg	1.20E-04			
Sodium	17/17	6.81E+02	mg/kg	1.36E-01			
Uranium	15/15	1.29E+02	mg/kg	2.58E-02			
Vanadium	17/17	3.91E+01	mg/kg	7.82E-03			
Zinc	17/17	7.57E+01	mg/kg	1.51E-02			

530868

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

-- SECTOR=West MEDIA=Subsurface soil --
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
2-Methylnaphthalene	2/17	9.00E-01	mg/kg	1.80E-04			
Acenaphthene	4/17	7.07E+00	mg/kg	1.41E-03			
Acetone	1/6	1.00E-01	mg/kg	2.00E-05			
Anthracene	6/17	8.43E+01	mg/kg	1.69E-02			
Benz(a)anthracene	7/17	3.92E+01	mg/kg	7.84E-03			
Benzo(a)pyrene	7/17	3.77E+01	mg/kg	7.54E-03			
Benzo(b)fluoranthene	7/17	6.24E+01	mg/kg	1.25E-02			
Benzo(ghi)perylene	5/17	8.84E+00	mg/kg	1.77E-03			
Benzo(k)fluoranthene	7/17	9.41E+01	mg/kg	1.88E-02			
Bis(2-ethylhexyl)phthalate	4/17	1.00E-01	mg/kg	2.00E-05			
Chrysene	7/17	4.37E+01	mg/kg	8.73E-03			
Di-n-butyl phthalate	2/17	2.05E-01	mg/kg	4.10E-05			
Dibenz(a,h)anthracene	2/17	4.27E+00	mg/kg	8.54E-04			
Dibenzofuran	4/17	3.60E+00	mg/kg	7.20E-04			
Fluoranthene	9/17	9.68E+01	mg/kg	1.94E-02			
Fluorene	4/17	4.54E+00	mg/kg	9.08E-04			
Indeno(1,2,3-cd)pyrene	5/17	9.69E+00	mg/kg	1.94E-03			
Methylene chloride	3/6	1.80E-03	mg/kg	3.60E-07			
Naphthalene	4/17	1.90E+00	mg/kg	3.80E-04			
PCB-1254	2/9	9.60E-01	mg/kg	1.92E-04			
PCB-1260	1/9	1.60E-02	mg/kg	3.20E-06			
Phenanthrene	8/17	7.75E+01	mg/kg	1.55E-02			
Polychlorinated biphenyl	3/17	9.60E-01	mg/kg	1.92E-04			
Pyrene	8/17	1.11E+02	mg/kg	2.21E-02			
Toluene	2/6	5.60E-03	mg/kg	1.12E-06			
Trichloroethene	1/8	1.40E+00	mg/kg	2.80E-04			
cis-1,2-Dichloroethene	1/8	8.20E-02	mg/kg	1.64E-05			
trans-1,2-Dichloroethene	1/8	2.50E+00	mg/kg	5.00E-04			
Alpha activity	18/18	3.89E+02	pCi/g				
Americium-241	3/15	4.00E-01	pCi/g				
Beta activity	18/18	7.56E+02	pCi/g				
Cesium-137	7/15	1.50E+00	pCi/g				
Neptunium-237	9/15	3.00E+00	pCi/g				
Plutonium-239	3/15	1.70E+00	pCi/g				
Technetium-99	13/15	5.30E+01	pCi/g				
Thorium-230	15/15	1.09E+01	pCi/g				
Uranium-234	15/15	4.17E+01	pCi/g				
Uranium-235	7/15	2.20E+00	pCi/g				
Uranium-238	15/15	4.28E+01	pCi/g				

530868

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Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=West MEDIA=Surface soil

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
Aluminum	9/9	1.77E+04	mg/kg	3.54E+00			
Antimony	4/9	1.30E+00	mg/kg	2.60E-04			
Arsenic	9/9	4.52E+01	mg/kg	9.04E-03			
Barium	9/9	1.27E+02	mg/kg	2.54E-02			
Beryllium	9/9	8.00E-01	mg/kg	1.60E-04			
Cadmium	8/9	4.25E+00	mg/kg	8.50E-04			
Calcium	9/9	7.15E+04	mg/kg	1.43E+01			
Chromium	9/9	4.58E+01	mg/kg	9.16E-03			
Cobalt	9/9	1.43E+01	mg/kg	2.86E-03			
Copper	9/9	2.79E+01	mg/kg	5.58E-03	1.00E+00	2.00E-01	No
Iron	9/9	2.49E+04	mg/kg	4.98E+00			
Lead	9/9	1.52E+01	mg/kg	3.04E-03			
Magnesium	9/9	4.17E+03	mg/kg	8.34E-01			
Manganese	9/9	5.38E+02	mg/kg	1.08E-01			
Mercury	9/9	6.76E-02	mg/kg	1.35E-05			
Nickel	9/9	2.55E+01	mg/kg	5.10E-03			
Potassium	9/9	1.00E+03	mg/kg	2.00E-01			
Selenium	3/9	3.00E-01	mg/kg	6.00E-05			
Silver	1/9	6.00E-01	mg/kg	1.20E-04			
Sodium	9/9	6.81E+02	mg/kg	1.36E-01			
Uranium	9/9	1.19E+02	mg/kg	2.38E-02			
Vanadium	9/9	3.58E+01	mg/kg	7.16E-03			
Zinc	9/9	7.57E+01	mg/kg	1.51E-02			
2-Methylnaphthalene	2/9	9.00E-01	mg/kg	1.80E-04			
Acenaphthene	4/9	7.07E+00	mg/kg	1.41E-03			
Anthracene	6/9	8.43E+01	mg/kg	1.69E-02			
Benz(a)anthracene	7/9	3.92E+01	mg/kg	7.84E-03			
Benzo(a)pyrene	7/9	3.77E+01	mg/kg	7.54E-03			
Benzo(b)fluoranthene	7/9	6.24E+01	mg/kg	1.25E-02			
Benzo(ghi)perylene	5/9	8.84E+00	mg/kg	1.77E-03			
Benzo(k)fluoranthene	7/9	9.41E+01	mg/kg	1.88E-02			
Bis(2-ethylhexyl)phthalate	1/9	1.00E-01	mg/kg	2.00E-05			
Chrysene	7/9	4.37E+01	mg/kg	8.73E-03			
Di-n-butyl phthalate	1/9	2.05E-01	mg/kg	4.10E-05			
Dibenz(a,h)anthracene	2/9	4.27E+00	mg/kg	8.54E-04			
Dibenzofuran	4/9	3.60E+00	mg/kg	7.20E-04			
Fluoranthene	8/9	9.68E+01	mg/kg	1.94E-02			
Fluorene	4/9	4.54E+00	mg/kg	9.08E-04			
Indeno(1,2,3-cd)pyrene	5/9	9.69E+00	mg/kg	1.94E-03			
Naphthalene	4/9	1.90E+00	mg/kg	3.80E-04			

530870

Table 1.18. PGDP WAG 6 comparison of maximum detected concentrations of essential nutrients to recommended dietary allowances for children

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Maximum detected concentration	Units	Daily dose for child	RDA for child	1/5 RDA	Exceed RDA?
PCB-1254	2/3	9.60E-01	mg/kg	1.92E-04			
PCB-1260	1/3	1.60E-02	mg/kg	3.20E-06			
Phenanthrene	8/9	7.75E+01	mg/kg	1.55E-02			
Polychlorinated biphenyl	3/9	9.60E-01	mg/kg	1.92E-04			
Pyrene	8/9	1.11E+02	mg/kg	2.21E-02			
Alpha activity	9/9	1.75E+02	pCi/g				
Americium-241	2/9	2.00E-01	pCi/g				
Beta activity	9/9	2.48E+02	pCi/g				
Cesium-137	5/9	1.50E+00	pCi/g				
Neptunium-237	8/9	3.00E+00	pCi/g				
Plutonium-239	3/9	1.70E+00	pCi/g				
Technetium-99	9/9	5.30E+01	pCi/g				
Thorium-230	9/9	1.09E+01	pCi/g				
Uranium-234	9/9	3.11E+01	pCi/g				
Uranium-235	6/9	1.90E+00	pCi/g				
Uranium-238	9/9	3.95E+01	pCi/g				

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=McNairy MED_NAME=Ground water

Analyte	Frequency of Detection
Aluminum	3/3
Arsenic	2/3
Barium	3/3
Beryllium	3/3
Bromide*	16/41
Cadmium	2/3
Chromium	3/3
Cobalt	2/3
Iron	3/3
Lead	2/3
Manganese	3/3
Nickel	3/3
Nitrate	23/41
Orthophosphate*	3/41
Selenium	1/3
Tetraoxo-sulfate(1-)*	41/41
Thallium*	2/3
Vanadium	3/3
Zinc	3/3
1,1-Dichloroethene	2/54
1,2-Dichloroethane	1/5
Bis(2-ethylhexyl)phthalate	3/5
Bromodichloromethane	2/5
Chloroform	4/5
Di-n-butyl phthalate	1/5
Di-n-octylphthalate	2/5
Dibromochloromethane	2/5
Tetrachloroethene	1/5
Trichloroethene	39/54
Vinyl chloride	1/54
cis-1,2-Dichloroethene	2/54
Actinium-228	1/1
Alpha activity*	48/51
Beta activity*	51/51
Cesium-137	4/6
Lead-210	1/1
Lead-212	1/1
Lead-214	1/1
Neptunium-237	6/6
Plutonium-239	1/5
Potassium-40	1/1
Technetium-99	3/6
Thorium-228	1/1
Thorium-230	6/6
Thorium-234	1/1
Uranium-234	4/5
Uranium-235	1/6
Uranium-238	4/6

SECTOR=RGA MED_NAME=Ground water

Analyte	Frequency of Detection
Aluminum	80/80
Antimony	11/80
Arsenic	61/80
Barium	80/80
Beryllium	69/79

Table 1.19. PGDP WAG 6 contaminants of potential concern

-- SECTOR=RGA MED_NAME=Ground water --
(continued)

Analyte	Frequency of Detection
Bromide*	10/39
Cadmium	29/80
Chromium	62/80
Cobalt	76/80
Copper	58/80
Iron	80/80
Lead	63/80
Manganese	80/80
Mercury	30/80
Nickel	74/80
Nitrate	39/39
Orthophosphate*	2/39
Silver	8/80
Tetraoxo-sulfate(1-)*	39/39
Thallium*	13/80
Uranium	45/52
Vanadium	73/80
Zinc	77/80
1,1-Dichloroethene	20/155
Bis(2-ethylhexyl)phthalate	6/16
Bromodichloromethane	2/23
Carbon tetrachloride	4/23
Chloroform	6/23
Di-n-butyl phthalate	8/16
Di-n-octylphthalate	1/16
N-Nitroso-di-n-propylamine	1/16
Tetrachloroethene	6/23
Toluene	1/23
Trichloroethene	146/155
Vinyl chloride	3/155
cis-1,2-Dichloroethene	10/155
trans-1,2-Dichloroethene	27/155
Alpha activity*	129/151
Americium-241	2/30
Beta activity*	149/151
Cesium-137	15/31
Lead-210	1/1
Lead-214	1/1
Neptunium-237	23/30
Plutonium-239	4/27
Technetium-99	26/28
Thorium-228	1/1
Thorium-230	22/28
Uranium-234	17/30
Uranium-235	3/28
Uranium-238	13/31

-- SECTOR=WAG 6 MED_NAME=Subsurface soil --

Analyte	Frequency of Detection
Aluminum	196/196
Antimony	73/196
Arsenic	196/196
Barium	196/196
Beryllium	196/196
Cadmium	117/196

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Table 1.19. PGDP WAG 6 contaminants of potential concern

------------------------------------- SECTOR=WAG 6 MED_NAME=Subsurface soil -------------------------------------
(continued)

Analyte	Frequency of Detection
Chromium	196/196
Cobalt	196/196
Copper	196/196
Iron	196/196
Lead	196/196
Manganese	196/196
Mercury	166/196
Nickel	196/196
Silver	45/196
Thallium*	16/196
Uranium	151/151
Vanadium	196/196
Zinc	196/196
1,1,2-Trichloroethane	3/142
1,1-Dichloroethene	10/181
2,4-Dinitrotoluene	1/203
2,6-Dinitrotoluene	4/203
2-Hexanone*	1/142
2-Methylnaphthalene*	2/203
Acenaphthene	20/203
Acenaphthylene*	1/203
Anthracene	28/203
Benz(a)anthracene	43/203
Benzo(a)pyrene	42/203
Benzo(b)fluoranthene	42/203
Benzo(ghi)perylene*	32/203
Benzo(k)fluoranthene	44/203
Bis(2-ethylhexyl)phthalate	71/203
Butyl benzyl phthalate	5/203
Carbon tetrachloride	3/142
Chrysene	43/203
Di-n-butyl phthalate	56/203
Di-n-octylphthalate	2/203
Dibenz(a,h)anthracene	9/203
Fluoranthene	56/203
Fluorene	18/203
Indeno(1,2,3-cd)pyrene	30/203
Iodomethane*	1/142
Methylene chloride	83/142
N-Nitroso-di-n-propylamine	4/203
N-Nitrosodiphenylamine	2/203
Naphthalene	10/203
PCB-1254	6/78
PCB-1260	12/78
PCB-1262	1/78
Phenanthrene*	43/203
Polychlorinated biphenyl	19/205
Pyrene	51/203
Tetrachloroethene	4/142
Trichloroethene	60/181
Vinyl chloride	16/181
trans-1,2-Dichloroethene	19/181
Alpha activity*	215/252
Beta activity*	245/252
Cesium-137	44/151
Neptunium-237	73/151
Plutonium-239	12/151
Technetium-99	113/151
Thorium-230	150/151
Uranium-234	151/151

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=WAG 6 MED_NAME=Subsurface soil (continued)

Analyte	Frequency of Detection
Uranium-235	21/151
Uranium-238	151/151

SECTOR=WAG 6 MED_NAME=Surface soil

Analyte	Frequency of Detection
Aluminum	27/27
Antimony	14/27
Arsenic	27/27
Beryllium	27/27
Cadmium	20/27
Chromium	27/27
Cobalt	27/27
Iron	27/27
Lead	27/27
Thallium*	4/27
Uranium	21/21
Vanadium	27/27
Zinc	27/27
2-Methylnaphthalene*	2/25
Acenaphthene	11/25
Acenaphthylene*	1/25
Anthracene	14/25
Benz(a)anthracene	18/25
Benzo(a)pyrene	18/25
Benzo(b)fluoranthene	18/25
Benzo(ghi)perylene*	13/25
Benzo(k)fluoranthene	19/25
Bis(2-ethylhexyl)phthalate	3/25
Chrysene	18/25
Di-n-butyl phthalate	5/25
Dibenz(a,h)anthracene	6/25
Fluoranthene	22/25
Fluorene	9/25
Indeno(1,2,3-cd)pyrene	13/25
Naphthalene	5/25
PCB-1254	2/13
PCB-1260	6/13
PCB-1262	1/13
Phenanthrene*	18/25
Polychlorinated biphenyl	9/24
Pyrene	21/25
Alpha activity*	40/57
Beta activity*	51/57
Cesium-137	12/21
Neptunium-237	11/21
Uranium-234	21/21
Uranium-235	11/21
Uranium-238	21/21

Table 1.19. PGDP WAG 6 contaminants of potential concern

------------------------------------- SECTOR=Central MED_NAME=Subsurface soil ---------------------------------

Analyte	Frequency of Detection
Antimony	1/3
Cadmium	2/3
Chromium	3/3
Iron	3/3
Thallium*	1/3
Bis(2-ethylhexyl)phthalate	1/3
Di-n-butyl phthalate	2/3
Alpha activity*	7/7
Beta activity*	7/7
Cesium-137	2/6
Neptunium-237	1/6

--------------------------------------- SECTOR=Central MED_NAME=Surface soil ----------------------------------

Analyte	Frequency of Detection
Di-n-butyl phthalate	1/1
Alpha activity*	1/1
Beta activity*	1/1

--------------------------------------- SECTOR=East MED_NAME=Subsurface soil -----------------------------

Analyte	Frequency of Detection
Aluminum	17/17
Antimony	3/17
Arsenic	17/17
Beryllium	17/17
Cadmium	14/17
Chromium	17/17
Cobalt	17/17
Lead	17/17
Manganese	17/17
Thallium*	1/17
Uranium	16/16
Acenaphthene	2/18
Anthracene	3/18
Benz(a)anthracene	4/18
Benzo(a)pyrene	4/18
Benzo(b)fluoranthene	4/18
Benzo(ghi)perylene*	3/18
Benzo(k)fluoranthene	5/18
Bis(2-ethylhexyl)phthalate	7/18
Chrysene	4/18
Di-n-butyl phthalate	6/18
Dibenz(a,h)anthracene	1/18
Fluoranthene	7/18
Fluorene	2/18
Indeno(1,2,3-cd)pyrene	3/18
Naphthalene	1/18
PCB-1260	4/10
Phenanthrene*	3/18
Polychlorinated biphenyl	4/18
Pyrene	6/18
Trichloroethene	4/15

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=East MED_NAME=Subsurface soil (continued)

Analyte	Frequency of Detection
Alpha activity*	17/18
Beta activity*	18/18
Cesium-137	3/16
Neptunium-237	3/16
Uranium-235	1/16
Uranium-238	16/16

SECTOR=East MED_NAME=Surface soil

Analyte	Frequency of Detection
Cadmium	2/2
Chromium	2/2
Thallium*	1/2
Uranium	1/1
Acenaphthene	1/2
Anthracene	1/2
Benz(a)anthracene	1/2
Benzo(a)pyrene	1/2
Benzo(b)fluoranthene	1/2
Benzo(ghi)perylene*	1/2
Benzo(k)fluoranthene	2/2
Chrysene	1/2
Di-n-butyl phthalate	2/2
Dibenz(a,h)anthracene	1/2
Fluoranthene	2/2
Fluorene	1/2
Indeno(1,2,3-cd)pyrene	1/2
PCB-1260	1/1
Phenanthrene*	1/2
Polychlorinated biphenyl	1/2
Pyrene	2/2
Alpha activity*	1/2
Beta activity*	2/2
Cesium-137	1/1
Neptunium-237	1/1
Uranium-235	1/1
Uranium-238	1/1

SECTOR=Far East/Northeast MED_NAME=Subsurface soil

Analyte	Frequency of Detection
Aluminum	7/7
Antimony	5/7
Arsenic	7/7
Beryllium	7/7
Cadmium	3/7
Chromium	7/7
Iron	7/7
Lead	7/7
Manganese	7/7
Thallium*	1/7
Uranium	6/6

530877

Table 1.19. PGDP WAG 6 contaminants of potential concern

---------------------------------- SECTOR=Far East/Northeast MED_NAME=Subsurface soil ----------------------------
(continued)

Analyte	Frequency of Detection
Vanadium	7/7
Benz(a)anthracene	2/7
Benzo(a)pyrene	2/7
Benzo(b)fluoranthene	2/7
Benzo(ghi)perylene*	1/7
Benzo(k)fluoranthene	2/7
Bis(2-ethylhexyl)phthalate	2/7
Butyl benzyl phthalate	1/7
Chrysene	2/7
Di-n-butyl phthalate	3/7
Fluoranthene	3/7
Indeno(1,2,3-cd)pyrene	1/7
PCB-1254	1/6
PCB-1260	2/6
Phenanthrene*	2/7
Polychlorinated biphenyl	2/7
Pyrene	3/7
Alpha activity*	13/16
Beta activity*	13/16
Cesium-137	2/6
Uranium-235	2/6
Uranium-238	6/6

---------------------------------- SECTOR=Far East/Northeast MED_NAME=Surface soil ------------------------------

Analyte	Frequency of Detection
Aluminum	2/2
Antimony	2/2
Chromium	2/2
Uranium	2/2
Benz(a)anthracene	1/2
Benzo(a)pyrene	1/2
Benzo(b)fluoranthene	1/2
Benzo(k)fluoranthene	1/2
Chrysene	1/2
Fluoranthene	2/2
PCB-1260	1/2
Phenanthrene*	1/2
Polychlorinated biphenyl	1/2
Pyrene	2/2
Alpha activity*	7/10
Beta activity*	7/10
Uranium-235	1/2
Uranium-238	2/2

------------------------------ SECTOR=Far North/Northwest MED_NAME=Subsurface soil ----------------------------

Analyte	Frequency of Detection
Aluminum	11/11
Antimony	9/11
Arsenic	11/11
Beryllium	11/11

Table 1.19. PGDP WAG 6 contaminants of potential concern

------------------------------ SECTOR=Far North/Northwest MED_NAME=Subsurface soil ------------------------------
(continued)

Analyte	Frequency of Detection
Cadmium	8/11
Chromium	11/11
Cobalt	11/11
Copper	11/11
Iron	11/11
Lead	11/11
Manganese	11/11
Mercury	9/11
Nickel	11/11
Thallium*	1/11
Uranium	9/9
Zinc	11/11
2,4-Dinitrotoluene	1/12
Acenaphthene	1/12
Anthracene	1/12
Benz(a)anthracene	3/12
Benzo(a)pyrene	3/12
Benzo(b)fluoranthene	3/12
Benzo(ghi)perylene*	3/12
Benzo(k)fluoranthene	3/12
Bis(2-ethylhexyl)phthalate	8/12
Chrysene	3/12
Di-n-butyl phthalate	6/12
Fluoranthene	4/12
Fluorene	1/12
Indeno(1,2,3-cd)pyrene	3/12
N-Nitrosodiphenylamine	1/12
PCB-1254	1/9
PCB-1260	1/9
Phenanthrene*	3/12
Polychlorinated biphenyl	2/11
Pyrene	3/12
Alpha activity*	17/27
Beta activity*	25/27
Cesium-137	6/9
Neptunium-237	5/9
Plutonium-239	4/9
Technetium-99	9/9
Thorium-230	9/9
Uranium-234	9/9
Uranium-235	3/9
Uranium-238	9/9

------------------------------ SECTOR=Far North/Northwest MED_NAME=Surface soil ------------------------------

Analyte	Frequency of Detection
Antimony	2/2
Beryllium	2/2
Cadmium	2/2
Chromium	2/2
Thallium*	1/2
Uranium	2/2
Acenaphthene	1/2
Anthracene	1/2
Benz(a)anthracene	1/2
Benzo(a)pyrene	1/2

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=Far North/Northwest MED_NAME=Surface soil
(continued)

Analyte	Frequency of Detection
Benzo(b)fluoranthene	1/2
Benzo(ghi)perylene*	1/2
Benzo(k)fluoranthene	1/2
Bis(2-ethylhexyl)phthalate	1/2
Chrysene	1/2
Di-n-butyl phthalate	1/2
Fluoranthene	2/2
Fluorene	1/2
Indeno(1,2,3-cd)pyrene	1/2
Phenanthrene*	1/2
Pyrene	1/2
Alpha activity*	6/15
Beta activity*	13/15
Neptunium-237	1/2
Uranium-235	1/2
Uranium-238	2/2

SECTOR=McNairy MED_NAME=Ground water

Analyte	Frequency of Detection
Aluminum	3/3
Arsenic	2/3
Barium	3/3
Beryllium	3/3
Bromide*	16/41
Cadmium	2/3
Chromium	3/3
Cobalt	2/3
Iron	3/3
Lead	2/3
Manganese	3/3
Nickel	3/3
Nitrate	23/41
Orthophosphate*	3/41
Selenium	1/3
Tetraoxo-sulfate(1-)*	41/41
Thallium*	2/3
Vanadium	3/3
Zinc	3/3
1,1-Dichloroethene	2/54
1,2-Dichloroethane	1/5
Bis(2-ethylhexyl)phthalate	3/5
Bromodichloromethane	2/5
Chloroform	4/5
Di-n-butyl phthalate	1/5
Di-n-octylphthalate	2/5
Dibromochloromethane	2/5
Tetrachloroethene	1/5
Trichloroethene	39/54
Vinyl chloride	1/54
cis-1,2-Dichloroethene	2/54
Actinium-228	1/1
Alpha activity*	48/51
Beta activity*	51/51
Cesium-137	4/6
Lead-210	1/1

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=McNairy MED_NAME=Ground water
(continued)

Analyte	Frequency of Detection
Lead-212	1/1
Lead-214	1/1
Neptunium-237	6/6
Plutonium-239	1/5
Potassium-40	1/1
Technetium-99	3/6
Thorium-228	1/1
Thorium-230	6/6
Thorium-234	1/1
Uranium-234	4/5
Uranium-235	1/6
Uranium-238	4/6

SECTOR=Northeast MED_NAME=Subsurface soil

Analyte	Frequency of Detection
Aluminum	25/25
Antimony	8/25
Arsenic	25/25
Barium	25/25
Beryllium	25/25
Cadmium	12/25
Chromium	25/25
Cobalt	25/25
Manganese	25/25
Thallium*	4/25
Uranium	6/6
Vanadium	25/25
Zinc	25/25
2,6-Dinitrotoluene	4/25
Acenaphthene	2/25
Anthracene	2/25
Benz(a)anthracene	2/25
Benzo(a)pyrene	2/25
Benzo(b)fluoranthene	2/25
Benzo(ghi)perylene*	2/25
Benzo(k)fluoranthene	2/25
Bis(2-ethylhexyl)phthalate	3/25
Chrysene	2/25
Di-n-butyl phthalate	8/25
Dibenz(a,h)anthracene	1/25
Fluoranthene	3/25
Fluorene	1/25
Indeno(1,2,3-cd)pyrene	2/25
N-Nitroso-di-n-propylamine	2/25
Naphthalene	1/25
PCB-1254	1/15
PCB-1260	1/15
Phenanthrene*	3/25
Polychlorinated biphenyl	2/25
Pyrene	3/25
Alpha activity*	20/24
Beta activity*	23/24
Neptunium-237	1/6
Uranium-234	6/6
Uranium-235	3/6

530881

Table 1.19. PGDP WAG 6 contaminants of potential concern

------------------------------------- SECTOR=Northeast MED_NAME=Subsurface soil -------------------------------------
(continued)

Analyte	Frequency of Detection
Uranium-238	6/6

--------------------------------------- SECTOR=Northeast MED_NAME=Surface soil ---------------------------------------

Analyte	Frequency of Detection
Chromium	1/1
Uranium	1/1
Zinc	1/1
Acenaphthene	1/1
Anthracene	1/1
Benz(a)anthracene	1/1
Benzo(a)pyrene	1/1
Benzo(b)fluoranthene	1/1
Benzo(ghi)perylene*	1/1
Benzo(k)fluoranthene	1/1
Chrysene	1/1
Fluoranthene	1/1
Indeno(1,2,3-cd)pyrene	1/1
PCB-1260	1/1
Phenanthrene*	1/1
Polychlorinated biphenyl	1/1
Pyrene	1/1
Alpha activity*	1/1
Beta activity*	1/1
Uranium-235	1/1
Uranium-238	1/1

------------------------------------- SECTOR=Northwest MED_NAME=Subsurface soil -------------------------------------

Analyte	Frequency of Detection
Aluminum	25/25
Antimony	9/25
Arsenic	25/25
Beryllium	25/25
Cadmium	8/25
Chromium	25/25
Cobalt	25/25
Iron	25/25
Lead	25/25
Manganese	25/25
Mercury	20/25
Thallium*	1/25
Uranium	12/12
Vanadium	25/25
Benz(a)anthracene	2/21
Benzo(a)pyrene	2/21
Benzo(b)fluoranthene	2/21
Benzo(k)fluoranthene	2/21
Bis(2-ethylhexyl)phthalate	4/21
Chrysene	2/21
Di-n-butyl phthalate	3/21
Fluoranthene	2/21

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=Northwest MED_NAME=Subsurface soil (continued)

Analyte	Frequency of Detection
N-Nitroso-di-n-propylamine	1/21
Phenanthrene*	1/21
Polychlorinated biphenyl	1/22
Pyrene	2/21
Alpha activity*	23/27
Beta activity*	27/27
Neptunium-237	2/12
Uranium-235	2/12
Uranium-238	12/12

SECTOR=Northwest MED_NAME=Surface soil

Analyte	Frequency of Detection
Antimony	2/6
Beryllium	6/6
Cadmium	3/6
Chromium	6/6
Iron	6/6
Lead	6/6
Vanadium	6/6
Benz(a)anthracene	1/2
Benzo(a)pyrene	1/2
Benzo(b)fluoranthene	1/2
Benzo(k)fluoranthene	1/2
Chrysene	1/2
Fluoranthene	1/2
Pyrene	1/2
Alpha activity*	6/6
Beta activity*	6/6
Uranium-238	1/1

SECTOR=RGA MED_NAME=Ground water

Analyte	Frequency of Detection
Aluminum	80/80
Antimony	11/80
Arsenic	61/80
Barium	80/80
Beryllium	69/79
Bromide*	10/39
Cadmium	29/80
Chromium	62/80
Cobalt	76/80
Copper	58/80
Iron	80/80
Lead	63/80
Manganese	80/80
Mercury	30/80
Nickel	74/80
Nitrate	39/39
Orthophosphate*	2/39
Silver	8/80

530883

Table 1.19. PGDP WAG 6 contaminants of potential concern

--- SECTOR=RGA MED_NAME=Ground water ---
(continued)

Analyte	Frequency of Detection
Tetraoxo-sulfate(1-)*	39/39
Thallium*	13/80
Uranium	45/52
Vanadium	73/80
Zinc	77/80
1,1-Dichloroethene	20/155
Bis(2-ethylhexyl)phthalate	6/16
Bromodichloromethane	2/23
Carbon tetrachloride	4/23
Chloroform	6/23
Di-n-butyl phthalate	8/16
Di-n-octylphthalate	1/16
N-Nitroso-di-n-propylamine	1/16
Tetrachloroethene	6/23
Toluene	1/23
Trichloroethene	146/155
Vinyl chloride	3/155
cis-1,2-Dichloroethene	10/155
trans-1,2-Dichloroethene	27/155
Alpha activity*	129/151
Americium-241	2/30
Beta activity*	149/151
Cesium-137	15/31
Lead-210	1/1
Lead-214	1/1
Neptunium-237	23/30
Plutonium-239	4/27
Technetium-99	26/28
Thorium-228	1/1
Thorium-230	22/28
Uranium-234	17/30
Uranium-235	3/28
Uranium-238	13/31

--- SECTOR=Southeast MED_NAME=Subsurface soil ---

Analyte	Frequency of Detection
Aluminum	57/57
Antimony	18/57
Arsenic	57/57
Barium	57/57
Beryllium	57/57
Cadmium	37/57
Chromium	57/57
Cobalt	57/57
Iron	57/57
Lead	57/57
Manganese	57/57
Mercury	54/57
Thallium*	3/57
Uranium	53/53
Vanadium	57/57
Zinc	57/57
1,1,2-Trichloroethane	2/54
1,1-Dichloroethene	9/61
Acenaphthene	5/60

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=Southeast MED_NAME=Subsurface soil
(continued)

Analyte	Frequency of Detection
Anthracene	9/60
Benz(a)anthracene	14/60
Benzo(a)pyrene	14/60
Benzo(b)fluoranthene	13/60
Benzo(ghi)perylene*	10/60
Benzo(k)fluoranthene	14/60
Bis(2-ethylhexyl)phthalate	23/60
Carbon tetrachloride	3/54
Chrysene	14/60
Di-n-butyl phthalate	7/60
Di-n-octylphthalate	1/60
Dibenz(a,h)anthracene	1/60
Fluoranthene	18/60
Fluorene	5/60
Indeno(1,2,3-cd)pyrene	9/60
Naphthalene	2/60
PCB-1254	1/11
PCB-1262	1/11
Phenanthrene*	15/60
Polychlorinated biphenyl	2/59
Pyrene	17/60
Tetrachloroethene	4/54
Trichloroethene	39/61
Vinyl chloride	13/61
trans-1,2-Dichloroethene	13/61
Alpha activity*	60/65
Beta activity*	65/65
Cesium-137	12/53
Neptunium-237	40/53
Uranium-235	1/53
Uranium-238	53/53

SECTOR=Southeast MED_NAME=Surface soil

Analyte	Frequency of Detection
Aluminum	1/1
Antimony	1/1
Cadmium	1/1
Chromium	1/1
Benz(a)anthracene	1/1
Benzo(a)pyrene	1/1
Benzo(b)fluoranthene	1/1
Benzo(k)fluoranthene	1/1
Chrysene	1/1
Fluoranthene	1/1
PCB-1262	1/1
Phenanthrene*	1/1
Polychlorinated biphenyl	1/1
Pyrene	1/1
Alpha activity*	2/2
Beta activity*	2/2

Table 1.19. PGDP WAG 6 contaminants of potential concern

------------------------------------ SECTOR=Southwest MED_NAME=Subsurface soil ------------------------------------

Analyte	Frequency of Detection
Aluminum	34/34
Antimony	14/34
Arsenic	34/34
Barium	34/34
Beryllium	34/34
Cadmium	22/34
Chromium	34/34
Iron	34/34
Lead	34/34
Manganese	34/34
Mercury	30/34
Silver	10/34
Thallium*	4/34
Uranium	28/28
Vanadium	34/34
Zinc	34/34
2-Hexanone*	1/30
Acenaphthene	6/40
Acenaphthylene*	1/40
Anthracene	7/40
Benz(a)anthracene	9/40
Benzo(a)pyrene	8/40
Benzo(b)fluoranthene	9/40
Benzo(ghi)perylene*	8/40
Benzo(k)fluoranthene	9/40
Bis(2-ethylhexyl)phthalate	19/40
Butyl benzyl phthalate	4/40
Chrysene	9/40
Di-n-butyl phthalate	19/40
Di-n-octylphthalate	1/40
Dibenz(a,h)anthracene	4/40
Fluoranthene	10/40
Fluorene	5/40
Indeno(1,2,3-cd)pyrene	7/40
Iodomethane*	1/30
Methylene chloride	24/30
N-Nitroso-di-n-propylamine	1/40
N-Nitrosodiphenylamine	1/40
Naphthalene	2/40
PCB-1260	3/6
Phenanthrene*	8/40
Polychlorinated biphenyl	3/42
Pyrene	9/40
Trichloroethene	8/41
Vinyl chloride	3/41
Alpha activity*	40/50
Beta activity*	49/50
Cesium-137	10/28
Neptunium-237	12/28
Uranium-235	2/28
Uranium-238	28/28

--------------------------------------- SECTOR=Southwest MED_NAME=Surface soil ---------------------------------------

Analyte	Frequency of Detection
Antimony	3/4
Beryllium	4/4

Table 1.19. PGDP WAG 6 contaminants of potential concern

------------------------------------- SECTOR=Southwest MED_NAME=Surface soil -------------------------------------
(continued)

Analyte	Frequency of Detection
Cadmium	4/4
Chromium	4/4
Iron	4/4
Thallium*	2/4
Uranium	3/3
Zinc	4/4
Acenaphthene	4/5
Acenaphthylene*	1/5
Anthracene	5/5
Benz(a)anthracene	5/5
Benzo(a)pyrene	5/5
Benzo(b)fluoranthene	5/5
Benzo(ghi)perylene•	5/5
Benzo(k)fluoranthene	5/5
Bis(2-ethylhexyl)phthalate	1/5
Chrysene	5/5
Dibenz(a,h)anthracene	3/5
Fluoranthene	5/5
Fluorene	3/5
Indeno(1,2,3-cd)pyrene	5/5
Naphthalene	1/5
PCB-1260	2/2
Phenanthrene*	5/5
Polychlorinated biphenyl	2/5
Pyrene	5/5
Alpha activity*	7/11
Beta activity*	10/11
Neptunium-237	1/3
Uranium-235	1/3
Uranium-238	3/3

------------------------------------- SECTOR=West MED_NAME=Subsurface soil -------------------------------------

Analyte	Frequency of Detection
Aluminum	17/17
Antimony	6/17
Arsenic	17/17
Barium	17/17
Beryllium	17/17
Cadmium	11/17
Chromium	17/17
Cobalt	17/17
Uranium	15/15
Vanadium	17/17
Zinc	17/17
2-Methylnaphthalene*	2/17
Acenaphthene	4/17
Anthracene	6/17
Benz(a)anthracene	7/17
Benzo(a)pyrene	7/17
Benzo(b)fluoranthene	7/17
Benzo(ghi)perylene*	5/17
Benzo(k)fluoranthene	7/17
Bis(2-ethylhexyl)phthalate	4/17
Chrysene	7/17
Di-n-butyl phthalate	2/17

Table 1.19. PGDP WAG 6 contaminants of potential concern

SECTOR=West MED_NAME=Subsurface soil (continued)

Analyte	Frequency of Detection
Dibenz(a,h)anthracene	2/17
Fluoranthene	9/17
Fluorene	4/17
Indeno(1,2,3-cd)pyrene	5/17
Naphthalene	4/17
PCB-1254	2/9
PCB-1260	1/9
Phenanthrene*	8/17
Polychlorinated biphenyl	3/17
Pyrene	8/17
Trichloroethene	1/8
Alpha activity*	18/18
Beta activity*	18/18
Cesium-137	7/15
Neptunium-237	9/15
Uranium-234	15/15
Uranium-235	7/15
Uranium-238	15/15

SECTOR=West MED_NAME=Surface soil

Analyte	Frequency of Detection
Aluminum	9/9
Antimony	4/9
Arsenic	9/9
Beryllium	9/9
Cadmium	8/9
Chromium	9/9
Cobalt	9/9
Uranium	9/9
Zinc	9/9
2-Methylnaphthalene*	2/9
Acenaphthene	4/9
Anthracene	6/9
Benz(a)anthracene	7/9
Benzo(a)pyrene	7/9
Benzo(b)fluoranthene	7/9
Benzo(ghi)perylene*	5/9
Benzo(k)fluoranthene	7/9
Bis(2-ethylhexyl)phthalate	1/9
Chrysene	7/9
Di-n-butyl phthalate	1/9
Dibenz(a,h)anthracene	2/9
Fluoranthene	8/9
Fluorene	4/9
Indeno(1,2,3-cd)pyrene	5/9
Naphthalene	4/9
PCB-1254	2/3
PCB-1260	1/3
Phenanthrene*	8/9
Polychlorinated biphenyl	3/9
Pyrene	8/9
Alpha activity*	9/9
Beta activity*	9/9
Cesium-137	5/9
Neptunium-237	8/9

Table 1.19. PGDP WAG 6 contaminants of potential concern

-- SECTOR=West MED_NAME=Surface soil --
(continued)

Analyte	Frequency of Detection
Uranium-234	9/9
Uranium-235	6/9
Uranium-238	9/9

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Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	3/3		8.13E-01 - 1.39E+02	2.89E+01		1.5E+00			mg/L	Yes/P
Arsenic	2/3	1.11E-03 - 1.11E-03	3.28E-02 - 4.06E-01	7.33E-02		4.5E-04	3.5E-06		mg/L	Yes/P
Barium	3/3		1.95E-01 - 5.88E-01	1.82E-01		1.0E-01			mg/L	Yes/P
Beryllium	3/3		3.33E-04 - 1.30E-02	2.83E-03		6.6E-03	1.0E-06		mg/L	Yes/P
Bromide	16/41	1.00E+00 - 1.00E+00	1.40E-02 - 5.20E-02	3.81E-02					mg/L	Yes/Qual
Cadmium	2/3	2.67E-04 - 2.67E-04	5.56E-04 - 2.99E-03	6.36E-04		6.6E-04			mg/L	Yes/P
Calcium	3/3		1.74E+01 - 5.45E+01	1.79E+01				1.60E+02	mg/L	No
Chloride	41/41		3.20E+00 - 2.24E+01	4.81E+00				1.20E+02	mg/L	No
Chromium	3/3		3.52E-02 - 3.87E-01	8.80E-02		7.1E-03			mg/L	Yes/P
Cobalt	2/3	1.78E-03 - 1.78E-03	4.87E-02 - 1.07E-01	2.62E-02		9.1E-02			mg/L	Yes/P
Copper	2/3	9.56E-03 - 9.56E-03	1.69E-02 - 9.57E-02	2.04E-02		6.0E-02		2.00E-01	mg/L	No
Fluoride	16/41	1.00E+00 - 1.00E+00	5.10E-02 - 2.92E-01	2.10E-01		9.1E-02		3.00E-01	mg/L	No
Iron	3/3		1.75E+00 - 3.37E+02	6.64E+01		4.5E-01		2.00E+00	mg/L	Yes/PE
Lead	2/3	1.33E-03 - 1.33E-03	3.13E-02 - 1.77E-01	3.49E-02		1.5E-07			mg/L	Yes/P
Magnesium	3/3		9.78E+00 - 3.19E+01	9.38E+00				3.40E+01	mg/L	No
Manganese	3/3		1.77E-02 - 2.44E+00	5.12E-01		6.7E-02			mg/L	Yes/P
Nickel	3/3		6.37E-02 - 1.86E-01	5.35E-02		3.0E-02			mg/L	Yes/P
Nitrate	23/41	1.00E+00 - 1.00E+00	7.00E-03 - 2.90E+00	4.33E-01		2.4E+00			mg/L	Yes/P
Nitrate/Nitrite	1/16	1.00E+00 - 1.00E+00	5.00E-03 - 5.00E-03	4.69E-01		2.4E+00			mg/L	No
Orthophosphate	3/41	1.00E+00 - 1.00E+00	3.30E-02 - 1.01E-01	4.66E-01					mg/L	Yes/Qual
Potassium	3/3		3.38E+00 - 2.12E+01	5.48E+00				3.20E+02	mg/L	No
Selenium	1/3	1.44E-03 - 2.30E-02	4.41E-02 - 4.41E-02	1.14E-02		7.5E-03		6.00E-03	mg/L	Yes/PE
Sodium	3/3		1.34E+01 - 3.67E+01	1.09E+01					mg/L	Yes/Qual
Tetraoxo-sulfate(1-)	41/41		1.23E+01 - 5.34E+01	1.52E+01					mg/L	Yes/Qual
Thallium	2/3	4.67E-04 - 4.67E-04	5.00E-04 - 1.03E-03	3.33E-04					mg/L	Yes/Qual
Uranium	2/3	8.00E-05 - 8.00E-05	2.73E-03 - 4.27E-03	2.36E-03		4.5E-03			mg/L	No
Vanadium	3/3		5.44E-03 - 1.57E+00	2.82E-01		9.3E-03			mg/L	Yes/P
Zinc	3/3		1.80E-02 - 1.21E+01	2.12E+00		4.5E-01			mg/L	Yes/P
1,1-Dichloroethene	2/54	4.00E-03 - 2.00E-01	2.00E-02 - 2.40E-02	4.18E-03		1.3E-02	9.3E-07		mg/L	Yes/P
1,2-Dichloroethane	1/5	5.00E-03 - 1.30E-02	1.00E-03 - 1.00E-03	2.90E-03		6.7E-04	1.1E-05		mg/L	Yes/P
Benzoic acid	1/5	5.00E-02 - 5.00E-02	1.00E-03 - 1.00E-03	2.01E-02		6.0E+00			mg/L	No
Bis(2-ethylhexyl)phthalate	3/5	1.00E-02 - 1.00E-02	1.00E-03 - 8.00E-03	3.00E-03		2.6E-02	3.1E-04		mg/L	Yes/P
Bromodichloromethane	2/5	5.00E-03 - 1.30E-02	1.00E-03 - 8.00E-03	3.20E-03		3.0E-02	8.4E-05		mg/L	Yes/P
Chloroform	4/5	5.00E-03 - 5.00E-03	1.00E-03 - 1.90E-02	3.30E-03		1.4E-02	1.5E-05		mg/L	Yes/P
Di-n-butyl phthalate	1/5	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.10E-03		1.3E-01			mg/L	Yes/Qual
Di-n-octylphthalate	2/5	1.00E-02 - 1.00E-02	1.00E-03 - 6.00E-03	3.70E-03		6.9E-04			mg/L	Yes/P
Dibromochloromethane	2/5	5.00E-03 - 1.30E-02	1.00E-03 - 4.00E-03	2.80E-03		3.0E-02	6.2E-05		mg/L	Yes/P
Phenol	3/5	1.00E-02 - 1.00E-02	1.00E-03 - 5.00E-03	2.70E-03		9.0E-01			mg/L	No
Tetrachloroethene	1/5	5.00E-03 - 1.00E-02	2.70E-02 - 2.70E-02	5.20E-03		9.9E-03	5.7E-05		mg/L	Yes/P
Toluene	3/5	1.00E-02 - 1.30E-02	1.00E-03 - 4.00E-03	2.90E-03		2.4E-02			mg/L	No
Trichloroethene	39/54	4.00E-03 - 4.00E-03	2.00E-04 - 1.28E+00	9.78E-03		7.9E-03	1.4E-04		mg/L	Yes/P

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Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Vinyl chloride	1/54	4.00E-03 - 2.00E-01	2.00E-02 - 2.00E-02	7.94E-03			1.7E-06		mg/L	Yes/P
cis-1,2-Dichloroethene	2/54	4.00E-03 - 2.00E-01	4.00E-03 - 2.00E-02	7.98E-03		1.5E-02			mg/L	Yes/P
trans-1,2-Dichloroethene	5/54	4.00E-03 - 2.00E-01	1.50E-03 - 2.00E-02	8.25E-03		3.0E-02			mg/L	No
Actinium-228	1/1		2.72E+01 - 2.72E+01	2.72E+01			2.4E+01		pCi/L	Yes/P
Alpha activity	48/51	2.90E-01 - 1.88E+00	1.69E+00 - 1.49E+02	2.21E+01					pCi/L	Yes/Qual
Americium-241	1/6	0.00E+00 - 3.70E-01	5.30E-02 - 5.30E-02	1.21E-01			1.2E-01		pCi/L	No
Beta activity	51/51		4.42E+00 - 1.16E+04	1.48E+02					pCi/L	Yes/Qual
Bismuth-214	1/1		9.00E+00 - 9.00E+00	9.00E+00			2.0E+02		pCi/L	No
Cesium-137	4/6	-1.70E+00 - 2.29E+00	2.49E+00 - 1.65E+01	6.57E+00			1.2E+00		pCi/L	Yes/P
Lead-210	1/1		4.21E+02 - 4.21E+02	4.21E+02			3.8E-02		pCi/L	Yes/P
Lead-212	1/1		2.25E+01 - 2.25E+01	2.25E+01			2.1E+00		pCi/L	Yes/P
Lead-214	1/1		1.21E+01 - 1.21E+01	1.21E+01			1.3E+02		pCi/L	Yes/Qual
Neptunium-237	6/6		0.00E+00 - 1.31E+01	4.39E+00			1.3E-01		pCi/L	Yes/P
Plutonium-239	1/5	-2.00E-02 - 4.00E-02	2.12E+00 - 2.12E+00	4.30E-01			1.2E-01		pCi/L	Yes/P
Potassium-40	1/1		6.80E+01 - 6.80E+01	6.80E+01			3.1E+00		pCi/L	Yes/P
Technetium-99	3/6	-1.56E+00 - 1.27E+00	6.60E-01 - 6.16E+02	1.03E+02			2.8E+01		pCi/L	Yes/P
Thallium-208	1/1		6.70E+00 - 6.70E+00	6.70E+00			2.2E+03		pCi/L	No
Thorium-228	1/1		1.23E+00 - 1.23E+00	1.23E+00			1.7E-01		pCi/L	Yes/P
Thorium-230	6/6		2.40E-01 - 1.88E+00	8.55E-01			1.0E+00		pCi/L	Yes/P
Thorium-232	1/1		1.15E+00 - 1.15E+00	1.15E+00			1.2E+00		pCi/L	No
Thorium-234	1/1		7.19E+02 - 7.19E+02	7.19E+02			2.0E+00		pCi/L	Yes/P
Uranium-233/234	1/1		6.10E-01 - 6.10E-01	6.10E-01			8.7E-01		pCi/L	No
Uranium-234	4/5	1.50E-01 - 1.50E-01	1.90E-01 - 2.23E+00	9.84E-01			8.7E-01		pCi/L	Yes/P
Uranium-235	1/6	1.00E-02 - 1.00E-01	2.30E+01 - 2.30E+01	3.86E+00			8.2E-01		pCi/L	Yes/P
Uranium-238	4/6	1.00E-02 - 1.20E-01	2.00E-01 - 1.82E+00	6.43E-01			6.2E-01		pCi/L	Yes/P

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	80/80		9.96E-02 - 2.50E+02	3.61E+01		1.5E+00			mg/L	Yes/P
Antimony	11/80	8.00E-04 - 2.77E-01	1.40E-03 - 4.02E-02	1.10E-02		5.6E-04			mg/L	Yes/P
Arsenic	61/80	1.00E-03 - 1.00E-02	1.00E-03 - 4.36E-01	1.99E-02		4.5E-04	3.5E-06		mg/L	Yes/P
Barium	80/80		5.58E-02 - 6.93E+00	3.60E-01		1.0E-01			mg/L	Yes/P
Beryllium	69/79	2.22E-04 - 5.00E-03	2.22E-04 - 1.11E-01	7.40E-03		6.6E-03	1.0E-06		mg/L	Yes/P
Bromide	10/39	1.00E+00 - 1.12E+00	2.90E-02 - 1.40E+00	4.10E-01					mg/L	Yes/Qual
Cadmium	29/80	2.67E-04 - 3.22E-03	3.56E-04 - 1.59E-02	1.02E-03		6.6E-04			mg/L	Yes/P

530891

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Calcium	80/80		2.27E+01 - 7.87E+01	1.91E+01				1.60E+02	mg/L	No
Chloride	39/39		7.01E+00 - 1.25E+02	2.99E+01				1.20E+02	mg/L	Yes/E
Chromium	62/80	6.56E-03 - 1.39E-01	5.00E-03 - 4.49E+00	7.97E-02		7.1E-03			mg/L	Yes/P
Cobalt	76/80	1.78E-03 - 1.00E-02	5.33E-03 - 4.84E-01	7.75E-02		9.1E-02			mg/L	Yes/P
Copper	58/80	8.60E-03 - 1.00E-02	8.10E-03 - 1.05E+01	1.08E-01		6.0E-02		2.00E-01	mg/L	Yes/PE
Fluoride	9/39	1.00E+00 - 1.00E+00	1.79E-01 - 2.31E-01	2.15E-01		9.1E-02		3.00E-01	mg/L	No
Iron	80/80		6.83E-02 - 2.24E+03	2.20E+02		4.5E-01		2.00E+00	mg/L	Yes/PE
Lead	63/80	1.00E-03 - 1.56E-02	1.96E-03 - 2.63E-01	2.32E-02		1.5E-07			mg/L	Yes/P
Magnesium	80/80		7.97E+00 - 3.33E+01	7.96E+00				3.40E+01	mg/L	No
Manganese	80/80		7.78E-03 - 5.79E+01	2.03E+00		6.7E-02			mg/L	Yes/P
Mercury	30/80	2.00E-04 - 2.10E-04	3.00E-05 - 6.12E-04	1.40E-04		4.4E-04			mg/L	Yes/P
Nickel	74/80	2.61E-02 - 8.21E-02	9.67E-03 - 4.88E+00	1.55E-01		3.0E-02			mg/L	Yes/P
Nitrate	39/39		9.30E-02 - 1.74E+02	2.04E+01		2.4E+00			mg/L	Yes/P
Nitrate/Nitrite	3/9	1.00E+00 - 1.00E+00	3.20E-02 - 1.14E-01	7.25E-02		2.4E+00			mg/L	No
Orthophosphate	2/39	1.00E+00 - 1.00E+00	2.50E-02 - 3.60E-02	4.75E-01					mg/L	Yes/Qual
Potassium	80/80		9.57E-01 - 2.53E+01	2.68E+00				3.20E+02	mg/L	No
Selenium	23/80	1.30E-03 - 4.00E-02	1.34E-03 - 4.80E-03	7.08E-03		7.5E-03			mg/L	No
Silver	8/80	1.00E-03 - 5.00E-02	4.00E-03 - 3.98E-01	8.12E-03		7.5E-03			mg/L	Yes/P
Sodium	80/80		2.71E+01 - 8.38E+01	2.34E+01					mg/L	Yes/Qual
Tetraoxo-sulfate(1-)	39/39		3.70E+00 - 5.64E+01	1.10E+01					mg/L	Yes/Qual
Thallium	13/80	4.20E-04 - 2.00E-03	4.89E-04 - 4.56E-03	3.79E-04					mg/L	Yes/Qual
Uranium	45/52	8.00E-05 - 1.00E-03	1.30E-04 - 1.21E-02	2.45E-03		4.5E-03			mg/L	Yes/P
Vanadium	73/80	4.00E-03 - 4.00E-03	4.20E-03 - 1.35E+00	1.09E-01		9.3E-03			mg/L	Yes/P
Zinc	77/80	9.00E-03 - 9.00E-03	1.58E-02 - 8.18E+01	5.42E-01		4.5E-01			mg/L	Yes/P
1,1,1-Trichloroethane	1/23	1.00E-02 - 1.30E+01	1.20E-02 - 1.20E-02	1.01E+00		4.4E-02			mg/L	No
1,1-Dichloroethene	20/155	4.00E-03 - 3.20E+01	1.00E-03 - 1.54E-01	4.08E-03		1.3E-02	9.3E-07		mg/L	Yes/P
Acetone	1/23	2.00E-02 - 2.50E+01	5.00E-03 - 5.00E-03	2.23E+00		1.5E-01			mg/L	No
Benzoic acid	5/16	5.00E-02 - 5.00E-02	1.00E-03 - 5.00E-03	2.93E-03		6.0E+00			mg/L	No
Bis(2-ethylhexyl)phthalate	6/16	2.00E-03 - 3.20E-02	1.00E-03 - 1.00E-03	4.42E-03		2.6E-02	3.1E-04		mg/L	Yes/P
Bromodichloromethane	2/23	1.00E-02 - 1.30E+01	3.00E-03 - 4.00E-03	3.72E-03		3.0E-02	8.4E-05		mg/L	Yes/P
Carbon tetrachloride	4/23	1.00E-02 - 1.30E+01	1.00E-03 - 2.70E-01	1.82E-02		1.2E-04	1.5E-05		mg/L	Yes/P
Chloroform	6/23	1.00E-02 - 1.30E+01	1.50E-02 - 3.60E-02	2.22E-02		1.4E-02	1.5E-05		mg/L	Yes/P
Di-n-butyl phthalate	8/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	2.75E-03		1.3E-01			mg/L	Yes/Qual
Di-n-octylphthalate	1/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.72E-03		6.9E-04			mg/L	Yes/P
Diethyl phthalate	1/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.72E-03		1.2E+00			mg/L	No
N-Nitroso-di-n-propylamine	1/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.72E-03			7.4E-07		mg/L	Yes/P
Phenol	6/16	1.00E-02 - 1.00E-02	1.00E-03 - 4.00E-02	4.61E-03		9.0E-01			mg/L	No
Tetrachloroethene	6/23	1.00E-02 - 1.30E+01	3.00E-03 - 3.00E-02	1.45E-02		9.9E-03	5.7E-05		mg/L	Yes/P
Toluene	1/23	1.00E-02 - 1.30E+01	3.60E-02 - 3.60E-02	8.78E-01		2.4E-02			mg/L	Yes/P
Trichloroethene	146/155	4.00E-03 - 4.00E-03	1.50E-03 - 7.01E+02	5.27E+00		7.9E-03	1.4E-04		mg/L	Yes/P

530892

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Vinyl chloride	3/155	4.00E-03 - 3.20E+01	1.00E-03 - 1.33E-01	1.15E+00			1.7E-06		mg/L	Yes/P
cis-1,2-Dichloroethene	10/155	4.00E-03 - 3.20E+01	1.30E-03 - 3.70E-01	1.23E+00		1.5E-02			mg/L	Yes/P
trans-1,2-Dichloroethene	27/155	4.00E-03 - 3.20E+01	1.50E-03 - 1.20E+00	7.62E-03		3.0E-02			mg/L	Yes/P
Alpha activity	129/151	-8.53E-01 - 5.06E+00	6.90E-01 - 1.36E+02	1.45E+01					pCi/L	Yes/Qual
Americium-241	2/30	-1.50E-01 - 1.22E+02	7.70E-02 - 1.68E+00	1.08E+01			1.2E-01		pCi/L	Yes/P
Beta activity	149/151	1.28E+00 - 1.50E+00	2.86E+00 - 1.72E+04	2.45E+02					pCi/L	Yes/Qual
Bismuth-212	1/1		4.20E+01 - 4.20E+01	4.20E+01			6.2E+01		pCi/L	No
Cesium-137	15/31	-1.19E+00 - 3.38E+01	3.33E+00 - 1.45E+01	8.31E+00			1.2E+00		pCi/L	Yes/P
Lead-210	1/1		1.00E+02 - 1.00E+02	1.00E+02			3.8E-02		pCi/L	Yes/P
Lead-214	1/1		7.40E+00 - 7.40E+00	7.40E+00			1.3E+02		pCi/L	Yes/Qual
Neptunium-237	23/30	2.04E+00 - 5.30E+01	0.00E+00 - 1.44E+01	9.10E+00			1.3E-01		pCi/L	Yes/P
Plutonium-239	4/27	-3.00E-02 - 1.10E-01	0.00E+00 - 1.30E-01	3.22E-02			1.2E-01		pCi/L	Yes/P
Technetium-99	26/28	-1.53E+01 --5.20E+00	2.00E+00 - 1.70E+04	1.42E+03			2.8E+01		pCi/L	Yes/P
Thorium-228	1/1		7.60E-01 - 7.60E-01	7.60E-01			1.7E-01		pCi/L	Yes/P
Thorium-230	22/28	6.00E-02 - 2.20E-01	1.80E-01 - 8.40E+00	6.85E-01			1.0E+00		pCi/L	Yes/P
Thorium-232	1/1		7.60E-01 - 7.60E-01	7.60E-01			1.2E+00		pCi/L	No
Uranium-233/234	1/1		6.50E-01 - 6.50E-01	6.50E-01			8.7E-01		pCi/L	No
Uranium-234	17/30	2.00E-02 - 4.98E+02	1.70E-01 - 1.70E+01	7.00E-01			8.7E-01		pCi/L	Yes/P
Uranium-235	3/28	-2.00E-02 - 4.10E-01	1.03E-01 - 7.70E-01	6.55E-02			8.2E-01		pCi/L	Yes/Qual
Uranium-238	13/31	-1.30E-01 - 5.44E+02	1.90E-01 - 1.66E+01	4.11E+01			6.2E-01		pCi/L	Yes/P

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	196/196		9.13E+01 - 2.34E+04	5.71E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	73/196	5.00E-01 - 6.00E+00	6.00E-03 - 9.40E+00	4.83E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	196/196		2.75E-02 - 4.52E+01	3.01E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	196/196		8.16E-01 - 2.79E+02	5.12E+01	170.00	3.7E+01			mg/kg	Yes/PB
Beryllium	196/196		4.20E-03 - 1.20E+00	2.92E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	117/196	5.00E-03 - 5.00E-01	1.30E-03 - 4.25E+00	7.61E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	196/196		6.49E+00 - 3.40E+05	9.57E+03	6100.00			1.60E+02	mg/kg	No
Chromium	196/196		1.22E-01 - 1.41E+02	9.56E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	196/196		4.40E-02 - 1.96E+01	3.34E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	196/196		6.70E-02 - 9.52E+03	3.09E+01	25.00	7.4E+01		2.00E-01	mg/kg	Yes/PBE
Iron	196/196		1.50E+02 - 5.17E+04	9.45E+03	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	196/196		5.70E-02 - 8.75E+01	5.41E+00	23.00	1.0E-04			mg/kg	Yes/PB

530893

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Magnesium	196/196		9.38E+00 - 2.72E+04	1.12E+03	2100.00			3.00E+01	mg/kg	No
Manganese	196/196		2.19E+00 - 1.37E+03	1.99E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	166/196	8.00E-03 - 9.90E-03	9.50E-03 - 8.30E+00	3.43E-02	0.13	1.6E-01			mg/kg	Yes/PB
Nickel	196/196		7.80E-02 - 1.76E+04	5.25E+01	22.00	3.4E+01			mg/kg	Yes/PB
Potassium	196/196		2.20E+00 - 1.14E+03	2.02E+02	950.00			3.20E+02	mg/kg	No
Selenium	30/196	2.00E-01 - 1.00E+00	2.00E-01 - 1.30E+00	1.34E-01		1.2E+01			mg/kg	No
Silver	45/196	8.00E-04 - 3.00E-01	7.00E-03 - 2.51E+01	2.03E-01	2.70	6.1E+00			mg/kg	Yes/PB
Sodium	196/196		3.92E+00 - 1.67E+03	2.41E+02	340.00				mg/kg	Yes/B
Thallium	16/196	5.00E-01 - 6.00E+00	7.00E-03 - 2.30E+00	3.40E-01	0.34				mg/kg	Yes/B
Uranium	151/151		1.19E+00 - 4.26E+02	1.13E+01	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	196/196		1.76E-01 - 6.72E+01	1.35E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	196/196		2.00E-01 - 1.81E+02	1.79E+01	60.00	4.0E+02			mg/kg	Yes/B
1,1,1-Trichloroethane	3/142	5.00E-03 - 8.00E-01	1.20E-02 - 2.40E+00	1.83E-02		8.4E+01			mg/kg	No
1,1,2-Trichloroethane	3/142	5.00E-03 - 8.00E-01	3.90E-03 - 5.30E-01	1.17E-02		4.5E+00	7.8E-02		mg/kg	Yes/P
1,1-Dichloroethene	10/181	6.00E-03 - 1.40E+00	1.20E-03 - 9.50E-01	3.47E-01		1.2E+01	1.8E-03		mg/kg	Yes/P
2,4-Dinitrotoluene	1/203	6.70E-01 - 1.65E+01	4.57E-01 - 4.57E-01	6.28E-01		4.7E+00	2.1E-02		mg/kg	Yes/P
2,6-Dinitrotoluene	4/203	6.70E-01 - 1.65E+01	3.47E-01 - 4.32E-01	6.25E-01		2.4E+00	2.1E-02		mg/kg	Yes/P
2-Hexanone	1/142	5.00E-02 - 8.00E+00	4.40E-03 - 4.40E-03	9.78E-02					mg/kg	Yes/Qual
2-Methylnaphthalene	2/203	6.70E-01 - 8.00E+00	4.40E-02 - 9.00E-01	5.89E-01					mg/kg	Yes/Qual
Acenaphthene	20/203	6.70E-01 - 8.00E+00	6.10E-03 - 7.07E+00	5.06E-01		6.5E+01			mg/kg	Yes/Qual
Acenaphthylene	1/203	6.90E-01 - 1.65E+01	2.20E-01 - 2.20E-01	6.28E-01					mg/kg	Yes/Qual
Acetone	18/142	1.00E-01 - 2.00E+01	6.10E-03 - 4.30E+00	2.09E-01		1.1E+02			mg/kg	No
Anthracene	28/203	6.90E-01 - 8.00E+00	1.00E-02 - 8.43E+01	6.83E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	43/203	6.90E-01 - 8.00E+00	2.10E-02 - 3.92E+01	6.55E-01			8.5E-03		mg/kg	Yes/P
Benzene	1/142	5.00E-03 - 8.00E-01	1.70E-02 - 1.70E-02	9.84E-03		2.4E+00	1.3E-01		mg/kg	No
Benzo(a)pyrene	42/203	6.90E-01 - 8.00E+00	1.90E-02 - 3.77E+01	6.41E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	42/203	6.90E-01 - 8.00E+00	1.80E-02 - 6.24E+01	7.18E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	32/203	6.30E-02 - 8.00E+00	1.20E-02 - 8.84E+00	5.30E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	44/203	6.90E-01 - 8.00E+00	1.60E-02 - 9.41E+01	7.36E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	71/203	6.90E-01 - 1.65E+01	1.50E-03 - 8.77E-01	4.87E-01		1.4E+01	2.8E-01		mg/kg	Yes/P
Butyl benzyl phthalate	5/203	6.70E-01 - 1.65E+01	4.00E-02 - 4.34E-01	6.22E-01		3.7E+02			mg/kg	Yes/Qual
Carbon disulfide	1/142	5.00E-03 - 8.00E-01	3.90E-03 - 3.90E-03	9.80E-03		6.9E+01			mg/kg	No
Carbon tetrachloride	3/142	5.00E-03 - 8.00E-01	2.00E-03 - 7.10E-01	1.23E-02		3.6E-01	3.2E-02		mg/kg	Yes/P
Chloroform	5/142	5.00E-03 - 8.00E-01	1.40E-03 - 1.80E-02	9.79E-03		3.1E+00	6.8E-02		mg/kg	No
Chrysene	43/203	6.90E-01 - 8.00E+00	2.20E-02 - 4.37E+01	6.72E-01			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	56/203	6.70E-01 - 1.65E+01	4.00E-02 - 3.80E+00	6.09E-01		2.6E+02			mg/kg	Yes/Qual
Di-n-octylphthalate	2/203	6.70E-01 - 1.65E+01	6.00E-02 - 6.06E-01	6.27E-01		4.9E+01			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	9/203	6.60E-02 - 8.00E+00	7.70E-02 - 4.27E+00	5.51E-01			8.5E-04		mg/kg	Yes/P
Dibenzofuran	12/203	6.90E-01 - 8.00E+00	2.80E-03 - 3.60E+00	5.24E-01		6.4E+00			mg/kg	No
Diethyl phthalate	9/203	6.70E-01 - 1.65E+01	4.00E-02 - 6.10E+00	6.51E-01		2.0E+03			mg/kg	No

530894

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Fluoranthene	56/203	6.90E-01 - 8.00E+00	1.20E-03 - 9.68E+01	1.03E+00		4.3E+01			mg/kg	Yes/P
Fluorene	18/203	6.70E-01 - 8.00E+00	4.80E-03 - 4.54E+00	5.04E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	30/203	6.60E-02 - 8.00E+00	1.10E-02 - 9.69E+00	5.23E-01			8.5E-03		mg/kg	Yes/P
Iodomethane	1/142	5.00E-03 - 8.00E-01	7.00E-01 - 7.00E-01	9.80E-03					mg/kg	Yes/Qual
Methylene chloride	83/142	1.30E-03 - 4.00E-02	1.20E-03 - 8.00E-01	9.58E-03		6.8E+01	6.9E-01		mg/kg	Yes/P
N-Nitroso-di-n-propylamine	4/203	6.70E-01 - 1.65E+01	4.84E-01 - 6.34E-01	6.26E-01			7.3E-04		mg/kg	Yes/P
N-Nitrosodiphenylamine	2/203	6.70E-01 - 1.65E+01	5.82E-01 - 8.23E-01	6.28E-01			1.0E+00		mg/kg	Yes/Qual
Naphthalene	10/203	6.70E-01 - 8.00E+00	2.40E-03 - 1.90E+00	5.32E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1254	6/78	1.80E-02 - 9.40E-01	5.20E-03 - 9.60E-01	5.40E-02		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1260	12/78	1.80E-02 - 2.10E-01	3.00E-03 - 3.30E+00	6.69E-02			1.1E-02		mg/kg	Yes/P
PCB-1262	1/78	1.80E-02 - 9.40E-01	3.80E-02 - 3.80E-02	3.45E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	43/203	6.90E-01 - 8.00E+00	4.00E-02 - 7.75E+01	8.50E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	19/205	1.90E-02 - 1.00E+00	3.00E-03 - 1.00E+01	4.76E-01			1.1E-02		mg/kg	Yes/P
Pyrene	51/203	6.90E-01 - 8.00E+00	4.10E-02 - 1.11E+02	9.74E-01		3.2E+01			mg/kg	Yes/P
Tetrachloroethene	4/142	5.00E-03 - 8.00E-01	5.20E-03 - 6.90E-01	1.23E-02		1.3E+01	1.4E-01		mg/kg	Yes/P
Toluene	26/142	5.00E-03 - 8.00E-01	1.20E-03 - 3.20E-01	1.32E-02		1.1E+02			mg/kg	No
Trichloroethene	60/181	1.49E-03 - 1.10E+00	1.45E-03 - 1.11E+04	7.46E+01		1.4E+00	1.1E-01		mg/kg	Yes/P
Trichlorofluoromethane	1/142	5.00E-03 - 8.00E-01	1.70E-03 - 1.70E-03	9.79E-03		4.8E+01			mg/kg	No
Vinyl acetate	3/142	5.00E-02 - 8.00E+00	1.70E-03 - 5.50E-02	9.77E-02		5.4E+01			mg/kg	No
Vinyl chloride	16/181	1.00E-02 - 2.30E+01	1.90E-03 - 2.90E+01	9.71E-01			1.2E-05		mg/kg	Yes/P
cis-1,2-Dichloroethene	43/181	6.00E-03 - 2.30E+01	1.40E-03 - 2.40E+00	7.62E-01		1.3E+01			mg/kg	No
trans-1,2-Dichloroethene	19/181	6.00E-03 - 6.32E+02	1.40E+00 - 1.02E+02	7.69E+00		2.7E+01			mg/kg	Yes/P
Alpha activity	215/252	-3.46E+00 - 7.15E+00	6.03E+00 - 8.78E+02	2.48E+01					pCi/g	Yes/Qual
Americium-241	19/151	1.00E-01 - 2.00E-01	1.20E-01 - 1.30E+00	1.37E-01			1.5E+00		pCi/g	No
Beta activity	245/252	3.48E+00 - 8.46E+00	9.64E+00 - 8.08E+03	7.29E+01					pCi/g	Yes/Qual
Cesium-137	44/151	1.00E-01 - 3.00E-01	2.00E-01 - 1.11E+01	2.75E-01	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	73/151	1.00E-01 - 2.00E-01	2.00E-01 - 5.26E+01	5.95E-01			6.8E-02		pCi/g	Yes/P
Plutonium-239	12/151	1.00E-01 - 1.00E-01	2.00E-01 - 1.12E+01	2.00E-01			2.0E+00		pCi/g	Yes/P
Technetium-99	113/151	1.00E-01 - 3.00E-01	2.00E-01 - 4.84E+03	3.62E+01	2.80		4.4E+02		pCi/g	Yes/PB
Thorium-230	150/151	2.00E-01 - 2.00E-01	3.00E-01 - 1.88E+01	1.44E+00	1.40		1.6E+01		pCi/g	Yes/PB
Uranium-234	151/151		4.00E-01 - 1.02E+02	2.83E+00	2.40		1.4E+01		pCi/g	Yes/PB
Uranium-235	21/151	1.00E-01 - 1.00E-01	2.00E-01 - 4.90E+00	1.91E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	151/151		4.00E-01 - 1.42E+02	3.78E+00	1.20		4.7E-01		pCi/g	Yes/PB

530895

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	27/27		3.25E+03 - 1.77E+04	5.34E+03	13000.00	7.3E+02			mg/kg	Yes/PB
Antimony	14/27	5.00E-01 - 6.00E-01	6.00E-01 - 2.90E+00	8.81E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	27/27		3.86E+00 - 4.52E+01	4.32E+00	12.00	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	27/27		3.53E+01 - 1.47E+02	4.37E+01	200.00	3.7E+01			mg/kg	No
Beryllium	27/27		2.20E-01 - 8.00E-01	2.65E-01	0.67	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	20/27	2.00E-02 - 2.00E-02	4.00E-02 - 4.25E+00	2.39E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	27/27		2.18E+03 - 2.77E+05	1.82E+04	200000.00			1.60E+02	mg/kg	No
Chromium	27/27		8.25E+00 - 6.60E+01	1.01E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	27/27		3.00E+00 - 1.43E+01	3.65E+00	14.00	2.1E+02			mg/kg	Yes/B
Copper	27/27		5.90E+00 - 3.46E+01	7.21E+00	19.00	7.4E+01		2.00E-01	mg/kg	No
Iron	27/27		1.12E+04 - 3.70E+04	9.89E+03	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	27/27		8.00E+00 - 4.20E+01	7.06E+00	36.00	1.0E-04			mg/kg	Yes/PB
Magnesium	27/27		8.20E+02 - 1.08E+04	1.22E+03	7700.00			3.00E+01	mg/kg	No
Manganese	27/27		1.65E+02 - 7.36E+02	2.08E+02	1500.00	1.4E+01			mg/kg	No
Mercury	24/27	8.00E-03 - 8.70E-03	1.65E-02 - 1.36E-01	4.15E-02	0.20	1.6E-01			mg/kg	No
Nickel	27/27		5.70E+00 - 2.55E+01	6.99E+00		3.4E+01			mg/kg	No
Potassium	27/27		1.33E+02 - 1.00E+03	2.46E+02	1300.00				mg/kg	No
Selenium	7/27	2.00E-01 - 1.00E+00	2.00E-01 - 3.00E-01	2.00E-01		1.2E+01			mg/kg	No
Silver	8/27	7.00E-02 - 1.00E-01	1.00E-01 - 1.10E+00	7.92E-02		6.1E+00			mg/kg	No
Sodium	27/27		1.80E+02 - 8.15E+02	2.07E+02	320.00				mg/kg	Yes/B
Thallium	4/27	5.00E-01 - 1.00E+00	6.00E-01 - 1.50E+00	3.52E-01	0.21				mg/kg	Yes/B
Uranium	21/21		1.49E+00 - 1.19E+02	1.78E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	27/27		7.40E+00 - 4.24E+01	1.29E+01	38.00	5.6E-01			mg/kg	Yes/PB
Zinc	27/27		1.77E+01 - 1.11E+02	2.24E+01	65.00	4.0E+02			mg/kg	Yes/B
2-Methylnaphthalene	2/25	6.70E-01 - 8.00E+00	4.40E-02 - 9.00E-01	1.83E-01					mg/kg	Yes/Qual
Acenaphthene	11/25	6.70E-01 - 7.90E+00	6.10E-03 - 7.07E+00	5.50E-01		6.5E+01			mg/kg	Yes/Qual
Acenaphthylene	1/25	7.10E-01 - 1.65E+01	2.20E-01 - 2.20E-01	2.39E+00					mg/kg	Yes/Qual
Anthracene	14/25	7.25E-01 - 7.50E+00	1.00E-02 - 8.43E+01	1.09E+00		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	18/25	7.25E-01 - 7.50E+00	2.10E-02 - 3.92E+01	1.73E+00			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	18/25	7.25E-01 - 7.50E+00	1.90E-02 - 3.77E+01	1.71E+00			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	18/25	7.25E-01 - 7.50E+00	1.80E-02 - 6.24E+01	1.96E+00			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	13/25	7.25E-01 - 7.90E+00	1.20E-02 - 8.84E+00	9.93E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	19/25	7.25E-01 - 7.90E+00	1.60E-02 - 9.41E+01	1.61E+00			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	3/25	7.10E-01 - 1.65E+01	8.00E-02 - 1.00E-01	9.08E-02		1.4E+01	2.8E-01		mg/kg	Yes/Qual

530896

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Chrysene	18/25	7.25E-01 - 7.50E+00	2.20E-02 - 4.37E+01	1.82E+00			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	5/25	6.70E-01 - 1.65E+01	4.00E-02 - 1.23E+00	3.85E-01		2.6E+02			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	6/25	7.10E-01 - 8.00E+00	7.70E-02 - 4.27E+00	5.29E-01			8.5E-04		mg/kg	Yes/P
Dibenzofuran	7/25	7.10E-01 - 7.90E+00	2.80E-03 - 3.60E+00	3.12E-01		6.4E+00			mg/kg	No
Fluoranthene	22/25	7.25E-01 - 7.50E+00	4.00E-02 - 9.68E+01	3.33E+00		4.3E+01			mg/kg	Yes/P
Fluorene	9/25	6.70E-01 - 7.90E+00	4.80E-03 - 4.54E+00	4.15E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	13/25	6.98E-01 - 7.90E+00	1.10E-02 - 9.69E+00	9.39E-01			8.5E-03		mg/kg	Yes/P
Methylene chloride	2/3	5.00E-03 - 5.00E-03	2.00E-03 - 1.40E-02	3.50E-03		6.8E+01	6.9E-01		mg/kg	No
Naphthalene	5/25	6.70E-01 - 7.90E+00	2.40E-03 - 1.90E+00	2.04E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1254	2/13	1.80E-02 - 9.40E-01	7.70E-02 - 9.60E-01	2.60E-03		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1260	6/13	1.80E-02 - 2.10E-01	3.00E-03 - 3.30E+00	2.58E-02			1.1E-02		mg/kg	Yes/P
PCB-1262	1/13	1.80E-02 - 9.40E-01	3.80E-02 - 3.80E-02	6.80E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	18/25	7.25E-01 - 7.50E+00	4.00E-02 - 7.75E+01	2.31E+00					mg/kg	Yes/Qual
Polychlorinated biphenyl	9/24	1.00E+00 - 1.00E+00	3.00E-03 - 1.00E+01	1.12E-01			1.1E-02		mg/kg	Yes/P
Pyrene	21/25	7.25E-01 - 7.50E+00	4.10E-02 - 1.11E+02	3.01E+00		3.2E+01			mg/kg	Yes/P
Toluene	1/3	6.00E-03 - 6.00E-03	3.10E-03 - 3.10E-03	2.52E-03		1.1E+02			mg/kg	No
Trichloroethene	1/3	6.00E-03 - 6.00E-01	1.60E-03 - 1.60E-03	2.03E-01		1.4E+00	1.1E-01		mg/kg	No
Alpha activity	40/57	-3.46E+00 - 7.15E+00	6.03E+00 - 1.75E+02	1.64E+01					pCi/g	Yes/Qual
Americium-241	3/21	1.00E-01 - 1.00E-01	2.00E-01 - 1.00E+00	2.90E-02			1.5E+00		pCi/g	No
Beta activity	51/57	3.48E+00 - 8.46E+00	9.64E+00 - 2.48E+02	3.90E+01					pCi/g	Yes/Qual
Cesium-137	12/21	1.00E-01 - 2.00E-01	2.00E-01 - 1.50E+00	2.43E-01	0.49		1.6E-02		pCi/g	Yes/PB
Neptunium-237	11/21	1.00E-01 - 1.00E-01	2.00E-01 - 3.00E+00	3.23E-01	0.10		6.8E-02		pCi/g	Yes/PB
Plutonium-239	6/21	1.00E-01 - 1.00E-01	2.00E-01 - 1.70E+00	9.24E-02			2.0E+00		pCi/g	No
Technetium-99	20/21	3.00E-01 - 3.00E-01	3.00E-01 - 5.30E+01	8.47E+00			4.4E+02		pCi/g	No
Thorium-230	21/21		5.00E-01 - 1.09E+01	2.53E+00			1.6E+01		pCi/g	No
Uranium-234	21/21		5.00E-01 - 3.11E+01	4.56E+00	2.50		1.4E+01		pCi/g	Yes/PB
Uranium-235	11/21	1.00E-01 - 1.00E-01	2.00E-01 - 1.90E+00	2.29E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	21/21		5.00E-01 - 3.95E+01	5.93E+00	1.20		4.7E-01		pCi/g	Yes/PB

530897

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Central MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	3/3		4.27E+03 - 7.77E+03	3.13E+03	12000.00	7.3E+02			mg/kg	No
Antimony	1/3	6.00E-01 - 6.00E-01	4.50E+00 - 4.50E+00	9.50E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	3/3		4.15E+00 - 5.71E+00	2.39E+00	7.90	6.9E-01	9.2E-03		mg/kg	No
Barium	3/3		2.31E+01 - 1.33E+02	3.55E+01	170.00	3.7E+01			mg/kg	No
Beryllium	3/3		3.40E-01 - 4.60E-01	2.08E-01	0.69	4.0E-01	1.0E-04		mg/kg	No
Cadmium	2/3	2.00E-02 - 2.00E-02	1.60E-01 - 3.00E-01	8.00E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/B
Calcium	3/3		8.31E+02 - 1.45E+03	5.82E+02	6100.00				mg/kg	No
Chromium	3/3		1.09E+01 - 3.67E+01	9.82E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	3/3		3.81E+00 - 6.29E+00	2.48E+00	13.00	2.1E+02			mg/kg	No
Copper	3/3		3.80E+00 - 1.27E+01	3.98E+00	25.00	7.4E+01			mg/kg	No
Iron	3/3		1.45E+04 - 2.90E+04	1.01E+04	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	3/3		3.90E+00 - 9.10E+00	3.25E+00	23.00	1.0E-04			mg/kg	No
Magnesium	3/3		2.43E+02 - 1.85E+03	5.34E+02	2100.00				mg/kg	No
Manganese	3/3		1.75E+02 - 3.02E+02	1.09E+02	820.00	1.4E+01			mg/kg	No
Mercury	3/3		1.59E-02 - 2.73E-02	1.15E-02	0.13	1.6E-01			mg/kg	No
Nickel	3/3		4.20E+00 - 1.50E+01	4.43E+00		3.4E+01			mg/kg	No
Potassium	3/3		1.42E+02 - 3.54E+02	1.20E+02	950.00				mg/kg	No
Silver	2/3	8.00E-02 - 8.00E-02	2.00E-01 - 1.21E+00	2.48E-01		6.1E+00			mg/kg	No
Sodium	3/3		5.67E+02 - 8.32E+02	3.36E+02	340.00				mg/kg	Yes/B
Thallium	1/3	6.00E-01 - 6.00E-01	7.00E-01 - 7.00E-01	3.17E-01	0.34				mg/kg	Yes/B
Uranium	6/6		1.19E+00 - 2.39E+00	1.84E+00		1.1E+01			mg/kg	No
Vanadium	3/3		1.84E+01 - 3.08E+01	1.13E+01	37.00	5.6E-01			mg/kg	No
Zinc	3/3		1.19E+01 - 3.47E+01	1.06E+01	60.00	4.0E+02			mg/kg	No
Bis(2-ethylhexyl)phthalate	1/3	7.60E-01 - 7.90E-01	4.00E-02 - 4.00E-02	2.65E-01		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chloroform	1/7	6.00E-03 - 6.00E-03	1.40E-03 - 1.40E-03	2.67E-03		3.1E+00	6.8E-02		mg/kg	No
Di-n-butyl phthalate	2/3	7.90E-01 - 7.90E-01	1.20E+00 - 1.40E+00	5.65E-01		2.6E+02			mg/kg	Yes/Qual
Methylene chloride	6/7	6.00E-03 - 6.00E-03	3.30E-03 - 1.40E-02	4.14E-03		6.8E+01	6.9E-01		mg/kg	No
Toluene	3/7	6.00E-03 - 6.00E-03	1.20E-03 - 1.70E-03	1.52E-03		1.1E+02			mg/kg	No
Trichloroethene	4/7	8.00E-01 - 1.00E+00	1.60E-03 - 1.70E-02	8.04E-03		1.4E+00	1.1E-01		mg/kg	No
Alpha activity	7/7		1.04E+01 - 3.04E+01	1.95E+01					pCi/g	Yes/Qual
Beta activity	7/7		2.60E+01 - 4.94E+01	3.26E+01					pCi/g	Yes/Qual
Cesium-137	2/6	1.00E-01 - 2.00E-01	2.00E-01 - 3.00E-01	1.67E-01	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	1/6	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.17E-01			6.8E-02		pCi/g	Yes/P
Technetium-99	5/6	2.00E-01 - 2.00E-01	7.00E-01 - 1.80E+00	1.08E+00			4.4E+02		pCi/g	No
Thorium-230	6/6		5.00E-01 - 1.00E+00	8.00E-01			1.6E+01		pCi/g	No
Uranium-234	6/6		4.00E-01 - 9.00E-01	6.00E-01			1.4E+01		pCi/g	No
Uranium-238	6/6		4.00E-01 - 8.00E-01	6.17E-01	1.20		4.7E-01		pCi/g	No

5308898

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Central MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Uranium	1/1		1.49E+00 - 1.49E+00	1.49E+00		1.1E+01			mg/kg	No
Di-n-butyl phthalate	1/1		1.20E+00 - 1.20E+00	6.00E-01		2.6E+02			mg/kg	Yes/Qual
Methylene chloride	1/1		1.40E-02 - 1.40E-02	7.00E-03		6.8E+01	6.9E-01		mg/kg	No
Trichloroethene	1/1		1.60E-03 - 1.60E-03	1.60E-03		1.4E+00	1.1E-01		mg/kg	No
Alpha activity	1/1		1.04E+01 - 1.04E+01	1.04E+01					pCi/g	Yes/Qual
Beta activity	1/1		2.68E+01 - 2.68E+01	2.68E+01					pCi/g	Yes/Qual
Cesium-137	1/1		2.00E-01 - 2.00E-01	2.00E-01	0.49		1.6E-02		pCi/g	No
Technetium-99	1/1		1.50E+00 - 1.50E+00	1.50E+00			4.4E+02		pCi/g	No
Thorium-230	1/1		1.00E+00 - 1.00E+00	1.00E+00			1.6E+01		pCi/g	No
Uranium-234	1/1		5.00E-01 - 5.00E-01	5.00E-01			1.4E+01		pCi/g	No
Uranium-238	1/1		5.00E-01 - 5.00E-01	5.00E-01	1.20		4.7E-01		pCi/g	No

SECTOR=East MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	17/17		6.19E+03 - 2.03E+04	6.66E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	3/17	6.00E-01 - 6.00E-01	6.00E-01 - 8.00E-01	3.12E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	17/17		3.27E+00 - 1.81E+01	3.11E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	17/17		6.54E+01 - 1.56E+02	5.54E+01	170.00	3.7E+01			mg/kg	No
Beryllium	17/17		2.60E-01 - 6.90E-01	2.73E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	14/17	2.00E-02 - 2.00E-01	6.00E-02 - 4.00E-01	1.77E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	17/17		9.49E+02 - 2.03E+04	2.04E+03	6100.00			1.60E+02	mg/kg	No
Chromium	17/17		1.16E+01 - 2.04E+01	8.48E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	17/17		2.90E+00 - 1.86E+01	3.60E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	17/17		7.70E+00 - 3.46E+01	6.52E+00	25.00	7.4E+01		2.00E-01	mg/kg	No
Iron	17/17		1.19E+04 - 2.70E+04	9.08E+03	28000.00	3.1E+02			mg/kg	No
Lead	17/17		5.00E+00 - 2.45E+01	4.95E+00	23.00	1.0E-04			mg/kg	Yes/PB
Magnesium	17/17		1.18E+03 - 3.06E+03	1.04E+03	2100.00			3.00E+01	mg/kg	No
Manganese	17/17		1.46E+02 - 9.96E+02	2.13E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	10/17	8.30E-03 - 9.60E-03	9.50E-03 - 6.28E-02	1.97E-02	0.13	1.6E-01			mg/kg	No
Nickel	17/17		8.00E+00 - 2.28E+01	6.96E+00		3.4E+01			mg/kg	No
Potassium	17/17		1.76E+02 - 1.07E+03	2.66E+02	950.00			3.20E+02	mg/kg	No
Selenium	1/17	2.00E-01 - 1.00E+00	5.00E-01 - 5.00E-01	1.49E-01		1.2E+01			mg/kg	No
Sodium	17/17		2.44E+02 - 8.64E+02	2.74E+02	340.00				mg/kg	Yes/B
Thallium	1/17	6.00E-01 - 6.00E-01	1.20E+00 - 1.20E+00	3.18E-01	0.34				mg/kg	Yes/B
Uranium	16/16		1.49E+00 - 2.74E+01	3.60E+00	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	17/17		1.70E+01 - 3.24E+01	1.40E+01	37.00	5.6E-01			mg/kg	No

530899

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=East MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Zinc	17/17		1.52E+01 - 5.39E+01	1.85E+01	60.00	4.0E+02			mg/kg	No
Acenaphthene	2/18	7.71E-01 - 3.80E+00	1.00E-01 - 1.30E-01	1.22E-01		6.5E+01			mg/kg	Yes/Qual
Acetone	4/14	1.00E-01 - 8.00E-01	8.20E-01 - 4.30E+00	1.16E-01		1.1E+02			mg/kg	No
Anthracene	3/18	7.71E-01 - 3.80E+00	4.00E-02 - 4.63E-01	2.04E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	4/18	7.71E-01 - 8.63E-01	2.50E-01 - 9.68E-01	3.81E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	4/18	7.71E-01 - 8.63E-01	2.10E-01 - 1.00E+00	3.78E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	4/18	7.71E-01 - 8.63E-01	2.00E-01 - 1.40E+00	3.88E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	3/18	7.71E-01 - 3.80E+00	1.20E-01 - 3.70E-01	2.28E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	5/18	7.71E-01 - 8.63E-01	1.80E-01 - 9.47E-01	3.61E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	7/18	7.71E-01 - 3.80E+00	4.10E-02 - 8.00E-02	7.01E-02		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	4/18	7.71E-01 - 8.63E-01	2.70E-01 - 1.00E+00	3.82E-01			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	6/18	7.71E-01 - 3.80E+00	4.00E-02 - 1.23E+00	3.65E-01		2.6E+02			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	1/18	7.50E-01 - 3.80E+00	1.60E-01 - 1.60E-01	4.61E-01			8.5E-04		mg/kg	Yes/P
Dibenzofuran	1/18	7.71E-01 - 3.80E+00	5.00E-02 - 5.00E-02	5.28E-01		6.4E+00			mg/kg	No
Fluoranthene	7/18	7.71E-01 - 8.63E-01	4.00E-02 - 2.10E+00	3.83E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	2/18	7.71E-01 - 3.80E+00	7.00E-02 - 9.00E-02	8.45E-02		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	3/18	7.71E-01 - 3.80E+00	1.10E-01 - 4.20E-01	2.48E-01			8.5E-03		mg/kg	Yes/P
Methylene chloride	8/14	6.00E-03 - 4.00E-02	1.40E-03 - 6.30E-02	8.26E-03		6.8E+01	6.9E-01		mg/kg	No
Naphthalene	1/18	7.71E-01 - 3.80E+00	4.00E-02 - 4.00E-02	5.41E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1260	4/10	2.00E-02 - 2.10E-02	2.10E-02 - 3.30E+00	3.82E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	3/18	7.71E-01 - 8.63E-01	3.00E-01 - 1.27E+00	4.11E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	4/18	2.00E-02 - 1.00E+00	2.10E-02 - 1.00E+01	1.13E-01			1.1E-02		mg/kg	Yes/P
Pyrene	6/18	7.71E-01 - 8.63E-01	5.00E-02 - 1.80E+00	3.90E-01		3.2E+01			mg/kg	Yes/Qual
Toluene	3/14	6.00E-03 - 4.00E-02	2.00E-03 - 2.70E-01	2.63E-03		1.1E+02			mg/kg	No
Trichloroethene	4/15	5.00E-01 - 1.00E+00	5.30E-03 - 2.90E+00	1.01E+00		1.4E+00	1.1E-01		mg/kg	Yes/P
cis-1,2-Dichloroethene	2/15	5.00E-01 - 1.00E+00	9.70E-03 - 4.60E-02	7.50E-01		1.3E+01			mg/kg	No
Alpha activity	17/18	7.15E+00 - 7.15E+00	6.92E+00 - 4.38E+01	2.28E+01					pCi/g	Yes/Qual
Americium-241	1/16	1.00E-01 - 2.00E-01	2.00E-01 - 2.00E-01	1.13E-01			1.5E+00		pCi/g	No
Beta activity	18/18		1.75E+01 - 4.90E+01	3.19E+01					pCi/g	Yes/Qual
Cesium-137	3/16	1.00E-01 - 1.00E-01	3.00E-01 - 5.00E-01	5.09E-02	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	3/16	1.00E-01 - 1.00E-01	3.00E-01 - 4.00E-01	1.50E-01			6.8E-02		pCi/g	Yes/P
Technetium-99	12/16	1.00E-01 - 2.00E-01	3.00E-01 - 3.50E+00	7.19E-01			4.4E+02		pCi/g	No
Thorium-230	15/16	2.00E-01 - 2.00E-01	4.00E-01 - 4.20E+00	1.14E+00			1.6E+01		pCi/g	No
Uranium-234	16/16		5.00E-01 - 7.10E+00	1.04E+00			1.4E+01		pCi/g	No
Uranium-235	1/16	1.00E-01 - 1.00E-01	4.00E-01 - 4.00E-01	1.19E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	16/16		5.00E-01 - 9.10E+00	1.21E+00	1.20		4.7E-01		pCi/g	Yes/PB

530900

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=East MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	2/2		1.20E+04 - 1.21E+04	6.03E+03	13000.00	7.3E+02			mg/kg	No
Arsenic	2/2		5.21E+00 - 8.10E+00	3.33E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	2/2		9.11E+01 - 1.32E+02	5.58E+01	200.00	3.7E+01			mg/kg	No
Beryllium	2/2		4.80E-01 - 5.20E-01	2.50E-01	0.67	4.0E-01	1.0E-04		mg/kg	No
Cadmium	2/2		1.60E-01 - 3.80E-01	1.35E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/B
Calcium	2/2		3.92E+03 - 2.03E+04	6.06E+03	200000.00				mg/kg	No
Chromium	2/2		1.48E+01 - 1.82E+01	8.25E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	2/2		7.98E+00 - 8.70E+00	4.17E+00	14.00	2.1E+02			mg/kg	No
Copper	2/2		1.80E+01 - 3.46E+01	1.32E+01	19.00	7.4E+01		2.00E-01	mg/kg	No
Iron	2/2		1.57E+04 - 2.05E+04	9.05E+03	28000.00	3.1E+02			mg/kg	No
Lead	2/2		1.06E+01 - 2.45E+01	8.78E+00	36.00	1.0E-04			mg/kg	No
Magnesium	2/2		2.00E+03 - 2.43E+03	1.11E+03	7700.00				mg/kg	No
Manganese	2/2		4.46E+02 - 5.55E+02	2.50E+02	1500.00	1.4E+01			mg/kg	No
Mercury	2/2		3.04E-02 - 6.28E-02	2.33E-02	0.20	1.6E-01			mg/kg	No
Nickel	2/2		1.82E+01 - 2.28E+01	1.03E+01		3.4E+01			mg/kg	No
Potassium	2/2		6.09E+02 - 7.51E+02	3.40E+02	1300.00				mg/kg	No
Sodium	2/2		5.73E+02 - 6.20E+02	2.98E+02	320.00				mg/kg	Yes/B
Thallium	1/2	6.00E-01 - 6.00E-01	1.20E+00 - 1.20E+00	4.50E-01	0.21				mg/kg	Yes/B
Uranium	1/1		2.74E+01 - 2.74E+01	2.74E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	2/2		2.46E+01 - 2.65E+01	1.28E+01	38.00	5.6E-01			mg/kg	No
Zinc	2/2		4.07E+01 - 5.39E+01	2.37E+01	65.00	4.0E+02			mg/kg	No
Acenaphthene	1/2	7.78E-01 - 7.78E-01	1.30E-01 - 1.30E-01	2.27E-01		6.5E+01			mg/kg	Yes/Qual
Anthracene	1/2	7.78E-01 - 7.78E-01	2.20E-01 - 2.20E-01	2.50E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	1/2	7.78E-01 - 7.78E-01	9.60E-01 - 9.60E-01	4.35E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	1/2	7.78E-01 - 7.78E-01	1.00E+00 - 1.00E+00	4.45E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	1/2	7.78E-01 - 7.78E-01	1.40E+00 - 1.40E+00	5.45E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	1/2	7.78E-01 - 7.78E-01	3.70E-01 - 3.70E-01	2.87E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	2/2		2.54E-01 - 8.70E-01	2.81E-01			8.5E-02		mg/kg	Yes/P
Chrysene	1/2	7.78E-01 - 7.78E-01	1.00E+00 - 1.00E+00	4.45E-01			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	2/2		6.19E-01 - 1.23E+00	4.62E-01		2.6E+02			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	1/2	7.78E-01 - 7.78E-01	1.60E-01 - 1.60E-01	2.35E-01			8.5E-04		mg/kg	Yes/P
Fluoranthene	2/2		2.24E-01 - 2.10E+00	5.81E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	1/2	7.78E-01 - 7.78E-01	9.00E-02 - 9.00E-02	2.17E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	1/2	7.78E-01 - 7.78E-01	4.20E-01 - 4.20E-01	3.00E-01			8.5E-03		mg/kg	Yes/P
PCB-1260	1/1		3.30E+00 - 3.30E+00	3.30E+00			1.1E-02		mg/kg	Yes/P
Phenanthrene	1/2	7.78E-01 - 7.78E-01	1.20E+00 - 1.20E+00	4.95E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	1/2	1.00E+00 - 1.00E+00	1.00E+01 - 1.00E+01	2.75E+00			1.1E-02		mg/kg	Yes/P
Pyrene	2/2		2.27E-01 - 1.80E+00	5.07E-01		3.2E+01			mg/kg	Yes/Qual
Alpha activity	1/2	7.15E+00 - 7.15E+00	3.32E+01 - 3.32E+01	2.02E+01					pCi/g	Yes/Qual
Beta activity	2/2		3.36E+01 - 4.27E+01	3.82E+01					pCi/g	Yes/Qual
Cesium-137	1/1		5.00E-01 - 5.00E-01	5.00E-01	0.49		1.6E-02		pCi/g	Yes/PB

530901

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=East MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Neptunium-237	1/1		4.00E-01 - 4.00E-01	4.00E-01	0.10		6.8E-02		pCi/g	Yes/PB
Technetium-99	1/1		3.50E+00 - 3.50E+00	3.50E+00			4.4E+02		pCi/g	No
Thorium-230	1/1		4.20E+00 - 4.20E+00	4.20E+00			1.6E+01		pCi/g	No
Uranium-234	1/1		7.10E+00 - 7.10E+00	7.10E+00			1.4E+01		pCi/g	No
Uranium-235	1/1		4.00E-01 - 4.00E-01	4.00E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	1/1		9.10E+00 - 9.10E+00	9.10E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	7/7		1.12E+04 - 1.57E+04	6.69E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	5/7	6.00E-01 - 1.00E+00	6.00E-01 - 2.90E+00	1.51E+00	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	7/7		6.58E+00 - 1.83E+01	5.26E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	7/7		9.20E+01 - 1.47E+02	5.49E+01	170.00	3.7E+01			mg/kg	No
Beryllium	7/7		5.00E-01 - 1.20E+00	3.70E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	3/7	2.00E-02 - 2.00E-02	2.20E-01 - 4.10E-01	6.86E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	7/7		1.77E+03 - 9.63E+04	2.29E+04	6100.00			1.60E+02	mg/kg	No
Chromium	7/7		1.53E+01 - 2.49E+01	1.00E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	7/7		5.90E+00 - 1.27E+01	4.07E+00	13.00	2.1E+02			mg/kg	No
Copper	7/7		1.04E+01 - 2.03E+01	6.80E+00	25.00	7.4E+01			mg/kg	No
Iron	7/7		1.62E+04 - 3.44E+04	1.19E+04	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	7/7		1.14E+01 - 2.96E+01	9.06E+00	23.00	1.0E-04			mg/kg	Yes/PB
Magnesium	7/7		1.47E+03 - 5.14E+03	1.39E+03	2100.00			3.00E+01	mg/kg	No
Manganese	7/7		3.23E+02 - 1.37E+03	4.03E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	3/7	8.60E-03 - 9.50E-03	1.82E-02 - 2.38E-02	6.96E-03	0.13	1.6E-01			mg/kg	No
Nickel	7/7		9.10E+00 - 1.86E+01	6.47E+00		3.4E+01			mg/kg	No
Potassium	7/7		3.42E+02 - 1.14E+03	3.70E+02	950.00			3.20E+02	mg/kg	No
Selenium	2/7	2.00E-01 - 2.00E-01	5.00E-01 - 7.00E-01	1.57E-01		1.2E+01			mg/kg	No
Silver	3/7	8.00E-02 - 2.00E-01	1.40E-01 - 6.60E-01	1.51E-01		6.1E+00			mg/kg	No
Sodium	7/7		2.58E+02 - 6.74E+02	2.17E+02	340.00				mg/kg	Yes/B
Thallium	1/7	6.00E-01 - 1.00E+00	9.00E-01 - 9.00E-01	3.50E-01	0.34				mg/kg	Yes/B
Uranium	6/6		3.28E+00 - 2.62E+01	1.17E+01	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	7/7		2.83E+01 - 5.98E+01	1.93E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	7/7		3.32E+01 - 5.66E+01	2.50E+01	60.00	4.0E+02			mg/kg	No
Benz(a)anthracene	2/7	7.22E-01 - 8.10E-01	4.00E-02 - 1.30E-01	2.90E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	2/7	7.22E-01 - 8.10E-01	4.00E-02 - 1.50E-01	2.91E-01			8.5E-04		mg/kg	Yes/P

530902

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Far East/Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Benzo(b)fluoranthene	2/7	7.22E-01 - 8.10E-01	4.00E-02 - 1.80E-01	2.93E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	1/7	7.22E-01 - 8.10E-01	6.20E-02 - 6.20E-02	3.35E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	2/7	7.22E-01 - 8.10E-01	5.00E-02 - 1.50E-01	2.92E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	2/7	7.22E-01 - 8.10E-01	7.00E-02 - 7.00E-02	2.79E-01		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Butyl benzyl phthalate	1/7	7.22E-01 - 8.10E-01	4.00E-02 - 4.00E-02	3.29E-01		3.7E+02			mg/kg	Yes/Qual
Chrysene	2/7	7.22E-01 - 8.10E-01	4.00E-02 - 1.50E-01	2.91E-01			8.5E-01		mg/kg	Yes/Qual
Di-n-butyl phthalate	3/7	7.40E-01 - 8.10E-01	5.00E-02 - 1.21E+00	3.13E-01		2.6E+02			mg/kg	Yes/Qual
Fluoranthene	3/7	7.22E-01 - 8.10E-01	6.00E-02 - 2.20E-01	1.39E-01		4.3E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	1/7	7.22E-01 - 8.10E-01	6.70E-02 - 6.70E-02	3.35E-01			8.5E-03		mg/kg	Yes/P
PCB-1254	1/6	1.90E-02 - 2.10E-02	3.80E-02 - 3.80E-02	2.30E-02		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1260	2/6	1.90E-02 - 2.10E-02	5.60E-03 - 3.80E-02	2.08E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	2/7	7.22E-01 - 8.10E-01	4.00E-02 - 7.00E-02	2.85E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	2/7	1.00E+00 - 1.00E+00	5.60E-03 - 7.60E-02	3.87E-02			1.1E-02		mg/kg	Yes/P
Pyrene	3/7	7.22E-01 - 8.10E-01	6.00E-02 - 2.20E-01	1.30E-01		3.2E+01			mg/kg	Yes/Qual
Alpha activity	13/16	-2.11E-01 - 5.64E+00	6.80E+00 - 4.43E+01	1.73E+01					pCi/g	Yes/Qual
Americium-241	3/6	1.00E-01 - 1.00E-01	2.00E-01 - 1.30E+00	4.67E-01			1.5E+00		pCi/g	No
Beta activity	13/16	5.14E+00 - 8.46E+00	1.72E+01 - 5.57E+01	2.82E+01					pCi/g	Yes/Qual
Cesium-137	2/6	1.00E-01 - 1.00E-01	2.00E-01 - 4.00E-01	1.67E-01	0.28		1.6E-02		pCi/g	Yes/PB
Technetium-99	6/6		3.00E-01 - 2.90E+00	1.00E+00			4.4E+02		pCi/g	No
Thorium-230	6/6		8.00E-01 - 1.40E+00	1.12E+00			1.6E+01		pCi/g	No
Uranium-234	6/6		1.00E+00 - 7.90E+00	3.45E+00			1.4E+01		pCi/g	No
Uranium-235	2/6	1.00E-01 - 1.00E-01	3.00E-01 - 5.00E-01	2.00E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	6/6		1.10E+00 - 8.70E+00	3.90E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	2/2		1.12E+04 - 1.57E+04	6.73E+03	13000.00	7.3E+02			mg/kg	Yes/PB
Antimony	2/2		6.00E-01 - 2.90E+00	8.75E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	2/2		7.11E+00 - 7.60E+00	3.68E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	2/2		9.40E+01 - 1.47E+02	6.03E+01	200.00	3.7E+01			mg/kg	No
Beryllium	2/2		5.60E-01 - 6.10E-01	2.93E-01	0.67	4.0E-01	1.0E-04		mg/kg	No
Calcium	2/2		4.29E+03 - 1.49E+04	4.80E+03	200000.00				mg/kg	No
Chromium	2/2		1.53E+01 - 1.68E+01	8.03E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	2/2		6.16E+00 - 9.38E+00	3.89E+00	14.00	2.1E+02			mg/kg	No
Copper	2/2		1.04E+01 - 1.26E+01	5.75E+00	19.00	7.4E+01			mg/kg	No

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Iron	2/2		1.62E+04 - 1.97E+04	8.98E+03	28000.00	3.1E+02			mg/kg	No
Lead	2/2		1.14E+01 - 1.25E+01	5.98E+00	36.00	1.0E-04			mg/kg	No
Magnesium	2/2		1.47E+03 - 2.25E+03	9.30E+02	7700.00				mg/kg	No
Manganese	2/2		6.00E+02 - 6.88E+02	3.22E+02	1500.00	1.4E+01			mg/kg	No
Mercury	1/2	8.60E-03 - 8.60E-03	1.82E-02 - 1.82E-02	6.70E-03	0.20	1.6E-01			mg/kg	No
Nickel	2/2		9.90E+00 - 1.62E+01	6.53E+00		3.4E+01			mg/kg	No
Potassium	2/2		3.42E+02 - 9.10E+02	3.13E+02	1300.00				mg/kg	No
Silver	1/2	8.00E-02 - 8.00E-02	1.40E-01 - 1.40E-01	5.50E-02		6.1E+00			mg/kg	No
Sodium	2/2		2.58E+02 - 2.58E+02	1.29E+02	320.00				mg/kg	No
Uranium	2/2		5.97E+00 - 2.62E+01	1.61E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	2/2		2.83E+01 - 2.91E+01	1.44E+01	38.00	5.6E-01			mg/kg	No
Zinc	2/2		3.32E+01 - 4.55E+01	1.97E+01	65.00	4.0E+02			mg/kg	No
Benz(a)anthracene	1/2	7.46E-01 - 7.46E-01	4.00E-02 - 4.00E-02	1.97E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	1/2	7.46E-01 - 7.46E-01	4.00E-02 - 4.00E-02	1.97E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	1/2	7.46E-01 - 7.46E-01	4.00E-02 - 4.00E-02	1.97E-01			8.5E-03		mg/kg	Yes/P
Benzo(k)fluoranthene	1/2	7.46E-01 - 7.46E-01	5.00E-02 - 5.00E-02	1.99E-01			8.5E-02		mg/kg	Yes/Qual
Chrysene	1/2	7.46E-01 - 7.46E-01	4.00E-02 - 4.00E-02	1.97E-01			8.5E-01		mg/kg	Yes/Qual
Fluoranthene	2/2		6.00E-02 - 9.00E-02	3.75E-02		4.3E+01			mg/kg	Yes/Qual
PCB-1260	1/2	1.90E-02 - 1.90E-02	5.60E-03 - 5.60E-03	1.23E-02			1.1E-02		mg/kg	Yes/Qual
Phenanthrene	1/2	7.46E-01 - 7.46E-01	4.00E-02 - 4.00E-02	1.97E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	1/2	1.00E+00 - 1.00E+00	5.60E-03 - 5.60E-03	2.51E-01			1.1E-02		mg/kg	Yes/Qual
Pyrene	2/2		6.00E-02 - 7.00E-02	3.25E-02		3.2E+01			mg/kg	Yes/Qual
Alpha activity	7/10	-2.11E-01 - 5.64E+00	6.80E+00 - 4.43E+01	1.43E+01					pCi/g	Yes/Qual
Americium-241	1/2	1.00E-01 - 1.00E-01	1.00E+00 - 1.00E+00	5.50E-01			1.5E+00		pCi/g	No
Beta activity	7/10	5.14E+00 - 8.46E+00	1.72E+01 - 5.57E+01	2.47E+01					pCi/g	Yes/Qual
Cesium-137	1/2	1.00E-01 - 1.00E-01	4.00E-01 - 4.00E-01	2.50E-01	0.49		1.6E-02		pCi/g	No
Technetium-99	2/2		1.00E+00 - 1.00E+00	1.00E+00			4.4E+02		pCi/g	No
Thorium-230	2/2		1.20E+00 - 1.30E+00	1.25E+00			1.6E+01		pCi/g	No
Uranium-234	2/2		1.90E+00 - 7.90E+00	4.90E+00			1.4E+01		pCi/g	No
Uranium-235	1/2	1.00E-01 - 1.00E-01	5.00E-01 - 5.00E-01	3.00E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	2/2		2.00E+00 - 8.70E+00	5.35E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	11/11		7.20E+03 - 1.61E+04	6.77E+03	12000.00	7.3E+02			mg/kg	Yes/PB

530904

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Antimony	9/11	6.00E-01 - 7.00E-01	6.00E-01 - 1.40E+00	1.01E+00	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	11/11		4.66E+00 - 1.08E+01	3.94E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	11/11		5.96E+01 - 1.66E+02	5.40E+01	170.00	3.7E+01			mg/kg	No
Beryllium	11/11		4.20E-01 - 9.80E-01	3.14E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	8/11	2.00E-02 - 3.00E-02	3.00E-02 - 9.00E-01	1.27E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	11/11		1.55E+03 - 4.16E+04	5.54E+03	6100.00			1.60E+02	mg/kg	No
Chromium	11/11		1.27E+01 - 1.41E+02	1.96E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	11/11		4.80E+00 - 1.60E+01	4.19E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	11/11		8.40E+00 - 9.52E+03	2.17E+02	25.00	7.4E+01		2.00E-01	mg/kg	Yes/PBE
Iron	11/11		1.20E+04 - 5.17E+04	1.16E+04	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	11/11		6.70E+00 - 8.75E+01	9.36E+00	23.00	1.0E-04			mg/kg	Yes/PB
Magnesium	11/11		1.29E+03 - 3.66E+03	9.39E+02	2100.00			3.00E+01	mg/kg	No
Manganese	11/11		2.93E+02 - 8.90E+02	3.01E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	9/11	9.50E-03 - 9.60E-03	1.36E-02 - 4.57E-01	4.67E-02	0.13	1.6E-01			mg/kg	Yes/PB
Nickel	11/11		8.00E+00 - 1.76E+04	3.33E+02	22.00	3.4E+01			mg/kg	Yes/PB
Potassium	11/11		2.84E+02 - 8.42E+02	2.30E+02	950.00				mg/kg	No
Selenium	4/11	2.00E-01 - 2.00E-01	3.00E-01 - 1.00E+00	2.72E-01		1.2E+01			mg/kg	No
Silver	7/11	8.00E-02 - 9.00E-02	1.00E-01 - 4.12E+00	3.77E-01		6.1E+00			mg/kg	No
Sodium	11/11		2.16E+02 - 1.17E+03	2.18E+02	340.00				mg/kg	Yes/B
Thallium	1/11	5.00E-01 - 3.00E+00	6.00E-01 - 6.00E-01	3.91E-01	0.34				mg/kg	Yes/B
Uranium	9/9		2.09E+00 - 4.26E+02	1.15E+02	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	11/11		1.94E+01 - 3.61E+01	1.46E+01	37.00	5.6E-01			mg/kg	No
Zinc	11/11		3.42E+01 - 1.81E+02	2.77E+01	60.00	4.0E+02			mg/kg	Yes/B
2,4-Dinitrotoluene	1/12	7.00E-01 - 9.16E-01	4.57E-01 - 4.57E-01	3.82E-01		4.7E+00	2.1E-02		mg/kg	Yes/P
Acenaphthene	1/12	7.00E-01 - 9.16E-01	5.00E-02 - 5.00E-02	3.72E-01		6.5E+01			mg/kg	Yes/Qual
Acetone	2/9	1.00E-01 - 1.00E-01	8.90E-01 - 1.10E+00	1.49E-01		1.1E+02			mg/kg	No
Anthracene	1/12	7.00E-01 - 9.16E-01	1.60E-01 - 1.60E-01	3.76E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	3/12	7.00E-01 - 9.16E-01	8.00E-02 - 3.40E-01	3.28E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	3/12	7.00E-01 - 9.16E-01	8.00E-02 - 2.80E-01	3.25E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	3/12	7.00E-01 - 9.16E-01	9.00E-02 - 2.60E-01	3.24E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	3/12	7.00E-01 - 9.16E-01	5.50E-02 - 1.30E-01	3.16E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	3/12	7.00E-01 - 9.16E-01	7.00E-02 - 2.90E-01	3.25E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	8/12	7.10E-01 - 9.16E-01	4.00E-02 - 1.20E-01	7.28E-02		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	3/12	7.00E-01 - 9.16E-01	9.00E-02 - 3.50E-01	3.29E-01			8.5E-01		mg/kg	Yes/Qual
Di-n-butyl phthalate	6/12	7.00E-01 - 8.70E-01	4.00E-02 - 1.86E+00	4.84E-01		2.6E+02			mg/kg	Yes/Qual
Fluoranthene	4/12	7.00E-01 - 9.16E-01	4.00E-02 - 8.40E-01	3.31E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	1/12	7.00E-01 - 9.16E-01	5.00E-02 - 5.00E-02	3.72E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	3/12	7.00E-01 - 9.16E-01	5.00E-02 - 1.40E-01	3.16E-01			8.5E-03		mg/kg	Yes/P
Methylene chloride	5/9	5.00E-03 - 7.00E-03	1.40E-03 - 1.70E-02	5.00E-03		6.8E+01	6.9E-01		mg/kg	No
N-Nitrosodiphenylamine	1/12	7.00E-01 - 9.16E-01	8.23E-01 - 8.23E-01	3.99E-01			1.0E+00		mg/kg	Yes/Qual

530905

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
PCB-1254	1/9	1.80E-02 - 2.20E-02	3.20E-02 - 3.20E-02	2.15E-02		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1260	1/9	1.80E-02 - 2.20E-02	6.30E-02 - 6.30E-02	2.48E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	3/12	7.00E-01 - 9.16E-01	1.10E-01 - 7.00E-01	3.45E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	2/11	1.00E+00 - 1.00E+00	3.20E-02 - 6.30E-02	5.32E-02			1.1E-02		mg/kg	Yes/P
Pyrene	3/12	7.00E-01 - 9.16E-01	1.50E-01 - 7.10E-01	3.50E-01		3.2E+01			mg/kg	Yes/Qual
Toluene	3/9	6.00E-03 - 7.00E-03	1.60E-03 - 3.20E-01	6.69E-03		1.1E+02			mg/kg	No
Trichloroethene	2/12	1.49E-03 - 1.00E+00	3.10E-03 - 3.40E-02	4.95E-01		1.4E+00	1.1E-01		mg/kg	No
cis-1,2-Dichloroethene	2/12	6.00E-03 - 1.00E+00	4.40E-03 - 1.50E-02	4.94E-01		1.3E+01			mg/kg	No
Alpha activity	17/27	5.33E-01 - 5.67E+00	6.03E+00 - 8.78E+02	1.64E+01					pCi/g	Yes/Qual
Americium-241	2/9	1.00E-01 - 1.00E-01	2.00E-01 - 6.00E-01	6.45E-02			1.5E+00		pCi/g	No
Beta activity	25/27	3.48E+00 - 7.90E+00	9.64E+00 - 8.08E+03	7.30E+01					pCi/g	Yes/Qual
Cesium-137	6/9	1.00E-01 - 1.00E-01	2.00E-01 - 1.11E+01	8.76E-01	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	5/9	1.00E-01 - 1.00E-01	2.00E-01 - 5.26E+01	7.50E-01			6.8E-02		pCi/g	Yes/P
Plutonium-239	4/9	1.00E-01 - 1.00E-01	2.00E-01 - 1.12E+01	2.93E-01			2.0E+00		pCi/g	Yes/P
Technetium-99	9/9		3.00E-01 - 4.84E+03	1.06E+03	2.80		4.4E+02		pCi/g	Yes/PB
Thorium-230	9/9		7.00E-01 - 1.88E+01	2.99E+00	1.40		1.6E+01		pCi/g	Yes/PB
Uranium-234	9/9		7.00E-01 - 1.02E+02	1.57E+01	2.40		1.4E+01		pCi/g	Yes/PB
Uranium-235	3/9	1.00E-01 - 1.00E-01	2.00E-01 - 4.90E+00	1.40E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	9/9		7.00E-01 - 1.42E+02	3.85E+01	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	2/2		7.20E+03 - 1.29E+04	5.03E+03	13000.00	7.3E+02			mg/kg	No
Antimony	2/2		6.00E-01 - 1.40E+00	5.00E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	2/2		4.66E+00 - 1.01E+01	3.69E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	2/2		6.63E+01 - 1.01E+02	4.18E+01	200.00	3.7E+01			mg/kg	No
Beryllium	2/2		4.20E-01 - 6.90E-01	2.78E-01	0.67	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	2/2		5.00E-02 - 3.00E-01	8.75E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/B
Calcium	2/2		9.08E+03 - 4.16E+04	1.27E+04	200000.00				mg/kg	No
Chromium	2/2		1.27E+01 - 2.72E+01	9.98E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	2/2		6.81E+00 - 8.86E+00	3.92E+00	14.00	2.1E+02			mg/kg	No
Copper	2/2		8.80E+00 - 1.40E+01	5.70E+00	19.00	7.4E+01			mg/kg	No
Iron	2/2		1.20E+04 - 2.13E+04	8.33E+03	28000.00	3.1E+02			mg/kg	No
Lead	2/2		9.40E+00 - 1.60E+01	6.35E+00	36.00	1.0E-04			mg/kg	No
Magnesium	2/2		1.29E+03 - 3.66E+03	1.24E+03	7700.00				mg/kg	No

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Far North/Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Manganese	2/2		4.25E+02 - 7.36E+02	2.90E+02	1500.00	1.4E+01			mg/kg	No
Mercury	2/2		2.06E-02 - 4.93E-02	1.75E-02	0.20	1.6E-01			mg/kg	No
Nickel	2/2		9.00E+00 - 1.43E+01	5.83E+00		3.4E+01			mg/kg	No
Potassium	2/2		2.84E+02 - 4.77E+02	1.90E+02	1300.00				mg/kg	No
Selenium	1/2	2.00E-01 - 2.00E-01	3.00E-01 - 3.00E-01	1.25E-01		1.2E+01			mg/kg	No
Silver	2/2		1.00E-01 - 3.00E-01	1.00E-01		6.1E+00			mg/kg	No
Sodium	2/2		2.51E+02 - 2.54E+02	1.26E+02	320.00				mg/kg	No
Thallium	1/2	6.00E-01 - 6.00E-01	6.00E-01 - 6.00E-01	3.00E-01	0.21				mg/kg	Yes/B
Uranium	2/2		8.06E+00 - 1.38E+01	1.09E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	2/2		1.94E+01 - 3.61E+01	1.39E+01	38.00	5.6E-01			mg/kg	No
Zinc	2/2		3.42E+01 - 3.78E+01	1.80E+01	65.00	4.0E+02			mg/kg	No
Acenaphthene	1/2	7.30E-01 - 7.30E-01	5.00E-02 - 5.00E-02	1.95E-01		6.5E+01			mg/kg	Yes/Qual
Anthracene	1/2	7.30E-01 - 7.30E-01	1.60E-01 - 1.60E-01	2.23E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	1/2	7.30E-01 - 7.30E-01	3.40E-01 - 3.40E-01	2.68E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	1/2	7.30E-01 - 7.30E-01	2.80E-01 - 2.80E-01	2.53E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	1/2	7.30E-01 - 7.30E-01	2.60E-01 - 2.60E-01	2.48E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	1/2	7.30E-01 - 7.30E-01	1.30E-01 - 1.30E-01	2.15E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	1/2	7.30E-01 - 7.30E-01	2.90E-01 - 2.90E-01	2.55E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	1/2	7.10E-01 - 7.10E-01	8.00E-02 - 8.00E-02	1.98E-01		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	1/2	7.30E-01 - 7.30E-01	3.50E-01 - 3.50E-01	2.70E-01			8.5E-01		mg/kg	Yes/Qual
Di-n-butyl phthalate	1/2	7.10E-01 - 7.10E-01	4.00E-02 - 4.00E-02	1.88E-01		2.6E+02			mg/kg	Yes/Qual
Fluoranthene	2/2		4.00E-02 - 8.40E-01	2.20E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	1/2	7.30E-01 - 7.30E-01	5.00E-02 - 5.00E-02	1.95E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	1/2	7.30E-01 - 7.30E-01	1.40E-01 - 1.40E-01	2.18E-01			8.5E-03		mg/kg	Yes/P
Phenanthrene	1/2	7.30E-01 - 7.30E-01	7.00E-01 - 7.00E-01	3.58E-01					mg/kg	Yes/Qual
Pyrene	1/2	7.30E-01 - 7.30E-01	7.10E-01 - 7.10E-01	3.60E-01		3.2E+01			mg/kg	Yes/Qual
Alpha activity	6/15	5.33E-01 - 4.46E+00	6.03E+00 - 2.32E+01	2.84E+00					pCi/g	Yes/Qual
Beta activity	13/15	3.48E+00 - 7.90E+00	9.64E+00 - 8.31E+01	2.43E+01					pCi/g	Yes/Qual
Cesium-137	2/2		2.00E-01 - 2.00E-01	2.00E-01	0.49		1.6E-02		pCi/g	No
Neptunium-237	1/2	1.00E-01 - 1.00E-01	6.00E-01 - 6.00E-01	3.50E-01	0.10		6.8E-02		pCi/g	Yes/PB
Plutonium-239	2/2		2.00E-01 - 4.00E-01	3.00E-01			2.0E+00		pCi/g	No
Technetium-99	2/2		3.10E+00 - 1.70E+01	1.01E+01			4.4E+02		pCi/g	No
Thorium-230	2/2		1.60E+00 - 1.60E+00	1.60E+00			1.6E+01		pCi/g	No
Uranium-234	2/2		1.70E+00 - 3.10E+00	2.40E+00			1.4E+01		pCi/g	No
Uranium-235	1/2	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.50E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	2/2		2.70E+00 - 4.60E+00	3.65E+00	1.20		4.7E-01		pCi/g	Yes/PB

530907

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=McNairy MEDIA=Ground water

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	3/3		8.13E-01 - 1.39E+02	2.89E+01		1.5E+00			mg/L	Yes/P
Arsenic	2/3	1.11E-03 - 1.11E-03	3.28E-02 - 4.06E-01	7.33E-02		4.5E-04	3.5E-06		mg/L	Yes/P
Barium	3/3		1.95E-01 - 5.88E-01	1.82E-01		1.0E-01			mg/L	Yes/P
Beryllium	3/3		3.33E-04 - 1.30E-02	2.83E-03		6.6E-03	1.0E-06		mg/L	Yes/P
Bromide	16/41	1.00E+00 - 1.00E+00	1.40E-02 - 5.20E-02	3.81E-02					mg/L	Yes/Qual
Cadmium	2/3	2.67E-04 - 2.67E-04	5.56E-04 - 2.99E-03	6.36E-04		6.6E-04			mg/L	Yes/P
Calcium	3/3		1.74E+01 - 5.45E+01	1.79E+01				1.60E+02	mg/L	No
Chloride	41/41		3.20E+00 - 2.24E+01	4.81E+00				1.20E+02	mg/L	No
Chromium	3/3		3.52E-02 - 3.87E-01	8.80E-02		7.1E-03			mg/L	Yes/P
Cobalt	2/3	1.78E-03 - 1.78E-03	4.87E-02 - 1.07E-01	2.62E-02		9.1E-02			mg/L	Yes/P
Copper	2/3	9.56E-03 - 9.56E-03	1.69E-02 - 9.57E-02	2.04E-02		6.0E-02		2.00E-01	mg/L	No
Fluoride	16/41	1.00E+00 - 1.00E+00	5.10E-02 - 2.92E-01	2.10E-01		9.1E-02		3.00E-01	mg/L	No
Iron	3/3		1.75E+00 - 3.37E+02	6.64E+01		4.5E-01		2.00E+00	mg/L	Yes/PE
Lead	2/3	1.33E-03 - 1.33E-03	3.13E-02 - 1.77E-01	3.49E-02		1.5E-07			mg/L	Yes/P
Magnesium	3/3		9.78E+00 - 3.19E+01	9.38E+00				3.40E+01	mg/L	No
Manganese	3/3		1.77E-02 - 2.44E+00	5.12E-01		6.7E-02			mg/L	Yes/P
Nickel	3/3		6.37E-02 - 1.86E-01	5.35E-02		3.0E-02			mg/L	Yes/P
Nitrate	23/41	1.00E+00 - 1.00E+00	7.00E-03 - 2.90E+00	4.33E-01		2.4E+00			mg/L	Yes/P
Nitrate/Nitrite	1/16	1.00E+00 - 1.00E+00	5.00E-03 - 5.00E-03	4.69E-01		2.4E+00			mg/L	No
Orthophosphate	3/41	1.00E+00 - 1.00E+00	3.30E-02 - 1.01E-01	4.66E-01					mg/L	Yes/Qual
Potassium	3/3		3.38E+00 - 2.12E+01	5.48E+00				3.20E+02	mg/L	No
Selenium	1/3	1.44E-03 - 2.30E-02	4.41E-02 - 4.41E-02	1.14E-02		7.5E-03		6.00E-03	mg/L	Yes/PE
Sodium	3/3		1.34E+01 - 3.67E+01	1.09E+01					mg/L	Yes/Qual
Tetraoxo-sulfate(1-)	41/41		1.23E+01 - 5.34E+01	1.52E+01					mg/L	Yes/Qual
Thallium	2/3	4.67E-04 - 4.67E-04	5.00E-04 - 1.03E-03	3.33E-04					mg/L	Yes/Qual
Uranium	2/3	8.00E-05 - 8.00E-05	2.73E-03 - 4.27E-03	2.36E-03		4.5E-03			mg/L	No
Vanadium	3/3		5.44E-03 - 1.57E+00	2.82E-01		9.3E-03			mg/L	Yes/P
Zinc	3/3		1.80E-02 - 1.21E+01	2.12E+00		4.5E-01			mg/L	Yes/P
1,1-Dichloroethene	2/54	4.00E-03 - 2.00E-01	2.00E-02 - 2.40E-02	4.18E-03		1.3E-02	9.3E-07		mg/L	Yes/P
1,2-Dichloroethane	1/5	5.00E-03 - 1.30E-02	1.00E-03 - 1.00E-03	2.90E-03		6.7E-04	1.1E-05		mg/L	Yes/P
Benzoic acid	1/5	5.00E-02 - 5.00E-02	1.00E-03 - 1.00E-03	2.01E-02		6.0E+00			mg/L	No
Bis(2-ethylhexyl)phthalate	3/5	1.00E-02 - 1.00E-02	1.00E-03 - 8.00E-03	3.00E-03		2.6E-02	3.1E-04		mg/L	Yes/P
Bromodichloromethane	2/5	5.00E-03 - 1.30E-02	1.00E-03 - 8.00E-03	3.20E-03		3.0E-02	8.4E-05		mg/L	Yes/P
Chloroform	4/5	5.00E-03 - 5.00E-03	1.00E-03 - 1.90E-02	3.30E-03		1.4E-02	1.5E-05		mg/L	Yes/P
Di-n-butyl phthalate	1/5	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.10E-03		1.3E-01			mg/L	Yes/Qual
Di-n-octylphthalate	2/5	1.00E-02 - 1.00E-02	1.00E-03 - 6.00E-03	3.70E-03		6.9E-04			mg/L	Yes/P
Dibromochloromethane	2/5	5.00E-03 - 1.30E-02	1.00E-03 - 4.00E-03	2.80E-03		3.0E-02	6.2E-05		mg/L	Yes/P
Phenol	3/5	1.00E-02 - 1.00E-02	1.00E-03 - 5.00E-03	2.70E-03		9.0E-01			mg/L	No
Tetrachloroethene	1/5	5.00E-03 - 1.00E-02	2.70E-02 - 2.70E-02	5.20E-03		9.9E-03	5.7E-05		mg/L	Yes/P
Toluene	3/5	1.00E-02 - 1.30E-02	1.00E-03 - 4.00E-03	2.90E-03		2.4E-02			mg/L	No
Trichloroethene	39/54	4.00E-03 - 4.00E-03	2.00E-04 - 1.28E+00	9.78E-03		7.9E-03	1.4E-04		mg/L	Yes/P

530908

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Vinyl chloride	1/54	4.00E-03 - 2.00E-01	2.00E-02 - 2.00E-02	7.94E-03			1.7E-06		mg/L	Yes/P
cis-1,2-Dichloroethene	2/54	4.00E-03 - 2.00E-01	4.00E-03 - 2.00E-02	7.98E-03		1.5E-02			mg/L	Yes/P
trans-1,2-Dichloroethene	5/54	4.00E-03 - 2.00E-01	1.50E-03 - 2.00E-02	8.25E-03		3.0E-02			mg/L	No
Actinium-228	1/1		2.72E+01 - 2.72E+01	2.72E+01			2.4E+01		pCi/L	Yes/P
Alpha activity	48/51	2.90E-01 - 1.88E+00	1.69E+00 - 1.49E+02	2.21E+01					pCi/L	Yes/Qual
Americium-241	1/6	0.00E+00 - 3.70E-01	5.30E-02 - 5.30E-02	1.21E-01			1.2E-01		pCi/L	No
Beta activity	51/51		4.42E+00 - 1.16E+04	1.48E+02					pCi/L	Yes/Qual
Bismuth-214	1/1		9.00E+00 - 9.00E+00	9.00E+00			2.0E+02		pCi/L	No
Cesium-137	4/6	-1.70E+00 - 2.29E+00	2.49E+00 - 1.65E+01	6.57E+00			1.2E+00		pCi/L	Yes/P
Lead-210	1/1		4.21E+02 - 4.21E+02	4.21E+02			3.8E-02		pCi/L	Yes/P
Lead-212	1/1		2.25E+01 - 2.25E+01	2.25E+01			2.1E+00		pCi/L	Yes/P
Lead-214	1/1		1.21E+01 - 1.21E+01	1.21E+01			1.3E+02		pCi/L	Yes/Qual
Neptunium-237	6/6		0.00E+00 - 1.31E+01	4.39E+00			1.3E-01		pCi/L	Yes/P
Plutonium-239	1/5	-2.00E-02 - 4.00E-02	2.12E+00 - 2.12E+00	4.30E-01			1.2E-01		pCi/L	Yes/P
Potassium-40	1/1		6.80E+01 - 6.80E+01	6.80E+01			3.1E+00		pCi/L	Yes/P
Technetium-99	3/6	-1.56E+00 - 1.27E+00	6.60E-01 - 6.16E+02	1.03E+02			2.8E+01		pCi/L	Yes/P
Thallium-208	1/1		6.70E+00 - 6.70E+00	6.70E+00			2.2E+03		pCi/L	No
Thorium-228	1/1		1.23E+00 - 1.23E+00	1.23E+00			1.7E-01		pCi/L	Yes/P
Thorium-230	6/6		2.40E-01 - 1.88E+00	8.55E-01			1.0E+00		pCi/L	Yes/P
Thorium-232	1/1		1.15E+00 - 1.15E+00	1.15E+00			1.2E+00		pCi/L	No
Thorium-234	1/1		7.19E+02 - 7.19E+02	7.19E+02			2.0E+00		pCi/L	Yes/P
Uranium-233/234	1/1		6.10E-01 - 6.10E-01	6.10E-01			8.7E-01		pCi/L	No
Uranium-234	4/5	1.50E-01 - 1.50E-01	1.90E-01 - 2.23E+00	9.84E-01			8.7E-01		pCi/L	Yes/P
Uranium-235	1/6	1.00E-02 - 1.00E-01	2.30E+01 - 2.30E+01	3.86E+00			8.2E-01		pCi/L	Yes/P
Uranium-238	4/6	1.00E-02 - 1.20E-01	2.00E-01 - 1.82E+00	6.43E-01			6.2E-01		pCi/L	Yes/P

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	25/25		1.46E+03 - 1.71E+04	5.56E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	8/25	6.00E-01 - 6.00E-01	7.00E-01 - 4.70E+00	6.51E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	25/25		1.55E+00 - 9.20E+00	2.04E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	25/25		9.05E+00 - 1.81E+02	4.41E+01	170.00	3.7E+01			mg/kg	Yes/PB
Beryllium	25/25		1.50E-01 - 8.10E-01	2.59E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	12/25	2.00E-02 - 3.00E-02	1.00E-01 - 4.90E-01	5.68E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	25/25		8.84E+02 - 3.40E+05	7.06E+03	6100.00			1.60E+02	mg/kg	No

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Chromium	25/25		5.62E+00 - 3.91E+01	9.08E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	25/25		2.54E+00 - 1.68E+01	3.37E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	25/25		2.60E+00 - 1.89E+01	4.42E+00	25.00	7.4E+01			mg/kg	No
Iron	25/25		3.17E+03 - 2.60E+04	8.29E+03	28000.00	3.1E+02			mg/kg	No
Lead	25/25		2.90E+00 - 1.41E+01	4.28E+00	23.00	1.0E-04			mg/kg	No
Magnesium	25/25		2.67E+02 - 8.04E+03	1.13E+03	2100.00			3.00E+01	mg/kg	No
Manganese	25/25		4.29E+01 - 8.42E+02	1.79E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	21/25	8.10E-03 - 9.30E-03	1.00E-02 - 8.36E-02	2.49E-02	0.13	1.6E-01			mg/kg	No
Nickel	25/25		2.20E+00 - 2.49E+01	6.05E+00		3.4E+01			mg/kg	No
Potassium	25/25		1.40E+01 - 1.08E+03	1.84E+02	950.00			3.20E+02	mg/kg	No
Selenium	2/25	2.00E-01 - 1.00E+00	2.00E-01 - 5.00E-01	8.24E-02		1.2E+01			mg/kg	No
Silver	7/25	8.00E-02 - 9.00E-02	1.40E-01 - 4.28E+00	7.17E-02		6.1E+00			mg/kg	No
Sodium	25/25		1.58E+02 - 1.67E+03	2.00E+02	340.00				mg/kg	Yes/B
Thallium	4/25	5.00E-01 - 6.00E-01	7.00E-01 - 2.30E+00	3.47E-01	0.34				mg/kg	Yes/B
Uranium	6/6		1.79E+00 - 6.06E+01	1.62E+01	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	25/25		4.00E+00 - 3.77E+01	1.33E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	25/25		6.99E+00 - 7.02E+01	1.47E+01	60.00	4.0E+02			mg/kg	Yes/B
2,6-Dinitrotoluene	4/25	7.04E-01 - 8.40E-01	3.47E-01 - 4.32E-01	3.60E-01		2.4E+00	2.1E-02		mg/kg	Yes/P
Acenaphthene	2/25	6.90E-01 - 8.40E-01	4.00E-02 - 1.22E+00	3.86E-01		6.5E+01			mg/kg	Yes/Qual
Acetone	4/12	1.00E-01 - 1.00E-01	6.10E-03 - 1.00E-01	3.90E-02		1.1E+02			mg/kg	No
Anthracene	2/25	6.90E-01 - 8.40E-01	8.00E-02 - 1.89E+00	4.00E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	2/25	6.90E-01 - 8.40E-01	3.50E-01 - 4.13E+00	1.60E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	2/25	6.90E-01 - 8.40E-01	3.00E-01 - 3.36E+00	1.92E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	2/25	6.90E-01 - 8.40E-01	4.30E-01 - 3.42E+00	1.91E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	2/25	6.90E-01 - 8.40E-01	1.70E-01 - 1.87E+00	4.01E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	2/25	6.90E-01 - 8.40E-01	2.80E-01 - 1.98E+00	2.92E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	3/25	6.90E-01 - 8.40E-01	1.50E-03 - 6.00E-02	3.47E-01		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	2/25	6.90E-01 - 8.40E-01	4.00E-01 - 3.97E+00	1.66E-01			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	8/25	6.90E-01 - 8.31E-01	6.00E-02 - 1.88E+00	3.89E-01		2.6E+02			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	1/25	6.90E-01 - 8.40E-01	4.12E-01 - 4.12E-01	3.84E-01			8.5E-04		mg/kg	Yes/P
Dibenzofuran	1/25	6.90E-01 - 8.40E-01	5.76E-01 - 5.76E-01	3.87E-01		6.4E+00			mg/kg	No
Fluoranthene	3/25	6.90E-01 - 8.40E-01	8.00E-02 - 8.29E+00	1.60E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	1/25	6.90E-01 - 8.40E-01	9.25E-01 - 9.25E-01	3.94E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	2/25	6.90E-01 - 8.40E-01	1.80E-01 - 1.89E+00	2.57E-01			8.5E-03		mg/kg	Yes/P
Methylene chloride	11/12	6.00E-03 - 6.00E-03	1.80E-03 - 3.70E-03	2.84E-03		6.8E+01	6.9E-01		mg/kg	No
N-Nitroso-di-n-propylamine	2/25	6.90E-01 - 8.40E-01	4.84E-01 - 6.34E-01	3.81E-01			7.3E-04		mg/kg	Yes/P
Naphthalene	1/25	6.90E-01 - 8.40E-01	5.03E-01 - 5.03E-01	3.86E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1254	1/15	1.80E-02 - 2.20E-02	5.20E-03 - 5.20E-03	1.90E-02		6.7E-02	1.1E-02		mg/kg	Yes/Qual
PCB-1260	1/15	1.80E-02 - 2.20E-02	4.30E-02 - 4.30E-02	2.13E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	3/25	6.90E-01 - 8.40E-01	5.00E-02 - 7.47E+00	1.49E-01					mg/kg	Yes/Qual

530910

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Northeast MEDIA=Subsurface soil (continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Polychlorinated biphenyl	2/25	2.10E-02 - 1.00E+00	5.20E-03 - 4.30E-02	1.95E-02			1.1E-02		mg/kg	Yes/P
Pyrene	3/25	6.90E-01 - 8.40E-01	6.00E-02 - 7.85E+00	1.53E-01		3.2E+01			mg/kg	Yes/Qual
Toluene	3/12	6.00E-03 - 6.00E-03	1.50E-03 - 2.30E-03	2.01E-03		1.1E+02			mg/kg	No
Trichloroethene	1/20	6.00E-03 - 1.00E+00	2.20E-03 - 2.20E-03	6.35E-01		1.4E+00	1.1E-01		mg/kg	No
Vinyl acetate	1/12	6.00E-02 - 6.00E-02	2.80E-02 - 2.80E-02	2.87E-02		5.4E+01			mg/kg	No
Alpha activity	20/24	-1.06E+00 - 4.84E+00	7.00E+00 - 7.49E+01	1.56E+01					pCi/g	Yes/Qual
Beta activity	23/24	5.72E+00 - 5.72E+00	1.24E+01 - 6.22E+01	3.21E+01					pCi/g	Yes/Qual
Neptunium-237	1/6	1.00E-01 - 1.00E-01	3.00E-01 - 3.00E-01	1.33E-01			6.8E-02		pCi/g	Yes/P
Technetium-99	6/6		4.00E-01 - 4.00E+00	1.55E+00			4.4E+02		pCi/g	No
Thorium-230	6/6		1.00E+00 - 1.90E+00	1.43E+00			1.6E+01		pCi/g	No
Uranium-234	6/6		6.00E-01 - 2.01E+01	5.05E+00	2.40		1.4E+01		pCi/g	Yes/PB
Uranium-235	3/6	1.00E-01 - 1.00E-01	2.00E-01 - 7.00E-01	2.33E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	6/6		6.00E-01 - 2.02E+01	5.40E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Northeast MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	1/1		1.26E+04 - 1.26E+04	6.30E+03	13000.00	7.3E+02			mg/kg	No
Arsenic	1/1		5.35E+00 - 5.35E+00	2.68E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	1/1		1.02E+02 - 1.02E+02	5.10E+01	200.00	3.7E+01			mg/kg	No
Beryllium	1/1		5.80E-01 - 5.80E-01	2.90E-01	0.67	4.0E-01	1.0E-04		mg/kg	No
Calcium	1/1		1.02E+04 - 1.02E+04	5.10E+03	200000.00				mg/kg	No
Chromium	1/1		1.93E+01 - 1.93E+01	9.65E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	1/1		9.76E+00 - 9.76E+00	4.88E+00	14.00	2.1E+02			mg/kg	No
Copper	1/1		1.89E+01 - 1.89E+01	9.45E+00	19.00	7.4E+01			mg/kg	No
Iron	1/1		2.60E+04 - 2.60E+04	1.30E+04	28000.00	3.1E+02			mg/kg	No
Lead	1/1		1.41E+01 - 1.41E+01	7.05E+00	36.00	1.0E-04			mg/kg	No
Magnesium	1/1		2.51E+03 - 2.51E+03	1.26E+03	7700.00				mg/kg	No
Manganese	1/1		5.20E+02 - 5.20E+02	2.60E+02	1500.00	1.4E+01			mg/kg	No
Mercury	1/1		2.63E-02 - 2.63E-02	1.32E-02	0.20	1.6E-01			mg/kg	No
Nickel	1/1		1.90E+01 - 1.90E+01	9.50E+00		3.4E+01			mg/kg	No
Potassium	1/1		3.54E+02 - 3.54E+02	1.77E+02	1300.00				mg/kg	No
Sodium	1/1		2.76E+02 - 2.76E+02	1.38E+02	320.00				mg/kg	No
Uranium	1/1		1.38E+01 - 1.38E+01	1.38E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	1/1		3.04E+01 - 3.04E+01	1.52E+01	38.00	5.6E-01			mg/kg	No
Zinc	1/1		7.02E+01 - 7.02E+01	3.51E+01	65.00	4.0E+02			mg/kg	Yes/B

530911

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Acenaphthene	1/1		4.00E-02 - 4.00E-02	2.00E-02		6.5E+01			mg/kg	Yes/Qual
Anthracene	1/1		8.00E-02 - 8.00E-02	4.00E-02		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	1/1		3.50E-01 - 3.50E-01	1.75E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	1/1		3.00E-01 - 3.00E-01	1.50E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	1/1		4.30E-01 - 4.30E-01	2.15E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	1/1		1.70E-01 - 1.70E-01	8.50E-02					mg/kg	Yes/Qual
Benzo(k)fluoranthene	1/1		2.80E-01 - 2.80E-01	1.40E-01			8.5E-02		mg/kg	Yes/P
Chrysene	1/1		4.00E-01 - 4.00E-01	2.00E-01			8.5E-01		mg/kg	Yes/Qual
Fluoranthene	1/1		8.60E-01 - 8.60E-01	4.30E-01		4.3E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	1/1		1.80E-01 - 1.80E-01	9.00E-02			8.5E-03		mg/kg	Yes/P
Methylene chloride	1/1		2.00E-03 - 2.00E-03	1.00E-03		6.8E+01	6.9E-01		mg/kg	No
PCB-1260	1/1		4.30E-02 - 4.30E-02	4.30E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	1/1		4.70E-01 - 4.70E-01	2.35E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	1/1		4.30E-02 - 4.30E-02	2.15E-02			1.1E-02		mg/kg	Yes/P
Pyrene	1/1		6.80E-01 - 6.80E-01	3.40E-01		3.2E+01			mg/kg	Yes/Qual
Alpha activity	1/1		3.19E+01 - 3.19E+01	3.19E+01					pCi/g	Yes/Qual
Beta activity	1/1		5.08E+01 - 5.08E+01	5.08E+01					pCi/g	Yes/Qual
Technetium-99	1/1		3.60E+00 - 3.60E+00	3.60E+00			4.4E+02		pCi/g	No
Thorium-230	1/1		1.80E+00 - 1.80E+00	1.80E+00			1.6E+01		pCi/g	No
Uranium-234	1/1		3.40E+00 - 3.40E+00	3.40E+00			1.4E+01		pCi/g	No
Uranium-235	1/1		2.00E-01 - 2.00E-01	2.00E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	1/1		4.60E+00 - 4.60E+00	4.60E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	25/25		5.11E+03 - 1.74E+04	5.42E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	9/25	6.00E-01 - 1.00E+00	6.00E-01 - 9.40E+00	6.47E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	25/25		2.75E-02 - 1.03E+01	2.30E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	25/25		1.85E+01 - 1.60E+02	4.28E+01	170.00	3.7E+01			mg/kg	No
Beryllium	25/25		3.10E-01 - 1.19E+00	3.08E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	8/25	2.00E-02 - 3.00E-02	5.00E-02 - 7.50E-01	2.78E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	25/25		4.11E+02 - 1.10E+05	5.24E+03	6100.00			1.60E+02	mg/kg	No
Chromium	25/25		8.25E+00 - 6.60E+01	1.02E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	25/25		3.40E+00 - 1.77E+01	3.49E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	25/25		5.50E+00 - 1.79E+01	4.72E+00	25.00	7.4E+01			mg/kg	No

530912

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Iron	25/25		1.12E+04 - 3.74E+04	9.66E+03	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	25/25		4.40E+00 - 4.20E+01	5.41E+00	23.00	1.0E-04			mg/kg	Yes/PB
Magnesium	25/25		7.76E+02 - 2.42E+03	7.41E+02	2100.00			3.00E+01	mg/kg	No
Manganese	25/25		1.55E+02 - 8.87E+02	1.94E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	20/25	8.00E-03 - 9.30E-03	1.47E-02 - 8.30E+00	4.62E-02	0.13	1.6E-01			mg/kg	Yes/PB
Nickel	25/25		5.30E+00 - 2.91E+01	5.48E+00		3.4E+01			mg/kg	No
Potassium	25/25		8.80E+01 - 4.61E+02	1.13E+02	950.00				mg/kg	No
Selenium	4/25	2.00E-01 - 3.00E-01	2.00E-01 - 3.00E-01	1.08E-01		1.2E+01			mg/kg	No
Silver	3/25	7.00E-02 - 2.00E-01	3.80E-01 - 1.03E+00	7.52E-03		6.1E+00			mg/kg	No
Sodium	25/25		1.67E+02 - 7.87E+02	1.88E+02	340.00				mg/kg	Yes/B
Thallium	1/25	5.00E-01 - 1.00E+00	7.00E-01 - 7.00E-01	3.16E-01	0.34				mg/kg	Yes/B
Uranium	12/12		1.79E+00 - 4.44E+01	5.71E+00	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	25/25		1.55E+01 - 6.72E+01	1.49E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	25/25		1.77E+01 - 4.57E+01	1.39E+01	60.00	4.0E+02			mg/kg	No
1,1-Dichloroethene	1/16	4.00E-02 - 1.00E+00	1.40E-03 - 1.40E-03	3.73E-01		1.2E+01	1.8E-03		mg/kg	No
Acetone	3/10	1.00E-01 - 8.00E-01	7.70E-03 - 1.40E+00	7.20E-02		1.1E+02			mg/kg	No
Benz(a)anthracene	2/21	7.25E-01 - 8.30E-01	7.00E-02 - 3.00E-01	3.63E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	2/21	7.25E-01 - 8.30E-01	8.00E-02 - 4.00E-01	3.65E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	2/21	7.25E-01 - 8.30E-01	1.20E-01 - 6.00E-01	3.71E-01			8.5E-03		mg/kg	Yes/P
Benzo(k)fluoranthene	2/21	7.25E-01 - 8.30E-01	7.00E-02 - 3.00E-01	3.63E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	4/21	7.10E-01 - 3.40E+00	5.00E-02 - 8.00E-02	7.57E-02		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	2/21	7.25E-01 - 8.30E-01	8.00E-02 - 2.90E-01	3.63E-01			8.5E-01		mg/kg	Yes/Qual
Di-n-butyl phthalate	3/21	7.10E-01 - 3.40E+00	4.00E-02 - 4.00E-02	5.21E-01		2.6E+02			mg/kg	Yes/Qual
Fluoranthene	2/21	7.25E-01 - 8.30E-01	1.40E-01 - 4.00E-01	3.67E-01		4.3E+01			mg/kg	Yes/Qual
Methylene chloride	6/10	4.00E-02 - 4.00E-02	1.40E-03 - 7.10E-03	3.45E-03		6.8E+01	6.9E-01		mg/kg	No
N-Nitroso-di-n-propylamine	1/21	7.10E-01 - 3.40E+00	5.22E-01 - 5.22E-01	4.33E-01			7.3E-04		mg/kg	Yes/P
Phenanthrene	1/21	7.25E-01 - 3.40E+00	5.00E-02 - 5.00E-02	4.68E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	1/22	1.00E+00 - 1.00E+00	1.00E+00 - 1.00E+00	5.00E-01			1.1E-02		mg/kg	Yes/P
Pyrene	2/21	7.25E-01 - 8.30E-01	1.20E-01 - 4.00E-01	3.66E-01		3.2E+01			mg/kg	Yes/Qual
Toluene	1/10	6.00E-03 - 4.00E-02	6.00E-03 - 6.00E-03	9.80E-03		1.1E+02			mg/kg	No
Trichloroethene	1/16	4.00E-02 - 1.00E+00	4.00E-03 - 4.00E-03	7.47E-01		1.4E+00	1.1E-01		mg/kg	No
Alpha activity	23/27	3.47E+00 - 5.93E+00	7.24E+00 - 4.02E+01	1.76E+01					pCi/g	Yes/Qual
Americium-241	2/12	1.00E-01 - 1.00E-01	1.20E-01 - 4.00E-01	5.15E-02			1.5E+00		pCi/g	No
Beta activity	27/27		1.25E+01 - 1.48E+02	3.38E+01					pCi/g	Yes/Qual
Cesium-137	2/12	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.17E-01	0.28		1.6E-02		pCi/g	No
Neptunium-237	2/12	1.00E-01 - 1.00E-01	4.00E-01 - 8.00E-01	3.03E-02			6.8E-02		pCi/g	Yes/P
Plutonium-239	1/12	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.08E-01			2.0E+00		pCi/g	No
Technetium-99	12/12		2.00E-01 - 4.33E+01	3.51E+00			4.4E+02		pCi/g	No
Thorium-230	12/12		3.00E-01 - 5.60E+00	1.45E+00			1.6E+01		pCi/g	No
Uranium-234	12/12		5.00E-01 - 7.40E+00	1.37E+00			1.4E+01		pCi/g	No

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Uranium-235	2/12	1.00E-01 - 1.00E-01	3.00E-01 - 4.00E-01	1.42E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	12/12		6.00E-01 - 1.48E+01	1.90E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Northwest MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	6/6		5.11E+03 - 1.10E+04	3.94E+03	13000.00	7.3E+02			mg/kg	No
Antimony	2/6	6.00E-01 - 6.00E-01	6.00E-01 - 1.00E+00	3.33E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	6/6		3.86E+00 - 7.07E+00	2.55E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	6/6		5.61E+01 - 8.67E+01	3.60E+01	200.00	3.7E+01			mg/kg	No
Beryllium	6/6		3.40E-01 - 7.10E-01	2.61E-01	0.67	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	3/6	2.00E-02 - 2.00E-02	5.00E-02 - 7.50E-01	8.42E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	6/6		1.14E+04 - 1.10E+05	1.59E+04	200000.00				mg/kg	No
Chromium	6/6		8.25E+00 - 6.60E+01	1.12E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	6/6		3.67E+00 - 8.50E+00	2.96E+00	14.00	2.1E+02			mg/kg	No
Copper	6/6		7.10E+00 - 1.32E+01	4.68E+00	19.00	7.4E+01			mg/kg	No
Iron	6/6		1.12E+04 - 3.05E+04	8.94E+03	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	6/6		8.40E+00 - 4.20E+01	7.60E+00	36.00	1.0E-04			mg/kg	Yes/PB
Magnesium	6/6		8.20E+02 - 2.42E+03	7.18E+02	7700.00				mg/kg	No
Manganese	6/6		1.95E+02 - 5.72E+02	1.90E+02	1500.00	1.4E+01			mg/kg	No
Mercury	5/6	8.00E-03 - 8.00E-03	2.94E-02 - 8.88E-02	2.19E-02	0.20	1.6E-01			mg/kg	No
Nickel	6/6		5.70E+00 - 1.41E+01	4.40E+00		3.4E+01			mg/kg	No
Potassium	6/6		1.33E+02 - 2.48E+02	9.60E+01	1300.00				mg/kg	No
Selenium	3/6	2.00E-01 - 2.00E-01	2.00E-01 - 3.00E-01	1.17E-01		1.2E+01			mg/kg	No
Silver	1/6	8.00E-02 - 1.00E-01	3.80E-01 - 3.80E-01	6.67E-02		6.1E+00			mg/kg	No
Sodium	6/6		2.07E+02 - 4.91E+02	1.89E+02	320.00				mg/kg	Yes/B
Uranium	1/1		9.55E+00 - 9.55E+00	9.55E+00		1.1E+01			mg/kg	No
Vanadium	6/6		1.55E+01 - 4.24E+01	1.24E+01	38.00	5.6E-01			mg/kg	Yes/PB
Zinc	6/6		1.77E+01 - 3.74E+01	1.41E+01	65.00	4.0E+02			mg/kg	No
Benz(a)anthracene	1/2	7.25E-01 - 7.25E-01	3.00E-01 - 3.00E-01	2.56E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	1/2	7.25E-01 - 7.25E-01	4.00E-01 - 4.00E-01	2.81E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	1/2	7.25E-01 - 7.25E-01	6.00E-01 - 6.00E-01	3.31E-01			8.5E-03		mg/kg	Yes/P
Benzo(k)fluoranthene	1/2	7.25E-01 - 7.25E-01	3.00E-01 - 3.00E-01	2.56E-01			8.5E-02		mg/kg	Yes/P
Chrysene	1/2	7.25E-01 - 7.25E-01	2.90E-01 - 2.90E-01	2.54E-01			8.5E-01		mg/kg	Yes/Qual
Fluoranthene	1/2	7.25E-01 - 7.25E-01	4.00E-01 - 4.00E-01	2.81E-01		4.3E+01			mg/kg	Yes/Qual
Pyrene	1/2	7.25E-01 - 7.25E-01	4.00E-01 - 4.00E-01	2.81E-01		3.2E+01			mg/kg	Yes/Qual

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Alpha activity	6/6		7.93E+00 - 2.22E+01	1.40E+01					pCi/g	Yes/Qual
Beta activity	6/6		1.91E+01 - 6.11E+01	3.65E+01					pCi/g	Yes/Qual
Cesium-137	1/1		2.00E-01 - 2.00E-01	2.00E-01	0.49		1.6E-02		pCi/g	No
Technetium-99	1/1		4.20E+00 - 4.20E+00	4.20E+00			4.4E+02		pCi/g	No
Thorium-230	1/1		1.10E+00 - 1.10E+00	1.10E+00			1.6E+01		pCi/g	No
Uranium-234	1/1		2.80E+00 - 2.80E+00	2.80E+00			1.4E+01		pCi/g	No
Uranium-238	1/1		3.20E+00 - 3.20E+00	3.20E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=RGA MEDIA=Ground water

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	80/80		9.96E-02 - 2.50E+02	3.61E+01		1.5E+00			mg/L	Yes/P
Antimony	11/80	8.00E-04 - 2.77E-01	1.40E-03 - 4.02E-02	1.10E-02		5.6E-04			mg/L	Yes/P
Arsenic	61/80	1.00E-03 - 1.00E-02	1.00E-03 - 4.36E-01	1.99E-02		4.5E-04	3.5E-06		mg/L	Yes/P
Barium	80/80		5.58E-02 - 6.93E+00	3.60E-01		1.0E-01			mg/L	Yes/P
Beryllium	69/79	2.22E-04 - 5.00E-03	2.22E-04 - 1.11E-01	7.40E-03		6.6E-03	1.0E-06		mg/L	Yes/P
Bromide	10/39	1.00E+00 - 1.12E+00	2.90E-02 - 1.40E+00	4.10E-01					mg/L	Yes/Qual
Cadmium	29/80	2.67E-04 - 3.22E-03	3.56E-04 - 1.59E-02	1.02E-03		6.6E-04			mg/L	Yes/P
Calcium	80/80		2.27E+01 - 7.87E+01	1.91E+01				1.60E+02	mg/L	No
Chloride	39/39		7.01E+00 - 1.25E+02	2.99E+01				1.20E+02	mg/L	Yes/E
Chromium	62/80	6.56E-03 - 1.39E-01	5.00E-03 - 4.49E+00	7.97E-02		7.1E-03			mg/L	Yes/P
Cobalt	76/80	1.78E-03 - 1.00E-02	5.33E-03 - 4.84E-01	7.75E-02		9.1E-02			mg/L	Yes/P
Copper	58/80	8.60E-03 - 1.00E-02	8.10E-03 - 1.05E+01	1.08E-01		6.0E-02		2.00E-01	mg/L	Yes/PE
Fluoride	9/39	1.00E+00 - 1.00E+00	1.79E-01 - 2.31E-01	2.15E-01		9.1E-02		3.00E-01	mg/L	No
Iron	80/80		6.83E-02 - 2.24E+03	2.20E+02		4.5E-01		2.00E+00	mg/L	Yes/PE
Lead	63/80	1.00E-03 - 1.56E-02	1.96E-03 - 2.63E-01	2.32E-02		1.5E-07			mg/L	Yes/P
Magnesium	80/80		7.97E+00 - 3.33E+01	7.96E+00				3.40E+01	mg/L	No
Manganese	80/80		7.78E-03 - 5.79E+01	2.03E+00		6.7E-02			mg/L	Yes/P
Mercury	30/80	2.00E-04 - 2.10E-04	3.00E-05 - 6.12E-04	1.40E-04		4.4E-04			mg/L	Yes/P
Nickel	74/80	2.61E-02 - 8.21E-02	9.67E-03 - 4.88E+00	1.55E-01		3.0E-02			mg/L	Yes/P
Nitrate	39/39		9.30E-02 - 1.74E+02	2.04E+01		2.4E+00			mg/L	Yes/P
Nitrate/Nitrite	3/9	1.00E+00 - 1.00E+00	3.20E-02 - 1.14E-01	7.25E-02		2.4E+00			mg/L	No
Orthophosphate	2/39	1.00E+00 - 1.00E+00	2.50E-02 - 3.60E-02	4.75E-01					mg/L	Yes/Qual
Potassium	80/80		9.57E-01 - 2.53E+01	2.68E+00				3.20E+02	mg/L	No
Selenium	23/80	1.30E-03 - 4.00E-02	1.34E-03 - 4.80E-03	7.08E-03		7.5E-03			mg/L	No
Silver	8/80	1.00E-03 - 5.00E-02	4.00E-03 - 3.98E-01	8.12E-03		7.5E-03			mg/L	Yes/P

530915

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Sodium	80/80		2.71E+01 - 8.38E+01	2.34E+01					mg/L	Yes/Qual
Tetraoxo-sulfate(1-)	39/39		3.70E+00 - 5.64E+01	1.10E+01					mg/L	Yes/Qual
Thallium	13/80	4.20E-04 - 2.00E-03	4.89E-04 - 4.56E-03	3.79E-04					mg/L	Yes/Qual
Uranium	45/52	8.00E-05 - 1.00E-03	1.30E-04 - 1.21E-02	2.45E-03		4.5E-03			mg/L	Yes/P
Vanadium	73/80	4.00E-03 - 4.00E-03	4.20E-03 - 1.35E+00	1.09E-01		9.3E-03			mg/L	Yes/P
Zinc	77/80	9.00E-03 - 9.00E-03	1.58E-02 - 8.18E+01	5.42E-01		4.5E-01			mg/L	Yes/P
1,1,1-Trichloroethane	1/23	1.00E-02 - 1.30E+01	1.20E-02 - 1.20E-02	1.01E+00		4.4E-02			mg/L	No
1,1-Dichloroethene	20/155	4.00E-03 - 3.20E+01	1.00E-03 - 1.54E-01	4.08E-03		1.3E-02	9.3E-07		mg/L	Yes/P
Acetone	1/23	2.00E-02 - 2.50E+01	5.00E-03 - 5.00E-03	2.23E+00		1.5E-01			mg/L	No
Benzoic acid	5/16	5.00E-02 - 5.00E-02	1.00E-03 - 5.00E-03	2.93E-03		6.0E+00			mg/L	No
Bis(2-ethylhexyl)phthalate	6/16	2.00E-03 - 3.20E-02	1.00E-03 - 1.00E-03	4.42E-03		2.6E-02	3.1E-04		mg/L	Yes/P
Bromodichloromethane	2/23	1.00E-02 - 1.30E+01	3.00E-03 - 4.00E-03	3.72E-03		3.0E-02	8.4E-05		mg/L	Yes/P
Carbon tetrachloride	4/23	1.00E-02 - 1.30E+01	1.00E-03 - 2.70E-01	1.82E-02		1.2E-04	1.5E-05		mg/L	Yes/P
Chloroform	6/23	1.00E-02 - 1.30E+01	1.50E-02 - 3.60E-02	2.22E-02		1.4E-02	1.5E-05		mg/L	Yes/P
Di-n-butyl phthalate	8/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	2.75E-03		1.3E-01			mg/L	Yes/Qual
Di-n-octylphthalate	1/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.72E-03		6.9E-04			mg/L	Yes/P
Diethyl phthalate	1/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.72E-03		1.2E+00			mg/L	No
N-Nitroso-di-n-propylamine	1/16	1.00E-02 - 1.00E-02	1.00E-03 - 1.00E-03	4.72E-03			7.4E-07		mg/L	Yes/P
Phenol	6/16	1.00E-02 - 1.00E-02	1.00E-03 - 4.00E-02	4.61E-03		9.0E-01			mg/L	No
Tetrachloroethene	6/23	1.00E-02 - 1.30E+01	3.00E-03 - 3.00E-02	1.45E-02		9.9E-03	5.7E-05		mg/L	Yes/P
Toluene	1/23	1.00E-02 - 1.30E+01	3.60E-02 - 3.60E-02	8.78E-01		2.4E-02			mg/L	Yes/P
Trichloroethene	146/155	4.00E-03 - 4.00E-03	1.50E-03 - 7.01E+02	5.27E+00		7.9E-03	1.4E-04		mg/L	Yes/P
Vinyl chloride	3/155	4.00E-03 - 3.20E+01	1.00E-03 - 1.33E-01	1.15E+00			1.7E-06		mg/L	Yes/P
cis-1,2-Dichloroethene	10/155	4.00E-03 - 3.20E+01	1.30E-03 - 3.70E-01	1.23E+00		1.5E-02			mg/L	Yes/P
trans-1,2-Dichloroethene	27/155	4.00E-03 - 3.20E+01	1.50E-03 - 1.20E+00	7.62E-03		3.0E-02			mg/L	Yes/P
Alpha activity	129/151	-8.53E-01 - 5.06E+00	6.90E-01 - 1.36E+02	1.45E+01					pCi/L	Yes/Qual
Americium-241	2/30	-1.50E-01 - 1.22E+02	7.70E-02 - 1.68E+00	1.08E+01			1.2E-01		pCi/L	Yes/P
Beta activity	149/151	1.28E+00 - 1.50E+00	2.86E+00 - 1.72E+04	2.45E+02					pCi/L	Yes/Qual
Bismuth-212	1/1		4.20E+01 - 4.20E+01	4.20E+01			6.2E+01		pCi/L	No
Cesium-137	15/31	-1.19E+00 - 3.38E+01	3.33E+00 - 1.45E+01	8.31E+00			1.2E+00		pCi/L	Yes/P
Lead-210	1/1		1.00E+02 - 1.00E+02	1.00E+02			3.8E-02		pCi/L	Yes/P
Lead-214	1/1		7.40E+00 - 7.40E+00	7.40E+00			1.3E+02		pCi/L	Yes/Qual
Neptunium-237	23/30	2.04E+00 - 5.30E+01	0.00E+00 - 1.44E+01	9.10E+00			1.3E-01		pCi/L	Yes/P
Plutonium-239	4/27	-3.00E-02 - 1.10E-01	0.00E+00 - 1.30E-01	3.22E-02			1.2E-01		pCi/L	Yes/P
Technetium-99	26/28	-1.53E+01 --5.20E+00	2.00E+00 - 1.70E+04	1.42E+03			2.8E+01		pCi/L	Yes/P
Thorium-228	1/1		7.60E-01 - 7.60E-01	7.60E-01			1.7E-01		pCi/L	Yes/P
Thorium-230	22/28	6.00E-02 - 2.20E-01	1.80E-01 - 8.40E+00	6.85E-01			1.0E+00		pCi/L	Yes/P
Thorium-232	1/1		7.60E-01 - 7.60E-01	7.60E-01			1.2E+00		pCi/L	No
Uranium-233/234	1/1		6.50E-01 - 6.50E-01	6.50E-01			8.7E-01		pCi/L	No
Uranium-234	17/30	2.00E-02 - 4.98E+02	1.70E-01 - 1.70E+01	7.00E-01			8.7E-01		pCi/L	Yes/P

530916

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Uranium-235	3/28	-2.00E-02 - 4.10E-01	1.03E-01 - 7.70E-01	6.55E-02			8.2E-01		pCi/L	Yes/Qual
Uranium-238	13/31	-1.30E-01 - 5.44E+02	1.90E-01 - 1.66E+01	4.11E+01			6.2E-01		pCi/L	Yes/P

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	57/57		1.18E+03 - 1.74E+04	5.61E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	18/57	6.00E-01 - 6.00E-01	6.00E-01 - 4.20E+00	4.23E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	57/57		1.31E+00 - 1.48E+01	2.64E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	57/57		1.35E+01 - 2.79E+02	5.54E+01	170.00	3.7E+01			mg/kg	Yes/PB
Beryllium	57/57		1.60E-01 - 1.00E+00	2.98E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	37/57	2.00E-02 - 3.00E-02	2.00E-02 - 5.90E-01	1.02E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	57/57		7.63E+02 - 3.33E+05	6.27E+03	6100.00			1.60E+02	mg/kg	No
Chromium	57/57		5.72E+00 - 5.16E+01	8.45E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	57/57		1.99E+00 - 1.96E+01	3.13E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	57/57		2.27E+00 - 1.86E+01	5.36E+00	25.00	7.4E+01			mg/kg	No
Iron	57/57		5.97E+03 - 3.12E+04	9.30E+03	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	57/57		2.40E+00 - 2.45E+01	5.08E+00	23.00	1.0E-04			mg/kg	Yes/PB
Magnesium	57/57		7.70E+02 - 2.72E+04	1.23E+03	2100.00			3.00E+01	mg/kg	No
Manganese	57/57		1.44E+02 - 1.02E+03	1.85E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	54/57	8.10E-03 - 9.60E-03	9.50E-03 - 1.49E-01	2.94E-02	0.13	1.6E-01			mg/kg	Yes/B
Nickel	57/57		5.10E+00 - 2.33E+01	6.43E+00		3.4E+01			mg/kg	No
Potassium	57/57		1.12E+02 - 9.08E+02	2.12E+02	950.00				mg/kg	No
Selenium	5/57	2.00E-01 - 3.00E-01	2.00E-01 - 3.00E-01	1.04E-01		1.2E+01			mg/kg	No
Silver	10/57	8.00E-02 - 2.00E-01	1.70E-01 - 1.58E+00	3.03E-02		6.1E+00			mg/kg	No
Sodium	57/57		2.29E+02 - 1.00E+03	2.77E+02	340.00				mg/kg	Yes/B
Thallium	3/57	5.00E-01 - 3.00E+00	7.00E-01 - 1.10E+00	3.30E-01	0.34				mg/kg	Yes/B
Uranium	53/53		1.49E+00 - 1.28E+01	3.05E+00	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	57/57		5.30E+00 - 5.50E+01	1.30E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	57/57		1.42E+01 - 6.52E+01	1.75E+01	60.00	4.0E+02			mg/kg	Yes/B
1,1,1-Trichloroethane	3/54	5.00E-03 - 3.00E-02	1.20E-02 - 2.40E+00	2.58E-02		8.4E+01			mg/kg	No
1,1,2-Trichloroethane	2/54	5.00E-03 - 3.00E-02	2.00E-02 - 5.30E-01	8.42E-03		4.5E+00	7.8E-02		mg/kg	Yes/P
1,1-Dichloroethene	9/61	5.00E-01 - 1.40E+00	1.20E-03 - 9.50E-01	3.15E-01		1.2E+01	1.8E-03		mg/kg	Yes/P
Acenaphthene	5/60	6.91E-01 - 8.00E+00	5.00E-02 - 3.30E-01	4.30E-01		6.5E+01			mg/kg	Yes/Qual
Acetone	3/54	1.00E-01 - 6.00E-01	1.50E-02 - 8.70E-02	5.76E-02		1.1E+02			mg/kg	No
Anthracene	9/60	6.91E-01 - 8.00E+00	4.00E-02 - 6.10E-01	4.13E-01		6.6E+02			mg/kg	Yes/Qual

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Benz(a)anthracene	14/60	6.91E-01 - 8.00E+00	5.00E-02 - 2.30E+00	4.26E-01			8.5E-03		mg/kg	Yes/P
Benzene	1/54	5.00E-03 - 3.00E-02	1.70E-02 - 1.70E-02	3.54E-03		2.4E+00	1.3E-01		mg/kg	No
Benzo(a)pyrene	14/60	6.91E-01 - 8.00E+00	5.00E-02 - 2.40E+00	4.25E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	13/60	6.91E-01 - 8.00E+00	6.00E-02 - 2.90E+00	4.36E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	10/60	6.30E-02 - 8.00E+00	6.50E-02 - 1.00E+00	4.16E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	14/60	6.91E-01 - 8.00E+00	5.00E-02 - 1.20E+00	4.07E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	23/60	6.91E-01 - 8.00E+00	6.30E-03 - 9.00E-02	6.40E-02		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Carbon tetrachloride	3/54	5.00E-03 - 3.00E-02	2.00E-03 - 7.10E-01	9.98E-03		3.6E-01	3.2E-02		mg/kg	Yes/P
Chloroform	3/54	5.00E-03 - 3.00E-02	1.70E-03 - 1.80E-02	3.47E-03		3.1E+00	6.8E-02		mg/kg	No
Chrysene	14/60	6.91E-01 - 8.00E+00	5.00E-02 - 2.60E+00	4.32E-01			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	7/60	6.91E-01 - 8.40E-01	1.40E-01 - 1.77E+00	3.96E-01		2.6E+02			mg/kg	Yes/Qual
Di-n-octylphthalate	1/60	6.91E-01 - 8.00E+00	6.00E-02 - 6.00E-02	4.50E-01		4.9E+01			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	1/60	6.60E-02 - 8.00E+00	4.60E-01 - 4.60E-01	4.48E-01			8.5E-04		mg/kg	Yes/P
Dibenzofuran	2/60	6.91E-01 - 8.00E+00	4.00E-02 - 1.80E-01	4.45E-01		6.4E+00			mg/kg	No
Diethyl phthalate	5/60	6.91E-01 - 8.00E+00	5.00E-02 - 6.10E+00	5.54E-01		2.0E+03			mg/kg	No
Fluoranthene	18/60	6.91E-01 - 8.00E+00	1.20E-03 - 4.00E+00	2.59E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	5/60	6.91E-01 - 8.00E+00	5.00E-02 - 2.00E-01	4.28E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	9/60	6.60E-02 - 8.00E+00	7.20E-02 - 1.10E+00	4.15E-01			8.5E-03		mg/kg	Yes/P
Methylene chloride	20/54	1.30E-03 - 3.00E-02	1.20E-03 - 2.80E-02	4.10E-03		6.8E+01	6.9E-01		mg/kg	No
Naphthalene	2/60	6.91E-01 - 8.00E+00	1.00E-01 - 1.60E-01	4.45E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1254	1/11	1.90E-02 - 2.20E-02	7.30E-01 - 7.30E-01	5.07E-02		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1262	1/11	1.90E-02 - 2.20E-02	3.80E-02 - 3.80E-02	2.22E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	15/60	6.91E-01 - 8.00E+00	4.00E-02 - 2.80E+00	4.25E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	2/59	1.00E+00 - 1.00E+00	3.80E-02 - 7.30E-01	4.90E-01			1.1E-02		mg/kg	Yes/P
Pyrene	17/60	6.91E-01 - 8.00E+00	5.00E-02 - 3.30E+00	3.21E-01		3.2E+01			mg/kg	Yes/Qual
Tetrachloroethene	4/54	5.00E-03 - 3.00E-02	5.20E-03 - 6.90E-01	9.91E-03		1.3E+01	1.4E-01		mg/kg	Yes/P
Toluene	2/54	5.00E-03 - 3.00E-02	5.40E-03 - 3.30E-02	3.68E-03		1.1E+02			mg/kg	No
Trichloroethene	39/61	5.00E-01 - 1.00E+00	1.50E-03 - 1.11E+04	2.24E+00		1.4E+00	1.1E-01		mg/kg	Yes/P
Trichlorofluoromethane	1/54	5.00E-03 - 3.00E-02	1.70E-03 - 1.70E-03	3.40E-03		4.8E+01			mg/kg	No
Vinyl acetate	1/54	5.00E-02 - 3.00E-01	1.70E-03 - 1.70E-03	3.38E-02		5.4E+01			mg/kg	No
Vinyl chloride	13/61	5.00E-01 - 2.30E+01	1.90E-03 - 2.90E+01	5.28E-02			1.2E-05		mg/kg	Yes/P
cis-1,2-Dichloroethene	29/61	5.00E-01 - 2.30E+01	1.40E-03 - 2.40E+00	1.37E-01		1.3E+01			mg/kg	No
trans-1,2-Dichloroethene	13/61	5.00E-01 - 6.32E+02	1.40E+00 - 1.02E+02	2.07E+01		2.7E+01			mg/kg	Yes/P
Alpha activity	60/65	2.42E+00 - 7.11E+00	6.28E+00 - 3.52E+01	2.05E+01					pCi/g	Yes/Qual
Americium-241	7/53	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.13E-01			1.5E+00		pCi/g	No
Beta activity	65/65		1.26E+01 - 4.94E+01	3.22E+01					pCi/g	Yes/Qual
Cesium-137	12/53	1.00E-01 - 2.00E-01	2.00E-01 - 6.00E-01	1.62E-01	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	40/53	1.00E-01 - 2.00E-01	2.00E-01 - 6.00E-01	2.57E-01			6.8E-02		pCi/g	Yes/P
Plutonium-239	3/53	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.06E-01			2.0E+00		pCi/g	No
Technetium-99	29/53	1.00E-01 - 3.00E-01	2.00E-01 - 4.70E+00	4.12E-01			4.4E+02		pCi/g	No

530918

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Thorium-230	53/53		5.00E-01 - 1.80E+00	1.06E+00			1.6E+01		pCi/g	No
Uranium-234	53/53		4.00E-01 - 3.50E+00	9.45E-01			1.4E+01		pCi/g	No
Uranium-235	1/53	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.02E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	53/53		5.00E-01 - 4.30E+00	1.02E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Southeast MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	1/1		1.42E+04 - 1.42E+04	7.10E+03	13000.00	7.3E+02			mg/kg	Yes/PB
Antimony	1/1		6.00E-01 - 6.00E-01	3.00E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	1/1		1.00E+01 - 1.00E+01	5.00E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	1/1		8.75E+01 - 8.75E+01	4.38E+01	200.00	3.7E+01			mg/kg	No
Beryllium	1/1		6.30E-01 - 6.30E-01	3.15E-01	0.67	4.0E-01	1.0E-04		mg/kg	No
Cadmium	1/1		3.50E-01 - 3.50E-01	1.75E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/B
Calcium	1/1		1.84E+04 - 1.84E+04	9.20E+03	200000.00				mg/kg	No
Chromium	1/1		2.36E+01 - 2.36E+01	1.18E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	1/1		8.06E+00 - 8.06E+00	4.03E+00	14.00	2.1E+02			mg/kg	No
Copper	1/1		1.53E+01 - 1.53E+01	7.65E+00	19.00	7.4E+01			mg/kg	No
Iron	1/1		2.78E+04 - 2.78E+04	1.39E+04	28000.00	3.1E+02			mg/kg	No
Lead	1/1		1.41E+01 - 1.41E+01	7.05E+00	36.00	1.0E-04			mg/kg	No
Magnesium	1/1		2.54E+03 - 2.54E+03	1.27E+03	7700.00				mg/kg	No
Manganese	1/1		4.39E+02 - 4.39E+02	2.20E+02	1500.00	1.4E+01			mg/kg	No
Nickel	1/1		1.33E+01 - 1.33E+01	6.65E+00		3.4E+01			mg/kg	No
Potassium	1/1		7.69E+02 - 7.69E+02	3.85E+02	1300.00				mg/kg	No
Sodium	1/1		4.00E+02 - 4.00E+02	2.00E+02	320.00				mg/kg	Yes/B
Uranium	1/1		3.28E+00 - 3.28E+00	3.28E+00		1.1E+01			mg/kg	No
Vanadium	1/1		3.61E+01 - 3.61E+01	1.81E+01	38.00	5.6E-01			mg/kg	No
Zinc	1/1		4.88E+01 - 4.88E+01	2.44E+01	65.00	4.0E+02			mg/kg	No
Benz(a)anthracene	1/1		7.00E-02 - 7.00E-02	3.50E-02			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	1/1		8.00E-02 - 8.00E-02	4.00E-02			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	1/1		7.00E-02 - 7.00E-02	3.50E-02			8.5E-03		mg/kg	Yes/P
Benzo(k)fluoranthene	1/1		6.00E-02 - 6.00E-02	3.00E-02			8.5E-02		mg/kg	Yes/Qual
Chrysene	1/1		8.00E-02 - 8.00E-02	4.00E-02			8.5E-01		mg/kg	Yes/Qual
Fluoranthene	1/1		1.50E-01 - 1.50E-01	7.50E-02		4.3E+01			mg/kg	Yes/Qual
PCB-1262	1/1		3.80E-02 - 3.80E-02	3.80E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	1/1		7.00E-02 - 7.00E-02	3.50E-02					mg/kg	Yes/Qual

530919

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Polychlorinated biphenyl	1/1		3.80E-02 - 3.80E-02	1.90E-02			1.1E-02		mg/kg	Yes/P
Pyrene	1/1		1.20E-01 - 1.20E-01	6.00E-02		3.2E+01			mg/kg	Yes/Qual
Alpha activity	2/2		6.73E+00 - 1.65E+01	1.16E+01					pCi/g	Yes/Qual
Beta activity	2/2		1.58E+01 - 2.43E+01	2.00E+01					pCi/g	Yes/Qual
Technetium-99	1/1		2.00E+00 - 2.00E+00	2.00E+00			4.4E+02		pCi/g	No
Thorium-230	1/1		9.00E-01 - 9.00E-01	9.00E-01			1.6E+01		pCi/g	No
Uranium-234	1/1		1.00E+00 - 1.00E+00	1.00E+00			1.4E+01		pCi/g	No
Uranium-238	1/1		1.10E+00 - 1.10E+00	1.10E+00	1.20		4.7E-01		pCi/g	No

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	34/34		9.13E+01 - 1.96E+04	5.00E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	14/34	6.00E-01 - 6.00E+00	6.00E-03 - 7.50E+00	6.40E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	34/34		1.32E+00 - 2.58E+01	3.07E+00	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	34/34		8.16E-01 - 1.95E+02	5.20E+01	170.00	3.7E+01			mg/kg	Yes/PB
Beryllium	34/34		4.20E-03 - 1.05E+00	2.89E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	22/34	5.00E-03 - 5.00E-01	1.30E-03 - 7.80E-01	9.85E-02	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	34/34		6.49E+00 - 2.77E+05	1.36E+04	6100.00			1.60E+02	mg/kg	No
Chromium	34/34		1.22E-01 - 4.80E+01	7.91E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	34/34		4.40E-02 - 1.06E+01	2.99E+00	13.00	2.1E+02			mg/kg	No
Copper	34/34		6.70E-02 - 2.07E+01	4.88E+00	25.00	7.4E+01			mg/kg	No
Iron	34/34		1.50E+02 - 3.70E+04	9.24E+03	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	34/34		5.70E-02 - 2.88E+01	4.88E+00	23.00	1.0E-04			mg/kg	Yes/PB
Magnesium	34/34		9.38E+00 - 1.08E+04	1.57E+03	2100.00			3.00E+01	mg/kg	No
Manganese	34/34		2.19E+00 - 8.60E+02	1.82E+02	820.00	1.4E+01			mg/kg	Yes/PB
Mercury	30/34	9.30E-03 - 9.90E-03	1.04E-02 - 1.36E-01	2.54E-02	0.13	1.6E-01			mg/kg	Yes/B
Nickel	34/34		7.80E-02 - 2.35E+01	5.55E+00		3.4E+01			mg/kg	No
Potassium	34/34		2.20E+00 - 8.00E+02	1.83E+02	950.00				mg/kg	No
Selenium	8/34	2.00E-01 - 1.00E+00	3.00E-01 - 1.30E+00	1.75E-01		1.2E+01			mg/kg	No
Silver	10/34	8.00E-04 - 9.00E-02	7.00E-03 - 2.51E+01	5.02E-02	2.70	6.1E+00			mg/kg	Yes/PB
Sodium	34/34		3.92E+00 - 8.58E+02	2.50E+02	340.00				mg/kg	Yes/B
Thallium	4/34	5.00E-01 - 6.00E+00	7.00E-03 - 1.50E+00	1.04E-01	0.34				mg/kg	Yes/B
Uranium	28/28		1.49E+00 - 5.01E+01	3.79E+00	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	34/34		1.76E-01 - 3.87E+01	1.16E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	34/34		2.00E-01 - 1.11E+02	1.81E+01	60.00	4.0E+02			mg/kg	Yes/B

530920

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
1,1,2-Trichloroethane	1/30	5.00E-03 - 8.00E-01	3.90E-03 - 3.90E-03	9.39E-03		4.5E+00	7.8E-02		mg/kg	No
2-Hexanone	1/30	5.00E-02 - 8.00E+00	4.40E-03 - 4.40E-03	1.00E-01					mg/kg	Yes/Qual
Acenaphthene	6/40	6.70E-01 - 8.41E-01	6.10E-03 - 2.80E+00	4.00E-01		6.5E+01			mg/kg	Yes/Qual
Acenaphthylene	1/40	7.20E-01 - 7.30E+00	2.20E-01 - 2.20E-01	5.55E-01					mg/kg	Yes/Qual
Acetone	1/30	1.00E-01 - 2.00E+01	7.10E-03 - 7.10E-03	1.80E-01		1.1E+02			mg/kg	No
Anthracene	7/40	7.50E-01 - 8.41E-01	1.00E-02 - 5.32E+00	2.14E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	9/40	7.50E-01 - 8.41E-01	2.10E-02 - 1.40E+01	2.74E-01			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	8/40	7.50E-01 - 8.41E-01	1.90E-02 - 1.30E+01	2.47E-01			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	9/40	7.50E-01 - 8.41E-01	1.80E-02 - 1.40E+01	2.65E-01			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	8/40	7.50E-01 - 8.41E-01	1.20E-02 - 6.10E+00	2.19E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	9/40	7.50E-01 - 8.41E-01	1.60E-02 - 8.75E+00	2.61E-01			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	19/40	7.20E-01 - 7.30E+00	4.00E-02 - 8.77E-01	1.18E-01		1.4E+01	2.8E-01		mg/kg	Yes/P
Butyl benzyl phthalate	4/40	6.70E-01 - 7.30E+00	2.00E-01 - 4.34E-01	3.47E-01		3.7E+02			mg/kg	Yes/Qual
Carbon disulfide	1/30	5.00E-03 - 8.00E-01	3.90E-03 - 3.90E-03	9.39E-03		6.9E+01			mg/kg	No
Chloroform	1/30	5.00E-03 - 8.00E-01	1.90E-03 - 1.90E-03	9.43E-03		3.1E+00	6.8E-02		mg/kg	No
Chrysene	9/40	7.50E-01 - 8.41E-01	2.20E-02 - 1.20E+01	2.88E-01			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	19/40	6.70E-01 - 7.30E+00	2.70E-01 - 3.80E+00	8.76E-01		2.6E+02			mg/kg	Yes/Qual
Di-n-octylphthalate	1/40	6.70E-01 - 7.30E+00	6.06E-01 - 6.06E-01	5.54E-01		4.9E+01			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	4/40	7.50E-01 - 7.30E+00	7.70E-02 - 1.30E+00	3.04E-01			8.5E-04		mg/kg	Yes/P
Dibenzofuran	4/40	7.50E-01 - 7.20E+00	2.80E-03 - 7.00E-01	7.06E-02		6.4E+00			mg/kg	No
Diethyl phthalate	4/40	6.70E-01 - 7.30E+00	4.00E-02 - 1.50E-01	8.39E-02		2.0E+03			mg/kg	No
Fluoranthene	10/40	7.50E-01 - 8.41E-01	4.00E-02 - 3.00E+01	3.17E-01		4.3E+01			mg/kg	Yes/Qual
Fluorene	5/40	6.70E-01 - 7.20E+00	4.80E-03 - 1.20E+00	1.15E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	7/40	7.35E-01 - 8.41E-01	1.10E-02 - 3.90E+00	2.09E-01			8.5E-03		mg/kg	Yes/P
Iodomethane	1/30	5.00E-03 - 8.00E-01	7.00E-01 - 7.00E-01	9.45E-03					mg/kg	Yes/Qual
Methylene chloride	24/30	5.00E-03 - 6.00E-03	1.20E-03 - 8.00E-01	1.10E-02		6.8E+01	6.9E-01		mg/kg	Yes/P
N-Nitroso-di-n-propylamine	1/40	6.70E-01 - 7.30E+00	5.82E-01 - 5.82E-01	5.53E-01			7.3E-04		mg/kg	Yes/P
N-Nitrosodiphenylamine	1/40	6.70E-01 - 7.30E+00	5.82E-01 - 5.82E-01	5.53E-01			1.0E+00		mg/kg	Yes/Qual
Naphthalene	2/40	6.70E-01 - 7.30E+00	2.40E-03 - 1.20E-01	2.67E-02		8.1E+01			mg/kg	Yes/Qual
PCB-1260	3/6	2.10E-02 - 2.10E-02	3.00E-03 - 3.80E-02	1.80E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	8/40	7.50E-01 - 8.41E-01	4.60E-02 - 1.60E+01	2.51E-01					mg/kg	Yes/Qual
Polychlorinated biphenyl	3/42	1.00E+00 - 1.00E+00	3.00E-03 - 3.80E-02	4.65E-01			1.1E-02		mg/kg	Yes/P
Pyrene	9/40	7.50E-01 - 8.41E-01	4.10E-02 - 2.60E+01	2.99E-01		3.2E+01			mg/kg	Yes/Qual
Toluene	9/30	6.00E-03 - 8.00E-01	1.60E-03 - 5.50E-03	2.93E-03		1.1E+02			mg/kg	No
Trichloroethene	8/41	2.00E-01 - 1.10E+00	1.45E-03 - 3.50E+01	5.75E-02		1.4E+00	1.1E-01		mg/kg	Yes/P
Vinyl acetate	1/30	5.00E-02 - 8.00E+00	5.50E-02 - 5.50E-02	9.43E-02		5.4E+01			mg/kg	No
Vinyl chloride	3/41	2.00E-01 - 2.00E+00	9.40E-03 - 3.50E-02	6.82E-01			1.2E-05		mg/kg	Yes/P
cis-1,2-Dichloroethene	9/41	2.00E-01 - 1.10E+00	1.50E-03 - 1.00E+00	6.28E-01		1.3E+01			mg/kg	No
trans-1,2-Dichloroethene	5/41	2.00E-01 - 1.10E+00	5.00E+00 - 1.41E+01	3.88E-02		2.7E+01			mg/kg	No
Alpha activity	40/50	-3.46E+00 - 7.14E+00	6.95E+00 - 3.98E+01	1.68E+01					pCi/g	Yes/Qual

530921

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Americium-241	1/28	1.00E-01 - 1.00E-01	1.00E+00 - 1.00E+00	1.32E-01			1.5E+00		pCi/g	No
Beta activity	49/50	4.27E+00 - 4.27E+00	1.69E+01 - 1.10E+02	3.67E+01					pCi/g	Yes/Qual
Cesium-137	10/28	1.00E-01 - 1.00E-01	2.00E-01 - 4.00E-01	1.31E-01	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	12/28	1.00E-01 - 2.00E-01	2.00E-01 - 4.00E-01	1.75E-01			6.8E-02		pCi/g	Yes/P
Plutonium-239	1/28	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.04E-01			2.0E+00		pCi/g	No
Technetium-99	21/28	1.00E-01 - 3.00E-01	2.00E-01 - 3.30E+01	7.89E-01			4.4E+02		pCi/g	No
Thorium-230	28/28		4.00E-01 - 2.20E+00	1.12E+00			1.6E+01		pCi/g	No
Uranium-234	28/28		5.00E-01 - 1.09E+01	1.12E+00			1.4E+01		pCi/g	No
Uranium-235	2/28	1.00E-01 - 1.00E-01	4.00E-01 - 6.00E-01	5.15E-03	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	28/28		5.00E-01 - 1.67E+01	1.27E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=Southwest MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	4/4		3.25E+03 - 1.09E+04	3.88E+03	13000.00	7.3E+02			mg/kg	No
Antimony	3/4	6.00E-01 - 6.00E-01	1.10E+00 - 2.80E+00	8.50E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	4/4		4.30E+00 - 4.70E+00	2.24E+00	12.00	6.9E-01	9.2E-03		mg/kg	No
Barium	4/4		4.31E+01 - 8.18E+01	3.01E+01	200.00	3.7E+01			mg/kg	No
Beryllium	4/4		2.40E-01 - 7.90E-01	2.38E-01	0.67	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	4/4		2.20E-01 - 7.80E-01	2.20E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	4/4		2.18E+04 - 2.77E+05	6.90E+04	200000.00			1.60E+02	mg/kg	No
Chromium	4/4		1.18E+01 - 4.80E+01	1.11E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	4/4		3.41E+00 - 1.06E+01	3.73E+00	14.00	2.1E+02			mg/kg	No
Copper	4/4		5.90E+00 - 2.07E+01	5.53E+00	19.00	7.4E+01		2.00E-01	mg/kg	No
Iron	4/4		1.37E+04 - 3.70E+04	1.07E+04	28000.00	3.1E+02		2.00E+00	mg/kg	Yes/PBE
Lead	4/4		8.00E+00 - 2.88E+01	8.76E+00	36.00	1.0E-04			mg/kg	No
Magnesium	4/4		1.08E+03 - 1.08E+04	2.39E+03	7700.00			3.00E+01	mg/kg	No
Manganese	4/4		2.16E+02 - 4.73E+02	1.62E+02	1500.00	1.4E+01			mg/kg	No
Mercury	4/4		1.65E-02 - 1.36E-01	2.61E-02	0.20	1.6E-01			mg/kg	No
Nickel	4/4		7.40E+00 - 2.35E+01	6.94E+00		3.4E+01			mg/kg	No
Potassium	4/4		2.17E+02 - 6.00E+02	2.27E+02	1300.00				mg/kg	No
Silver	3/4	8.00E-02 - 8.00E-02	1.30E-01 - 1.10E+00	2.66E-01		6.1E+00			mg/kg	No
Sodium	4/4		2.70E+02 - 8.15E+02	2.11E+02	320.00				mg/kg	Yes/B
Thallium	2/4	5.00E-01 - 6.00E-01	9.00E-01 - 1.50E+00	4.38E-01	0.21				mg/kg	Yes/B
Uranium	3/3		5.37E+00 - 5.01E+01	2.10E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	4/4		7.40E+00 - 3.35E+01	8.96E+00	38.00	5.6E-01			mg/kg	No

530922

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Zinc	4/4		2.30E+01 - 1.11E+02	2.74E+01	65.00	4.0E+02			mg/kg	Yes/B
Acenaphthene	4/5	6.70E-01 - 6.70E-01	6.10E-03 - 2.80E+00	4.78E-01		6.5E+01			mg/kg	Yes/Qual
Acenaphthylene	1/5	7.70E-01 - 7.30E+00	2.20E-01 - 2.20E-01	2.27E+00					mg/kg	Yes/Qual
Anthracene	5/5		1.00E-02 - 5.32E+00	7.93E-01		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	5/5		2.10E-02 - 1.40E+01	2.33E+00			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	5/5		1.90E-02 - 1.30E+01	2.34E+00			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	5/5		1.80E-02 - 1.40E+01	2.46E+00			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	5/5		1.20E-02 - 6.10E+00	1.18E+00					mg/kg	Yes/Qual
Benzo(k)fluoranthene	5/5		1.60E-02 - 8.75E+00	1.72E+00			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	1/5	7.70E-01 - 7.30E+00	8.00E-02 - 8.00E-02	2.26E+00		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	5/5		2.20E-02 - 1.20E+01	2.22E+00			8.5E-01		mg/kg	Yes/P
Dibenz(a,h)anthracene	3/5	7.70E-01 - 7.30E+00	7.70E-02 - 1.30E+00	1.04E+00			8.5E-04		mg/kg	Yes/P
Dibenzofuran	3/5	7.20E+00 - 7.20E+00	2.80E-03 - 7.00E-01	1.51E+00		6.4E+00			mg/kg	No
Fluoranthene	5/5		6.00E-02 - 3.00E+01	5.11E+00		4.3E+01			mg/kg	Yes/Qual
Fluorene	3/5	6.70E-01 - 7.20E+00	4.80E-03 - 1.20E+00	9.57E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	5/5		1.10E-02 - 3.90E+00	9.63E-01			8.5E-03		mg/kg	Yes/P
Naphthalene	1/5	6.70E-01 - 7.30E+00	2.40E-03 - 2.40E-03	2.24E+00		8.1E+01			mg/kg	Yes/Qual
PCB-1260	2/2		3.00E-03 - 3.80E-02	2.05E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	5/5		4.60E-02 - 1.60E+01	2.60E+00					mg/kg	Yes/Qual
Polychlorinated biphenyl	2/5	1.00E+00 - 1.00E+00	3.00E-03 - 3.80E-02	3.04E-01			1.1E-02		mg/kg	Yes/P
Pyrene	5/5		4.10E-02 - 2.60E+01	4.19E+00		3.2E+01			mg/kg	Yes/Qual
Toluene	1/1		3.10E-03 - 3.10E-03	1.55E-03		1.1E+02			mg/kg	No
Alpha activity	7/11	-3.46E+00 - 7.09E+00	6.95E+00 - 3.18E+01	1.08E+01					pCi/g	Yes/Qual
Beta activity	10/11	4.27E+00 - 4.27E+00	1.80E+01 - 1.10E+02	3.76E+01					pCi/g	Yes/Qual
Cesium-137	1/3	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.33E-01	0.49		1.6E-02		pCi/g	No
Neptunium-237	1/3	1.00E-01 - 1.00E-01	3.00E-01 - 3.00E-01	1.67E-01	0.10		6.8E-02		pCi/g	Yes/PB
Plutonium-239	1/3	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.33E-01			2.0E+00		pCi/g	No
Technetium-99	2/3	3.00E-01 - 3.00E-01	2.10E+00 - 3.30E+01	1.18E+01			4.4E+02		pCi/g	No
Thorium-230	3/3		5.00E-01 - 2.20E+00	1.37E+00			1.6E+01		pCi/g	No
Uranium-234	3/3		1.50E+00 - 1.09E+01	4.87E+00			1.4E+01		pCi/g	No
Uranium-235	1/3	1.00E-01 - 1.00E-01	6.00E-01 - 6.00E-01	2.67E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	3/3		1.80E+00 - 1.67E+01	7.00E+00	1.20		4.7E-01		pCi/g	Yes/PB

230922

530923

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=West MEDIA=Subsurface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	17/17		6.55E+03 - 2.34E+04	6.63E+03	12000.00	7.3E+02			mg/kg	Yes/PB
Antimony	6/17	5.00E-01 - 6.00E-01	7.00E-01 - 1.30E+00	6.39E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	17/17		4.56E-02 - 4.52E+01	1.28E+01	7.90	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	17/17		3.33E+01 - 2.35E+02	5.41E+01	170.00	3.7E+01			mg/kg	Yes/PB
Beryllium	17/17		2.20E-01 - 8.00E-01	2.92E-01	0.69	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	11/17	2.00E-02 - 2.00E-02	4.00E-02 - 4.25E+00	1.54E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	17/17		1.15E+03 - 7.15E+04	4.68E+03	6100.00			1.60E+02	mg/kg	No
Chromium	17/17		1.22E+01 - 4.58E+01	9.92E+00		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	17/17		3.00E+00 - 1.43E+01	3.48E+00	13.00	2.1E+02			mg/kg	Yes/B
Copper	17/17		4.70E+00 - 2.79E+01	7.05E+00	25.00	7.4E+01		2.00E-01	mg/kg	No
Iron	17/17		1.41E+04 - 2.49E+04	9.71E+03	28000.00	3.1E+02			mg/kg	No
Lead	17/17		4.80E+00 - 1.52E+01	5.41E+00	23.00	1.0E-04			mg/kg	No
Magnesium	17/17		7.23E+02 - 4.17E+03	1.03E+03	2100.00			3.00E+01	mg/kg	No
Manganese	17/17		1.40E+02 - 5.38E+02	1.78E+02	820.00	1.4E+01			mg/kg	No
Mercury	16/17	9.60E-03 - 9.60E-03	1.11E-02 - 6.76E-02	3.07E-02	0.13	1.6E-01			mg/kg	No
Nickel	17/17		5.40E+00 - 2.55E+01	7.10E+00		3.4E+01			mg/kg	No
Potassium	17/17		1.37E+02 - 1.00E+03	2.41E+02	950.00			3.20E+02	mg/kg	No
Selenium	4/17	2.00E-01 - 1.00E+00	3.00E-01 - 4.00E-01	1.84E-01		1.2E+01			mg/kg	No
Silver	3/17	7.00E-02 - 9.00E-02	2.70E-01 - 6.00E-01	3.19E-02		6.1E+00			mg/kg	No
Sodium	17/17		1.25E+02 - 6.81E+02	2.07E+02	340.00				mg/kg	Yes/B
Uranium	15/15		2.09E+00 - 1.29E+02	2.23E+01	4.60	1.1E+01			mg/kg	Yes/PB
Vanadium	17/17		1.91E+01 - 3.91E+01	1.39E+01	37.00	5.6E-01			mg/kg	Yes/PB
Zinc	17/17		1.41E+01 - 7.57E+01	2.09E+01	60.00	4.0E+02			mg/kg	Yes/B
2-Methylnaphthalene	2/17	7.50E-01 - 8.00E+00	4.40E-02 - 9.00E-01	2.07E-01					mg/kg	Yes/Qual
Acenaphthene	4/17	7.50E-01 - 7.90E+00	1.80E+00 - 7.07E+00	8.33E-01		6.5E+01			mg/kg	Yes/Qual
Acetone	1/6	1.00E-01 - 1.00E-01	1.00E-01 - 1.00E-01	5.00E-02		1.1E+02			mg/kg	No
Anthracene	6/17	7.50E-01 - 7.50E+00	3.59E-01 - 8.43E+01	1.14E+00		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	7/17	7.50E-01 - 7.50E+00	8.00E-02 - 3.92E+01	1.38E+00			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	7/17	7.50E-01 - 7.50E+00	9.00E-02 - 3.77E+01	1.34E+00			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	7/17	7.50E-01 - 7.50E+00	9.00E-02 - 6.24E+01	1.48E+00			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	5/17	7.50E-01 - 7.90E+00	6.20E-02 - 8.84E+00	8.11E-01					mg/kg	Yes/Qual
Benzo(k)fluoranthene	7/17	7.50E-01 - 7.90E+00	7.00E-02 - 9.41E+01	1.24E+00			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	4/17	7.70E-01 - 1.65E+01	4.00E-02 - 1.00E-01	8.21E-02		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	7/17	7.50E-01 - 7.50E+00	9.00E-02 - 4.37E+01	1.45E+00			8.5E-01		mg/kg	Yes/P

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Di-n-butyl phthalate	2/17	7.50E-01 - 1.65E+01	1.20E-01 - 2.05E-01	1.79E-01		2.6E+02			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	2/17	7.50E-01 - 8.00E+00	3.20E+00 - 4.27E+00	1.75E+00			8.5E-04		mg/kg	Yes/P
Dibenzofuran	4/17	7.50E-01 - 7.90E+00	1.10E+00 - 3.60E+00	8.08E-01		6.4E+00			mg/kg	No
Fluoranthene	9/17	7.90E-01 - 7.50E+00	4.00E-02 - 9.68E+01	2.32E+00		4.3E+01			mg/kg	Yes/P
Fluorene	4/17	7.50E-01 - 7.90E+00	9.00E-01 - 4.54E+00	7.84E-01		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	5/17	7.50E-01 - 7.90E+00	6.00E-02 - 9.69E+00	8.12E-01			8.5E-03		mg/kg	Yes/P
Methylene chloride	3/6	6.00E-03 - 6.00E-03	1.40E-03 - 1.80E-03	1.91E-03		6.8E+01	6.9E-01		mg/kg	No
Naphthalene	4/17	7.50E-01 - 7.90E+00	5.00E-01 - 1.90E+00	6.84E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1254	2/9	1.90E-02 - 2.10E-02	7.70E-02 - 9.60E-01	7.91E-03		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1260	1/9	1.80E-02 - 2.10E-01	1.60E-02 - 1.60E-02	3.48E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	8/17	7.50E-01 - 7.50E+00	1.10E-01 - 7.75E+01	1.95E+00					mg/kg	Yes/Qual
Polychlorinated biphenyl	3/17	1.90E-02 - 1.00E+00	1.60E-02 - 9.60E-01	5.99E-02			1.1E-02		mg/kg	Yes/P
Pyrene	8/17	7.50E-01 - 7.50E+00	1.30E-01 - 1.11E+02	2.23E+00		3.2E+01			mg/kg	Yes/P
Toluene	2/6	6.00E-03 - 6.00E-03	2.00E-03 - 5.60E-03	2.63E-03		1.1E+02			mg/kg	No
Trichloroethene	1/8	5.00E-01 - 1.00E+00	1.40E+00 - 1.40E+00	8.68E-01		1.4E+00	1.1E-01		mg/kg	Yes/P
cis-1,2-Dichloroethene	1/8	5.00E-01 - 1.00E+00	8.20E-02 - 8.20E-02	6.98E-01		1.3E+01			mg/kg	No
trans-1,2-Dichloroethene	1/8	5.00E-01 - 1.00E+00	2.50E+00 - 2.50E+00	9.96E-01		2.7E+01			mg/kg	No
Alpha activity	18/18		1.31E+01 - 3.89E+02	5.33E+01					pCi/g	Yes/Qual
Americium-241	3/15	1.00E-01 - 1.00E-01	2.00E-01 - 4.00E-01	6.46E-02			1.5E+00		pCi/g	No
Beta activity	18/18		3.11E+01 - 7.56E+02	9.59E+01					pCi/g	Yes/Qual
Cesium-137	7/15	1.00E-01 - 3.00E-01	2.00E-01 - 1.50E+00	2.19E-01	0.28		1.6E-02		pCi/g	Yes/PB
Neptunium-237	9/15	1.00E-01 - 1.00E-01	2.00E-01 - 3.00E+00	4.11E-01			6.8E-02		pCi/g	Yes/P
Plutonium-239	3/15	1.00E-01 - 1.00E-01	2.00E-01 - 1.70E+00	3.93E-02			2.0E+00		pCi/g	No
Technetium-99	13/15	3.00E-01 - 3.00E-01	3.00E-01 - 5.30E+01	6.64E+00			4.4E+02		pCi/g	No
Thorium-230	15/15		8.00E-01 - 1.09E+01	2.94E+00			1.6E+01		pCi/g	No
Uranium-234	15/15		7.00E-01 - 4.17E+01	5.99E+00	2.40		1.4E+01		pCi/g	Yes/PB
Uranium-235	7/15	1.00E-01 - 1.00E-01	2.00E-01 - 2.20E+00	2.25E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	15/15		7.00E-01 - 4.28E+01	7.42E+00	1.20		4.7E-01		pCi/g	Yes/PB

SECTOR=West MEDIA=Surface soil

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Aluminum	9/9		6.55E+03 - 1.77E+04	6.23E+03	13000.00	7.3E+02			mg/kg	Yes/PB
Antimony	4/9	5.00E-01 - 6.00E-01	7.00E-01 - 1.30E+00	7.18E-01	0.21	6.4E-02			mg/kg	Yes/PB
Arsenic	9/9		5.46E+00 - 4.52E+01	7.96E+00	12.00	6.9E-01	9.2E-03		mg/kg	Yes/PB
Barium	9/9		3.53E+01 - 1.27E+02	4.81E+01	200.00	3.7E+01			mg/kg	No

530925

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Beryllium	9/9		2.20E-01 - 8.00E-01	2.65E-01	0.67	4.0E-01	1.0E-04		mg/kg	Yes/PB
Cadmium	8/9	2.00E-02 - 2.00E-02	4.00E-02 - 4.25E+00	3.53E-01	0.21	3.8E-01	2.9E+02		mg/kg	Yes/PB
Calcium	9/9		2.18E+03 - 7.15E+04	9.03E+03	200000.00				mg/kg	No
Chromium	9/9		1.27E+01 - 4.58E+01	1.02E+01		7.9E-01	4.2E+01		mg/kg	Yes/P
Cobalt	9/9		3.00E+00 - 1.43E+01	3.72E+00	14.00	2.1E+02			mg/kg	Yes/B
Copper	9/9		1.16E+01 - 2.79E+01	8.68E+00	19.00	7.4E+01		2.00E-01	mg/kg	No
Iron	9/9		1.50E+04 - 2.49E+04	1.01E+04	28000.00	3.1E+02			mg/kg	No
Lead	9/9		1.01E+01 - 1.52E+01	6.18E+00	36.00	1.0E-04			mg/kg	No
Magnesium	9/9		1.04E+03 - 4.17E+03	1.19E+03	7700.00				mg/kg	No
Manganese	9/9		1.65E+02 - 5.38E+02	1.81E+02	1500.00	1.4E+01			mg/kg	No
Mercury	9/9		2.15E-02 - 6.76E-02	1.66E-02	0.20	1.6E-01			mg/kg	No
Nickel	9/9		1.06E+01 - 2.55E+01	8.15E+00		3.4E+01			mg/kg	No.
Potassium	9/9		3.35E+02 - 1.00E+03	3.10E+02	1300.00				mg/kg	No
Selenium	3/9	2.00E-01 - 1.00E+00	3.00E-01 - 3.00E-01	1.57E-01		1.2E+01			mg/kg	No
Silver	1/9	7.00E-02 - 9.00E-02	6.00E-01 - 6.00E-01	6.27E-02		6.1E+00			mg/kg	No
Sodium	9/9		1.80E+02 - 6.81E+02	2.39E+02	320.00				mg/kg	Yes/B
Uranium	9/9		7.76E+00 - 1.19E+02	2.14E+01	4.90	1.1E+01			mg/kg	Yes/PB
Vanadium	9/9		1.91E+01 - 3.58E+01	1.38E+01	38.00	5.6E-01			mg/kg	No
Zinc	9/9		3.30E+01 - 7.57E+01	2.56E+01	65.00	4.0E+02			mg/kg	Yes/B
2-Methylnaphthalene	2/9	6.70E+00 - 8.00E+00	4.40E-02 - 9.00E-01	2.95E+00					mg/kg	Yes/Qual
Acenaphthene	4/9	7.70E-01 - 7.90E+00	1.80E+00 - 7.07E+00	2.47E+00		6.5E+01			mg/kg	Yes/Qual
Anthracene	6/9	7.70E-01 - 7.50E+00	3.59E-01 - 8.43E+01	4.81E+00		6.6E+02			mg/kg	Yes/Qual
Benz(a)anthracene	7/9	6.70E+00 - 7.50E+00	8.00E-02 - 3.92E+01	5.98E+00			8.5E-03		mg/kg	Yes/P
Benzo(a)pyrene	7/9	6.70E+00 - 7.50E+00	9.00E-02 - 3.77E+01	5.56E+00			8.5E-04		mg/kg	Yes/P
Benzo(b)fluoranthene	7/9	6.70E+00 - 7.50E+00	9.00E-02 - 6.24E+01	6.72E+00			8.5E-03		mg/kg	Yes/P
Benzo(ghi)perylene	5/9	6.70E+00 - 7.90E+00	6.20E-02 - 8.84E+00	2.82E+00					mg/kg	Yes/Qual
Benzo(k)fluoranthene	7/9	7.50E+00 - 7.90E+00	7.00E-02 - 9.41E+01	5.70E+00			8.5E-02		mg/kg	Yes/P
Bis(2-ethylhexyl)phthalate	1/9	7.70E-01 - 1.65E+01	1.00E-01 - 1.00E-01	3.42E+00		1.4E+01	2.8E-01		mg/kg	Yes/Qual
Chrysene	7/9	6.70E+00 - 7.50E+00	9.00E-02 - 4.37E+01	6.50E+00			8.5E-01		mg/kg	Yes/P
Di-n-butyl phthalate	1/9	7.70E-01 - 1.65E+01	2.05E-01 - 2.05E-01	3.50E+00		2.6E+02			mg/kg	Yes/Qual
Dibenz(a,h)anthracene	2/9	7.70E-01 - 8.00E+00	3.20E+00 - 4.27E+00	2.96E+00			8.5E-04		mg/kg	Yes/P
Dibenzofuran	4/9	7.70E-01 - 7.90E+00	1.10E+00 - 3.60E+00	1.78E+00		6.4E+00			mg/kg	No
Fluoranthene	8/9	7.50E+00 - 7.50E+00	1.70E-01 - 9.68E+01	1.28E+01		4.3E+01			mg/kg	Yes/P
Fluorene	4/9	7.70E-01 - 7.90E+00	9.00E-01 - 4.54E+00	2.18E+00		6.4E+01			mg/kg	Yes/Qual
Indeno(1,2,3-cd)pyrene	5/9	6.70E+00 - 7.90E+00	6.00E-02 - 9.69E+00	2.88E+00			8.5E-03		mg/kg	Yes/P
Naphthalene	4/9	7.70E-01 - 7.90E+00	5.00E-01 - 1.90E+00	9.65E-01		8.1E+01			mg/kg	Yes/Qual
PCB-1254	2/3	2.00E-02 - 2.00E-02	7.70E-02 - 9.60E-01	3.52E-01		6.7E-02	1.1E-02		mg/kg	Yes/P
PCB-1260	1/3	1.80E-02 - 2.10E-01	1.60E-02 - 1.60E-02	8.13E-02			1.1E-02		mg/kg	Yes/P
Phenanthrene	8/9	7.50E+00 - 7.50E+00	1.10E-01 - 7.75E+01	9.49E+00					mg/kg	Yes/Qual
Polychlorinated biphenyl	3/9	1.00E+00 - 1.00E+00	1.60E-02 - 9.60E-01	1.67E-01			1.1E-02		mg/kg	Yes/P

Table 1.20. PGDP WAG 6 summary of data evaluation

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Frequency of Detection	Nondetected Range	Detected Range	Arithmetic Mean	Background value	HI	ELCR	1/5 RDA	Units	COPC/ Basis
Pyrene	8/9	7.50E+00 - 7.50E+00	1.30E-01 - 1.11E+02	1.13E+01		3.2E+01			mg/kg	Yes/P
Alpha activity	9/9		1.31E+01 - 1.75E+02	4.10E+01					pCi/g	Yes/Qual
Americium-241	2/9	1.00E-01 - 1.00E-01	2.00E-01 - 2.00E-01	1.22E-01			1.5E+00		pCi/g	No
Beta activity	9/9		3.11E+01 - 2.48E+02	7.68E+01					pCi/g	Yes/Qual
Cesium-137	5/9	1.00E-01 - 2.00E-01	2.00E-01 - 1.50E+00	2.99E-01	0.49		1.6E-02		pCi/g	Yes/PB
Neptunium-237	8/9	1.00E-01 - 1.00E-01	2.00E-01 - 3.00E+00	8.37E-01	0.10		6.8E-02		pCi/g	Yes/PB
Plutonium-239	3/9	1.00E-01 - 1.00E-01	2.00E-01 - 1.70E+00	1.34E-01			2.0E+00		pCi/g	No
Technetium-99	9/9		3.00E-01 - 5.30E+01	2.39E+01			4.4E+02		pCi/g	No
Thorium-230	9/9		1.10E+00 - 1.09E+01	4.02E+00			1.6E+01		pCi/g	No
Uranium-234	9/9		2.20E+00 - 3.11E+01	5.64E+00	2.50		1.4E+01		pCi/g	Yes/PB
Uranium-235	6/9	1.00E-01 - 1.00E-01	2.00E-01 - 1.90E+00	3.20E-01	0.14		1.2E-01		pCi/g	Yes/PB
Uranium-238	9/9		2.60E+00 - 3.95E+01	7.11E+00	1.20		4.7E-01		pCi/g	Yes/PB

Table 1.21. Reasonable maximum exposure assumptions and human intake factors for ingestion of water by a rural resident[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_w \times IR \times EF \times ED}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_w \times IR \times EF \times ED$$

Parameter	Units	Value used	References[b]
Chemical concentration in water = C_w	mg/L	Chemical-specific	—
Radiological activity = A_w	pCi/L	Chemical-specific	—
Ingestion Rate = **IR**	L/d	2 (adult) 1 (child)	[14]
Exposure frequency = **EF**	d/year	350	[14]
Exposure duration = **ED**	years	34 (adult) 6 (child)	[14]
Body weight = **BW**	kg	70 (adult) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.

Notes:

Human Intake Factors for Ingestion of Water by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Adult	1.33×10^{-2}	2.74×10^{-2}	2.38×10^{4}
Child	5.67×10^{-3}	6.61×10^{-2}	2.10×10^{3}

[a] Chemical concentration in water (mg/L) times intake factor [L/(kg • day)] yields the default RME dose for the associated endpoint.
[b] Radionuclide concentration in water (pCi/L) times the intake factor (L) yields the default RME dose.

Table 1.22. Reasonable maximum exposure assumptions and human intake factors for dermal contact with water while showering by a rural resident[a]

Equation:

$$\text{Absorbed Dose (mg/kg-day)} = \frac{C_w \times SA \times P_c \times CF \times ED \times EF \times ET}{BW \times AT}$$

Parameter	Units	Value used	References[b]
Concentration in water = **C_w**	mg/L	Chemical-specific	—
Skin surface area exposed[c] = **SA**	m^2	1.815 (adult) 0.72 (child)	[14]
Skin permeability constant = **P_c**	cm/hr	Chemical-specific	—
Conversion Factor = **CF**	(L-m)/(cm-m^3)	10	—
Exposure duration = **ED**	years	34 (adult) 6 (child)	[14]
Exposure frequency = **EF**	baths/yr	350	[14]
Exposure time = **ET**	hrs/bath	0.2	[14]
Body weight = **BW**	kg	70 (adult) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation from [1].
b References follow Table 1.50.
c Entire surface area of body for both adult and child.

Notes:

Human Intake Factors for Dermal Contact with Groundwater during Showering by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Adult	2.41×10^{-2}	4.97×10^{-2}	Not applicable
Child	8.16×10^{-3}	9.52×10^{-2}	Not applicable

a Chemical concentration in water (mg/L) times chemical "P_c" (cm/hr) times intake factor [(L • hr)/(cm • kg • day)] yields default RME dose for associated endpoint.
b Dermal absorbed dose is not applicable to radionuclides per guidance found in [1].

Table 1.23. Reasonable maximum exposure assumptions and human intake factors for inhalation of volatile organic compounds in water while showering by a rural resident[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_{shower} \times IR_{air} \times EF \times ED \times ET}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_{gw} \times IR_{air} \times EF \times ED \times IEF$$

$$C_{shower}\ (\text{mg/m}^3) = \frac{[(C_{amax}/2)\ t_1] + [C_{amax}\ t_2]}{t_1 + t_2} \qquad C_{amax}\ (\text{mg/m}^3) = \frac{C_{gw} \times f \times F_w \times t_1}{V_a}$$

Parameter	Units	Value used	References[b]
Time-adjusted concentration in shower = C_{shower}	mg/m^3	Chemical-specific	Calculated
Indoor inhalation rate = IR_{air}	m^3/hour	0.6	[14]
Exposure frequency = **EF**	day/year	350	[14]
Exposure duration = **ED**	years	34 (adult) 6 (child)	[14]
Exposure Time = **ET**	hours/day	0.2	[14]
Body weight = **BW**	kg	70 (adult) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]
Activity in groundwater = A_{gw}	pCi/L	Chemical-specific	—
Inhalation exposure factor = **IEF**	(L-hr)/(m^3-day)	0.2802 (tritium) 7.6030 (radon) 0 (all other radionuclides)	[15] [15]
Maximum air concentration = C_{amax}	mg/m^3	Chemical-specific	Calculated
Time of shower = t_1	hour	0.1	[14]
Time after shower = t_2	hour	0.1	[14]
Concentration in groundwater = C_{gw}	mg/L	Chemical-specific	—
Fraction volatilized = f	unitless	0.75	[14]
Water flow rate = F_w	L/h	890	[14]
Bathroom volume = V_a	m^3	11	[14]

a Equation from [1].
b References follow Table 1.50.

Notes:

Human Intake Factors for Inhalation of Volatile Organic Compounds in Water while Showering by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Adult	3.63×10^{-3}	7.48×10^{-3}	7.14×10^{3}
Child	3.09×10^{-3}	3.61×10^{-2}	1.26×10^{3}

a Chemical concentration in water (mg/L) times intake factor [L/(kg • day)] yields default RME dose for the associated endpoint.
b Radionuclide concentration in water (pCi/L) times "IEF" [(L • hr/(m^3 • day)] times intake factor [(m^3 • day)/hr] yields default RME dose.

530929

Table 1.24. Reasonable maximum exposure assumptions and human intake factors for inhalation of volatile organic compounds in water during household use by a rural resident[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_{house} \times IR_{air} \times EF \times ED \times ET}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_{gw} \times IR_{air} \times EF \times ED \times IEF$$

$$C_{house}\ (mg/m^3) = \frac{C_{gw} \times WHF \times f}{HV \times ER \times MC}$$

Parameter	Units	Value used	References[b]
Concentration in household air = C_{house}	mg/m^3	Chemical-specific	Calculated
Indoor inhalation rate = IR_{air}	m^3/hour	0.833	[14]
Exposure frequency = **EF**	day/year	350	[14]
Exposure duration = **ED**	years	34 (adult) 6 (child)	[14]
Exposure time = **ET**	hours/day	24	[14]
Body weight = **BW**	kg	70 (adult) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]
Activity in groundwater = A_{gw}	pCi/L	Chemical-specific	—
Inhalation exposure factor = **IEF**	(L-hr)(m^3-day)	0.2802 (tritium) 7.6030 (radon) 0 (all other radionuclides)	[15]
Concentration in groundwater = C_{gw}	mg/L	Chemical-specific	—
Water flow rate = **WHF**	L/day	890	[14]
Fraction volatilized = ***f***	unitless	0.75	[14]
House volume = **HV**	m^3/change	450	[14]
Exchange rate = **ER**	changes/day	10	[14]
Mixing coefficient = **MC**	unitless	0.5	[14]

[a] Equation from [1] and [14].
[b] References follow Table 1.50.

Notes:

Human Intake Factors for Inhalation of Volatile Organic Compounds in Water during Household Use by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Adult	2.63×10^{-2}	5.42×10^{-2}	9.91×10^{3}
Child	2.24×10^{-2}	2.62×10^{-1}	1.75×10^{3}

[a] Chemical concentration in water (mg/L) times intake factor [m^3/(kg • day)] yields default RME dose for associated endpoint.
[b] Radionuclide concentration in water (pCi/L) times "IEF" [(L • hr)/(m^3 • day)] times intake factor [(m^3 • day)/hr] yields default RME dose.

530930

Table 1.25. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion of soil by a rural resident[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_s \times CF \times EF \times FI \times ED \times IR \times AC}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_s \times CF_{rad} \times EF \times FI \times ED \times IR \times AC$$

Parameter	Units	Value used	References[b]
Chemical concentration in soil = C_s	mg/kg	Chemical-specific	—
Radiological activity = A_s	pCi/g	Chemical-specific	—
Conversion factor = CF	kg/mg	10^{-6}	—
Conversion factor = CF_{rad}	g/mg	10^{-3}	—
Exposure frequency = EF	days/yr	350	[14]
Fraction ingested = FI	unitless	1	[14]
Exposure duration = ED	years	34 (adult) 6 (child)	[14]
Ingestion rate of soil = IR	mg/d	100 (adult) 200 (child)	[14]
Area of contact[c] = AC	unitless	AS/AG	—
Area of SWMU = AS	acres	SWMU-specific	—
Area of garden = AG	acres	0.25	[33]
Body weight = BW	kg	70 (adult) 14.5 (child)	[14]
Averaging time = AT	(yr × day/yr)	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.
[c] AC cannot be greater than 1.

Notes:

Human Intake Factors for Incidental Ingestion of Soil by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Adult	6.65×10^{-7}	1.37×10^{-6}	1.19×10^{3}
Child	1.13×10^{-6}	1.32×10^{-5}	4.20×10^{2}

[a] Chemical concentration in soil (mg/kg) times "AC" (unitless) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
[b] Radionuclide concentration is soil (pCi/g) times "AC" (unitless) times intake factor (g) yields default RME dose.

Table 1.26. Reasonable maximum exposure assumptions and human intake factors for dermal contact with soil by a rural resident[a]

Equation:

$$\text{Absorbed Dose (mg/kg-day)} = \frac{C_s \times CF_d \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$$

Parameter	Units	Value used	References[b]
Concentration in soil = **C_s**	mg/kg	Chemical-specific	—
Conversion factor = **CF_d**	$(kg\text{-}cm^2)/(mg\text{-}m^2)$	0.01	—
Surface area[c] = **SA**	m^2/day	0.350 (adult) 0.373 (child)	[14]
Adherence factor = **AF**	mg/cm^2	1	[14]
Absorption factor[d] = **ABS**	unitless	0.25 (volatile organic) 0.1 (semivolatile organic) 0.05 (inorganic)	[14]
Exposure frequency = **EF**	day/yr	350	[14]
Exposure duration = **ED**	years	34 (adult) 6 (child)	[14]
Body weight = **BW**	kg	70 (adult) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation from [1].
b References follow Table 1.50.
c Includes hands and arms for adults and arms, hands, feet, and legs for children.
d Listed default factors used unless chemical-specific absorption factors are available. Chemical-specific absorption factors used are 0.03 for dioxins[16],[17], 0.06 for polychlorinated biphenyls[16],[17], 0.01 for cadmium[16],[17], and 0.25 for carbon disulfide[18].

Notes:

Human Intake Factors for Dermal Contact with Soil by a Rural Resident

Cohort	**Endpoint**		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Adult	2.33×10^{-5}	4.79×10^{-5}	Not Applicable
Child	2.11×10^{-5}	2.47×10^{-4}	Not Applicable

a Chemical concentration in soil (mg/kg) times chemical "ABS" (unitless) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
b Dermal absorbed dose is not applicable to radionuclides per guidance found in [1].

530932

Table 1.27. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by a rural resident[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_s \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_s \times EF \times ED \times ET \times CF \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}$$

Parameter	Units	Value used	References[b]
Concentration in soil = C_s	mg/kg	Chemical-specific	—
Activity in soil = A_s	pCi/g	Chemical-specific	—
Exposure frequency = **EF**	day/year	350	[14]
Exposure duration = **ED**	years	34 (adult) 6 (child)	[14]
Exposure time = **ET**	hours/day	24	[14]
Conversion factor = **CF**	g/kg	10^3	—
Volatilization factor = **VF**	m^3/kg	Chemical-specific	[19]
Particulate emission factor = **PEF**	m^3/kg	4.28×10^9	[19]
Total inhalation rate = IR_{air}	m^3/hour	0.833	[14]
Body weight = **BW**	kg	70 (adult) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [20].
[b] References follow Table 1.50.

Notes:

Human Intake Factors for Inhalation of Vapors and Particulates Emitted from Soil by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Adult	1.33×10^{-1}	2.74×10^{-1}	2.38×10^8
Child	1.13×10^{-1}	1.32×10^0	4.20×10^7

[a] Chemical concentration in soil (mg/kg) times "1/VF + 1/PEF" [$(m^3/kg)^{-1}$] times intake factor [m^3/(kg • day)] yields default RME dose for associated endpoint.
[b] Radionuclide activity in soil (pCi/g) times "1/VF + 1/PEF" [$(m^3/kg)^{-1}$] times intake factor [(g • m^3)/kg] yields default RME dose.

Table 1.28. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by a rural resident[a]

Equation:

$$\text{Absorbed Dose (pCi-year/g)} = A_s \times ED \times EF \times (1 - S_e) \times T_e \times AC$$

Parameter	Units	Value used	References[b]
Activity in soil = A_s	pCi/g	Chemical-specific	——
Exposure duration = **ED**	year	34 (adult) 6 (child)	[14]
Exposure frequency = **EF**	day/day	350/365	[14]
Gamma shielding factor = S_e	unitless	0.2	[20]
Gamma exposure time factor = T_e	hr/hr	24/24	[20]
Area of Contact[c] = **AC**	unitless	AS/AG	——
Area of SWMU = **AS**	acres	SWMU-specific	——
Area of garden = **AG**	acres	0.25	[33]

[a] Equation from [20].
[b] References follow Table 1.50.
[c] AC cannot be greater than 1.

Notes:

Human Intake Factors for External Exposure to Ionizing Radiation from Soil by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Adult	Not Applicable	Not Applicable	2.61×10^1
Child	Not Applicable	Not Applicable	4.60×10^0

[a] Exposure route is not applicable to chemicals not emitting ionizing radiation.
[b] Radionuclide activity in soil (pCi/g) times "AC" (unitless) times intake factor (yr) yields default RME dose.

Table 1.29. Reasonable maximum exposure assumptions and human intake factors for consumption of home-grown vegetables by a rural resident[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_v \times FI_v \times IR_v \times EF \times ED}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_v \times FI_v \times IR_v \times EF \times ED \times CF$$

Parameter	Units	Value used	References[b]
Chemical concentration in vegetables = C_v	mg/kg	Chemical-specific	See Table 1.47
Radiological activity = A_v	pCi/g	Chemical-specific	See Table 1.47
Diet fraction = FI_v	unitless	0.4	[21]
Ingestion rate = IR_v	kg/d	0.130 (child 3 -5) 0.148 (teen 12 - 19) 0.1995 (adult 20 - 39)	[23]
Exposure frequency = EF	d/year	350	[14]
Exposure duration = ED	years	6(child) 12 (teen) 22 (adult)	[14]
Body weight (adult) = BW	kg	14.5 (child) 43 (teen) 70 (adult)	[14]
Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]
Conversion factor = CF	g/kg	1000	—

a Equation from [1]. These intake rates are for those people that eat vegetables and should not be combined with the intake rates for other media.

b References follow Table 1.50.

Notes:

Human Intake Factors for Consumption of Home-grown Vegetables by a Rural Resident

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Adult	3.44×10^{-4}	1.09×10^{-3}	6.14×10^{5}
Teen	2.24×10^{-4}	1.32×10^{-3}	2.49×10^{5}
Child	2.95×10^{-4}	3.44×10^{-3}	1.09×10^{5}

a Chemical concentration in vegetables (mg/kg) (see Table 1.47) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.

b Radionuclide activity in soil (pCi/g) (see Table 1.47) times intake factor (g) yields default RME dose.

530935

Table 1.30. Reasonable maximum exposure assumptions and human intake factors for consumption of venison by a recreational user[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_d \times IR \times FI \times EF \times ED}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_d \times CF \times IR \times FI \times EF \times ED$$

Parameter	Units	Value used	References[b]
Chemical concentration in venison = C_d	mg/kg	Chemical-specific	See Table 1.46
Radiological activity in venison = A_d	pCi/g	Chemical-specific	See Table 1.46
Ingestion rate[c] = **IR**	kg/day	0.032 (adult) 0.032 (teen) 0.007 (child)	See footnote b
Conversion factor = **CF**	g/kg	1000	—
Diet fraction = **FI**	unitless	1	[5]
Exposure frequency = **EF**	day/yr	350	See footnote b
Exposure duration = **ED**	years	22 (adult) 12 (teen) 6 (child)	[14]
Body weight = **BW**	kg	70 (adult) 43 (teen) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.
[c] Based on 2 deer maximum per year in the state of Kentucky, 50% success rate (Kentucky Department of Fish and Wildlife. 1992. Deer Surveys. Project No: W-45-24.), dressed weight averaging 108.5 pounds per deer for Ballard and McCracken counties, 60% of venison recovered per deer, 2.5 persons per household in Ballard and McCracken counties, and a child consumption rate 20% of that for adults.

Notes:

Human Intake Factors for Consumption of Venison by a Recreational User

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Adult	1.38×10^{-4}	4.38×10^{-4}	2.46×10^{5}
Teen	1.22×10^{-4}	7.14×10^{-4}	1.34×10^{5}
Child	3.97×10^{-5}	4.63×10^{-4}	1.47×10^{4}

[a] Chemical concentration in venison (mg/kg) (see Table 1.46) times human intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
[b] Radionuclide concentration in venison (pCi/g) (see Table 1.46) times human intake factor (g) yields RMS dose.

Table 1.31. Reasonable maximum exposure assumptions and human intake factors for consumption of rabbit by a recreational user[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_r \times IR \times FI \times EF \times ED}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_r \times CF \times IR \times FI \times EF \times ED$$

Parameter	Units	Value used	References[b]
Chemical concentration in rabbit = C_r	mg/kg	Chemical-specific	See Table 1.48
Radiological activity in rabbit = A_r	pCi/g	Chemical-specific	See Table 1.48
Ingestion rate[c] = **IR**	kg/meal	0.0165 (adult) 0.0082 (teen) 0.0033 (child)	See footnote c
Conversion factor = **CF**	g/kg	1000	—
Diet fraction = **FI**	unitless	1	[5]
Exposure frequency = **EF**	meals/yr	350	See footnote c
Exposure duration = **ED**	years	22 (adult) 12 (teen) 6 (child)	[14]
Body weight = **BW**	kg	70 (adult) 43 (teen) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation from [1].
b References follow Table 1.50.
c Based on 20 rabbits bagged per year at WKWMA, Personal communication stating dressed weight equals 60% of average 1.2 kg rabbit, 2.5 persons per household in Ballard and McCracken counties, a child consumption rate 20% of that for adults, and a teen consumption rate 50% of that for adults.

Notes:

Human Intake Factors for Consumption of Rabbit by a Recreational User

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Adult	7.10×10^{-5}	2.26×10^{-4}	1.27×10^{5}
Teen	3.13×10^{-5}	1.83×10^{-4}	3.44×10^{4}
Child	1.87×10^{-5}	2.18×10^{-4}	6.93×10^{3}

a Chemical concentration in rabbit (mg/kg) (see Table 1.48) times human intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
b Radionuclide concentration in rabbit (pCi/g) (see Table 1.48) times human intake factor (g) yields RMS dose.

Table 1.32. Reasonable maximum exposure assumptions and human intake factors for consumption of quail by a recreational user[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_q \times IR \times FI \times EF \times ED}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_q \times CF \times IR \times FI \times EF \times ED$$

Parameter	Units	Value used	References[b]
Chemical concentration in quail = C_q	mg/kg	Chemical-specific	See Table 1.49
Radiological activity in quail = A_q	pCi/g	Chemical-specific	See Table 1.49
Ingestion rate[c] = **IR**	kg/meal	0.0047 (adult) 0.0024 (teen) 0.00094 (child)	See footnote c
Conversion factor = **CF**	g/kg	1000	—
Diet fraction = **FI**	unitless	1	[5]
Exposure frequency = **EF**	meals/yr	350	See footnote c
Exposure duration = **ED**	years	22 (adult) 12 (teen) 6 (child)	[14]
Body weight = **BW**	kg	70 (adult) 43 (teen) 14.5 (child)	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation from [1].
b References follow Table 1.50.
c Based on 20 quail bagged per year at WKWMA, Personal communication stating dressed weight equals 75% of average 0.183 kg quail, 2.5 persons per household in Ballard and McCracken counties, a child consumption rate 20% of that for adults, and a teen consumption rate 50% of that for adults.

Notes:

Human Intake Factors for Consumption of Quail by a Recreational User

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Adult	2.02×10^{-5}	6.44×10^{-5}	3.62×10^{4}
Teen	9.17×10^{-6}	5.35×10^{-5}	1.01×10^{4}
Child	5.33×10^{-6}	6.22×10^{-5}	1.97×10^{3}

a Chemical concentration in quail (mg/kg) (see Table 1.49) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
b Radionuclide concentration in quail (pCi/g) (see Table 1.49) times intake factor (g) yields default RME dose for associated endpoint.

Table 1.33. Reasonable maximum exposure assumptions and human intake factors for ingestion of water by an industrial worker[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_w \times IR_w \times EF \times ED}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_w \times IR_w \times EF \times ED$$

Parameter	Units	Value used	References[b]
Concentration in groundwater = C_w	mg/L	Chemical-specific	—
Activity in groundwater = A_w	pCi/L	Chemical-specific	—
Ingestion rate = IR_w	L/day	1	[14]
Exposure frequency = **EF**	day/yr	250	[14]
Exposure duration = **ED**	year	25	[14]
Body weight = **BW**	kg	70	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.

Notes:

Human Intake Factors for Ingestion of Water by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Worker	3.49×10^{-3}	9.78×10^{-3}	6.25×10^{3}

[a] Chemical concentration in water (mg/L) times intake factor [L/(kg • day)] yields default RME dose for associated endpoint.
[b] Radionuclide concentration in water (pCi/L) times intake factor (L) yields default RME dose.

Table 1.34. Reasonable maximum exposure assumptions and human intake factors for dermal contact with water while showering by an industrial worker[a]

Equation:

$$\text{Absorbed Dose (mg/kg-day)} = \frac{C_w \times P_c \times SA \times EF \times ED \times ET \times CF}{BW \times AT}$$

Parameter	Units	Value used	References[b]
Concentration in water = C_w	mg/L	Chemical-specific	—
Skin permeability constant = P_c	cm/hr	Chemical-specific	—
Skin surface area exposed[c] = SA	m^2	1.815	[14]
Exposure frequency = EF	baths/yr	250	[14]
Exposure duration = ED	years	25	[14]
Exposure time = ET	hrs/bath	0.2	[14]
Conversion factor = CF	(L-m)/(cm-m^3)	10	—
Body weight = BW	kg	70	[14]
Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.
[c] Entire surface area of body.

Notes:

Human Intake Factors for Dermal Contact with Water while Showering by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Worker	1.27×10^{-2}	3.55×10^{-2}	Not Applicable

[a] Chemical concentration (mg/L) times chemical "P_c" (cm/hr) times intake factor [(L • hr)/(cm • kg • day)] yields default RME dose for associated endpoint.
[b] Dermal absorbed dose is not applicable to radionuclides per guidance found in [1].

530940

Table 1.35. Reasonable maximum exposure assumptions and human intake factors for inhalation of volatile organic compounds in water while showering by an industrial worker[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_{shower} \times IR_{air} \times EF \times ED \times ET}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_{gw} \times IR_{air} \times EF \times ED \times IEF$$

$$C_{shower}\ (mg/m^3) = \frac{[(C_{amax}/2)\ t_1] + [C_{amax}\ t_2]}{t_1 + t_2} \qquad C_{amax}\ (mg/m^3) = \frac{C_{gw} \times f \times F_w \times t_1}{V_a}$$

Parameter	Units	Value used	References[b]
Concentration in shower = C_{shower}	mg/m³	Chemical-specific	Calculated
Indoor inhalation rate = IR_{air}	m³/hour	0.6	[14]
Exposure frequency = EF	day/year	250	[14]
Exposure duration = ED	years	25	[14]
Exposure time = ET	hours/day	0.2	[14]
Body weight = BW	kg	70	[14]
Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]
Activity in groundwater = A_{gw}	pCi/L	Chemical-specific	—
Inhalation exposure factor = IEF	(L-hr)/(m³-day)	0.2802 (tritium) 7.6030 (radon) 0.00 (other radionuclides)	[15]
Maximum concentration = C_{amax}	mg/m³	Chemical-specific	
Time of shower = t_1	hours	0.1	[14]
Time after shower = t_2	hours	0.1	[14]
Concentration in groundwater = C_{gw}	mg/L	Chemical-specific	
Fraction volatilized = f	unitless	0.75	[14]
Water flow rate = F_w	L/h	890	[14]
Bathroom volume = V_a	m³	11	[14]

[a] Equation after [1] and [14].
[b] References follow Table 1.50.

Notes:

Human Intake Factors for Inhalation of Volatile Organic Compounds in Water while Showering by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Worker	1.91×10^{-3}	5.34×10^{-3}	3.75×10^{3}

[a] Chemical concentration in water (mg/L) times intake factor [L/(kg • day)] yields default RME dose for the associated endpoint.
[b] Radionuclide concentration in water (pCi/L) times "IEF" [(L • hr)/(m³ • day)] times intake factor [(m³ • day)/hr] yields default RME dose.

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Table 1.36. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion of soil by an industrial worker[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_s \times IR_s \times FI \times EF \times ED \times AC \times CF}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_s \times IR_s \times FI \times EF \times ED \times AC \times CF_{rad}$$

Parameter	Units	Value used	References[b]
Concentration in soil = C_s	mg/kg	Chemical-specific	—
Activity in soil = A_s	pCi/g	Chemical-specific	—
Ingestion rate = IR_s	mg/day	50	[14]
Fraction ingested = **FI**	unitless	1	[14]
Exposure frequency = **EF**	day/yr	250	[14]
Exposure duration = **ED**	year	25	[14]
Area of contact[c] = **AC**	unitless	AS/AW	—
Area of SWMU = **AS**	acres	SWMU-specific	—
Area worker ranges = **AW**	acres	.5	[35]
Conversion factor = **CF**	kg/mg	10^{-6}	—
Conversion factor = CF_{rad}	g/mg	10^{-3}	—
Body weight = **BW**	kg	70	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.
[c] "AC" cannot be greater than 1.

Notes:

Human Intake Factors for Incidental Ingestion of Soil by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Worker	1.75×10^{-7}	4.89×10^{-7}	3.13×10^{2}

[a] Chemical concentration in soil (mg/kg) times "AC" (unitless) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint. "AC" cannot be greater than 1.
[b] Radionuclide concentration (pCi/g) times "AC" (unitless) times intake factor (g) yields default RME dose. "AC" cannot be greater than 1.

530942

Table 1.37. Reasonable maximum exposure assumptions and human intake factors for dermal contact with soil or sediment by an industrial worker[a]

Equation:

$$\text{Absorbed Dose (mg/kg-day)} = \frac{C_s \times CF_d \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$$

Parameter	Units	Value used	References[b]
Concentration in soil = C_s	mg/kg	Chemical-specific	----
Conversion factor-dermal = CF_d	(kg-cm²)/(mg-m²)	0.01	----
Surface area[c] = SA	m²/day	0.43	[14]
Adherence factor = AF	mg/cm²	1	[14]
Absorption factor[d] = ABS	unitless	0.25 (volatile organic) 0.10 (semivolatile organic) 0.05 (inorganic)	[14]
Exposure frequency = EF	day/yr	250	[14]
Exposure duration = ED	years	25	[14]
Body weight = BW	kg	70	[14]
Averaging time = AT	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation after [1].
b References follow Table 1.50.
c Area of hands, arms, and head.
d Listed default factors used unless chemical-specific absorption factors are available. Chemical-specific absorption factors used are 0.03 for dioxins[16],[17], 0.06 for polychlorinated biphenyls[16],[17], 0.01 for cadmium[16],[17], and 0.25 for carbon disulfide[18].

Notes:

Human Intake Factors for Dermal Contact with Soil and Sediment by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Worker	1.50×10^{-5}	4.21×10^{-5}	Not Applicable

a Chemical concentration is soil or sediment (mg/kg) times chemical "ABS" (unitless) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
b Dermal absorbed dose is not applicable to radionuclides per guidance found in [1].

530943

Table 1.38. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by an industrial worker[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_s \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_s \times CF_i \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}$$

Parameter	Units	Value used	References[b]
Concentration in soil = C_s	mg/kg	Chemical-specific	—
Activity in soil or = A_s	pCi/g	Chemical-specific	—
Conversion factor = CF_i	g/kg	10^3	—
Exposure frequency = **EF**	day/year	250	[14]
Exposure duration = **ED**	years	25	[14]
Exposure time = **ET**	hour/day	8	[14]
Volatilization factor = **VF**	m^3/kg	Chemical-specific	[19]
Particulate emission factor = **PEF**	m^3/kg	4.28×10^9	[19]
Total inhalation rate = IR_{air}	m^3/hour	2.5	[14]
Body weight = **BW**	kg	70	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation from [20].
b References follow Table 1.50.

Notes:

Human Intake Factors for Inhalation of Vapors and Particulates Emitted from Soil by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Worker	6.99×10^{-2}	1.96×10^{-1}	1.25×10^{8}

a Chemical concentration in soil (mg/kg) times "1/VF + 1/PEF" [$(m^3/kg)^{-1}$] times intake factor [m^3/(kg • day)] yields default RME dose for associated endpoint.
b Radionuclide activity in soil (pCi/g) times "1/VF + 1/PEF"[$(m^3/kg)^{-1}$] times intake factor [(g • m^3)/kg] yields default RME dose.

Table 1.39. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by an industrial worker[a]

Equation:

$$\text{Absorbed Dose (pCi-year/g)} = A_s \times ED \times EF_x \times (1-S_e) \times T_e \times AC$$

Parameter	Units	Value used	References[b]
Activity in soil = A_s	pCi/g	Chemical-specific	—
Exposure frequency = EF_x	day/day	250/365	[14]
Exposure duration = **ED**	year	25	[14]
Gamma shielding factor = S_e	unitless	0.2	[20]
Gamma exposure time factor = T_e	hr/hr	8/24	[20]
Area of contact[c] = **AC**	unitless	AS/AW	—
Area of SWMU = **AS**	acres	SWMU-specific	—
Area worker ranges = **AW**	acres	0.5	[35]

a Equation after [20].
b References follow Table 1.50.
c AC cannot be greater than 1.

Notes:

Human Intake Factors for External Exposure to Ionizing Radiation from Soil by an Industrial Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Worker	Not Applicable	Not Applicable	4.57×10^0

a Exposure not applicable to chemicals not emitting ionizing radiation.
b Radionuclide activity in soil (pCi/g) times "AC" (unitless) times intake factor (yr) yields default RME dose.

530945

Table 1.40. Reasonable maximum exposure assumptions and human intake factors for incidental ingestion of soil by an excavation worker[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_s \times CF \times IR_s \times EF \times ED \times FI}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_s \times CF_{rad} \times IR_s \times EF \times ED \times FI$$

Parameter	Units	Value used	References[b]
Concentration in soil or sediment = C_s	mg/kg	Chemical-specific	----
Conversion factor = **CF**	kg/mg	10^{-6}	----
Activity in soil or sediment = A_s	pCi/g	Chemical-specific	----
Conversion factor = CF_{rad}	g/mg	10^{-3}	----
Ingestion rate = IR_s	mg/day	480	[14]
Exposure frequency = **EF**	day/yr	185	[14]
Exposure duration = **ED**	year	25	[20]
Fraction ingested = **FI**	unitless	1	[14]
Body weight = **BW**	kg	70	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation after [1].
b References follow Table 1.50.

Notes:

Human Intake Factors for Incidental Ingestion of Soil by an Excavation Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Excavation Worker	1.24×10^{-6}	3.48×10^{-6}	2.22×10^{3}

a Chemical concentration in soil (mg/kg) times intake factor [kg/(kg • day)] yields default RME dose for associated endpoint.
b Radionuclide concentration in soil (pCi/g) times intake factor (g) yields default RME dose.

Table 1.41. Reasonable maximum exposure assumptions and human intake factors for dermal contact with soil by an excavation worker[a]

Equation:

$$\text{Absorbed Dose (mg/kg-day)} = \frac{C_s \times CF_d \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$$

Parameter	Units	Value used	References[b]
Concentration in soil or sediment = $\mathbf{C_s}$	mg/kg	Chemical-specific	—
Conversion factor-dermal = $\mathbf{CF_d}$	$(kg\text{-}cm^2)/(mg\text{-}m^2)$	0.01	—
Surface area[c] = **SA**	m^2/day	0.43	[14]
Adherence factor = **AF**	mg/cm^2	1	[14]
Absorption factor[d] = **ABS**	unitless	0.25 (volatile organic) 0.10 (semivolatile organic) 0.05 (inorganic)	[14]
Exposure frequency = **EF**	day/yr	185	[14]
Exposure duration = **ED**	years	25	[20]
Body weight = **BW**	kg	70	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

[a] Equation from [1].
[b] References follow Table 1.50.
[c] Includes skin area of arms, hands, and head.
[d] Listed default factors used unless chemical-specific absorption factors are available. Chemical-specific absorption factors used are 0.03 for dioxins[16],[17], 0.06 for polychlorinated biphenyls[16],[17], 0.01 for cadmium[16],[17], and 0.25 for carbon disulfide[18].

Notes:

Human Intake Factors for Dermal Contact with Soil by an Excavation Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Excavation Worker	1.11×10^{-5}	3.11×10^{-5}	Not Applicable

[a] Chemical concentration in soil (mg/kg) times chemical "ABS" (unitless) times intake factor [kg/(kg • day)] yields default RME dose for the associated endpoint.
[b] Dermal absorbed dose is not applicable to radionuclides per guidance found in [1].

Table 1.42. Reasonable maximum exposure assumptions and human intake factors for inhalation of vapors and particulates emitted from soil by an excavation worker[a]

Equations:

$$\text{Chemical Intake (mg/kg-day)} = \frac{C_s \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}}{BW \times AT}$$

$$\text{Radionuclide Intake (pCi)} = A_s \times CF \times EF \times ED \times ET \times \left(\frac{1}{VF} + \frac{1}{PEF}\right) \times IR_{air}$$

Parameter	Units	Value used	References[b]
Concentration in soil or sediment = **C_s**	mg/kg	Chemical-specific	—
Activity in soil or sediment = **A_s**	pCi/g	Chemical-specific	—
Conversion factor = **CF**	g/kg	10^3	—
Exposure frequency = **EF**	day/yr	185	[14]
Exposure duration = **ED**	years	25	[20]
Exposure time = **ET**	hours/day	8	[14]
Volatilization factor = **VF**	m^3/kg	Chemical-specific	[19]
Particulate emission factor = **PEF**	m^3/kg	4.28×10^9	[19]
Inhalation rate = **IR_{air}**	m^3/hour	2.5	[14]
Body weight = **BW**	kg	70	[14]
Averaging time = **AT**	yr × day/yr	70 × 365 (carcinogen) ED × 365 (noncarcinogen)	[14]

a Equation from [20].
b References follow Table 1.50.

Notes:

Human Intake Factors for Inhalation of Volatile Organic Compounds and Particulates Emitted from Soil by an Excavation Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	Chemical Noncarcinogen[a]	Radionuclide Carcinogen[b]
Excavation Worker	5.18×10^{-2}	1.45×10^{-1}	9.25×10^7

a Chemical concentration in soil (mg/kg) times "1/VF + 1/PEF" [(m^3/kg)$^{-1}$] times intake factor [m^3/(kg • day)] yields default RME dose for associated endpoint.
b Radionuclide activity in soil (pCi/g) times "1/VF + 1/PEF" [(m^3/kg)$^{-1}$] times intake factor [(g • m^3)/kg] yields default RME dose.

530948

530948

Table 1.43. Reasonable maximum exposure assumptions and human intake factors for external exposure to ionizing radiation from soil by an excavation worker[a]

Equation:

$$\text{Absorbed Dose (pCi-year/g)} = A_s \times EF \times ED \times (1-S_e) \times T_e$$

Parameter	Units	Value used	References[b]
Activity in soil or sediment = A_s	pCi/g	Chemical-specific	—
Exposure frequency = **EF**	day/day	185/365	[14], [20]
Exposure duration = **ED**	year	25	[20]
Gamma shielding factor = S_e	unitless	0.2	[20]
Gamma exposure time factor = T_e	hr/hr	8/24	[20]

[a] Equation from [20].
[b] References follow Table 1.50.

Notes:

Human Intake Factors for External Exposure to Ionizing Radiation from Soil by an Excavation Worker

Cohort	Endpoint		
	Chemical Carcinogen[a]	**Chemical Noncarcinogen[a]**	**Radionuclide Carcinogen[b]**
Excavation Worker	Not Applicable	Not Applicable	3.38×10^0

[a] Exposure not applicable to chemicals not emitting ionizing radiation.
[b] Radionuclide concentration in soil (pCi/g) times intake factor (yr) yields default RME dose.

530949

Table 1.44. Summary of reasons for selection or dismissal of exposure routes for quantitative evaluation at the WAG 6 area and all sectors

Exposed populations	Exposure route, medium, and exposure point	Route quantified?	Reason for selection or dismissal
Current Land Use			
Industrial			
	Ingestion of groundwater	No	Groundwater not in use
	Dermal contact with groundwater while showering	No	Groundwater not in use
	Inhalation of vapors while showering in groundwater	No	Groundwater not in use
	External exposure to ionizing radiation from groundwater while showering	No	Groundwater not in use
	Ingestion of soil	Yes	Soil may be ingested
	Dermal contact with soil	Yes	Soil may adhere to skin
	Inhalation of vapors and particulates emitted from soil	Yes	Vapors and particulates may be emitted from soil
	External exposure to ionizing radiation from soil	Yes	Radionuclides may be in soil
	Ingestion of waste	No	Waste not at site
	Dermal contact with waste	No	Waste not at site
	Inhalation of vapors and particulates emitted from waste	No	Waste not at site
	External exposure to ionizing radiation from waste	No	Waste not at site
	Ingestion of sediment	No	Sediment not at site
	Dermal contact with sediment	No	Sediment not at site
	Inhalation of particulates and vapors in sediment	No	Sediment not at site
	External exposure from creek sediment	No	Sediment not at site
	Ingestion of surface water	No	Surface water not at site
	Dermal contact with surface water	No	Surface water not at site
	Inhalation of vapors in surface water	No	Surface water not at site
	External exposure to ionizing radiation emitted from surface water	No	Surface water not at site

Table 1.44. (Cont.)

Exposed populations	Exposure route, medium, and exposure point	Route quantified?	Reason for selection or dismissal
Potential Future Land Use			
Industrial			
	Ingestion of groundwater	Yes, on area basis	Groundwater may be used in future
	Dermal contact with groundwater while showering	Yes, on area basis	Groundwater may be used in future
	Inhalation of vapors while showering in groundwater	Yes, on area basis	Groundwater may be used in future
	External exposure to ionizing radiation from groundwater while showering	No	Water is a natural radiation shield
	Ingestion of soil	Yes	Soil may be ingested
	Dermal contact with soil	Yes	Soil may adhere to skin
	Inhalation of vapors and particulates emitted from soil	Yes	Vapors and particulates may be emitted from soil
	External exposure to ionizing radiation from soil	Yes	Radionuclides may be in soil
	Ingestion of waste	No	Waste not at site
	Dermal contact with waste	No	Waste not at site
	Inhalation of vapors and particulates emitted from waste	No	Waste not at site
	External exposure to ionizing radiation from waste	No	Waste not at site
	Ingestion of sediment	No	No sediment at site
	Dermal contact with sediment	No	No sediment at site
	Inhalation of particulates and vapors in sediment	No	No sediment at site
	External exposure from creek sediment	No	No sediment at site
	Ingestion of surface water	No	No surface water at site
	Dermal contact with surface water	No	No surface water at site
	Inhalation of vapors emitted by surface water	No	No surface water at site
	External exposure to ionizing radiation emitted from surface water	No	Water is a natural radiation shield

Table 1.44. (Cont.)

Exposed populations	Exposure route, medium, and exposure point	Route quantified?	Reason for selection or dismissal
Potential Future Land Use (cont.)			
Excavation			
	Ingestion of soil	Yes	Soil could be ingested
	Dermal contact with soil	Yes	Soil could adhere to skin
	Inhalation of vapors and particulates emitted from soil	Yes	Vapors and particles could be emitted from soil or waste
	External exposure to ionizing radiation in soil	Yes	Soil could contain radionuclides
	Ingestion of sediment	No	No sediment present on site
	Dermal contact with sediment	No	No sediment present on site
	Inhalation of vapors and particulates emitted from sediment	No	No sediment present on site
	External exposure to ionizing radiation in sediment	No	No sediment present on site
	Ingestion of waste	No	No waste present on site
	Dermal contact with waste	No	No waste present on site
	Inhalation of vapors and particulates emitted from waste	No	No waste present on site
	External exposure to ionizing radiation in waste	No	No waste present on site

Table 1.44. (Cont.)

Exposed populations	Exposure route, medium, and exposure point	Route quantified?	Reason for selection or dismissal
Potential Future Land Use (cont.)			
Recreational			
	Ingestion of soil	No	Area not attractive for recreational activities
	Dermal contact with soil	No	Area attractive for recreational activities
	Inhalation of particles and vapors emitted from soil	No	Area not attractive for recreational activities
	External exposure to ionizing radiation from soil	No	Area not attractive for recreational activities
	Ingestion of waste	No	Waste not at site
	Dermal contact with waste	No	Waste not at site
	Inhalation of vapors and particulates emitted from waste	No	Waste not at site
	External exposure to ionizing radiation from waste	No	Waste not at site
	Ingestion of sediment	No	No sediment at site
	Dermal contact with sediment	No	No sediment at site
	Inhalation of particulates and vapors emitted from sediment	No	No sediment at site
	External exposure to ionizing radiation from creek sediment	No	No sediment at site
	Ingestion of surface water	No	No surface water at site
	Dermal contact with surface water	No	No surface water at site
	Inhalation of vapors emitted from surface water	No	No surface water at site
	External exposure to ionizing radiation from creek surface water	No	No surface water at site
	Ingestion of fish from creek surface water	No	No surface water at site
	Ingestion of game	Yes	Deer, rabbit, and quail harvest is significant in the area

Table 1.44. (Cont.)

Exposed populations	Exposure route, medium, and exposure point	Route quantified?	Reason for selection or dismissal
Potential Future Land Use (cont.)			
Residential			
	Ingestion of groundwater	Yes, on area basis	Groundwater may be used in future
	Dermal contact with groundwater while showering	Yes, on area basis	Groundwater may be used in future
	Inhalation of vapors while showering in groundwater	Yes, on area basis	Groundwater may be used in future
	Inhalation of vapors during household use of groundwater	Yes, on area basis	Groundwater may be used in future
	External exposure to ionizing radiation from groundwater while showering	No	Water is a natural radiation shield
	Ingestion of soil	Yes	Contaminated soil may be ingested on site
	Dermal contact with soil	Yes	Contaminated soil on site may adhere to skin
	Inhalation of vapors and particulates emitted from soil	Yes	Vapors and Particulates may be emitted from soil on site
	External exposure to ionizing radiation from soil	Yes	Radionuclides may be in soil on site
	Ingestion of waste	No	Waste not at site
	Dermal contact with waste	No	Waste not at site
	Inhalation of vapors and particulates emitted from waste	No	Waste not at site
	External exposure to ionizing radiation from waste	No	Waste not at site
	Ingestion of sediment	No	No sediment at site
	Dermal contact with sediment	No	No sediment at site
	Inhalation of particulates and vapors in sediment	No	No sediment at site
	External exposure from creek sediment	No	No sediment at site
	Ingestion of surface water	No	No surface water at site
	Dermal contact with surface water	No	No surface water at site
	Inhalation of vapors in surface water	No	No surface water at site
	External exposure to ionizing radiation emitted from surface water	No	No surface water at site

Table 1.44. (Cont.)

Exposed populations	Exposure route, medium, and exposure point	Route quantified?	Reason for selection or dismissal
Potential Future Land Use (cont.)			
Residential (cont.)			
	Ingestion of vegetables	Yes	Site is large enough for garden
	Ingestion of beef and dairy products	No	Site not suitable for agricultural development
	Ingestion of pork	No	Site not suitable for agricultural development
	Ingestion of poultry and eggs	No	Site not suitable for agricultural development
	Ingestion of fish raised in ponds filled with groundwater	No	Currently no such types of ponds present
	Dermal contact with groundwater while swimming in a pond	No	Currently no such types of ponds present
	Inhalation of vapors in groundwater while swimming in a pond	No	Currently no such types of ponds present
	Inhalation of vapors during irrigation with groundwater	No	Mixing volume too large
	External exposure to ionizing radiation from groundwater while swimming in a pond filled with groundwater	No	Currently no such types of ponds present
	Ingestion of sediment while swimming in ponds filled with groundwater	No	Currently no such types of ponds present
	Dermal contact with sediment while swimming in a pond filled with groundwater	No	Currently no such types of ponds present
	Inhalation of vapors and particulates emitted from sediment in a pond filled with groundwater	No	Currently no such types of ponds present
	External exposure to ionizing radiation from sediment while swimming in a pond filled with groundwater	No	Currently no such types of ponds present

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=McNairy

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum	8.98E+01		
Arsenic	2.63E-01		
Barium	3.52E-01		
Beryllium	8.37E-03		
Bromide	4.49E-02		
Cadmium	1.90E-03		
Chromium	2.45E-01		
Cobalt	7.07E-02		
Iron	2.17E+02		
Lead	1.14E-01		
Manganese	1.58E+00		
Nickel	1.11E-01		
Nitrate	5.30E-01		
Orthophosphate	1.01E-01		
Selenium	2.94E-02		
Tetraoxo-sulfate(1-)	1.72E+01		
Thallium	5.99E-04		
Vanadium	1.02E+00		
Zinc	7.86E+00		
1,1-Dichloroethene	7.23E-03		
1,2-Dichloroethane	1.00E-03		
Bis(2-ethylhexyl)phthalate	5.21E-03		
Bromodichloromethane	5.32E-03		
Chloroform	6.75E-03		
Di-n-butyl phthalate	1.00E-03		
Di-n-octylphthalate	5.59E-03		
Dibromochloromethane	4.00E-03		
Tetrachloroethene	9.74E-03		
Trichloroethene	1.62E-02		
Vinyl chloride	1.40E-02		
cis-1,2-Dichloroethene	1.41E-02		
Actinium-228	2.72E+01		
Alpha activity	3.07E+01		
Beta activity	2.78E+02		
Cesium-137	1.23E+01		
Lead-210	4.21E+02		
Lead-212	2.25E+01		
Lead-214	1.21E+01		
Neptunium-237	8.08E+00		
Plutonium-239	1.33E+00		
Potassium-40	6.80E+01		
Technetium-99	3.10E+02		
Thorium-228	1.23E+00		
Thorium-230	1.36E+00		
Thorium-234	7.19E+02		
Uranium-234	1.88E+00		
Uranium-235	1.16E+01		
Uranium-238	1.26E+00		

SECTOR=RGA

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum	6.09E+01		
Antimony	1.39E-02		
Arsenic	2.91E-02		
Barium	4.20E-01		
Beryllium	1.01E-02		
Bromide	4.61E-01		
Cadmium	1.48E-03		

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=RGA
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Chromium	1.13E-01		
Cobalt	9.87E-02		
Copper	2.20E-01		
Iron	3.88E+02		
Lead	3.27E-02		
Manganese	3.06E+00		
Mercury	1.65E-04		
Nickel	1.97E-01		
Nitrate	4.74E+01		
Orthophosphate	3.60E-02		
Silver	1.27E-02		
Tetraoxo-sulfate(1-)	1.32E+01		
Thallium	5.92E-04		
Uranium	3.66E-03		
Vanadium	1.54E-01		
Zinc	7.65E-01		
1,1-Dichloroethene	6.63E-03		
Bis(2-ethylhexyl)phthalate	1.00E-03		
Bromodichloromethane	4.00E-03		
Carbon tetrachloride	7.07E-02		
Chloroform	2.89E-02		
Di-n-butyl phthalate	1.00E-03		
Di-n-octylphthalate	1.00E-03		
N-Nitroso-di-n-propylamine	1.00E-03		
Tetrachloroethene	2.20E-02		
Toluene	3.60E-02		
Trichloroethene	8.19E+00		
Vinyl chloride	1.33E-01		
cis-1,2-Dichloroethene	3.70E-01		
trans-1,2-Dichloroethene	1.23E-02		
Alpha activity	1.70E+01		
Americium-241	1.68E+00		
Beta activity	3.21E+02		
Cesium-137	1.09E+01		
Lead-210	1.00E+02		
Lead-214	7.40E+00		
Neptunium-237	1.35E+01		
Plutonium-239	4.57E-02		
Technetium-99	2.68E+03		
Thorium-228	7.60E-01		
Thorium-230	1.09E+00		
Uranium-234	1.66E+00		
Uranium-235	1.18E-01		
Uranium-238	1.66E+01		

SECTOR=WAG 6

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		5.94E+03	5.92E+03
Antimony		5.47E-01	1.17E+00
Arsenic		3.30E+00	5.34E+00
Barium		5.39E+01	
Beryllium		3.03E-01	2.89E-01
Cadmium		9.57E-02	4.44E-01
Chromium		1.04E+01	1.18E+01
Cobalt		3.51E+00	4.05E+00
Copper		7.11E+01	
Iron		9.81E+03	1.09E+04

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=WAG 6
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Lead		5.84E+00	7.98E+00
Manganese		2.12E+02	
Mercury		6.93E-02	
Nickel		1.27E+02	
Silver		3.16E-01	
Thallium		3.68E-01	6.82E-01
Uranium		1.68E+01	2.64E+01
Vanadium		1.40E+01	1.43E+01
Zinc		1.90E+01	2.56E+01
1,1,2-Trichloroethane		1.85E-02	
1,1-Dichloroethene		3.63E-01	
2,4-Dinitrotoluene		4.57E-01	
2,6-Dinitrotoluene		4.32E-01	
2-Hexanone		4.40E-03	
2-Methylnaphthalene		6.78E-01	5.36E-01
Acenaphthene		5.76E-01	1.25E+00
Acenaphthylene		2.20E-01	2.20E-01
Anthracene		1.03E+00	2.42E+00
Benz(a)anthracene		8.47E-01	3.79E+00
Benzo(a)pyrene		8.23E-01	3.71E+00
Benzo(b)fluoranthene		9.91E-01	4.36E+00
Benzo(ghi)perylene		6.10E-01	2.12E+00
Benzo(k)fluoranthene		1.12E+00	3.53E+00
Bis(2-ethylhexyl)phthalate		5.97E-01	1.00E-01
Butyl benzyl phthalate		4.34E-01	
Carbon tetrachloride		1.96E-02	
Chrysene		8.79E-01	4.00E+00
Di-n-butyl phthalate		7.14E-01	7.45E-01
Di-n-octylphthalate		6.06E-01	
Dibenz(a,h)anthracene		6.31E-01	1.10E+00
Fluoranthene		1.51E+00	7.59E+00
Fluorene		5.74E-01	9.51E-01
Indeno(1,2,3-cd)pyrene		6.02E-01	2.00E+00
Iodomethane		1.59E-02	
Methylene chloride		1.58E-02	
N-Nitroso-di-n-propylamine		6.34E-01	
N-Nitrosodiphenylamine		7.37E-01	
Naphthalene		6.09E-01	6.43E-01
PCB-1254		8.55E-02	1.70E-01
PCB-1260		1.37E-01	9.32E-02
PCB-1262		3.80E-02	3.80E-02
Phenanthrene		1.21E+00	5.31E+00
Polychlorinated biphenyl		5.17E-01	3.00E-01
Pyrene		1.46E+00	6.70E+00
Tetrachloroethene		1.95E-02	
Trichloroethene		1.76E+02	
Vinyl chloride		1.30E+00	
trans-1,2-Dichloroethene		1.41E+01	
Alpha activity		3.12E+01	2.18E+01
Beta activity		1.26E+02	4.79E+01
Cesium-137		4.04E-01	3.74E-01
Neptunium-237		1.17E+00	6.36E-01
Plutonium-239		3.23E-01	
Technetium-99		8.92E+01	
Thorium-230		1.69E+00	
Uranium-234		4.12E+00	6.56E+00
Uranium-235		2.53E-01	3.88E-01
Uranium-238		5.59E+00	8.78E+00

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Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=Central

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Antimony		2.85E+00	
Cadmium		1.98E-01	
Chromium		2.23E+01	
Iron		1.66E+04	
Thallium		3.65E-01	
Bis(2-ethylhexyl)phthalate		4.00E-02	
Di-n-butyl phthalate		8.27E-01	1.20E+00
Alpha activity		2.52E+01	1.04E+01
Beta activity		3.75E+01	2.68E+01
Cesium-137		2.34E-01	
Neptunium-237		1.50E-01	

SECTOR=East

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		7.46E+03	
Antimony		3.26E-01	
Arsenic		3.73E+00	
Beryllium		2.94E-01	
Cadmium		2.69E-01	3.80E-01
Chromium		9.06E+00	1.36E+01
Cobalt		4.48E+00	
Lead		5.70E+00	
Manganese		2.68E+02	
Thallium		3.48E-01	1.20E+00
Uranium		5.15E+00	2.74E+01
Acenaphthene		1.30E-01	1.30E-01
Anthracene		4.08E-01	2.20E-01
Benz(a)anthracene		4.19E-01	7.22E-01
Benzo(a)pyrene		4.18E-01	7.95E-01
Benzo(b)fluoranthene		4.39E-01	1.40E+00
Benzo(ghi)perylene		3.64E-01	3.70E-01
Benzo(k)fluoranthene		4.07E-01	8.70E-01
Bis(2-ethylhexyl)phthalate		8.00E-02	
Chrysene		4.20E-01	7.95E-01
Di-n-butyl phthalate		7.24E-01	1.23E+00
Dibenz(a,h)anthracene		1.60E-01	1.60E-01
Fluoranthene		4.85E-01	2.10E+00
Fluorene		9.00E-02	9.00E-02
Indeno(1,2,3-cd)pyrene		3.99E-01	4.20E-01
Naphthalene		4.00E-02	
PCB-1260		2.42E-01	3.30E+00
Phenanthrene		4.50E-01	1.16E+00
Polychlorinated biphenyl		4.67E-01	1.00E+01
Pyrene		4.74E-01	1.80E+00
Trichloroethene		1.37E+00	
Alpha activity		2.68E+01	3.32E+01
Beta activity		3.50E+01	4.27E+01
Cesium-137		2.17E-01	5.00E-01
Neptunium-237		1.98E-01	4.00E-01
Uranium-235		1.52E-01	4.00E-01
Uranium-238		1.72E+00	9.10E+00

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=Far East/Northeast

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		7.27E+03	1.38E+04
Antimony		2.53E+00	2.90E+00
Arsenic		6.84E+00	
Beryllium		4.54E-01	
Cadmium		1.26E-01	
Chromium		1.12E+01	1.04E+01
Iron		1.40E+04	
Lead		1.20E+01	
Manganese		5.48E+02	
Thallium		4.14E-01	
Uranium		1.87E+01	2.62E+01
Vanadium		2.34E+01	
Benz(a)anthracene		1.30E-01	4.00E-02
Benzo(a)pyrene		1.50E-01	4.00E-02
Benzo(b)fluoranthene		1.80E-01	4.00E-02
Benzo(ghi)perylene		6.20E-02	
Benzo(k)fluoranthene		1.50E-01	5.00E-02
Bis(2-ethylhexyl)phthalate		7.00E-02	
Butyl benzyl phthalate		4.00E-02	
Chrysene		1.50E-01	4.00E-02
Di-n-butyl phthalate		4.67E-01	
Fluoranthene		2.20E-01	8.49E-02
Indeno(1,2,3-cd)pyrene		6.70E-02	
PCB-1254		2.91E-02	
PCB-1260		2.92E-02	5.60E-03
Phenanthrene		7.00E-02	4.00E-02
Polychlorinated biphenyl		7.60E-02	5.60E-03
Pyrene		2.20E-01	4.83E-02
Alpha activity		2.25E+01	2.23E+01
Beta activity		3.50E+01	4.40E+01
Cesium-137		2.66E-01	
Uranium-235		3.38E-01	5.00E-01
Uranium-238		6.22E+00	8.70E+00

SECTOR=Far North/Northwest

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		7.41E+03	
Antimony		1.20E+00	1.40E+00
Arsenic		4.48E+00	
Beryllium		3.52E-01	6.90E-01
Cadmium		2.89E-01	3.00E-01
Chromium		3.19E+01	2.72E+01
Cobalt		4.97E+00	
Copper		1.56E+03	
Iron		1.40E+04	
Lead		1.35E+01	
Manganese		3.58E+02	
Mercury		8.96E-02	
Nickel		2.86E+03	
Thallium		5.06E-01	3.00E-01
Uranium		4.26E+02	1.38E+01
Zinc		3.54E+01	
2,4-Dinitrotoluene		4.11E-01	
Acenaphthene		5.00E-02	5.00E-02
Anthracene		1.60E-01	1.60E-01
Benz(a)anthracene		3.40E-01	3.40E-01
Benzo(a)pyrene		2.80E-01	2.80E-01
Benzo(b)fluoranthene		2.60E-01	2.60E-01

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=Far North/Northwest (continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Benzo(ghi)perylene		1.30E-01	1.30E-01
Benzo(k)fluoranthene		2.90E-01	2.90E-01
Bis(2-ethylhexyl)phthalate		9.21E-02	8.00E-02
Chrysene		3.50E-01	3.50E-01
Di-n-butyl phthalate		6.38E-01	4.00E-02
Fluoranthene		4.09E-01	8.40E-01
Fluorene		5.00E-02	5.00E-02
Indeno(1,2,3-cd)pyrene		1.40E-01	1.40E-01
N-Nitrosodiphenylamine		4.16E-01	
PCB-1254		2.35E-02	
PCB-1260		3.08E-02	
Phenanthrene		4.14E-01	4.05E-01
Polychlorinated biphenyl		6.30E-02	
Pyrene		4.14E-01	3.92E-01
Alpha activity		3.89E+01	1.06E+01
Beta activity		1.24E+02	3.56E+01
Cesium-137		3.32E+00	
Neptunium-237		4.90E+00	6.00E-01
Plutonium-239		1.70E+00	
Technetium-99		4.84E+03	
Thorium-230		5.49E+00	
Uranium-234		6.67E+01	
Uranium-235		1.23E+00	2.00E-01
Uranium-238		1.42E+02	4.60E+00

SECTOR=McNairy

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum	8.98E+01		
Arsenic	2.63E-01		
Barium	3.52E-01		
Beryllium	8.37E-03		
Bromide	4.49E-02		
Cadmium	1.90E-03		
Chromium	2.45E-01		
Cobalt	7.07E-02		
Iron	2.17E+02		
Lead	1.14E-01		
Manganese	1.58E+00		
Nickel	1.11E-01		
Nitrate	5.30E-01		
Orthophosphate	1.01E-01		
Selenium	2.94E-02		
Tetraoxo-sulfate(1-)	1.72E+01		
Thallium	5.99E-04		
Vanadium	1.02E+00		
Zinc	7.86E+00		
1,1-Dichloroethene	7.23E-03		
1,2-Dichloroethane	1.00E-03		
Bis(2-ethylhexyl)phthalate	5.21E-03		
Bromodichloromethane	5.32E-03		
Chloroform	6.75E-03		
Di-n-butyl phthalate	1.00E-03		
Di-n-octylphthalate	5.59E-03		
Dibromochloromethane	4.00E-03		
Tetrachloroethene	9.74E-03		
Trichloroethene	1.62E-02		
Vinyl chloride	1.40E-02		

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=McNairy
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
cis-1,2-Dichloroethene	1.41E-02		
Actinium-228	2.72E+01		
Alpha activity	3.07E+01		
Beta activity	2.78E+02		
Cesium-137	1.23E+01		
Lead-210	4.21E+02		
Lead-212	2.25E+01		
Lead-214	1.21E+01		
Neptunium-237	8.08E+00		
Plutonium-239	1.33E+00		
Potassium-40	6.80E+01		
Technetium-99	3.10E+02		
Thorium-228	1.23E+00		
Thorium-230	1.36E+00		
Thorium-234	7.19E+02		
Uranium-234	1.88E+00		
Uranium-235	1.16E+01		
Uranium-238	1.26E+00		

SECTOR=Northeast

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		6.22E+03	
Antimony		1.17E+00	
Arsenic		2.38E+00	
Barium		5.25E+01	
Beryllium		2.88E-01	
Cadmium		7.77E-02	
Chromium		1.06E+01	1.93E+01
Cobalt		3.99E+00	
Manganese		2.15E+02	
Thallium		7.12E-01	
Uranium		3.45E+01	1.38E+01
Vanadium		1.48E+01	
Zinc		1.73E+01	7.02E+01
2,6-Dinitrotoluene		3.86E-01	
Acenaphthene		4.16E-01	4.00E-02
Anthracene		4.46E-01	8.00E-02
Benz(a)anthracene		1.02E+00	3.50E-01
Benzo(a)pyrene		9.17E-01	3.00E-01
Benzo(b)fluoranthene		1.02E+00	4.30E-01
Benzo(ghi)perylene		4.45E-01	1.70E-01
Benzo(k)fluoranthene		7.77E-01	2.80E-01
Bis(2-ethylhexyl)phthalate		6.00E-02	
Chrysene		1.05E+00	4.00E-01
Di-n-butyl phthalate		4.39E-01	
Dibenz(a,h)anthracene		3.98E-01	
Fluoranthene		7.28E-01	8.60E-01
Fluorene		4.02E-01	
Indeno(1,2,3-cd)pyrene		6.95E-01	1.80E-01
N-Nitroso-di-n-propylamine		3.94E-01	
Naphthalene		3.98E-01	
PCB-1254		5.20E-03	
PCB-1260		2.33E-02	4.30E-02
Phenanthrene		6.21E-01	4.70E-01
Polychlorinated biphenyl		4.30E-02	4.30E-02
Pyrene		6.73E-01	6.80E-01
Alpha activity		2.09E+01	3.19E+01

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=Northeast
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Beta activity		3.69E+01	5.08E+01
Neptunium-237		2.01E-01	
Uranium-234		1.12E+01	
Uranium-235		4.26E-01	2.00E-01
Uranium-238		1.15E+01	4.60E+00

SECTOR=Northwest

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		6.09E+03	
Antimony		1.02E+00	4.01E-01
Arsenic		2.72E+00	
Beryllium		3.43E-01	3.23E-01
Cadmium		1.04E-01	2.03E-01
Chromium		1.18E+01	2.03E+01
Cobalt		4.03E+00	
Iron		1.07E+04	1.22E+04
Lead		6.22E+00	1.30E+01
Manganese		2.30E+02	
Mercury		7.96E-02	
Thallium		3.32E-01	
Uranium		1.01E+01	
Vanadium		1.67E+01	1.65E+01
Benz(a)anthracene		3.00E-01	3.00E-01
Benzo(a)pyrene		3.98E-01	4.00E-01
Benzo(b)fluoranthene		3.99E-01	5.29E-01
Benzo(k)fluoranthene		3.00E-01	3.00E-01
Bis(2-ethylhexyl)phthalate		8.00E-02	
Chrysene		2.90E-01	2.90E-01
Di-n-butyl phthalate		4.00E-02	
Fluoranthene		3.97E-01	4.00E-01
N-Nitroso-di-n-propylamine		4.91E-01	
Phenanthrene		5.00E-02	
Polychlorinated biphenyl		5.00E-01	
Pyrene		3.97E-01	4.00E-01
Alpha activity		2.23E+01	1.81E+01
Beta activity		3.92E+01	4.91E+01
Neptunium-237		4.14E-01	
Uranium-235		1.93E-01	
Uranium-238		3.35E+00	3.20E+00

SECTOR=RGA

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum	6.09E+01		
Antimony	1.39E-02		
Arsenic	2.91E-02		
Barium	4.20E-01		
Beryllium	1.01E-02		
Bromide	4.61E-01		
Cadmium	1.48E-03		
Chromium	1.13E-01		
Cobalt	9.87E-02		
Copper	2.20E-01		
Iron	3.88E+02		

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=RGA
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Lead	3.27E-02		
Manganese	3.06E+00		
Mercury	1.65E-04		
Nickel	1.97E-01		
Nitrate	4.74E+01		
Orthophosphate	3.60E-02		
Silver	1.27E-02		
Tetraoxo-sulfate(1-)	1.32E+01		
Thallium	5.92E-04		
Uranium	3.66E-03		
Vanadium	1.54E-01		
Zinc	7.65E-01		
1,1-Dichloroethene	6.63E-03		
Bis(2-ethylhexyl)phthalate	1.00E-03		
Bromodichloromethane	4.00E-03		
Carbon tetrachloride	7.07E-02		
Chloroform	2.89E-02		
Di-n-butyl phthalate	1.00E-03		
Di-n-octylphthalate	1.00E-03		
N-Nitroso-di-n-propylamine	1.00E-03		
Tetrachloroethene	2.20E-02		
Toluene	3.60E-02		
Trichloroethene	8.19E+00		
Vinyl chloride	1.33E-01		
cis-1,2-Dichloroethene	3.70E-01		
trans-1,2-Dichloroethene	1.23E-02		
Alpha activity	1.70E+01		
Americium-241	1.68E+00		
Beta activity	3.21E+02		
Cesium-137	1.09E+01		
Lead-210	1.00E+02		
Lead-214	7.40E+00		
Neptunium-237	1.35E+01		
Plutonium-239	4.57E-02		
Technetium-99	2.68E+03		
Thorium-228	7.60E-01		
Thorium-230	1.09E+00		
Uranium-234	1.66E+00		
Uranium-235	1.18E-01		
Uranium-238	1.66E+01		

SECTOR=Southeast

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		6.02E+03	1.42E+04
Antimony		4.97E-01	6.00E-01
Arsenic		2.93E+00	
Barium		6.09E+01	
Beryllium		3.19E-01	
Cadmium		1.45E-01	3.50E-01
Chromium		9.21E+00	2.36E+01
Cobalt		3.41E+00	
Iron		9.86E+03	
Lead		5.53E+00	
Manganese		2.05E+02	
Mercury		3.35E-02	
Thallium		3.66E-01	
Uranium		3.43E+00	

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=Southeast
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Vanadium		1.40E+01	
Zinc		1.89E+01	
1,1,2-Trichloroethane		1.65E-02	
1,1-Dichloroethene		3.45E-01	
Acenaphthene		3.30E-01	
Anthracene		5.17E-01	
Benz(a)anthracene		5.34E-01	7.00E-02
Benzo(a)pyrene		5.32E-01	8.00E-02
Benzo(b)fluoranthene		5.44E-01	7.00E-02
Benzo(ghi)perylene		5.20E-01	
Benzo(k)fluoranthene		5.13E-01	6.00E-02
Bis(2-ethylhexyl)phthalate		7.67E-02	
Carbon tetrachloride		2.09E-02	
Chrysene		5.41E-01	8.00E-02
Di-n-butyl phthalate		4.17E-01	
Di-n-octylphthalate		6.00E-02	
Dibenz(a,h)anthracene		4.60E-01	
Fluoranthene		4.22E-01	1.50E-01
Fluorene		2.00E-01	
Indeno(1,2,3-cd)pyrene		5.19E-01	
Naphthalene		1.60E-01	
PCB-1254		9.83E-02	
PCB-1262		2.44E-02	3.80E-02
Phenanthrene		5.34E-01	7.00E-02
Polychlorinated biphenyl		5.04E-01	3.80E-02
Pyrene		4.62E-01	1.20E-01
Tetrachloroethene		2.05E-02	
Trichloroethene		6.59E+00	
Vinyl chloride		1.22E-01	
trans-1,2-Dichloroethene		3.99E+01	
Alpha activity		2.21E+01	1.65E+01
Beta activity		3.37E+01	2.43E+01
Cesium-137		1.90E-01	
Neptunium-237		2.83E-01	
Uranium-235		1.05E-01	
Uranium-238		1.15E+00	

SECTOR=Southwest

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		5.56E+03	
Antimony		1.14E+00	1.45E+00
Arsenic		3.69E+00	
Barium		5.94E+01	
Beryllium		3.23E-01	3.77E-01
Cadmium		1.73E-01	3.63E-01
Chromium		9.05E+00	2.12E+01
Iron		1.02E+04	1.70E+04
Lead		5.54E+00	
Manganese		2.08E+02	
Mercury		3.04E-02	
Silver		2.31E-01	
Thallium		3.33E-01	7.02E-01
Uranium		4.92E+00	5.01E+01
Vanadium		1.28E+01	
Zinc		2.09E+01	5.03E+01
2-Hexanone		4.40E-03	
Acenaphthene		4.49E-01	9.90E-01

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=Southwest
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Acenaphthylene		2.20E-01	2.20E-01
Anthracene		4.72E-01	1.82E+00
Benz(a)anthracene		6.29E-01	5.02E+00
Benzo(a)pyrene		6.43E-01	4.83E+00
Benzo(b)fluoranthene		6.41E-01	5.11E+00
Benzo(ghi)perylene		4.93E-01	2.37E+00
Benzo(k)fluoranthene		5.76E-01	3.38E+00
Bis(2-ethylhexyl)phthalate		1.61E-01	8.00E-02
Butyl benzyl phthalate		4.34E-01	
Chrysene		6.51E-01	4.52E+00
Di-n-butyl phthalate		1.12E+00	
Di-n-octylphthalate		6.06E-01	
Dibenz(a,h)anthracene		5.47E-01	1.30E+00
Fluoranthene		8.01E-01	1.09E+01
Fluorene		2.85E-01	1.20E+00
Indeno(1,2,3-cd)pyrene		5.05E-01	1.80E+00
Iodomethane		1.55E-02	
Methylene chloride		1.98E-02	
N-Nitroso-di-n-propylamine		5.82E-01	
N-Nitrosodiphenylamine		5.82E-01	
Naphthalene		1.20E-01	2.40E-03
PCB-1260		2.87E-02	3.80E-02
Phenanthrene		6.57E-01	5.72E+00
Polychlorinated biphenyl		3.80E-02	3.80E-02
Pyrene		7.77E-01	9.20E+00
Trichloroethene		3.57E-01	
Vinyl chloride		3.50E-02	
Alpha activity		1.91E+01	1.58E+01
Beta activity		4.12E+01	5.83E+01
Cesium-137		2.10E-01	
Neptunium-237		2.04E-01	3.00E-01
Uranium-235		2.76E-01	6.00E-01
Uranium-238		1.64E+00	1.67E+01

SECTOR=West

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Aluminum		7.50E+03	7.28E+03
Antimony		8.19E-01	9.92E-01
Arsenic		4.35E+01	1.32E+01
Barium		6.38E+01	
Beryllium		3.21E-01	3.15E-01
Cadmium		3.75E-01	9.05E-01
Chromium		1.13E+01	1.26E+01
Cobalt		4.00E+00	4.74E+00
Uranium		4.80E+01	3.63E+01
Vanadium		1.51E+01	
Zinc		2.44E+01	3.00E+01
2-Methylnaphthalene		6.35E-01	9.00E-01
Acenaphthene		2.32E+00	3.37E+00
Anthracene		3.90E+00	1.46E+01
Benz(a)anthracene		4.63E+00	2.01E+01
Benzo(a)pyrene		4.34E+00	1.81E+01
Benzo(b)fluoranthene		5.10E+00	2.25E+01
Benzo(ghi)perylene		2.59E+00	3.70E+00
Benzo(k)fluoranthene		4.53E+00	2.22E+01
Bis(2-ethylhexyl)phthalate		1.00E-01	1.00E-01
Chrysene		4.95E+00	2.17E+01

Table 1.45. PGDP WAG 6 representative concentrations of COPCs in soil and ground water

SECTOR=West
(continued)

Analyte	Groundwater (mg/L or pCi/L)	Subsurface soil (mg/kg or pCi/g)	Surface soil (mg/kg or pCi/g)
Di-n-butyl phthalate		2.05E-01	2.05E-01
Dibenz(a,h)anthracene		2.43E+00	3.75E+00
Fluoranthene		8.55E+00	4.51E+01
Fluorene		1.67E+00	3.13E+00
Indeno(1,2,3-cd)pyrene		2.65E+00	3.80E+00
Naphthalene		9.46E-01	1.45E+00
PCB-1254		2.60E-01	9.60E-01
PCB-1260		1.60E-02	1.60E-02
Phenanthrene		7.00E+00	3.50E+01
Polychlorinated biphenyl		2.38E-01	5.61E-01
Pyrene		8.11E+00	3.95E+01
Trichloroethene		1.05E+00	
Alpha activity		8.28E+01	6.48E+01
Beta activity		1.44E+02	1.11E+02
Cesium-137		3.98E-01	6.72E-01
Neptunium-237		8.59E-01	1.52E+00
Uranium-234		1.21E+01	9.48E+00
Uranium-235		5.41E-01	6.60E-01
Uranium-238		1.59E+01	1.21E+01

Table 1.46. Reasonable maximum exposure assumptions for concentration or activity of COPCs in deer[a]

Equations:

$$C_d = F_d \times [(C_{forage} \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_{sw} \times CF_{rad} \times Q_{sw})]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es})$$

Parameter	Units	Value used	References[b]
Chemical concentration in deer = C_d	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-deer transfer factor = F_d	day/kg	Chemical-specific	——
Chemical concentration in forage = C_{forage}	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact[c] = AC	unitless	AS/AD	——
Area of SWMU = AS	acres	SWMU-specific	——
Area of deer range = AD	acres	494	[34]
Fraction of deer's food from site when on site = f_s	unitless	1.0	[5]
Quantity of forage ingested daily by deer = Q_f	kg/day	1.74	[7]
Chemical concentration in soil or sediment = C_s	mg/kg or pCi/g	Chemical-specific	——
Quantity of soil ingested daily by deer = Q_s	kg/day	0.034	[6]; 2% of forage
Contaminant concentration in surface water = C_{sw}	mg/L or pCi/L	Chemical-specific	——
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	——
Quantity of surface water ingested daily by deer = Q_{sw}	L/day	3.61	[8]
Soil to plant uptake (dry) = R_{upp}	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = R_{es}	unitless	0.25	[3]

[a] Equations after [1], [2], [3], [4].
[b] All references follow Table 1.50.
[c] AC cannot be greater than 1.
[d] All ingested water is considered to be from SWMU or SWMU area.

Table 1.47. Reasonable maximum exposure assumptions for concentration or activity of COPCs in home-grown vegetables[a]

Equations:

$$C_v = (C_w \times Irr_{rup} \times CF_{rad}) + (C_s \times AC \times R_{upv}) + (C_w \times Irr_{res} \times CF_{rad}) + (C_s \times AC \times R_{es}) + (C_w \times Irr_{dep} \times CF_{rad})$$

$$Irr_{rup} = \frac{Ir \times F \times Bv_{wet} \times [1 - \exp(-\lambda_B \times t_b)]}{P \times \lambda_B} \qquad Irr_{dep} = \frac{Ir \times F \times I_f \times T \times [1 - \exp(-\lambda_E \times t_v)]}{Y_v \times \lambda_E}$$

$$Irr_{res} = \frac{Ir \times F \times MLF \times [1 - \exp(-\lambda_B \times t_b)]}{P \times \lambda_B}$$

Parameter	Units	Value used	References[b]
Concentration in vegetable = C_v	mg/kg or pCi/g	Chemical-specific	Calculated
Concentration in groundwater = C_w	mg/L or pCi/L	Chemical-specific	—
Root uptake from irrigation = Irr_{rup}	L/kg	Chemical-specific	Calculated
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	—
Concentration in soil = C_s	mg/kg or pCi/g	Chemical-specific	—
Area of contact[c] = AC	unitless	AS/AG	—
Area of SWMU = AS	acres	SWMU-specific	—
Area of garden = AG	acres	0.25	[33]
Wet root uptake for leafy vegetables = R_{upv}	kg/kg	Chemical-specific	—
Resuspension from irrigation = Irr_{res}	L/kg	Chemical-specific	Calculated
Resuspension multiplier = R_{es}	unitless	0.26	[9]
Aerial deposition from irrigation = Irr_{dep}	L/kg	Chemical-specific	Calculated
Irrigation rate = Ir	L/m^2-day	3.62	[10]
Irrigation period = F	unitless	0.25	[10]; 3 months a year
Soil to plant uptake, wet weight = Bv_{wet}	kg/kg	Chemical-specific or $7.7 \times K_{ow}^{-0.58}$	[11]
Effective rate for removal = λ_B	1/day	$\lambda_i + \lambda_{HL}$	[11]
Decay = λ_i	1/day	$0.693/T_r$	[11]
Half-life = T_r	day	Chemical-specific	—
Soil leaching rate = λ_{HL}	1/day	2.7×10^{-5}	[11]
Long term deposition and build-up = t_b	day	10,950	[2]
Area density for root zone = P	kg/m^2	240	[8], [12], [13]
Plant mass leading factor = MLF	unitless	0.26	[9]
Interception fraction = I_f	unitless	0.42	[7]
Translocation factor = T	unitless	1	[2]
Decay for removal on produce = λ_E	1/day	$\lambda_i + (0.693/t_w)$	[11]
Weathering half-life = t_w	day	14	[2]
Above ground exposure time = t_v	day	60	[2]
Plant yield (wet) = Y_v	kg/m^2	2	[2]

[a] Equations after [1], [2], [3], [4].
[b] References follow Table 1.50.
[c] AC cannot be greater than 1.

Table 1.48. Reasonable maximum exposure assumptions for concentration or activity of COPCs in rabbits[a]

Equations:

$$C_r = F_r \times [(C_{forage} \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_{sw} \times CF_{rad} \times Q_{sw})]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es})$$

Parameter	Units	Value used	References[b]
Chemical concentration in rabbit = $\mathbf{C_r}$	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-rabbit transfer factor = $\mathbf{F_r}$	day/kg	Chemical-specific	—
Chemical concentration in forage = $\mathbf{C_{forage}}$	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact[c] = **AC**	unitless	AS/AR	—
Area of SWMU = **AS**	acres	SWMU-specific	—
Area of rabbit range = **AR**	acres	3.6	[30]
Fraction of rabbit's food from site when on site = $\mathbf{f_s}$	unitless	1.0	—
Quantity of forage ingested daily by rabbit = $\mathbf{Q_f}$	kg/day	0.237	[31]
Chemical concentration in soil or sediment = $\mathbf{C_s}$	mg/kg or pCi/g	Chemical-specific	—
Quantity of soil ingested daily by rabbit = $\mathbf{Q_s}$	kg/day	0.0149	[31] 6.3% of forage
Contaminant concentration in surface water = $\mathbf{C_{sw}}$	mg/L or pCi/L	Chemical-specific	—
Conversion factor for radionuclides = $\mathbf{CF_{rad}}$	kg/g	10^{-3}	—
Quantity of surface water ingested daily by rabbit = $\mathbf{Q_{sw}}$	L/day	0.116	[31]
Soil to plant uptake (dry) = $\mathbf{R_{upp}}$	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = $\mathbf{R_{es}}$	unitless	0.25	[3]

[a] Equations after [1], [2], [3], [4].
[b] All references follow Table 1.50.
[c] AC cannot be greater than 1.
[d] All ingested water is considered to be from SWMU or SWMU area.

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530971

Table 1.49. Reasonable maximum exposure assumptions for concentration or activity of COPCs in quail[a]

Equations:

$$C_q = F_q \times [(C_f \times AC \times f_s \times Q_f) + (C_s \times AC \times Q_s) + (C_{sw} \times CF_{rad} \times Q_{sw}) + (C_i \times AC \times Q_i]$$

$$C_{forage} = (C_s \times R_{upp}) + (C_s \times R_{es}) \qquad C_i = (C_s \times BAF_i)$$

Parameter	Units	Value used	References[b]
Chemical concentration in quail = C_q	mg/kg or pCi/g	Chemical-specific	Calculated
Forage-quail transfer factor = F_q	day/kg	Chemical-specific	----
Chemical concentration in forage = C_f	mg/kg or pCi/g	Chemical-specific	Calculated
Area of contact[c] = AC	unitless	AS/AQ	—
Area of SWMU = AS	acres	SWMU-specific	—
Area of quail range = AQ	acres	15.4	[30]
Fraction of quail's food from site when on site = f_s	unitless	1.0	—
Quantity of forage ingested daily by quail = Q_f	kg/day	0.01499	[30] 88.2% of total food
Chemical concentration in invertebrates = C_i	mg/kg or pCi/g	Chemical-specific	—
Quantity of invertebrates ingested daily by quail = Q_i	kg/day	0.002006	[30] 11.8 % of total food
Chemical concentration in soil or sediment = C_s	mg/kg or pCi/g	Chemical-specific	—
Quantity of soil ingested daily by quail = Q_s	kg/day	0.00158	[32] 9.3% of total food (same as turkey)
Contaminant concentration in surface water = C_{sw}	mg/L or pCi/L	Chemical-specific	—
Conversion factor for radionuclides = CF_{rad}	kg/g	10^{-3}	—
Quantity of surface water ingested daily by quail = Q_{sw}	L/day	0.024	[30]
Soil to plant uptake (dry) = R_{upp}	unitless	Chemical-specific or $38 \times K_{ow}^{-0.58}$	[8]
Soil resuspension multiplier = R_{es}	unitless	0.25	[3]

[a] Equations after [1], [2], [3], [4].
[b] All references follow Table 1.50.
[c] AC cannot be greater than 1.
[d] All ingested water is considered to be from SWMU or SWMU area.

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Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs

Analyte	Halflife (days)	Permeability constant (cm/hr)	Volatilization factor (m^3/kg)	Particulate emission factor (m^3/kg)	Soil to wet plant uptake factor (kg/kg)	Soil to dry plant uptake factor (kg/kg)	Uptake factor (invertebrates) (day/kg)	Uptake factor (deer & rabbit) (day/kg)	Uptake factor (quail) (day/kg)
Aluminum		1.00E-03		4.28E+09	1.00E-03	4.00E-03	5.44E-02	1.50E-03	1.50E-03
Antimony		1.00E-03		4.28E+09	1.00E-02	5.00E-02	1.00E+00	4.00E-05	4.00E-05
Arsenic		1.00E-03		4.28E+09	1.00E-02	4.00E-02	1.46E-01	2.00E-03	2.00E-03
Barium		1.00E-03		4.28E+09	3.00E-03	1.00E-01	5.76E-02	2.00E-04	9.00E-03
Beryllium		1.00E-03		4.28E+09	2.50E-03	1.00E-02	6.28E-01	1.00E-03	1.00E-03
Bromide									
Cadmium		1.00E-03		4.28E+09	1.38E-01	5.50E-01	7.36E-01	4.00E-04	8.00E-01
Chromium		1.00E-03		4.28E+09	1.00E-04	4.00E-02	7.84E-02	9.00E-03	9.00E-03
Cobalt		1.00E-03		4.28E+09	2.32E-02	5.40E-02		1.00E-04	
Copper		1.00E-03		4.28E+09	8.00E-02	8.00E-01		9.00E-03	
Iron		1.00E-03		4.28E+09	4.00E-04	1.00E-02	6.08E-02	2.00E-02	1.00E+00
Lead		1.00E-03		4.28E+09	7.60E-04	9.00E-02	7.20E-02	4.00E-04	4.00E-04
Manganese		1.00E-03		4.28E+09	6.88E-02	6.80E-01	6.40E-02	5.00E-04	5.00E-02
Mercury		1.00E-03		4.28E+09	3.00E-01	1.00E+00	1.54E-01	1.00E-02	3.00E-02
Nickel		1.00E-03		4.28E+09	5.00E-02	1.80E-01		5.00E-03	
Nitrate		1.00E-03		4.28E+09					
Orthophosphate									
Selenium		1.00E-03		4.28E+09	1.00E-01	5.00E-01		1.00E-01	
Silver		1.00E-03		4.28E+09	2.16E-05	1.00E+00		3.00E-03	
Tetraoxo-sulfate(1-)									
Thallium		1.00E-03		4.28E+09	1.00E-03	4.00E-03	0.00E+00	4.00E-02	4.00E-02
Uranium		1.00E-03		4.28E+09	6.31E-04	2.30E-02	9.20E-02	3.00E-04	1.00E+00
Vanadium		1.00E-03		4.28E+09	1.38E-03	5.50E-03	6.70E-02	2.50E-03	2.50E-03
Zinc		1.00E-03		4.28E+09	2.64E-01	9.90E-01		1.00E-01	
1,1,2-Trichloroethane		8.40E-03	3.52E+04	4.28E+09	5.33E-01	2.63E+00		2.50E-06	
1,1-Dichloroethene		8.90E-03	6.31E+03	4.28E+09	6.96E-01	3.43E+00		1.58E-06	
1,2-Dichloroethane		5.30E-03	2.13E+04	4.28E+09	1.04E+00	5.13E+00		7.91E-07	
2,4-Dinitrotoluene		3.80E-03		4.28E+09	5.33E-01	2.63E+00		2.50E-06	
2,6-Dinitrotoluene		2.50E-03		4.28E+09	7.95E-01	3.92E+00		1.25E-06	
2-Hexanone		4.60E-03		4.28E+09	1.19E+00	5.86E+00		6.28E-07	
2-Methylnaphthalene		1.52E-01		4.28E+09	4.21E-02	2.08E-01		1.99E-04	
Acenaphthene		2.47E-01		4.28E+09	2.47E-02	1.22E-01		4.99E-04	
Acenaphthylene		9.55E-02		4.28E+09	5.50E-02	2.72E-01		1.25E-04	
Anthracene		2.24E-01		4.28E+09	2.16E-02	1.07E-01		6.28E-04	
Benz(a)anthracene		8.10E-01		4.28E+09	3.81E-03	1.88E-02		1.25E-02	
Benzo(a)pyrene		1.20E+00		4.28E+09	2.23E-03	1.10E-02	5.44E-02	3.15E-02	1.73E+00
Benzo(b)fluoranthene		1.23E+00		4.28E+09	2.23E-03	1.10E-02		3.15E-02	
Benzo(ghi)perylene		1.82E+00		4.28E+09	1.14E-03	5.65E-03		9.95E-02	
Benzo(k)fluoranthene		6.00E-01		4.28E+09	8.76E-04	4.32E-03		1.58E-01	
Bis(2-ethylhexyl)phthalate		2.34E-02		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Bromodichloromethane		5.80E-03		4.28E+09	4.66E-01	2.30E+00		3.15E-06	
Butyl benzyl phthalate		7.14E-02		4.28E+09	1.11E-02	5.47E-02		1.99E-03	

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Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs

Analyte	Halflife (days)	Permeability constant (cm/hr)	Volatilization factor (m^3/kg)	Particulate emission factor (m^3/kg)	Soil to wet plant uptake factor (kg/kg)	Soil to dry plant uptake factor (kg/kg)	Uptake factor (invertebrates) (day/kg)	Uptake factor (deer & rabbit) (day/kg)	Uptake factor (quail) (day/kg)
Carbon tetrachloride		2.20E-02	1.90E+04	4.28E+09	1.83E-01	9.03E-01		1.58E-05	
Chloroform		8.90E-03	1.78E+04	4.28E+09	5.33E-01	2.63E+00		2.50E-06	
Chrysene		8.10E-01		4.28E+09	3.81E-03	1.88E-02		1.25E-02	
Di-n-butyl phthalate		1.15E-01		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Di-n-octylphthalate		2.69E+01		4.28E+09	3.55E-05	1.75E-04		3.96E+01	
Dibenz(a,h)anthracene		2.70E+00		4.28E+09	8.76E-04	4.32E-03		1.58E-01	
Dibromochloromethane		3.90E-03		4.28E+09	4.08E-01	2.01E+00		3.96E-06	
Fluoranthene		3.60E-01		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Fluorene		2.46E-01		4.28E+09	2.16E-02	1.07E-01		6.28E-04	
Indeno(1,2,3-cd)pyrene		1.90E+00		4.28E+09	1.14E-03	5.65E-03		9.95E-02	
Iodomethane									
Methylene chloride		4.50E-03	9.28E+03	4.28E+09	1.36E+00	6.70E+00		4.99E-07	
N-Nitroso-di-n-propylamine		2.80E-03		4.28E+09	1.19E+00	5.86E+00	4.85E-02	6.28E-07	6.00E-03
N-Nitrosodiphenylamine		1.95E-02		4.28E+09	1.23E-01	6.05E-01		3.15E-05	
Naphthalene		6.90E-02		4.28E+09	9.39E-02	4.63E-01		4.99E-05	
PCB-1254		3.46E-01		4.28E+09	2.55E-03	1.26E-02	1.22E+00	2.50E-02	2.44E+00
PCB-1260		1.07E+00		4.28E+09	5.87E-04	2.90E-03	1.22E+00	3.15E-01	2.44E+00
PCB-1262		3.46E-01		4.28E+09	2.55E-03	1.26E-02		2.50E-02	
Phenanthrene		2.70E-01		4.28E+09	1.65E-02	8.16E-02	4.48E-02	9.95E-04	2.66E-01
Polychlorinated biphenyl		3.46E-01		4.28E+09	2.55E-03	1.26E-02		2.50E-02	
Pyrene		3.24E-01		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Tetrachloroethene		3.70E-01	2.20E+04	4.28E+09	2.39E-01	1.18E+00		9.95E-06	
Toluene		4.50E-02	2.51E+04	4.28E+09	2.09E-01	1.03E+00		1.25E-05	
Trichloroethene		1.60E-02	1.89E+04	4.28E+09	3.12E-01	1.54E+00		6.28E-06	
Vinyl chloride		7.30E-03	8.63E+00	4.28E+09	1.19E+00	5.86E+00		6.28E-07	
cis-1,2-Dichloroethene		1.00E-02		4.28E+09	6.09E-01	3.00E+00		1.99E-06	
trans-1,2-Dichloroethene		1.07E-03		4.28E+09	4.06E+00	2.00E+01		7.55E-08	
Actinium-228	2.55E-01			4.28E+09	8.75E-04	3.50E-03		2.50E-05	
Alpha activity									
Americium-241	1.58E+05			4.28E+09	2.40E-05	1.20E-03		4.00E-05	
Beta activity									
Cesium-137	1.10E+04			4.28E+09	1.67E-02	2.10E-01		5.02E-02	
Lead-210	8.14E+03			4.28E+09	9.60E-03	2.15E-01	7.20E-02	5.80E-03	4.00E-04
Lead-212	4.42E-01			4.28E+09	7.60E-04	9.00E-02	7.20E-02	4.00E-04	4.00E-04
Lead-214	1.86E-02			4.28E+09	7.60E-04	9.00E-02	7.20E-02	4.00E-04	4.00E-04
Neptunium-237	7.81E+08			4.28E+09	3.51E-03	7.15E-02	1.00E+00	1.01E-03	1.01E-03
Plutonium-239	8.80E+06			4.28E+09	4.92E-06	3.40E-04	2.50E+00	1.00E-05	3.00E-03
Potassium-40	4.67E+11			4.28E+09	3.00E-01	3.00E+00		2.00E-02	
Technetium-99	7.77E+07			4.28E+09	2.08E+02	7.60E+01		1.00E-04	
Thorium-228	6.97E+02			4.28E+09	2.01E-02	4.00E-01	1.00E+00	5.18E-02	1.00E-04
Thorium-230	2.81E+07			4.28E+09	1.37E-04	1.10E-02	1.00E+00	1.00E-04	1.00E-04
Thorium-234	2.41E+01			4.28E+09	1.37E-04	1.10E-02	1.00E+00	1.00E-04	1.00E-04

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Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs

Analyte	Halflife (days)	Permeability constant (cm/hr)	Volatilization factor (m^3/kg)	Particulate emission factor (m^3/kg)	Soil to wet plant uptake factor (kg/kg)	Soil to dry plant uptake factor (kg/kg)	Uptake factor (invertebrates) (day/kg)	Uptake factor (deer & rabbit) (day/kg)	Uptake factor (quail) (day/kg)
Uranium-234	8.94E+07			4.28E+09	6.31E-04	2.30E-02	9.20E-02	3.00E-04	1.00E+00
Uranium-235	2.57E+11			4.28E+09	7.68E-04	3.40E-02	9.20E-02	4.00E-04	1.00E+00
Uranium-238	1.63E+12			4.28E+09	2.02E-03	3.90E-02	9.20E-02	4.20E-04	1.00E+00

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Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs

Analyte	Halflife (days)	Permeability constant (cm/hr)	Volatilization factor (m^3/kg)	Particulate emission factor (m^3/kg)	Soil to wet plant uptake factor (kg/kg)	Soil to dry plant uptake factor (kg/kg)	Uptake factor (invertebrates) (day/kg)	Uptake factor (deer & rabbit) (day/kg)	Uptake factor (quail) (day/kg)
Aluminum		1.00E-03		4.28E+09	1.00E-03	4.00E-03	5.44E-02	1.50E-03	1.50E-03
Antimony		1.00E-03		4.28E+09	1.00E-02	5.00E-02	1.00E+00	4.00E-05	4.00E-05
Arsenic		1.00E-03		4.28E+09	1.00E-02	4.00E-02	1.46E-01	2.00E-03	2.00E-03
Barium		1.00E-03		4.28E+09	3.00E-03	1.00E-01	5.76E-02	2.00E-04	9.00E-03
Beryllium		1.00E-03		4.28E+09	2.50E-03	1.00E-02	6.28E-01	1.00E-03	1.00E-03
Bromide									
Cadmium		1.00E-03		4.28E+09	1.38E-01	5.50E-01	7.36E-01	4.00E-04	8.00E-01
Chromium		1.00E-03		4.28E+09	1.00E-04	4.00E-02	7.84E-02	9.00E-03	9.00E-03
Cobalt		1.00E-03		4.28E+09	2.32E-02	5.40E-02		1.00E-04	
Copper		1.00E-03		4.28E+09	8.00E-02	8.00E-01		9.00E-03	
Iron		1.00E-03		4.28E+09	4.00E-04	1.00E-02	6.08E-02	2.00E-02	1.00E+00
Lead		1.00E-03		4.28E+09	7.60E-04	9.00E-02	7.20E-02	4.00E-04	4.00E-04
Manganese		1.00E-03		4.28E+09	6.88E-02	6.80E-01	6.40E-02	5.00E-04	5.00E-02
Mercury		1.00E-03		4.28E+09	3.00E-01	1.00E+00	1.54E-01	1.00E-02	3.00E-02
Nickel		1.00E-03		4.28E+09	5.00E-02	1.80E-01		5.00E-03	
Nitrate		1.00E-03		4.28E+09					
Orthophosphate									
Selenium		1.00E-03		4.28E+09	1.00E-01	5.00E-01		1.00E-01	
Silver		1.00E-03		4.28E+09	2.16E-05	1.00E+00		3.00E-03	
Tetraoxo-sulfate(1-)									
Thallium		1.00E-03		4.28E+09	1.00E-03	4.00E-03	0.00E+00	4.00E-02	4.00E-02
Uranium		1.00E-03		4.28E+09	6.31E-04	2.30E-02	9.20E-02	3.00E-04	1.00E+00
Vanadium		1.00E-03		4.28E+09	1.38E-03	5.50E-03	6.70E-02	2.50E-03	2.50E-03
Zinc		1.00E-03		4.28E+09	2.64E-01	9.90E-01		1.00E-01	
1,1,2-Trichloroethane		8.40E-03	3.52E+04	4.28E+09	5.33E-01	2.63E+00		2.50E-06	
1,1-Dichloroethene		8.90E-03	6.31E+03	4.28E+09	6.96E-01	3.43E+00		1.58E-06	
1,2-Dichloroethane		5.30E-03	2.13E+04	4.28E+09	1.04E+00	5.13E+00		7.91E-07	
2,4-Dinitrotoluene		3.80E-03		4.28E+09	5.33E-01	2.63E+00		2.50E-06	
2,6-Dinitrotoluene		2.50E-03		4.28E+09	7.95E-01	3.92E+00		1.25E-06	
2-Hexanone		4.60E-03		4.28E+09	1.19E+00	5.86E+00		6.28E-07	
2-Methylnaphthalene		1.52E-01		4.28E+09	4.21E-02	2.08E-01		1.99E-04	
Acenaphthene		2.47E-01		4.28E+09	2.47E-02	1.22E-01		4.99E-04	
Acenaphthylene		9.55E-02		4.28E+09	5.50E-02	2.72E-01		1.25E-04	
Anthracene		2.24E-01		4.28E+09	2.16E-02	1.07E-01		6.28E-04	
Benz(a)anthracene		8.10E-01		4.28E+09	3.81E-03	1.88E-02		1.25E-02	
Benzo(a)pyrene		1.20E+00		4.28E+09	2.23E-03	1.10E-02	5.44E-02	3.15E-02	1.73E+00
Benzo(b)fluoranthene		1.23E+00		4.28E+09	2.23E-03	1.10E-02		3.15E-02	
Benzo(ghi)perylene		1.82E+00		4.28E+09	1.14E-03	5.65E-03		9.95E-02	
Benzo(k)fluoranthene		6.00E-01		4.28E+09	8.76E-04	4.32E-03		1.58E-01	
Bis(2-ethylhexyl)phthalate		2.34E-02		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Bromodichloromethane		5.80E-03		4.28E+09	4.66E-01	2.30E+00		3.15E-06	
Butyl benzyl phthalate		7.14E-02		4.28E+09	1.11E-02	5.47E-02		1.99E-03	

530976

Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs

Analyte	Halflife (days)	Permeability constant (cm/hr)	Volatilization factor (m^3/kg)	Particulate emission factor (m^3/kg)	Soil to wet plant uptake factor (kg/kg)	Soil to dry plant uptake factor (kg/kg)	Uptake factor (invertebrates) (day/kg)	Uptake factor (deer & rabbit) (day/kg)	Uptake factor (quail) (day/kg)
Carbon tetrachloride		2.20E-02	1.90E+04	4.28E+09	1.83E-01	9.03E-01		1.58E-05	
Chloroform		8.90E-03	1.78E+04	4.28E+09	5.33E-01	2.63E+00		2.50E-06	
Chrysene		8.10E-01		4.28E+09	3.81E-03	1.88E-02		1.25E-02	
Di-n-butyl phthalate		1.15E-01		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Di-n-octylphthalate		2.69E+01		4.28E+09	3.55E-05	1.75E-04		3.96E+01	
Dibenz(a,h)anthracene		2.70E+00		4.28E+09	8.76E-04	4.32E-03		1.58E-01	
Dibromochloromethane		3.90E-03		4.28E+09	4.08E-01	2.01E+00		3.96E-06	
Fluoranthene		3.60E-01		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Fluorene		2.46E-01		4.28E+09	2.16E-02	1.07E-01		6.28E-04	
Indeno(1,2,3-cd)pyrene		1.90E+00		4.28E+09	1.14E-03	5.65E-03		9.95E-02	
Iodomethane									
Methylene chloride		4.50E-03	9.28E+03	4.28E+09	1.36E+00	6.70E+00		4.99E-07	
N-Nitroso-di-n-propylamine		2.80E-03		4.28E+09	1.19E+00	5.86E+00	4.85E-02	6.28E-07	6.00E-03
N-Nitrosodiphenylamine		1.95E-02		4.28E+09	1.23E-01	6.05E-01		3.15E-05	
Naphthalene		6.90E-02		4.28E+09	9.39E-02	4.63E-01		4.99E-05	
PCB-1254		3.46E-01		4.28E+09	2.55E-03	1.26E-02	1.22E+00	2.50E-02	2.44E+00
PCB-1260		1.07E+00		4.28E+09	5.87E-04	2.90E-03	1.22E+00	3.15E-01	2.44E+00
PCB-1262		3.46E-01		4.28E+09	2.55E-03	1.26E-02		2.50E-02	
Phenanthrene		2.70E-01		4.28E+09	1.65E-02	8.16E-02	4.48E-02	9.95E-04	2.66E-01
Polychlorinated biphenyl		3.46E-01		4.28E+09	2.55E-03	1.26E-02		2.50E-02	
Pyrene		3.24E-01		4.28E+09	1.11E-02	5.47E-02		1.99E-03	
Tetrachloroethene		3.70E-01	2.20E+04	4.28E+09	2.39E-01	1.18E+00		9.95E-06	
Toluene		4.50E-02	2.51E+04	4.28E+09	2.09E-01	1.03E+00		1.25E-05	
Trichloroethene		1.60E-02	1.89E+04	4.28E+09	3.12E-01	1.54E+00		6.28E-06	
Vinyl chloride		7.30E-03	8.63E+00	4.28E+09	1.19E+00	5.86E+00		6.28E-07	
cis-1,2-Dichloroethene		1.00E-02		4.28E+09	6.09E-01	3.00E+00		1.99E-06	
trans-1,2-Dichloroethene		1.07E-03		4.28E+09	4.06E+00	2.00E+01		7.55E-08	
Actinium-228	2.55E-01			4.28E+09	8.75E-04	3.50E-03		2.50E-05	
Alpha activity									
Americium-241	1.58E+05			4.28E+09	2.40E-05	1.20E-03		4.00E-05	
Beta activity									
Cesium-137	1.10E+04			4.28E+09	1.67E-02	2.10E-01		5.02E-02	
Lead-210	8.14E+03			4.28E+09	9.60E-03	2.15E-01	7.20E-02	5.80E-03	4.00E-04
Lead-212	4.42E-01			4.28E+09	7.60E-04	9.00E-02	7.20E-02	4.00E-04	4.00E-04
Lead-214	1.86E-02			4.28E+09	7.60E-04	9.00E-02	7.20E-02	4.00E-04	4.00E-04
Neptunium-237	7.81E+08			4.28E+09	3.51E-03	7.15E-02	1.00E+00	1.01E-03	1.01E-03
Plutonium-239	8.80E+06			4.28E+09	4.92E-06	3.40E-04	2.50E+00	1.00E-05	3.00E-03
Potassium-40	4.67E+11			4.28E+09	3.00E-01	3.00E+00		2.00E-02	
Technetium-99	7.77E+07			4.28E+09	2.08E+02	7.60E+01		1.00E-04	
Thorium-228	6.97E+02			4.28E+09	2.01E-02	4.00E-01	1.00E+00	5.18E-02	1.00E-04
Thorium-230	2.81E+07			4.28E+09	1.37E-04	1.10E-02	1.00E+00	1.00E-04	1.00E-04
Thorium-234	2.41E+01			4.28E+09	1.37E-04	1.10E-02	1.00E+00	1.00E-04	1.00E-04

Table 1.50. PGDP WAG 6 miscellaneous factors used to calculate chronic daily intakes of COPCs

Analyte	Halflife (days)	Permeability constant (cm/hr)	Volatilization factor (m^3/kg)	Particulate emission factor (m^3/kg)	Soil to wet plant uptake factor (kg/kg)	Soil to dry plant uptake factor (kg/kg)	Uptake factor (invertebrates) (day/kg)	Uptake factor (deer & rabbit) (day/kg)	Uptake factor (quail) (day/kg)
Uranium-234	8.94E+07			4.28E+09	6.31E-04	2.30E-02	9.20E-02	3.00E-04	1.00E+00
Uranium-235	2.57E+11			4.28E+09	7.68E-04	3.40E-02	9.20E-02	4.00E-04	1.00E+00
Uranium-238	1.63E+12			4.28E+09	2.02E-03	3.90E-02	9.20E-02	4.20E-04	1.00E+00

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530981

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=Central

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Di-n-butyl phthalate	3.25E-01		1.55E-04		7.32E-06

SECTOR=East

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Cadmium	1.51E-01		5.70E-06	1.96E-04	2.90E-07
Chromium	3.54E+00		1.88E-03	3.20E-05	8.82E-05
Thallium	3.13E-01		6.61E-04	1.11E-05	3.05E-05
Uranium	7.13E+00		1.20E-04	6.87E-03	5.58E-06
Acenaphthene	3.70E-02		1.22E-06		5.90E-08
Anthracene	6.20E-02		2.52E-06		1.21E-07
Benz(a)anthracene	1.90E-01		1.30E-04		6.06E-06
Benzo(a)pyrene	2.08E-01		3.52E-04	3.30E-04	1.63E-05
Benzo(b)fluoranthene	3.67E-01		6.20E-04		2.87E-05
Benzo(ghi)perylene	9.66E-02		5.10E-04		2.36E-05
Benzo(k)fluoranthene	2.27E-01		1.89E-03		8.74E-05
Chrysene	2.10E-01		1.44E-04		6.68E-06
Di-n-butyl phthalate	3.33E-01		3.90E-05		1.84E-06
Dibenz(a,h)anthracene	4.17E-02		3.48E-04		1.61E-05
Fluoranthene	5.69E-01		6.66E-05		3.14E-06
Fluorene	2.53E-02		1.03E-06		4.94E-08
Indeno(1,2,3-cd)pyrene	1.10E-01		5.79E-04		2.67E-05
PCB-1260	8.60E-01		1.42E-02	2.70E-03	6.58E-04
Phenanthrene	3.21E-01		1.98E-05	8.79E-05	9.43E-07
Polychlorinated biphenyl	2.63E+00		3.54E-03		1.64E-04
Pyrene	4.88E-01		5.71E-05		2.69E-06
Cesium-137	1.38E-01		5.70E-04		2.80E-05
Neptunium-237	1.05E-01		6.75E-06	1.46E-07	3.20E-07
Uranium-235	1.04E-01		2.41E-06	1.03E-04	1.13E-07
Uranium-238	2.38E+00		5.84E-05	2.38E-03	2.74E-06

SECTOR=Far East/Northeast

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum	3.61E+03		1.56E+00	4.26E-02	1.15E-01
Antimony	7.83E-01		9.98E-06	3.50E-07	7.51E-07

530982

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=Far East/Northeast
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Chromium	2.70E+00		7.82E-03	2.12E-04	5.86E-04
Uranium	6.83E+00		6.26E-04	5.73E-02	4.66E-05
Benz(a)anthracene	1.06E-02		3.94E-05		2.93E-06
Benzo(a)pyrene	1.05E-02		9.66E-05	1.45E-04	7.15E-06
Benzo(b)fluoranthene	1.05E-02		9.66E-05		7.15E-06
Benzo(k)fluoranthene	1.30E-02		5.93E-04		4.37E-05
Chrysene	1.06E-02		3.94E-05		2.93E-06
Fluoranthene	2.30E-02		1.47E-05		1.11E-06
PCB-1260	1.46E-03		1.32E-04	3.99E-05	9.72E-06
Phenanthrene	1.11E-02		3.72E-06	2.64E-05	2.83E-07
Polychlorinated biphenyl	1.47E-03		1.08E-05		8.00E-07
Pyrene	1.31E-02		8.35E-06		6.30E-07
Uranium-235	1.30E-01		1.64E-05	1.12E-03	1.23E-06
Uranium-238	2.28E+00		3.05E-04	1.98E-02	2.28E-05

SECTOR=Far North/Northwest

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Antimony	3.78E-01		4.82E-06	1.69E-07	3.62E-07
Beryllium	1.81E-01		5.28E-05	1.74E-06	3.91E-06
Cadmium	1.19E-01		2.45E-05	1.35E-03	1.99E-06
Chromium	7.07E+00		2.05E-02	5.56E-04	1.53E-03
Thallium	7.83E-02		9.01E-04	2.41E-05	6.65E-05
Uranium	3.60E+00		3.30E-04	3.02E-02	2.46E-05
Acenaphthene	1.42E-02		2.57E-06		1.98E-07
Anthracene	4.51E-02		9.99E-06		7.65E-07
Benz(a)anthracene	8.97E-02		3.35E-04		2.49E-05
Benzo(a)pyrene	7.34E-02		6.76E-04	1.01E-03	5.01E-05
Benzo(b)fluoranthene	6.82E-02		6.28E-04		4.65E-05
Benzo(ghi)perylene	3.39E-02		9.77E-04		7.21E-05
Benzo(k)fluoranthene	7.57E-02		3.44E-03		2.54E-04
Bis(2-ethylhexyl)phthalate	2.17E-02		1.38E-05		1.04E-06
Chrysene	9.23E-02		3.45E-04		2.56E-05
Di-n-butyl phthalate	1.08E-02		6.92E-06		5.22E-07
Fluoranthene	2.28E-01		1.45E-04		1.10E-05
Fluorene	1.41E-02		3.12E-06		2.39E-07
Indeno(1,2,3-cd)pyrene	3.66E-02		1.05E-03		7.77E-05
Phenanthrene	1.12E-01		3.77E-05	2.67E-04	2.87E-06

530983

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=Far North/Northwest
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Pyrene	1.06E-01		6.77E-05		5.11E-06
Neptunium-237	1.58E-01		5.52E-05	1.90E-06	4.19E-06
Uranium-235	5.22E-02		6.58E-06	4.50E-04	4.92E-07
Uranium-238	1.21E+00		1.61E-04	1.05E-02	1.21E-05

SECTOR=McNairy

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum		1.16E+03			
Arsenic		3.50E+00			
Barium		4.60E+00			
Beryllium		1.09E-01			
Cadmium		3.39E-02			
Chromium		3.17E+00			
Cobalt		9.73E-01			
Iron		2.82E+03			
Lead		1.48E+00			
Manganese		2.43E+01			
Nickel		1.64E+00			
Selenium		4.85E-01			
Thallium		7.77E-03			
Vanadium		1.32E+01			
Zinc		1.76E+02			
1,1-Dichloroethene		2.73E-01			
1,2-Dichloroethane		5.01E-02			
Bis(2-ethylhexyl)phthalate		6.95E-02			
Bromodichloromethane		1.57E-01			
Chloroform		2.16E-01			
Di-n-butyl phthalate		1.33E-02			
Di-n-octylphthalate		7.24E-02			
Dibromochloromethane		1.10E-01			
Tetrachloroethene		2.09E-01			
Trichloroethene		3.90E-01			
Vinyl chloride		7.77E-01			
cis-1,2-Dichloroethene		4.88E-01			
Actinium-228		1.88E-03			
Cesium-137		1.34E-01			
Lead-210		4.23E+00			

530984

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=McNairy (continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Lead-212		2.66E-03			
Lead-214		6.20E-05			
Neptunium-237		1.06E-01			
Plutonium-239		1.72E-02			
Potassium-40		1.61E+00			
Technetium-99		2.31E+03			
Thorium-228		5.68E-03			
Thorium-230		1.76E-02			
Thorium-234		1.75E+00			
Uranium-234		2.44E-02			
Uranium-235		1.50E-01			
Uranium-238		1.63E-02			

SECTOR=Northeast

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Chromium	5.02E+00		4.48E-03	7.62E-05	2.10E-04
Uranium	3.60E+00		1.02E-04	5.84E-03	4.74E-06
Zinc	3.68E+01		6.68E-01		3.46E-02
Acenaphthene	1.14E-02		6.34E-07		3.05E-08
Anthracene	2.25E-02		1.54E-06		7.39E-08
Benz(a)anthracene	9.23E-02		1.06E-04		4.94E-06
Benzo(a)pyrene	7.87E-02		2.23E-04	2.10E-04	1.04E-05
Benzo(b)fluoranthene	1.13E-01		3.20E-04		1.48E-05
Benzo(ghi)perylene	4.44E-02		3.94E-04		1.82E-05
Benzo(k)fluoranthene	7.30E-02		1.02E-03		4.73E-05
Chrysene	1.06E-01		1.21E-04		5.65E-06
Fluoranthene	2.33E-01		4.59E-05		2.16E-06
Indeno(1,2,3-cd)pyrene	4.70E-02		4.17E-04		1.93E-05
PCB-1260	1.12E-02		3.12E-04	5.91E-05	1.44E-05
Phenanthrene	1.30E-01		1.35E-05	5.98E-05	6.42E-07
Polychlorinated biphenyl	1.13E-02		2.56E-05		1.19E-06
Pyrene	1.84E-01		3.63E-05		1.71E-06
Uranium-235	5.22E-02		2.03E-06	8.68E-05	9.49E-08
Uranium-238	1.21E+00		4.97E-05	2.02E-03	2.33E-06

530985

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=Northwest

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Antimony	1.08E-01		4.98E-07	1.09E-08	2.34E-08
Beryllium	8.49E-02		8.94E-06	1.84E-07	4.14E-07
Cadmium	8.08E-02		6.00E-06	2.06E-04	3.05E-07
Chromium	5.27E+00		5.51E-03	9.36E-05	2.58E-04
Iron	3.18E+03		6.74E+00	5.77E+00	3.12E-01
Lead	3.39E+00		1.80E-04	3.00E-06	8.57E-06
Vanadium	4.32E+00		1.12E-03	1.93E-05	5.20E-05
Benz(a)anthracene	7.91E-02		1.07E-04		4.96E-06
Benzo(a)pyrene	1.05E-01		3.49E-04	3.27E-04	1.62E-05
Benzo(b)fluoranthene	1.39E-01		4.61E-04		2.14E-05
Benzo(k)fluoranthene	7.83E-02		1.28E-03		5.93E-05
Chrysene	7.65E-02		1.03E-04		4.80E-06
Fluoranthene	1.08E-01		2.50E-05		1.18E-06
Pyrene	1.08E-01		2.50E-05		1.18E-06
Uranium-238	8.38E-01		4.05E-05	1.65E-03	1.90E-06

SECTOR=RGA

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum		7.90E+02			
Antimony		1.85E-01			
Arsenic		3.87E-01			
Barium		5.48E+00			
Beryllium		1.32E-01			
Cadmium		2.64E-02			
Chromium		1.46E+00			
Cobalt		1.36E+00			
Copper		3.47E+00			
Iron		5.02E+03			
Lead		4.24E-01			
Manganese		4.71E+01			
Mercury		3.89E-03			
Nickel		2.90E+00			
Silver		1.64E-01			
Thallium		7.68E-03			
Uranium		4.74E-02			
Vanadium		2.00E+00			
Zinc		1.71E+01			
1,1-Dichloroethene		2.51E-01			

530986

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=RGA
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Bis(2-ethylhexyl)phthalate		1.33E-02			
Bromodichloromethane		1.18E-01			
Carbon tetrachloride		1.38E+00			
Chloroform		9.24E-01			
Di-n-butyl phthalate		1.33E-02			
Di-n-octylphthalate		1.29E-02			
N-Nitroso-di-n-propylamine		5.54E-02			
Tetrachloroethene		4.72E-01			
Toluene		7.35E-01			
Trichloroethene		1.97E+02			
Vinyl chloride		7.36E+00			
cis-1,2-Dichloroethene		1.28E+01			
trans-1,2-Dichloroethene		1.94E+00			
Americium-241		2.14E-02			
Cesium-137		1.19E-01			
Lead-210		1.00E+00			
Lead-214		3.79E-05			
Neptunium-237		1.77E-01			
Plutonium-239		5.91E-04			
Technetium-99		2.00E+04			
Thorium-228		3.51E-03			
Thorium-230		1.41E-02			
Uranium-234		2.15E-02			
Uranium-235		1.52E-03			
Uranium-238		2.16E-01			

SECTOR=Southeast

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum	3.71E+03		8.04E-01	1.38E-02	3.71E-02
Antimony	1.62E-01		1.04E-06	2.28E-08	4.89E-08
Cadmium	1.39E-01		1.44E-05	4.95E-04	7.31E-07
Chromium	6.14E+00		8.93E-03	1.52E-04	4.19E-04
Benz(a)anthracene	1.85E-02		3.47E-05		1.61E-06
Benzo(a)pyrene	2.10E-02		9.72E-05	9.11E-05	4.50E-06
Benzo(b)fluoranthene	1.84E-02		8.50E-05		3.94E-06
Benzo(k)fluoranthene	1.57E-02		3.58E-04		1.65E-05
Chrysene	2.11E-02		3.96E-05		1.84E-06

530987

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=Southeast
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Fluoranthene	4.07E-02		1.30E-05		6.16E-07
PCB-1262	9.98E-03		3.68E-05		1.71E-06
Phenanthrene	1.94E-02		3.27E-06	1.45E-05	1.56E-07
Polychlorinated biphenyl	9.98E-03		3.68E-05		1.71E-06
Pyrene	3.25E-02		1.04E-05		4.93E-07

SECTOR=Southwest

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Antimony	3.92E-01		3.76E-06	8.26E-08	1.77E-07
Beryllium	9.90E-02		2.17E-05	4.47E-07	1.01E-06
Cadmium	1.44E-01		2.23E-05	7.68E-04	1.13E-06
Chromium	5.53E+00		1.20E-02	2.05E-04	5.65E-04
Iron	4.43E+03		1.96E+01	1.68E+01	9.08E-01
Thallium	1.83E-01		1.59E-03	2.66E-05	7.33E-05
Uranium	1.31E+01		9.01E-04	5.17E-02	4.20E-05
Zinc	2.63E+01		1.17E+00		6.05E-02
Acenaphthene	2.82E-01		3.83E-05		1.84E-06
Acenaphthylene	6.93E-02		2.87E-06		1.42E-07
Anthracene	5.12E-01		8.55E-05		4.10E-06
Benz(a)anthracene	1.32E+00		3.72E-03		1.73E-04
Benzo(a)pyrene	1.27E+00		8.79E-03	8.24E-03	4.07E-04
Benzo(b)fluoranthene	1.34E+00		9.30E-03		4.31E-04
Benzo(ghi)perylene	6.18E-01		1.34E-02		6.18E-04
Benzo(k)fluoranthene	8.81E-01		3.01E-02		1.39E-03
Bis(2-ethylhexyl)phthalate	2.17E-02		1.04E-05		4.92E-07
Chrysene	1.19E+00		3.35E-03		1.56E-04
Dibenz(a,h)anthracene	3.39E-01		1.16E-02		5.36E-04
Fluoranthene	2.96E+00		1.42E-03		6.70E-05
Fluorene	3.38E-01		5.64E-05		2.71E-06
Indeno(1,2,3-cd)pyrene	4.71E-01		1.02E-02		4.72E-04
Naphthalene	8.49E-04		1.66E-08		8.37E-10
PCB-1260	9.90E-03		6.74E-04	1.27E-04	3.11E-05
Phenanthrene	1.58E+00		4.00E-04	1.78E-03	1.91E-05
Polychlorinated biphenyl	9.98E-03		5.52E-05		2.56E-06
Pyrene	2.49E+00		1.20E-03		5.65E-05
Neptunium-237	7.91E-02		2.08E-05	4.48E-07	9.86E-07
Uranium-235	1.56E-01		1.49E-05	6.36E-04	6.95E-07

530988

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=Southwest (continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Uranium-238	4.38E+00		4.40E-04	1.79E-02	2.07E-05

SECTOR=West

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum	1.90E+03		2.37E-01	4.05E-03	1.09E-02
Antimony	2.68E-01		9.86E-07	2.17E-08	4.64E-08
Arsenic	3.56E+00		6.37E-04	1.11E-05	2.99E-05
Beryllium	8.26E-02		6.96E-06	1.43E-07	3.22E-07
Cadmium	3.60E-01		2.14E-05	7.36E-04	1.09E-06
Chromium	3.27E+00		2.73E-03	4.64E-05	1.28E-04
Cobalt	1.34E+00		1.19E-05		5.62E-07
Uranium	9.46E+00		2.50E-04	1.44E-02	1.17E-05
Zinc	1.57E+01		2.68E-01		1.38E-02
2-Methylnaphthalene	2.72E-01		6.37E-06		3.13E-07
Acenaphthene	9.58E-01		5.00E-05		2.41E-06
Anthracene	4.11E+00		2.63E-04		1.26E-05
Benz(a)anthracene	5.31E+00		5.73E-03		2.66E-04
Benzo(a)pyrene	4.75E+00		1.26E-02	1.18E-02	5.86E-04
Benzo(b)fluoranthene	5.91E+00		1.57E-02		7.29E-04
Benzo(ghi)perylene	9.66E-01		8.03E-03		3.71E-04
Benzo(k)fluoranthene	5.79E+00		7.61E-02		3.51E-03
Bis(2-ethylhexyl)phthalate	2.71E-02		5.00E-06		2.36E-07
Chrysene	5.72E+00		6.17E-03		2.87E-04
Di-n-butyl phthalate	5.56E-02		1.02E-05		4.83E-07
Dibenz(a,h)anthracene	9.79E-01		1.29E-02		5.94E-04
Fluoranthene	1.22E+01		2.26E-03		1.06E-04
Fluorene	8.80E-01		5.64E-05		2.71E-06
Indeno(1,2,3-cd)pyrene	9.92E-01		8.25E-03		3.81E-04
Naphthalene	5.14E-01		3.85E-06		1.94E-07
PCB-1254	2.52E-01		5.35E-04	1.26E-03	2.48E-05
PCB-1260	4.17E-03		1.09E-04	2.06E-05	5.03E-06
Phenanthrene	9.68E+00		9.41E-04	4.18E-03	4.48E-05
Polychlorinated biphenyl	1.47E-01		3.12E-04		1.45E-05
Pyrene	1.07E+01		1.97E-03		9.31E-05
Cesium-137	1.86E-01		1.21E-03		5.92E-05
Neptunium-237	4.01E-01		4.04E-05	8.72E-07	1.92E-06
Uranium-234	2.47E+00		6.54E-05	3.75E-03	3.05E-06

539989

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=West
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Uranium-235	1.72E-01		6.27E-06	2.69E-04	2.94E-07
Uranium-238	3.16E+00		1.22E-04	4.97E-03	5.72E-06

530990

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=McNairy

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum		1.16E+03			
Arsenic		3.50E+00			
Barium		4.60E+00			
Beryllium		1.09E-01			
Cadmium		3.39E-02			
Chromium		3.17E+00			
Cobalt		9.73E-01			
Iron		2.82E+03			
Lead		1.48E+00			
Manganese		2.43E+01			
Nickel		1.64E+00			
Selenium		4.85E-01			
Thallium		7.77E-03			
Vanadium		1.32E+01			
Zinc		1.76E+02			
1,1-Dichloroethene		2.73E-01			
1,2-Dichloroethane		5.01E-02			
Bis(2-ethylhexyl)phthalate		6.95E-02			
Bromodichloromethane		1.57E-01			
Chloroform		2.16E-01			
Di-n-butyl phthalate		1.33E-02			
Di-n-octylphthalate		7.24E-02			
Dibromochloromethane		1.10E-01			
Tetrachloroethene		2.09E-01			
Trichloroethene		3.90E-01			
Vinyl chloride		7.77E-01			
cis-1,2-Dichloroethene		4.88E-01			
Actinium-228		1.88E-03			
Cesium-137		1.34E-01			
Lead-210		4.23E+00			
Lead-212		2.66E-03			
Lead-214		6.20E-05			
Neptunium-237		1.06E-01			
Plutonium-239		1.72E-02			
Potassium-40		1.61E+00			
Technetium-99		2.31E+03			
Thorium-228		5.68E-03			
Thorium-230		1.76E-02			
Thorium-234		1.75E+00			
Uranium-234		2.44E-02			
Uranium-235		1.50E-01			
Uranium-238		1.63E-02			

530991

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=RGA

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum		7.90E+02			
Antimony		1.85E-01			
Arsenic		3.87E-01			
Barium		5.48E+00			
Beryllium		1.32E-01			
Cadmium		2.64E-02			
Chromium		1.46E+00			
Cobalt		1.36E+00			
Copper		3.47E+00			
Iron		5.02E+03			
Lead		4.24E-01			
Manganese		4.71E+01			
Mercury		3.89E-03			
Nickel		2.90E+00			
Silver		1.64E-01			
Thallium		7.68E-03			
Uranium		4.74E-02			
Vanadium		2.00E+00			
Zinc		1.71E+01			
1,1-Dichloroethene		2.51E-01			
Bis(2-ethylhexyl)phthalate		1.33E-02			
Bromodichloromethane		1.18E-01			
Carbon tetrachloride		1.38E+00			
Chloroform		9.24E-01			
Di-n-butyl phthalate		1.33E-02			
Di-n-octylphthalate		1.29E-02			
N-Nitroso-di-n-propylamine		5.54E-02			
Tetrachloroethene		4.72E-01			
Toluene		7.35E-01			
Trichloroethene		1.97E+02			
Vinyl chloride		7.36E+00			
cis-1,2-Dichloroethene		1.28E+01			
trans-1,2-Dichloroethene		1.94E+00			
Americium-241		2.14E-02			
Cesium-137		1.19E-01			
Lead-210		1.00E+00			
Lead-214		3.79E-05			
Neptunium-237		1.77E-01			
Plutonium-239		5.91E-04			
Technetium-99		2.00E+04			
Thorium-228		3.51E-03			
Thorium-230		1.41E-02			

530992

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=RGA
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Uranium-234		2.15E-02			
Uranium-235		1.52E-03			
Uranium-238		2.16E-01			

SECTOR=WAG 6

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
Aluminum	1.55E+03		6.67E-01	4.88E-02	8.56E-01
Antimony	3.15E-01		4.02E-06	3.78E-07	5.26E-06
Arsenic	1.44E+00		8.93E-04	6.64E-05	1.16E-03
Beryllium	7.58E-02		2.21E-05	1.95E-06	2.84E-05
Cadmium	1.76E-01		3.63E-05	5.34E-03	5.12E-05
Chromium	3.08E+00		8.92E-03	6.49E-04	1.16E-02
Cobalt	1.15E+00		3.52E-05		4.62E-05
Iron	2.84E+03		1.67E+01	6.11E+01	2.15E+01
Lead	2.08E+00		3.05E-04	2.18E-05	4.04E-04
Thallium	1.78E-01		2.05E-03	1.47E-04	2.63E-03
Uranium	6.88E+00		6.30E-04	1.55E-01	8.16E-04
Vanadium	3.73E+00		2.69E-03	1.98E-04	3.45E-03
Zinc	1.34E+01		7.92E-01		1.14E+00
2-Methylnaphthalene	1.62E-01		1.31E-05		1.79E-05
Acenaphthene	3.56E-01		6.42E-05		8.59E-05
Acenaphthylene	6.93E-02		3.82E-06		5.25E-06
Anthracene	6.81E-01		1.51E-04		2.01E-04
Benz(a)anthracene	9.99E-01		3.73E-03		4.82E-03
Benzo(a)pyrene	9.72E-01		8.96E-03	3.59E-02	1.15E-02
Benzo(b)fluoranthene	1.14E+00		1.05E-02		1.36E-02
Benzo(ghi)perylene	5.53E-01		1.59E-02		2.04E-02
Benzo(k)fluoranthene	9.21E-01		4.19E-02		5.37E-02
Bis(2-ethylhexyl)phthalate	2.71E-02		1.73E-05		2.27E-05
Chrysene	1.06E+00		3.94E-03		5.09E-03
Di-n-butyl phthalate	2.02E-01		1.29E-04		1.69E-04
Dibenz(a,h)anthracene	2.87E-01		1.30E-02		1.67E-02
Fluoranthene	2.06E+00		1.31E-03		1.72E-03
Fluorene	2.68E-01		5.94E-05		7.92E-05
Indeno(1,2,3-cd)pyrene	5.23E-01		1.51E-02		1.93E-02
Naphthalene	2.28E-01		5.90E-06		8.28E-06
PCB-1254	4.45E-02		3.27E-04	3.29E-03	4.21E-04

Table 1.51. PGDP WAG 6 representative concentrations and activities of COPCs in vegetables, deer, rabbit, and quail

SECTOR=WAG 6
(continued)

Analyte	Soil vegetable conc. (mg/kg or pCi/g)	Ground water veg. conc. (mg/L or pCi/L)	Soil rabbit conc. (mg/kg or pCi/g)	Soil quail conc. (mg/kg or pCi/g)	Soil deer conc. (mg/kg or pCi/g)
PCB-1260	2.43E-02		2.19E-03	1.78E-03	2.81E-03
PCB-1262	9.98E-03		7.33E-05		9.44E-05
Phenanthrene	1.47E+00		4.94E-04	9.39E-03	6.54E-04
Polychlorinated biphenyl	7.86E-02		5.78E-04		7.44E-04
Pyrene	1.82E+00		1.16E-03		1.52E-03
Cesium-137	1.03E-01		2.33E-03		3.17E-03
Neptunium-237	1.68E-01		5.85E-05	5.40E-06	7.72E-05
Uranium-234	1.71E+00		1.57E-04	3.84E-02	2.03E-04
Uranium-235	1.01E-01		1.28E-05	2.34E-03	1.66E-05
Uranium-238	2.30E+00		3.07E-04	5.35E-02	4.01E-04

Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	2.90E-03	1.25E-02	2.70E-07
Antimony	5.71E-07	2.46E-06	5.34E-11
Arsenic	2.61E-06	1.12E-05	2.44E-10
Beryllium	1.41E-07	6.08E-07	1.32E-11
Cadmium	2.17E-07	1.87E-07	2.03E-11
Chromium	5.80E-06	2.49E-05	5.41E-10
Cobalt	1.98E-06	8.53E-06	1.85E-10
Iron	5.34E-03	2.29E-02	4.98E-07
Lead	3.90E-06	1.68E-05	3.65E-10
Thallium	3.34E-07	1.43E-06	3.11E-11
Uranium	1.29E-05	5.55E-05	1.21E-09
Vanadium	6.97E-06	3.00E-05	6.51E-10
Zinc	1.25E-05	5.40E-05	1.17E-09
2-Methylnaphthalene	2.62E-07	2.26E-06	2.45E-11
Acenaphthene	6.11E-07	5.25E-06	5.70E-11
Acenaphthylene	1.08E-07	9.26E-07	1.00E-11
Anthracene	1.18E-06	1.02E-05	1.11E-10
Benz(a)anthracene	1.85E-06	1.59E-05	1.73E-10
Benzo(a)pyrene	1.81E-06	1.56E-05	1.69E-10
Benzo(b)fluoranthene	2.13E-06	1.83E-05	1.99E-10
Benzo(ghi)perylene	1.04E-06	8.90E-06	9.67E-11
Benzo(k)fluoranthene	1.73E-06	1.49E-05	1.61E-10
Bis(2-ethylhexyl)phthalate	4.89E-08	4.21E-07	4.57E-12
Chrysene	1.96E-06	1.68E-05	1.83E-10
Di-n-butyl phthalate	3.65E-07	3.13E-06	3.40E-11
Dibenz(a,h)anthracene	5.38E-07	4.62E-06	5.02E-11
Fluoranthene	3.71E-06	3.19E-05	3.47E-10
Fluorene	4.66E-07	4.00E-06	4.35E-11
Indeno(1,2,3-cd)pyrene	9.81E-07	8.43E-06	9.15E-11
Naphthalene	3.15E-07	2.71E-06	2.94E-11
PCB-1254	8.30E-08	4.28E-07	7.75E-12
PCB-1260	4.56E-08	2.35E-07	4.26E-12
PCB-1262	1.86E-08	9.59E-08	1.74E-12
Phenanthrene	2.60E-06	2.24E-05	2.43E-10
Polychlorinated biphenyl	1.47E-07	7.56E-07	1.37E-11
Pyrene	3.28E-06	2.82E-05	3.06E-10
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Di-n-butyl phthalate	5.87E-07	5.05E-06	5.48E-11
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Cadmium	1.86E-07	1.60E-07	1.74E-11
Chromium	6.66E-06	2.86E-05	6.22E-10
Thallium	5.87E-07	2.52E-06	5.48E-11
Uranium	1.34E-05	5.75E-05	1.25E-09
Acenaphthene	6.36E-08	5.47E-07	5.94E-12
Anthracene	1.08E-07	9.26E-07	1.00E-11
Benz(a)anthracene	3.53E-07	3.04E-06	3.30E-11
Benzo(a)pyrene	3.89E-07	3.34E-06	3.63E-11
Benzo(b)fluoranthene	6.85E-07	5.89E-06	6.39E-11
Benzo(ghi)perylene	1.81E-07	1.56E-06	1.69E-11
Benzo(k)fluoranthene	4.26E-07	3.66E-06	3.97E-11
Chrysene	3.89E-07	3.34E-06	3.63E-11
Di-n-butyl phthalate	6.01E-07	5.17E-06	5.61E-11
Dibenz(a,h)anthracene	7.83E-08	6.73E-07	7.31E-12
Fluoranthene	1.03E-06	8.84E-06	9.59E-11
Fluorene	4.40E-08	3.79E-07	4.11E-12
Indeno(1,2,3-cd)pyrene	2.05E-07	1.77E-06	1.92E-11
PCB-1260	1.61E-06	8.33E-06	1.51E-10
Phenanthrene	5.68E-07	4.88E-06	5.30E-11
Polychlorinated biphenyl	4.89E-06	2.52E-05	4.57E-10
Pyrene	8.81E-07	7.57E-06	8.22E-11
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	6.77E-03	2.91E-02	6.32E-07
Antimony	1.42E-06	6.10E-06	1.32E-10
Chromium	5.08E-06	2.19E-05	4.75E-10
Uranium	1.28E-05	5.51E-05	1.20E-09
Benz(a)anthracene	1.96E-08	1.68E-07	1.83E-12
Benzo(a)pyrene	1.96E-08	1.68E-07	1.83E-12
Benzo(b)fluoranthene	1.96E-08	1.68E-07	1.83E-12
Benzo(k)fluoranthene	2.45E-08	2.10E-07	2.28E-12
Chrysene	1.96E-08	1.68E-07	1.83E-12
Fluoranthene	4.15E-08	3.57E-07	3.88E-12
PCB-1260	2.74E-09	1.41E-08	2.56E-13
Phenanthrene	1.96E-08	1.68E-07	1.83E-12

Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Polychlorinated biphenyl	2.74E-09	1.41E-08	2.56E-13
Pyrene	2.36E-08	2.03E-07	2.21E-12
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Antimony	6.85E-07	2.95E-06	6.39E-11
Beryllium	3.38E-07	1.45E-06	3.15E-11
Cadmium	1.47E-07	1.26E-07	1.37E-11
Chromium	1.33E-05	5.72E-05	1.24E-09
Thallium	1.47E-07	6.31E-07	1.37E-11
Uranium	6.76E-06	2.91E-05	6.31E-10
Acenaphthene	2.45E-08	2.10E-07	2.28E-12
Anthracene	7.83E-08	6.73E-07	7.31E-12
Benz(a)anthracene	1.66E-07	1.43E-06	1.55E-11
Benzo(a)pyrene	1.37E-07	1.18E-06	1.28E-11
Benzo(b)fluoranthene	1.27E-07	1.09E-06	1.19E-11
Benzo(ghi)perylene	6.36E-08	5.47E-07	5.94E-12
Benzo(k)fluoranthene	1.42E-07	1.22E-06	1.32E-11
Bis(2-ethylhexyl)phthalate	3.91E-08	3.37E-07	3.65E-12
Chrysene	1.71E-07	1.47E-06	1.60E-11
Di-n-butyl phthalate	1.96E-08	1.68E-07	1.83E-12
Fluoranthene	4.11E-07	3.53E-06	3.84E-11
Fluorene	2.45E-08	2.10E-07	2.28E-12
Indeno(1,2,3-cd)pyrene	6.85E-08	5.89E-07	6.39E-12
Phenanthrene	1.98E-07	1.70E-06	1.85E-11
Pyrene	1.92E-07	1.65E-06	1.79E-11
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Chromium	9.44E-06	4.06E-05	8.82E-10
Uranium	6.76E-06	2.91E-05	6.31E-10
Zinc	3.43E-05	1.48E-04	3.21E-09
Acenaphthene	1.96E-08	1.68E-07	1.83E-12
Anthracene	3.91E-08	3.37E-07	3.65E-12
Benz(a)anthracene	1.71E-07	1.47E-06	1.60E-11
Benzo(a)pyrene	1.47E-07	1.26E-06	1.37E-11
Benzo(b)fluoranthene	2.10E-07	1.81E-06	1.96E-11
Benzo(ghi)perylene	8.32E-08	7.15E-07	7.76E-12

Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Benzo(k)fluoranthene	1.37E-07	1.18E-06	1.28E-11
Chrysene	1.96E-07	1.68E-06	1.83E-11
Fluoranthene	4.21E-07	3.62E-06	3.93E-11
Indeno(1,2,3-cd)pyrene	8.81E-08	7.57E-07	8.22E-12
PCB-1260	2.10E-08	1.09E-07	1.96E-12
Phenanthrene	2.30E-07	1.98E-06	2.15E-11
Polychlorinated biphenyl	2.10E-08	1.09E-07	1.96E-12
Pyrene	3.33E-07	2.86E-06	3.11E-11
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Antimony	1.96E-07	8.43E-07	1.83E-11
Beryllium	1.58E-07	6.80E-07	1.48E-11
Cadmium	9.94E-08	8.55E-08	9.28E-12
Chromium	9.91E-06	4.26E-05	9.25E-10
Iron	5.97E-03	2.57E-02	5.57E-07
Lead	6.37E-06	2.74E-05	5.94E-10
Vanadium	8.08E-06	3.47E-05	7.54E-10
Benz(a)anthracene	1.47E-07	1.26E-06	1.37E-11
Benzo(a)pyrene	1.96E-07	1.68E-06	1.83E-11
Benzo(b)fluoranthene	2.59E-07	2.22E-06	2.41E-11
Benzo(k)fluoranthene	1.47E-07	1.26E-06	1.37E-11
Chrysene	1.42E-07	1.22E-06	1.32E-11
Fluoranthene	1.96E-07	1.68E-06	1.83E-11
Pyrene	1.96E-07	1.68E-06	1.83E-11
Alpha activity			
Beta activity			
Uranium-238			

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	6.95E-03	2.99E-02	6.49E-07
Antimony	2.94E-07	1.26E-06	2.74E-11
Cadmium	1.71E-07	1.47E-07	1.60E-11
Chromium	1.15E-05	4.96E-05	1.08E-09
Benz(a)anthracene	3.42E-08	2.95E-07	3.20E-12
Benzo(a)pyrene	3.91E-08	3.37E-07	3.65E-12
Benzo(b)fluoranthene	3.42E-08	2.95E-07	3.20E-12
Benzo(k)fluoranthene	2.94E-08	2.52E-07	2.74E-12
Chrysene	3.91E-08	3.37E-07	3.65E-12
Fluoranthene	7.34E-08	6.31E-07	6.85E-12
PCB-1262	1.86E-08	9.59E-08	1.74E-12
Phenanthrene	3.42E-08	2.95E-07	3.20E-12

Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Polychlorinated biphenyl	1.86E-08	9.59E-08	1.74E-12
Pyrene	5.87E-08	5.05E-07	5.48E-12
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Antimony	7.10E-07	3.05E-06	6.63E-11
Beryllium	1.84E-07	7.93E-07	1.72E-11
Cadmium	1.77E-07	1.53E-07	1.66E-11
Chromium	1.04E-05	4.47E-05	9.70E-10
Iron	8.32E-03	3.58E-02	7.77E-07
Thallium	3.44E-07	1.48E-06	3.21E-11
Uranium	2.45E-05	1.05E-04	2.29E-09
Zinc	2.46E-05	1.06E-04	2.30E-09
Acenaphthene	4.84E-07	4.16E-06	4.52E-11
Acenaphthylene	1.08E-07	9.26E-07	1.00E-11
Anthracene	8.90E-07	7.65E-06	8.31E-11
Benz(a)anthracene	2.45E-06	2.11E-05	2.29E-10
Benzo(a)pyrene	2.37E-06	2.03E-05	2.21E-10
Benzo(b)fluoranthene	2.50E-06	2.15E-05	2.34E-10
Benzo(ghi)perylene	1.16E-06	9.95E-06	1.08E-10
Benzo(k)fluoranthene	1.65E-06	1.42E-05	1.54E-10
Bis(2-ethylhexyl)phthalate	3.91E-08	3.37E-07	3.65E-12
Chrysene	2.21E-06	1.90E-05	2.06E-10
Dibenz(a,h)anthracene	6.36E-07	5.47E-06	5.94E-11
Fluoranthene	5.34E-06	4.59E-05	4.98E-10
Fluorene	5.87E-07	5.05E-06	5.48E-11
Indeno(1,2,3-cd)pyrene	8.82E-07	7.59E-06	8.24E-11
Naphthalene	1.17E-09	1.01E-08	1.10E-13
PCB-1260	1.86E-08	9.59E-08	1.74E-12
Phenanthrene	2.80E-06	2.41E-05	2.61E-10
Polychlorinated biphenyl	1.86E-08	9.59E-08	1.74E-12
Pyrene	4.50E-06	3.87E-05	4.20E-10
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Aluminum	3.56E-03	1.53E-02	3.32E-07
Antimony	4.85E-07	2.09E-06	4.53E-11
Arsenic	6.45E-06	2.78E-05	6.03E-10
Beryllium	1.54E-07	6.62E-07	1.44E-11
Cadmium	4.43E-07	3.81E-07	4.13E-11

Table 1.52. Noncarcinogenic chronic daily intakes for current industrial worker

-- SECTOR=West MEDIA=Surface soil --
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates
Chromium	6.14E-06	2.64E-05	5.73E-10
Cobalt	2.32E-06	9.98E-06	2.17E-10
Uranium	1.78E-05	7.63E-05	1.66E-09
Zinc	1.47E-05	6.31E-05	1.37E-09
2-Methylnaphthalene	4.40E-07	3.79E-06	4.11E-11
Acenaphthene	1.65E-06	1.42E-05	1.54E-10
Anthracene	7.13E-06	6.13E-05	6.66E-10
Benz(a)anthracene	9.85E-06	8.47E-05	9.19E-10
Benzo(a)pyrene	8.86E-06	7.62E-05	8.27E-10
Benzo(b)fluoranthene	1.10E-05	9.48E-05	1.03E-09
Benzo(ghi)perylene	1.81E-06	1.56E-05	1.69E-10
Benzo(k)fluoranthene	1.09E-05	9.35E-05	1.01E-09
Bis(2-ethylhexyl)phthalate	4.89E-08	4.21E-07	4.57E-12
Chrysene	1.06E-05	9.12E-05	9.91E-10
Di-n-butyl phthalate	1.00E-07	8.63E-07	9.36E-12
Dibenz(a,h)anthracene	1.84E-06	1.58E-05	1.71E-10
Fluoranthene	2.21E-05	1.90E-04	2.06E-09
Fluorene	1.53E-06	1.32E-05	1.43E-10
Indeno(1,2,3-cd)pyrene	1.86E-06	1.60E-05	1.74E-10
Naphthalene	7.11E-07	6.11E-06	6.63E-11
PCB-1254	4.70E-07	2.42E-06	4.38E-11
PCB-1260	7.83E-09	4.04E-08	7.31E-13
Phenanthrene	1.71E-05	1.47E-04	1.60E-09
Polychlorinated biphenyl	2.74E-07	1.42E-06	2.56E-11
Pyrene	1.93E-05	1.66E-04	1.80E-09
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.53. Carcinogenic chronic daily intakes for current industrial worker

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	1.03E-03	4.45E-03	9.66E-08	
Antimony	2.04E-07	8.78E-07	1.91E-11	
Arsenic	9.33E-07	4.01E-06	8.71E-11	
Beryllium	5.05E-08	2.17E-07	4.71E-12	
Cadmium	7.75E-08	6.67E-08	7.24E-12	
Chromium	2.07E-06	8.90E-06	1.93E-10	
Cobalt	7.08E-07	3.05E-06	6.61E-11	
Iron	1.91E-03	8.19E-03	1.78E-07	
Lead	1.39E-06	6.00E-06	1.30E-10	
Thallium	1.19E-07	5.12E-07	1.11E-11	
Uranium	4.61E-06	1.98E-05	4.31E-10	
Vanadium	2.49E-06	1.07E-05	2.33E-10	
Zinc	4.48E-06	1.93E-05	4.18E-10	
2-Methylnaphthalene	9.37E-08	8.06E-07	8.75E-12	
Acenaphthene	2.18E-07	1.88E-06	2.04E-11	
Acenaphthylene	3.84E-08	3.31E-07	3.59E-12	
Anthracene	4.23E-07	3.64E-06	3.95E-11	
Benz(a)anthracene	6.62E-07	5.69E-06	6.18E-11	
Benzo(a)pyrene	6.48E-07	5.57E-06	6.05E-11	
Benzo(b)fluoranthene	7.61E-07	6.55E-06	7.11E-11	
Benzo(ghi)perylene	3.70E-07	3.18E-06	3.45E-11	
Benzo(k)fluoranthene	6.17E-07	5.31E-06	5.76E-11	
Bis(2-ethylhexyl)phthalate	1.75E-08	1.50E-07	1.63E-12	
Chrysene	6.99E-07	6.01E-06	6.52E-11	
Di-n-butyl phthalate	1.30E-07	1.12E-06	1.22E-11	
Dibenz(a,h)anthracene	1.92E-07	1.65E-06	1.79E-11	
Fluoranthene	1.33E-06	1.14E-05	1.24E-10	
Fluorene	1.66E-07	1.43E-06	1.55E-11	
Indeno(1,2,3-cd)pyrene	3.50E-07	3.01E-06	3.27E-11	
Naphthalene	1.12E-07	9.67E-07	1.05E-11	
PCB-1254	2.96E-08	1.53E-07	2.77E-12	
PCB-1260	1.63E-08	8.40E-08	1.52E-12	
PCB-1262	6.64E-09	3.43E-08	6.20E-13	
Phenanthrene	9.28E-07	7.98E-06	8.67E-11	
Polychlorinated biphenyl	5.23E-08	2.70E-07	4.89E-12	
Pyrene	1.17E-06	1.01E-05	1.09E-10	
Alpha activity	6.81E+03			9.95E+01
Beta activity	1.50E+04			2.19E+02
Cesium-137	1.17E+02		1.09E-02	1.71E+00
Neptunium-237	1.99E+02		1.86E-02	2.90E+00
Uranium-234	2.05E+03		1.91E-01	3.00E+01
Uranium-235	1.21E+02		1.13E-02	1.77E+00
Uranium-238	2.74E+03		2.56E-01	4.01E+01

Table 1.53. Carcinogenic chronic daily intakes for current industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Di-n-butyl phthalate	2.10E-07	1.80E-06	1.96E-11	
Alpha activity	3.24E+03			4.74E+01
Beta activity	8.37E+03			1.22E+02

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Cadmium	6.64E-08	5.71E-08	6.20E-12	
Chromium	2.38E-06	1.02E-05	2.22E-10	
Thallium	2.10E-07	9.02E-07	1.96E-11	
Uranium	4.78E-06	2.05E-05	4.46E-10	
Acenaphthene	2.27E-08	1.95E-07	2.12E-12	
Anthracene	3.84E-08	3.31E-07	3.59E-12	
Benz(a)anthracene	1.26E-07	1.08E-06	1.18E-11	
Benzo(a)pyrene	1.39E-07	1.19E-06	1.30E-11	
Benzo(b)fluoranthene	2.45E-07	2.10E-06	2.28E-11	
Benzo(ghi)perylene	6.46E-08	5.56E-07	6.04E-12	
Benzo(k)fluoranthene	1.52E-07	1.31E-06	1.42E-11	
Chrysene	1.39E-07	1.19E-06	1.30E-11	
Di-n-butyl phthalate	2.15E-07	1.85E-06	2.00E-11	
Dibenz(a,h)anthracene	2.80E-08	2.40E-07	2.61E-12	
Fluoranthene	3.67E-07	3.16E-06	3.43E-11	
Fluorene	1.57E-08	1.35E-07	1.47E-12	
Indeno(1,2,3-cd)pyrene	7.34E-08	6.31E-07	6.85E-12	
PCB-1260	5.77E-07	2.98E-06	5.38E-11	
Phenanthrene	2.03E-07	1.74E-06	1.89E-11	
Polychlorinated biphenyl	1.75E-06	9.02E-06	1.63E-10	
Pyrene	3.15E-07	2.70E-06	2.94E-11	
Alpha activity	1.04E+04			1.52E+02
Beta activity	1.34E+04			1.95E+02
Cesium-137	1.56E+02		1.46E-02	2.28E+00
Neptunium-237	1.25E+02		1.17E-02	1.83E+00
Uranium-235	1.25E+02		1.17E-02	1.83E+00
Uranium-238	2.84E+03		2.65E-01	4.16E+01

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	2.42E-03	1.04E-02	2.26E-07	
Antimony	5.07E-07	2.18E-06	4.73E-11	
Chromium	1.82E-06	7.81E-06	1.70E-10	
Uranium	4.58E-06	1.97E-05	4.27E-10	
Benz(a)anthracene	6.99E-09	6.01E-08	6.53E-13	
Benzo(a)pyrene	6.99E-09	6.01E-08	6.53E-13	
Benzo(b)fluoranthene	6.99E-09	6.01E-08	6.53E-13	
Benzo(k)fluoranthene	8.74E-09	7.51E-08	8.16E-13	
Chrysene	6.99E-09	6.01E-08	6.53E-13	
Fluoranthene	1.48E-08	1.28E-07	1.38E-12	
PCB-1260	9.78E-10	5.05E-09	9.14E-14	
Phenanthrene	6.99E-09	6.01E-08	6.53E-13	

Table 1.53. Carcinogenic chronic daily intakes for current industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Polychlorinated biphenyl	9.78E-10	5.05E-09	9.14E-14	
Pyrene	8.44E-09	7.26E-08	7.88E-13	
Alpha activity	6.96E+03			1.02E+02
Beta activity	1.38E+04			2.01E+02
Uranium-235	1.56E+02		1.46E-02	2.28E+00
Uranium-238	2.72E+03		2.54E-01	3.97E+01

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Antimony	2.45E-07	1.05E-06	2.28E-11	
Beryllium	1.21E-07	5.18E-07	1.13E-11	
Cadmium	5.24E-08	4.51E-08	4.89E-12	
Chromium	4.75E-06	2.04E-05	4.44E-10	
Thallium	5.24E-08	2.25E-07	4.89E-12	
Uranium	2.42E-06	1.04E-05	2.26E-10	
Acenaphthene	8.74E-09	7.51E-08	8.16E-13	
Anthracene	2.80E-08	2.40E-07	2.61E-12	
Benz(a)anthracene	5.94E-08	5.11E-07	5.55E-12	
Benzo(a)pyrene	4.89E-08	4.21E-07	4.57E-12	
Benzo(b)fluoranthene	4.54E-08	3.91E-07	4.24E-12	
Benzo(ghi)perylene	2.27E-08	1.95E-07	2.12E-12	
Benzo(k)fluoranthene	5.07E-08	4.36E-07	4.73E-12	
Bis(2-ethylhexyl)phthalate	1.40E-08	1.20E-07	1.31E-12	
Chrysene	6.12E-08	5.26E-07	5.71E-12	
Di-n-butyl phthalate	6.99E-09	6.01E-08	6.53E-13	
Fluoranthene	1.47E-07	1.26E-06	1.37E-11	
Fluorene	8.74E-09	7.51E-08	8.16E-13	
Indeno(1,2,3-cd)pyrene	2.45E-08	2.10E-07	2.28E-12	
Phenanthrene	7.07E-08	6.08E-07	6.60E-12	
Pyrene	6.84E-08	5.88E-07	6.39E-12	
Alpha activity	3.32E+03			4.85E+01
Beta activity	1.11E+04			1.62E+02
Neptunium-237	1.88E+02		1.75E-02	2.74E+00
Uranium-235	6.25E+01		5.84E-03	9.13E-01
Uranium-238	1.44E+03		1.34E-01	2.10E+01

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Chromium	3.37E-06	1.45E-05	3.15E-10	
Uranium	2.42E-06	1.04E-05	2.26E-10	
Zinc	1.23E-05	5.27E-05	1.15E-09	
Acenaphthene	6.99E-09	6.01E-08	6.53E-13	
Anthracene	1.40E-08	1.20E-07	1.31E-12	
Benz(a)anthracene	6.12E-08	5.26E-07	5.71E-12	
Benzo(a)pyrene	5.24E-08	4.51E-07	4.89E-12	
Benzo(b)fluoranthene	7.51E-08	6.46E-07	7.01E-12	
Benzo(ghi)perylene	2.97E-08	2.55E-07	2.77E-12	

Table 1.53. Carcinogenic chronic daily intakes for current industrial worker

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Benzo(k)fluoranthene	4.89E-08	4.21E-07	4.57E-12	
Chrysene	6.99E-08	6.01E-07	6.53E-12	
Fluoranthene	1.50E-07	1.29E-06	1.40E-11	
Indeno(1,2,3-cd)pyrene	3.15E-08	2.70E-07	2.94E-12	
PCB-1260	7.51E-09	3.88E-08	7.01E-13	
Phenanthrene	8.21E-08	7.06E-07	7.67E-12	
Polychlorinated biphenyl	7.51E-09	3.88E-08	7.01E-13	
Pyrene	1.19E-07	1.02E-06	1.11E-11	
Alpha activity	9.97E+03			1.46E+02
Beta activity	1.59E+04			2.32E+02
Uranium-235	6.25E+01		5.84E-03	9.13E-01
Uranium-238	1.44E+03		1.34E-01	2.10E+01

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Antimony	7.00E-08	3.01E-07	6.53E-12	
Beryllium	5.65E-08	2.43E-07	5.28E-12	
Cadmium	3.55E-08	3.05E-08	3.31E-12	
Chromium	3.54E-06	1.52E-05	3.30E-10	
Iron	2.13E-03	9.17E-03	1.99E-07	
Lead	2.27E-06	9.78E-06	2.12E-10	
Vanadium	2.89E-06	1.24E-05	2.69E-10	
Benz(a)anthracene	5.24E-08	4.51E-07	4.89E-12	
Benzo(a)pyrene	6.99E-08	6.01E-07	6.53E-12	
Benzo(b)fluoranthene	9.24E-08	7.94E-07	8.62E-12	
Benzo(k)fluoranthene	5.24E-08	4.51E-07	4.89E-12	
Chrysene	5.07E-08	4.36E-07	4.73E-12	
Fluoranthene	6.99E-08	6.01E-07	6.53E-12	
Pyrene	6.99E-08	6.01E-07	6.53E-12	
Alpha activity	5.67E+03			8.28E+01
Beta activity	1.53E+04			2.24E+02
Uranium-238	1.00E+03		9.34E-02	1.46E+01

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	2.48E-03	1.07E-02	2.32E-07	
Antimony	1.05E-07	4.51E-07	9.79E-12	
Cadmium	6.12E-08	5.26E-08	5.71E-12	
Chromium	4.12E-06	1.77E-05	3.85E-10	
Benz(a)anthracene	1.22E-08	1.05E-07	1.14E-12	
Benzo(a)pyrene	1.40E-08	1.20E-07	1.31E-12	
Benzo(b)fluoranthene	1.22E-08	1.05E-07	1.14E-12	
Benzo(k)fluoranthene	1.05E-08	9.02E-08	9.79E-13	
Chrysene	1.40E-08	1.20E-07	1.31E-12	
Fluoranthene	2.62E-08	2.25E-07	2.45E-12	
PCB-1262	6.64E-09	3.43E-08	6.20E-13	
Phenanthrene	1.22E-08	1.05E-07	1.14E-12	

Table 1.53. Carcinogenic chronic daily intakes for current industrial worker

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Polychlorinated biphenyl	6.64E-09	3.43E-08	6.20E-13	
Pyrene	2.10E-08	1.80E-07	1.96E-12	
Alpha activity	5.15E+03			7.53E+01
Beta activity	7.58E+03			1.11E+02

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Antimony	2.54E-07	1.09E-06	2.37E-11	
Beryllium	6.59E-08	2.83E-07	6.15E-12	
Cadmium	6.34E-08	5.45E-08	5.91E-12	
Chromium	3.71E-06	1.60E-05	3.47E-10	
Iron	2.97E-03	1.28E-02	2.78E-07	
Thallium	1.23E-07	5.28E-07	1.15E-11	
Uranium	8.76E-06	3.77E-05	8.18E-10	
Zinc	8.79E-06	3.78E-05	8.20E-10	
Acenaphthene	1.73E-07	1.49E-06	1.61E-11	
Acenaphthylene	3.84E-08	3.31E-07	3.59E-12	
Anthracene	3.18E-07	2.73E-06	2.97E-11	
Benz(a)anthracene	8.77E-07	7.54E-06	8.18E-11	
Benzo(a)pyrene	8.45E-07	7.26E-06	7.89E-11	
Benzo(b)fluoranthene	8.93E-07	7.68E-06	8.34E-11	
Benzo(ghi)perylene	4.13E-07	3.55E-06	3.86E-11	
Benzo(k)fluoranthene	5.90E-07	5.07E-06	5.51E-11	
Bis(2-ethylhexyl)phthalate	1.40E-08	1.20E-07	1.31E-12	
Chrysene	7.89E-07	6.79E-06	7.37E-11	
Dibenz(a,h)anthracene	2.27E-07	1.95E-06	2.12E-11	
Fluoranthene	1.91E-06	1.64E-05	1.78E-10	
Fluorene	2.10E-07	1.80E-06	1.96E-11	
Indeno(1,2,3-cd)pyrene	3.15E-07	2.71E-06	2.94E-11	
Naphthalene	4.19E-10	3.61E-09	3.92E-14	
PCB-1260	6.64E-09	3.43E-08	6.20E-13	
Phenanthrene	9.99E-07	8.59E-06	9.33E-11	
Polychlorinated biphenyl	6.64E-09	3.43E-08	6.20E-13	
Pyrene	1.61E-06	1.38E-05	1.50E-10	
Alpha activity	4.95E+03			7.23E+01
Beta activity	1.82E+04			2.66E+02
Neptunium-237	9.38E+01		8.75E-03	1.37E+00
Uranium-235	1.88E+02		1.75E-02	2.74E+00
Uranium-238	5.22E+03		4.87E-01	7.63E+01

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	1.27E-03	5.47E-03	1.19E-07	
Antimony	1.73E-07	7.45E-07	1.62E-11	
Arsenic	2.31E-06	9.91E-06	2.15E-10	
Beryllium	5.50E-08	2.36E-07	5.13E-12	
Cadmium	1.58E-07	1.36E-07	1.48E-11	

Table 1.53. Carcinogenic chronic daily intakes for current industrial worker

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Chromium	2.19E-06	9.43E-06	2.05E-10	
Cobalt	8.29E-07	3.56E-06	7.74E-11	
Uranium	6.34E-06	2.73E-05	5.92E-10	
Zinc	5.24E-06	2.25E-05	4.89E-10	
2-Methylnaphthalene	1.57E-07	1.35E-06	1.47E-11	
Acenaphthene	5.88E-07	5.06E-06	5.49E-11	
Anthracene	2.55E-06	2.19E-05	2.38E-10	
Benz(a)anthracene	3.52E-06	3.02E-05	3.28E-10	
Benzo(a)pyrene	3.16E-06	2.72E-05	2.95E-10	
Benzo(b)fluoranthene	3.94E-06	3.39E-05	3.68E-10	
Benzo(ghi)perylene	6.47E-07	5.56E-06	6.04E-11	
Benzo(k)fluoranthene	3.88E-06	3.34E-05	3.62E-10	
Bis(2-ethylhexyl)phthalate	1.75E-08	1.50E-07	1.63E-12	
Chrysene	3.79E-06	3.26E-05	3.54E-10	
Di-n-butyl phthalate	3.58E-08	3.08E-07	3.34E-12	
Dibenz(a,h)anthracene	6.56E-07	5.64E-06	6.12E-11	
Fluoranthene	7.89E-06	6.78E-05	7.36E-10	
Fluorene	5.46E-07	4.70E-06	5.10E-11	
Indero(1,2,3-cd)pyrene	6.64E-07	5.71E-06	6.20E-11	
Naphthalene	2.54E-07	2.18E-06	2.37E-11	
PCB-1254	1.68E-07	8.66E-07	1.57E-11	
PCB-1260	2.80E-09	1.44E-08	2.61E-13	
Phenanthrene	6.12E-06	5.26E-05	5.71E-10	
Polychlorinated biphenyl	9.80E-08	5.06E-07	9.15E-12	
Pyrene	6.90E-06	5.93E-05	6.44E-10	
Alpha activity	2.03E+04			2.96E+02
Beta activity	3.48E+04			5.09E+02
Cesium-137	2.10E+02		1.96E-02	3.07E+00
Neptunium-237	4.75E+02		4.44E-02	6.94E+00
Uranium-234	2.96E+03		2.76E-01	4.33E+01
Uranium-235	2.06E+02		1.93E-02	3.02E+00
Uranium-238	3.77E+03		3.52E-01	5.51E+01

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	8.78E-01	3.19E-03		
Arsenic	2.57E-03	9.35E-06		
Barium	3.45E-03	1.25E-05		
Beryllium	8.19E-05	2.97E-07		
Bromide	4.40E-04			
Cadmium	1.86E-05	6.74E-08		
Chromium	2.40E-03	8.70E-06		
Cobalt	6.92E-04	2.51E-06		
Iron	2.13E+00	7.72E-03		
Lead	1.12E-03	4.05E-06		
Manganese	1.54E-02	5.60E-05		
Nickel	1.09E-03	3.95E-06		
Nitrate	5.19E-03	1.88E-05		
Orthophosphate	9.88E-04			
Selenium	2.88E-04	1.04E-06		
Tetraoxo-sulfate(1-)	1.68E-01			
Thallium	5.86E-06	2.13E-08		
Vanadium	9.96E-03	3.62E-05		
Zinc	7.69E-02	2.79E-04		
1,1-Dichloroethene	7.07E-05	2.28E-06		3.86E-05
1,2-Dichloroethane	9.78E-06	1.88E-07		5.34E-06
Bis(2-ethylhexyl)phthalate	5.10E-05	4.33E-06		
Bromodichloromethane	5.21E-05	1.10E-06		2.84E-05
Chloroform	6.60E-05	2.13E-06		3.61E-05
Di-n-butyl phthalate	9.78E-06	4.08E-06		
Di-n-octylphthalate	5.47E-05	5.34E-03		
Dibromochloromethane	3.91E-05	5.54E-07		2.14E-05
Tetrachloroethene	9.53E-05	1.28E-04		5.21E-05
Trichloroethene	1.59E-04	9.21E-06		8.66E-05
Vinyl chloride	1.37E-04	3.64E-06		7.50E-05
cis-1,2-Dichloroethene	1.38E-04	5.00E-06		7.52E-05
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	5.96E-01	2.16E-03		
Antimony	1.36E-04	4.94E-07		
Arsenic	2.85E-04	1.03E-06		

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Barium	4.11E-03	1.49E-05		
Beryllium	9.91E-05	3.60E-07		
Bromide	4.51E-03			
Cadmium	1.45E-05	5.26E-08		
Chromium	1.10E-03	4.01E-06		
Cobalt	9.66E-04	3.51E-06		
Copper	2.15E-03	7.81E-06		
Iron	3.79E+00	1.38E-02		
Lead	3.20E-04	1.16E-06		
Manganese	2.99E-02	1.09E-04		
Mercury	1.61E-06	5.84E-09		
Nickel	1.93E-03	6.99E-06		
Nitrate	4.64E-01	1.68E-03		
Orthophosphate	3.52E-04			
Silver	1.24E-04	4.51E-07		
Tetraoxo-sulfate(1-)	1.29E-01			
Thallium	5.79E-06	2.10E-08		
Uranium	3.58E-05	1.30E-07		
Vanadium	1.50E-03	5.46E-06		
Zinc	7.48E-03	2.72E-05		
1,1-Dichloroethene	6.49E-05	2.10E-06		3.55E-05
Bis(2-ethylhexyl)phthalate	9.78E-06	8.31E-07		
Bromodichloromethane	3.91E-05	8.24E-07		2.14E-05
Carbon tetrachloride	6.92E-04	5.52E-05		3.78E-04
Chloroform	2.83E-04	9.13E-06		1.54E-04
Di-n-butyl phthalate	9.78E-06	4.08E-06		
Di-n-octylphthalate	9.78E-06	9.55E-04		
N-Nitroso-di-n-propylamine	9.78E-06	9.95E-08		
Tetrachloroethene	2.15E-04	2.89E-04		1.17E-04
Toluene	3.52E-04	5.75E-05		1.92E-04
Trichloroethene	8.01E-02	4.65E-03		4.38E-02
Vinyl chloride	1.30E-03	3.45E-05		7.11E-04
cis-1,2-Dichloroethene	3.62E-03	1.31E-04		1.98E-03
trans-1,2-Dichloroethene	1.20E-04	4.68E-07		6.57E-05
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	2.90E-03	1.25E-02	2.70E-07	
Antimony	5.71E-07	2.46E-06	5.34E-11	

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Arsenic	2.61E-06	1.12E-05	2.44E-10	
Beryllium	1.41E-07	6.08E-07	1.32E-11	
Cadmium	2.17E-07	1.87E-07	2.03E-11	
Chromium	5.80E-06	2.49E-05	5.41E-10	
Cobalt	1.98E-06	8.53E-06	1.85E-10	
Iron	5.34E-03	2.29E-02	4.98E-07	
Lead	3.90E-06	1.68E-05	3.65E-10	
Thallium	3.34E-07	1.43E-06	3.11E-11	
Uranium	1.29E-05	5.55E-05	1.21E-09	
Vanadium	6.97E-06	3.00E-05	6.51E-10	
Zinc	1.25E-05	5.40E-05	1.17E-09	
2-Methylnaphthalene	2.62E-07	2.26E-06	2.45E-11	
Acenaphthene	6.11E-07	5.25E-06	5.70E-11	
Acenaphthylene	1.08E-07	9.26E-07	1.00E-11	
Anthracene	1.18E-06	1.02E-05	1.11E-10	
Benz(a)anthracene	1.85E-06	1.59E-05	1.73E-10	
Benzo(a)pyrene	1.81E-06	1.56E-05	1.69E-10	
Benzo(b)fluoranthene	2.13E-06	1.83E-05	1.99E-10	
Benzo(ghi)perylene	1.04E-06	8.90E-06	9.67E-11	
Benzo(k)fluoranthene	1.73E-06	1.49E-05	1.61E-10	
Bis(2-ethylhexyl)phthalate	4.89E-08	4.21E-07	4.57E-12	
Chrysene	1.96E-06	1.68E-05	1.83E-10	
Di-n-butyl phthalate	3.65E-07	3.13E-06	3.40E-11	
Dibenz(a,h)anthracene	5.38E-07	4.62E-06	5.02E-11	
Fluoranthene	3.71E-06	3.19E-05	3.47E-10	
Fluorene	4.66E-07	4.00E-06	4.35E-11	
Indeno(1,2,3-cd)pyrene	9.81E-07	8.43E-06	9.15E-11	
Naphthalene	3.15E-07	2.71E-06	2.94E-11	
PCB-1254	8.30E-08	4.28E-07	7.75E-12	
PCB-1260	4.56E-08	2.35E-07	4.26E-12	
PCB-1262	1.86E-08	9.59E-08	1.74E-12	
Phenanthrene	2.60E-06	2.24E-05	2.43E-10	
Polychlorinated biphenyl	1.47E-07	7.56E-07	1.37E-11	
Pyrene	3.28E-06	2.82E-05	3.06E-10	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				

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Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Di-n-butyl phthalate	5.87E-07	5.05E-06	5.48E-11	
Alpha activity				
Beta activity				

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Cadmium	1.86E-07	1.60E-07	1.74E-11	
Chromium	6.66E-06	2.86E-05	6.22E-10	
Thallium	5.87E-07	2.52E-06	5.48E-11	
Uranium	1.34E-05	5.75E-05	1.25E-09	
Acenaphthene	6.36E-08	5.47E-07	5.94E-12	
Anthracene	1.08E-07	9.26E-07	1.00E-11	
Benz(a)anthracene	3.53E-07	3.04E-06	3.30E-11	
Benzo(a)pyrene	3.89E-07	3.34E-06	3.63E-11	
Benzo(b)fluoranthene	6.85E-07	5.89E-06	6.39E-11	
Benzo(ghi)perylene	1.81E-07	1.56E-06	1.69E-11	
Benzo(k)fluoranthene	4.26E-07	3.66E-06	3.97E-11	
Chrysene	3.89E-07	3.34E-06	3.63E-11	
Di-n-butyl phthalate	6.01E-07	5.17E-06	5.61E-11	
Dibenz(a,h)anthracene	7.83E-08	6.73E-07	7.31E-12	
Fluoranthene	1.03E-06	8.84E-06	9.59E-11	
Fluorene	4.40E-08	3.79E-07	4.11E-12	
Indeno(1,2,3-cd)pyrene	2.05E-07	1.77E-06	1.92E-11	
PCB-1260	1.61E-06	8.33E-06	1.51E-10	
Phenanthrene	5.68E-07	4.88E-06	5.30E-11	
Polychlorinated biphenyl	4.89E-06	2.52E-05	4.57E-10	
Pyrene	8.81E-07	7.57E-06	8.22E-11	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-235				
Uranium-238				

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	6.77E-03	2.91E-02	6.32E-07	
Antimony	1.42E-06	6.10E-06	1.32E-10	
Chromium	5.08E-06	2.19E-05	4.75E-10	
Uranium	1.28E-05	5.51E-05	1.20E-09	
Benz(a)anthracene	1.96E-08	1.68E-07	1.83E-12	
Benzo(a)pyrene	1.96E-08	1.68E-07	1.83E-12	
Benzo(b)fluoranthene	1.96E-08	1.68E-07	1.83E-12	
Benzo(k)fluoranthene	2.45E-08	2.10E-07	2.28E-12	
Chrysene	1.96E-08	1.68E-07	1.83E-12	
Fluoranthene	4.15E-08	3.57E-07	3.88E-12	
PCB-1260	2.74E-09	1.41E-08	2.56E-13	
Phenanthrene	1.96E-08	1.68E-07	1.83E-12	

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Polychlorinated biphenyl	2.74E-09	1.41E-08	2.56E-13	
Pyrene	2.36E-08	2.03E-07	2.21E-12	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Antimony	6.85E-07	2.95E-06	6.39E-11	
Beryllium	3.38E-07	1.45E-06	3.15E-11	
Cadmium	1.47E-07	1.26E-07	1.37E-11	
Chromium	1.33E-05	5.72E-05	1.24E-09	
Thallium	1.47E-07	6.31E-07	1.37E-11	
Uranium	6.76E-06	2.91E-05	6.31E-10	
Acenaphthene	2.45E-08	2.10E-07	2.28E-12	
Anthracene	7.83E-08	6.73E-07	7.31E-12	
Benz(a)anthracene	1.66E-07	1.43E-06	1.55E-11	
Benzo(a)pyrene	1.37E-07	1.18E-06	1.28E-11	
Benzo(b)fluoranthene	1.27E-07	1.09E-06	1.19E-11	
Benzo(ghi)perylene	6.36E-08	5.47E-07	5.94E-12	
Benzo(k)fluoranthene	1.42E-07	1.22E-06	1.32E-11	
Bis(2-ethylhexyl)phthalate	3.91E-08	3.37E-07	3.65E-12	
Chrysene	1.71E-07	1.47E-06	1.60E-11	
Di-n-butyl phthalate	1.96E-08	1.68E-07	1.83E-12	
Fluoranthene	4.11E-07	3.53E-06	3.84E-11	
Fluorene	2.45E-08	2.10E-07	2.28E-12	
Indeno(1,2,3-cd)pyrene	6.85E-08	5.89E-07	6.39E-12	
Phenanthrene	1.98E-07	1.70E-06	1.85E-11	
Pyrene	1.92E-07	1.65E-06	1.79E-11	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	8.78E-01	3.19E-03		
Arsenic	2.57E-03	9.35E-06		
Barium	3.45E-03	1.25E-05		
Beryllium	8.19E-05	2.97E-07		
Bromide	4.40E-04			
Cadmium	1.86E-05	6.74E-08		
Chromium	2.40E-03	8.70E-06		
Cobalt	6.92E-04	2.51E-06		
Iron	2.13E+00	7.72E-03		

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Lead	1.12E-03	4.05E-06		
Manganese	1.54E-02	5.60E-05		
Nickel	1.09E-03	3.95E-06		
Nitrate	5.19E-03	1.88E-05		
Orthophosphate	9.88E-04			
Selenium	2.88E-04	1.04E-06		
Tetraoxo-sulfate(1-)	1.68E-01			
Thallium	5.86E-06	2.13E-08		
Vanadium	9.96E-03	3.62E-05		
Zinc	7.69E-02	2.79E-04		
1,1-Dichloroethene	7.07E-05	2.28E-06		3.86E-05
1,2-Dichloroethane	9.78E-06	1.88E-07		5.34E-06
Bis(2-ethylhexyl)phthalate	5.10E-05	4.33E-06		
Bromodichloromethane	5.21E-05	1.10E-06		2.84E-05
Chloroform	6.60E-05	2.13E-06		3.61E-05
Di-n-butyl phthalate	9.78E-06	4.08E-06		
Di-n-octylphthalate	5.47E-05	5.34E-03		
Dibromochloromethane	3.91E-05	5.54E-07		2.14E-05
Tetrachloroethene	9.53E-05	1.28E-04		5.21E-05
Trichloroethene	1.59E-04	9.21E-06		8.66E-05
Vinyl chloride	1.37E-04	3.64E-06		7.50E-05
cis-1,2-Dichloroethene	1.38E-04	5.00E-06		7.52E-05
Actinium-228				
Alpha activity				
Beta activity				
Cesium-137				
Lead-210				
Lead-212				
Lead-214				
Neptunium-237				
Plutonium-239				
Potassium-40				
Technetium-99				
Thorium-228				
Thorium-230				
Thorium-234				
Uranium-234				
Uranium-235				
Uranium-238				

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Chromium	9.44E-06	4.06E-05	8.82E-10	
Uranium	6.76E-06	2.91E-05	6.31E-10	
Zinc	3.43E-05	1.48E-04	3.21E-09	
Acenaphthene	1.96E-08	1.68E-07	1.83E-12	
Anthracene	3.91E-08	3.37E-07	3.65E-12	
Benz(a)anthracene	1.71E-07	1.47E-06	1.60E-11	
Benzo(a)pyrene	1.47E-07	1.26E-06	1.37E-11	
Benzo(b)fluoranthene	2.10E-07	1.81E-06	1.96E-11	
Benzo(ghi)perylene	8.32E-08	7.15E-07	7.76E-12	
Benzo(k)fluoranthene	1.37E-07	1.18E-06	1.28E-11	
Chrysene	1.96E-07	1.68E-06	1.83E-11	

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Fluoranthene	4.21E-07	3.62E-06	3.93E-11	
Indeno(1,2,3-cd)pyrene	8.81E-08	7.57E-07	8.22E-12	
PCB-1260	2.10E-08	1.09E-07	1.96E-12	
Phenanthrene	2.30E-07	1.98E-06	2.15E-11	
Polychlorinated biphenyl	2.10E-08	1.09E-07	1.96E-12	
Pyrene	3.33E-07	2.86E-06	3.11E-11	
Alpha activity				
Beta activity				
Uranium-235				
Uranium-238				

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Antimony	1.96E-07	8.43E-07	1.83E-11	
Beryllium	1.58E-07	6.80E-07	1.48E-11	
Cadmium	9.94E-08	8.55E-08	9.28E-12	
Chromium	9.91E-06	4.26E-05	9.25E-10	
Iron	5.97E-03	2.57E-02	5.57E-07	
Lead	6.37E-06	2.74E-05	5.94E-10	
Vanadium	8.08E-06	3.47E-05	7.54E-10	
Benz(a)anthracene	1.47E-07	1.26E-06	1.37E-11	
Benzo(a)pyrene	1.96E-07	1.68E-06	1.83E-11	
Benzo(b)fluoranthene	2.59E-07	2.22E-06	2.41E-11	
Benzo(k)fluoranthene	1.47E-07	1.26E-06	1.37E-11	
Chrysene	1.42E-07	1.22E-06	1.32E-11	
Fluoranthene	1.96E-07	1.68E-06	1.83E-11	
Pyrene	1.96E-07	1.68E-06	1.83E-11	
Alpha activity				
Beta activity				
Uranium-238				

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	5.96E-01	2.16E-03		
Antimony	1.36E-04	4.94E-07		
Arsenic	2.85E-04	1.03E-06		
Barium	4.11E-03	1.49E-05		
Beryllium	9.91E-05	3.60E-07		
Bromide	4.51E-03			
Cadmium	1.45E-05	5.26E-08		
Chromium	1.10E-03	4.01E-06		
Cobalt	9.66E-04	3.51E-06		
Copper	2.15E-03	7.81E-06		
Iron	3.79E+00	1.38E-02		
Lead	3.20E-04	1.16E-06		
Manganese	2.99E-02	1.09E-04		
Mercury	1.61E-06	5.84E-09		

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Nickel	1.93E-03	6.99E-06		
Nitrate	4.64E-01	1.68E-03		
Orthophosphate	3.52E-04			
Silver	1.24E-04	4.51E-07		
Tetraoxo-sulfate(1-)	1.29E-01			
Thallium	5.79E-06	2.10E-08		
Uranium	3.58E-05	1.30E-07		
Vanadium	1.50E-03	5.46E-06		
Zinc	7.48E-03	2.72E-05		
1,1-Dichloroethene	6.49E-05	2.10E-06		3.55E-05
Bis(2-ethylhexyl)phthalate	9.78E-06	8.31E-07		
Bromodichloromethane	3.91E-05	8.24E-07		2.14E-05
Carbon tetrachloride	6.92E-04	5.52E-05		3.78E-04
Chloroform	2.83E-04	9.13E-06		1.54E-04
Di-n-butyl phthalate	9.78E-06	4.08E-06		
Di-n-octylphthalate	9.78E-06	9.55E-04		
N-Nitroso-di-n-propylamine	9.78E-06	9.95E-08		
Tetrachloroethene	2.15E-04	2.89E-04		1.17E-04
Toluene	3.52E-04	5.75E-05		1.92E-04
Trichloroethene	8.01E-02	4.65E-03		4.38E-02
Vinyl chloride	1.30E-03	3.45E-05		7.11E-04
cis-1,2-Dichloroethene	3.62E-03	1.31E-04		1.98E-03
trans-1,2-Dichloroethene	1.20E-04	4.68E-07		6.57E-05
Alpha activity				
Americium-241				
Beta activity				
Cesium-137				
Lead-210				
Lead-214				
Neptunium-237				
Plutonium-239				
Technetium-99				
Thorium-228				
Thorium-230				
Uranium-234				
Uranium-235				
Uranium-238				

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	6.95E-03	2.99E-02	6.49E-07	
Antimony	2.94E-07	1.26E-06	2.74E-11	
Cadmium	1.71E-07	1.47E-07	1.60E-11	
Chromium	1.15E-05	4.96E-05	1.08E-09	
Benz(a)anthracene	3.42E-08	2.95E-07	3.20E-12	
Benzo(a)pyrene	3.91E-08	3.37E-07	3.65E-12	
Benzo(b)fluoranthene	3.42E-08	2.95E-07	3.20E-12	
Benzo(k)fluoranthene	2.94E-08	2.52E-07	2.74E-12	
Chrysene	3.91E-08	3.37E-07	3.65E-12	
Fluoranthene	7.34E-08	6.31E-07	6.85E-12	
PCB-1262	1.86E-08	9.59E-08	1.74E-12	
Phenanthrene	3.42E-08	2.95E-07	3.20E-12	
Polychlorinated biphenyl	1.86E-08	9.59E-08	1.74E-12	

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Pyrene	5.87E-08	5.05E-07	5.48E-12	
Alpha activity				
Beta activity				

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Antimony	7.10E-07	3.05E-06	6.63E-11	
Beryllium	1.84E-07	7.93E-07	1.72E-11	
Cadmium	1.77E-07	1.53E-07	1.66E-11	
Chromium	1.04E-05	4.47E-05	9.70E-10	
Iron	8.32E-03	3.58E-02	7.77E-07	
Thallium	3.44E-07	1.48E-06	3.21E-11	
Uranium	2.45E-05	1.05E-04	2.29E-09	
Zinc	2.46E-05	1.06E-04	2.30E-09	
Acenaphthene	4.84E-07	4.16E-06	4.52E-11	
Acenaphthylene	1.08E-07	9.26E-07	1.00E-11	
Anthracene	8.90E-07	7.65E-06	8.31E-11	
Benz(a)anthracene	2.45E-06	2.11E-05	2.29E-10	
Benzo(a)pyrene	2.37E-06	2.03E-05	2.21E-10	
Benzo(b)fluoranthene	2.50E-06	2.15E-05	2.34E-10	
Benzo(ghi)perylene	1.16E-06	9.95E-06	1.08E-10	
Benzo(k)fluoranthene	1.65E-06	1.42E-05	1.54E-10	
Bis(2-ethylhexyl)phthalate	3.91E-08	3.37E-07	3.65E-12	
Chrysene	2.21E-06	1.90E-05	2.06E-10	
Dibenz(a,h)anthracene	6.36E-07	5.47E-06	5.94E-11	
Fluoranthene	5.34E-06	4.59E-05	4.98E-10	
Fluorene	5.87E-07	5.05E-06	5.48E-11	
Indeno(1,2,3-cd)pyrene	8.82E-07	7.59E-06	8.24E-11	
Naphthalene	1.17E-09	1.01E-08	1.10E-13	
PCB-1260	1.86E-08	9.59E-08	1.74E-12	
Phenanthrene	2.80E-06	2.41E-05	2.61E-10	
Polychlorinated biphenyl	1.86E-08	9.59E-08	1.74E-12	
Pyrene	4.50E-06	3.87E-05	4.20E-10	
Alpha activity				
Beta activity				
Neptunium-237				
Uranium-235				
Uranium-238				

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Aluminum	3.56E-03	1.53E-02	3.32E-07	
Antimony	4.85E-07	2.09E-06	4.53E-11	
Arsenic	6.45E-06	2.78E-05	6.03E-10	
Beryllium	1.54E-07	6.62E-07	1.44E-11	
Cadmium	4.43E-07	3.81E-07	4.13E-11	
Chromium	6.14E-06	2.64E-05	5.73E-10	

Table 1.54. Noncarcinogenic chronic daily intakes for future industrial worker

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering
Cobalt	2.32E-06	9.98E-06	2.17E-10	
Uranium	1.78E-05	7.63E-05	1.66E-09	
Zinc	1.47E-05	6.31E-05	1.37E-09	
2-Methylnaphthalene	4.40E-07	3.79E-06	4.11E-11	
Acenaphthene	1.65E-06	1.42E-05	1.54E-10	
Anthracene	7.13E-06	6.13E-05	6.66E-10	
Benz(a)anthracene	9.85E-06	8.47E-05	9.19E-10	
Benzo(a)pyrene	8.86E-06	7.62E-05	8.27E-10	
Benzo(b)fluoranthene	1.10E-05	9.48E-05	1.03E-09	
Benzo(ghi)perylene	1.81E-06	1.56E-05	1.69E-10	
Benzo(k)fluoranthene	1.09E-05	9.35E-05	1.01E-09	
Bis(2-ethylhexyl)phthalate	4.89E-08	4.21E-07	4.57E-12	
Chrysene	1.06E-05	9.12E-05	9.91E-10	
Di-n-butyl phthalate	1.00E-07	8.63E-07	9.36E-12	
Dibenz(a,h)anthracene	1.84E-06	1.58E-05	1.71E-10	
Fluoranthene	2.21E-05	1.90E-04	2.06E-09	
Fluorene	1.53E-06	1.32E-05	1.43E-10	
Indeno(1,2,3-cd)pyrene	1.86E-06	1.60E-05	1.74E-10	
Naphthalene	7.11E-07	6.11E-06	6.63E-11	
PCB-1254	4.70E-07	2.42E-06	4.38E-11	
PCB-1260	7.83E-09	4.04E-08	7.31E-13	
Phenanthrene	1.71E-05	1.47E-04	1.60E-09	
Polychlorinated biphenyl	2.74E-07	1.42E-06	2.56E-11	
Pyrene	1.93E-05	1.66E-04	1.80E-09	
Alpha activity				
Beta activity				
Cesium-137				
Neptunium-237				
Uranium-234				
Uranium-235				
Uranium-238				

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	2.46E+00	4.46E-03		1.27E+00		
Arsenic	7.21E-03	1.31E-05		3.82E-03		
Barium	9.65E-03	1.75E-05		5.02E-03		
Beryllium	2.29E-04	4.16E-07		1.19E-04		
Bromide	1.23E-03					
Cadmium	5.20E-05	9.43E-08		3.70E-05		
Chromium	6.71E-03	1.22E-05		3.46E-03		
Cobalt	1.94E-03	3.51E-06		1.06E-03		
Iron	5.96E+00	1.08E-02		3.08E+00		
Lead	3.13E-03	5.68E-06		1.62E-03		
Manganese	4.32E-02	7.84E-05		2.65E-02		
Nickel	3.05E-03	5.53E-06		1.79E-03		
Nitrate	1.45E-02	2.64E-05				
Orthophosphate	2.77E-03					
Selenium	8.06E-04	1.46E-06		5.31E-04		
Tetraoxo-sulfate(1-)	4.70E-01					
Thallium	1.64E-05	2.98E-08		8.50E-06		
Vanadium	2.79E-02	5.06E-05		1.45E-02		
Zinc	2.15E-01	3.91E-04		1.92E-01		
1,1-Dichloroethene	1.98E-04	3.20E-06		2.99E-04	5.41E-05	5.87E-04
1,2-Dichloroethane	2.74E-05	2.64E-07		5.47E-05	7.48E-06	8.12E-05
Bis(2-ethylhexyl)phthalate	1.43E-04	6.06E-06		7.59E-05		
Bromodichloromethane	1.46E-04	1.53E-06		1.72E-04	3.98E-05	4.32E-04
roform	1.85E-04	2.99E-06		2.36E-04	5.05E-05	5.48E-04
-butyl phthalate	2.74E-05	5.72E-06		1.46E-05		
Di-n-octylphthalate	1.53E-04	7.48E-03		7.91E-05		
Dibromochloromethane	1.10E-04	7.76E-07		1.20E-04	2.99E-05	3.25E-04
Tetrachloroethene	2.67E-04	1.79E-04		2.29E-04	7.29E-05	7.92E-04
Trichloroethene	4.44E-04	1.29E-05		4.27E-04	1.21E-04	1.32E-03
Vinyl chloride	3.84E-04	5.09E-06		8.49E-04	1.05E-04	1.14E-03
cis-1,2-Dichloroethene	3.85E-04	7.00E-06		5.34E-04	1.05E-04	1.14E-03
Actinium-228						
Alpha activity						
Beta activity						
Cesium-137						
Lead-210						
Lead-212						
Lead-214						
Neptunium-237						
Plutonium-239						
Potassium-40						
Technetium-99						
Thorium-228						
Thorium-230						
Thorium-234						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
minum	1.67E+00	3.03E-03		8.64E-01		
mony	3.81E-04	6.91E-07		2.02E-04		
nic	7.98E-04	1.45E-06		4.23E-04		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Barium	1.15E-02	2.09E-05		5.99E-03		
Beryllium	2.77E-04	5.03E-07		1.44E-04		
Bromide	1.26E-02					
Cadmium	4.05E-05	7.36E-08		2.89E-05		
Chromium	3.09E-03	5.61E-06		1.60E-03		
Cobalt	2.71E-03	4.91E-06		1.49E-03		
Copper	6.03E-03	1.09E-05		3.80E-03		
Iron	1.06E+01	1.93E-02		5.49E+00		
Lead	8.97E-04	1.63E-06		4.64E-04		
Manganese	8.38E-02	1.52E-04		5.15E-02		
Mercury	4.51E-06	8.18E-09		4.26E-06		
Nickel	5.39E-03	9.79E-06		3.17E-03		
Nitrate	1.30E+00	2.36E-03				
Orthophosphate	9.86E-04					
Silver	3.48E-04	6.31E-07		1.79E-04		
Tetraoxo-sulfate(1-)	3.61E-01					
Thallium	1.62E-05	2.94E-08		8.39E-06		
Uranium	1.00E-04	1.82E-07		5.18E-05		
Vanadium	4.21E-03	7.65E-06		2.18E-03		
Zinc	2.10E-02	3.80E-05		1.87E-02		
1,1-Dichloroethene	1.82E-04	2.94E-06		2.74E-04	4.96E-05	5.39E-04
Bis(2-ethylhexyl)phthalate	2.74E-05	1.16E-06		1.46E-05		
Bromodichloromethane	1.10E-04	1.15E-06		1.29E-04	2.99E-05	3.25E-
Carbon tetrachloride	1.94E-03	7.73E-05		1.51E-03	5.29E-04	5.74E-
Chloroform	7.91E-04	1.28E-05		1.01E-03	2.16E-04	2.35E-03
Di-n-butyl phthalate	2.74E-05	5.72E-06		1.46E-05		
Di-n-octylphthalate	2.74E-05	1.34E-03		1.41E-05		
N-Nitroso-di-n-propylamine	2.74E-05	1.39E-07		6.05E-05		
Tetrachloroethene	6.02E-04	4.04E-04		5.16E-04	1.64E-04	1.78E-03
Toluene	9.86E-04	8.06E-05		8.03E-04	2.69E-04	2.92E-03
Trichloroethene	2.24E-01	6.52E-03		2.16E-01	6.13E-02	6.65E-01
Vinyl chloride	3.64E-03	4.83E-05		8.05E-03	9.95E-04	1.08E-02
cis-1,2-Dichloroethene	1.01E-02	1.84E-04		1.40E-02	2.77E-03	3.01E-02
trans-1,2-Dichloroethene	3.37E-04	6.55E-07		2.12E-03	9.20E-05	1.00E-03
Alpha activity						
Americium-241						
Beta activity						
Cesium-137						
Lead-210						
Lead-214						
Neptunium-237						
Plutonium-239						
Technetium-99						
Thorium-228						
Thorium-230						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	8.11E-03	1.42E-02	3.78E-07	1.68E+00		
Antimony	1.60E-06	2.80E-06	7.47E-11	3.44E-04		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Arsenic	7.31E-06	1.28E-05	3.41E-10	1.57E-03		
Beryllium	3.96E-07	6.92E-07	1.85E-11	8.27E-05		
Cadmium	6.08E-07	2.13E-07	2.84E-11	1.92E-04		
Chromium	1.62E-05	2.84E-05	7.57E-10	3.36E-03		
Cobalt	5.55E-06	9.72E-06	2.59E-10	1.25E-03		
Iron	1.49E-02	2.61E-02	6.97E-07	3.10E+00		
Lead	1.09E-05	1.91E-05	5.10E-10	2.27E-03		
Thallium	9.34E-07	1.63E-06	4.36E-11	1.94E-04		
Uranium	3.62E-05	6.33E-05	1.69E-09	7.50E-03		
Vanadium	1.95E-05	3.42E-05	9.11E-10	4.06E-03		
Zinc	3.51E-05	6.15E-05	1.64E-09	1.47E-02		
2-Methylnaphthalene	7.35E-07	2.57E-06	3.43E-11	1.77E-04		
Acenaphthene	1.71E-06	5.99E-06	7.98E-11	3.88E-04		
Acenaphthylene	3.01E-07	1.05E-06	1.41E-11	7.56E-05		
Anthracene	3.31E-06	1.16E-05	1.55E-10	7.43E-04		
Benz(a)anthracene	5.19E-06	1.82E-05	2.42E-10	1.09E-03		
Benzo(a)pyrene	5.08E-06	1.78E-05	2.37E-10	1.06E-03		
Benzo(b)fluoranthene	5.97E-06	2.09E-05	2.79E-10	1.25E-03		
Benzo(ghi)perylene	2.90E-06	1.01E-05	1.35E-10	6.03E-04		
Benzo(k)fluoranthene	4.84E-06	1.69E-05	2.26E-10	1.00E-03		
Bis(2-ethylhexyl)phthalate	1.37E-07	4.79E-07	6.39E-12	2.96E-05		
Chrysene	5.48E-06	1.92E-05	2.56E-10	1.15E-03		
n-butyl phthalate	1.02E-06	3.57E-06	4.76E-11	2.20E-04		
enz(a,h)anthracene	1.51E-06	5.27E-06	7.02E-11	3.13E-04		
Fluoranthene	1.04E-05	3.64E-05	4.85E-10	2.24E-03		
Fluorene	1.30E-06	4.56E-06	6.08E-11	2.92E-04		
Indeno(1,2,3-cd)pyrene	2.75E-06	9.61E-06	1.28E-10	5.71E-04		
Naphthalene	8.81E-07	3.08E-06	4.11E-11	2.48E-04		
PCB-1254	2.32E-07	4.88E-07	1.08E-11	4.86E-05		
PCB-1260	1.28E-07	2.68E-07	5.96E-12	2.65E-05		
PCB-1262	5.21E-08	1.09E-07	2.43E-12	1.09E-05		
Phenanthrene	7.28E-06	2.55E-05	3.40E-10	1.60E-03		
Polychlorinated biphenyl	4.10E-07	8.62E-07	1.91E-11	8.58E-05		
Pyrene	9.17E-06	3.21E-05	4.28E-10	1.98E-03		
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-234						
Uranium-235						
Uranium-238						

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Di-n-butyl phthalate	1.64E-06	5.75E-06	7.67E-11	3.55E-04		
Alpha activity						
Beta activity						

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Cadmium	5.21E-07	1.82E-07	2.43E-11	1.65E-04		
Chromium	1.87E-05	3.26E-05	8.70E-10	3.86E-03		
Thallium	1.64E-06	2.88E-06	7.67E-11	3.42E-04		
Uranium	3.75E-05	6.56E-05	1.75E-09	7.77E-03		
Acenaphthene	1.78E-07	6.23E-07	8.31E-12	4.04E-05		
Anthracene	3.01E-07	1.05E-06	1.41E-11	6.76E-05		
Benz(a)anthracene	9.89E-07	3.46E-06	4.61E-11	2.08E-04		
Benzo(a)pyrene	1.09E-06	3.81E-06	5.08E-11	2.27E-04		
Benzo(b)fluoranthene	1.92E-06	6.71E-06	8.95E-11	4.00E-04		
Benzo(ghi)perylene	5.07E-07	1.77E-06	2.37E-11	1.05E-04		
Benzo(k)fluoranthene	1.19E-06	4.17E-06	5.56E-11	2.47E-04		
Chrysene	1.09E-06	3.81E-06	5.08E-11	2.29E-04		
Di-n-butyl phthalate	1.68E-06	5.89E-06	7.86E-11	3.63E-04		
Dibenz(a,h)anthracene	2.19E-07	7.67E-07	1.02E-11	4.55E-05		
Fluoranthene	2.88E-06	1.01E-05	1.34E-10	6.21E-04		
Fluorene	1.23E-07	4.32E-07	5.75E-12	2.76E-05		
Indeno(1,2,3-cd)pyrene	5.75E-07	2.01E-06	2.68E-11	1.20E-04		
PCB-1260	4.52E-06	9.49E-06	2.11E-10	9.38E-04		
Phenanthrene	1.59E-06	5.56E-06	7.42E-11	3.50E-04		
Polychlorinated biphenyl	1.37E-05	2.88E-05	6.39E-10	2.86E-03		
Pyrene	2.47E-06	8.63E-06	1.15E-10	5.32E-04		
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-235						
Uranium-238						

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	1.89E-02	3.31E-02	8.84E-07	3.94E+00		
Antimony	3.97E-06	6.95E-06	1.85E-10	8.54E-04		
Chromium	1.42E-05	2.49E-05	6.64E-10	2.95E-03		
Uranium	3.59E-05	6.28E-05	1.67E-09	7.45E-03		
Benz(a)anthracene	5.48E-08	1.92E-07	2.56E-12	1.15E-05		
Benzo(a)pyrene	5.48E-08	1.92E-07	2.56E-12	1.14E-05		
Benzo(b)fluoranthene	5.48E-08	1.92E-07	2.56E-12	1.14E-05		
Benzo(k)fluoranthene	6.85E-08	2.40E-07	3.20E-12	1.42E-05		
Chrysene	5.48E-08	1.92E-07	2.56E-12	1.15E-05		
Fluoranthene	1.16E-07	4.07E-07	5.42E-12	2.51E-05		
PCB-1260	7.67E-09	1.61E-08	3.58E-13	1.59E-06		
Phenanthrene	5.48E-08	1.92E-07	2.56E-12	1.21E-05		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Polychlorinated biphenyl	7.67E-09	1.61E-08	3.58E-13	1.60E-06		
Pyrene	6.61E-08	2.32E-07	3.09E-12	1.43E-05		
Alpha activity						
Beta activity						
Uranium-235						
Uranium-238						

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Antimony	1.92E-06	3.36E-06	8.95E-11	4.12E-04		
Beryllium	9.45E-07	1.65E-06	4.41E-11	1.98E-04		
Cadmium	4.11E-07	1.44E-07	1.92E-11	1.30E-04		
Chromium	3.73E-05	6.52E-05	1.74E-09	7.71E-03		
Thallium	4.11E-07	7.19E-07	1.92E-11	8.54E-05		
Uranium	1.89E-05	3.31E-05	8.84E-10	3.93E-03		
Acenaphthene	6.85E-08	2.40E-07	3.20E-12	1.55E-05		
Anthracene	2.19E-07	7.67E-07	1.02E-11	4.91E-05		
Benz(a)anthracene	4.66E-07	1.63E-06	2.17E-11	9.78E-05		
Benzo(a)pyrene	3.84E-07	1.34E-06	1.79E-11	8.01E-05		
Benzo(b)fluoranthene	3.56E-07	1.25E-06	1.66E-11	7.43E-05		
Benzo(ghi)perylene	1.78E-07	6.23E-07	8.31E-12	3.70E-05		
Benzo(k)fluoranthene	3.97E-07	1.39E-06	1.85E-11	8.25E-05		
Bis(2-ethylhexyl)phthalate	1.10E-07	3.84E-07	5.11E-12	2.36E-05		
Chrysene	4.79E-07	1.68E-06	2.24E-11	1.01E-04		
Di-n-butyl phthalate	5.48E-08	1.92E-07	2.56E-12	1.18E-05		
Fluoranthene	1.15E-06	4.03E-06	5.37E-11	2.48E-04		
Fluorene	6.85E-08	2.40E-07	3.20E-12	1.54E-05		
Indeno(1,2,3-cd)pyrene	1.92E-07	6.71E-07	8.95E-12	3.99E-05		
Phenanthrene	5.55E-07	1.94E-06	2.59E-11	1.22E-04		
Pyrene	5.36E-07	1.88E-06	2.50E-11	1.16E-04		
Alpha activity						
Beta activity						
Neptunium-237						
Uranium-235						
Uranium-238						

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	2.46E+00	4.46E-03		1.27E+00		
Arsenic	7.21E-03	1.31E-05		3.82E-03		
Barium	9.65E-03	1.75E-05		5.02E-03		
Beryllium	2.29E-04	4.16E-07		1.19E-04		
Bromide	1.23E-03					
Cadmium	5.20E-05	9.43E-08		3.70E-05		
Chromium	6.71E-03	1.22E-05		3.46E-03		
Cobalt	1.94E-03	3.51E-06		1.06E-03		
[illegible]	5.96E+00	1.08E-02		3.08E+00		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Lead	3.13E-03	5.68E-06		1.62E-03		
Manganese	4.32E-02	7.84E-05		2.65E-02		
Nickel	3.05E-03	5.53E-06		1.79E-03		
Nitrate	1.45E-02	2.64E-05				
Orthophosphate	2.77E-03					
Selenium	8.06E-04	1.46E-06		5.31E-04		
Tetraoxo-sulfate(1-)	4.70E-01					
Thallium	1.64E-05	2.98E-08		8.50E-06		
Vanadium	2.79E-02	5.06E-05		1.45E-02		
Zinc	2.15E-01	3.91E-04		1.92E-01		
1,1-Dichloroethene	1.98E-04	3.20E-06		2.99E-04	5.41E-05	5.87E-04
1,2-Dichloroethane	2.74E-05	2.64E-07		5.47E-05	7.48E-06	8.12E-05
Bis(2-ethylhexyl)phthalate	1.43E-04	6.06E-06		7.59E-05		
Bromodichloromethane	1.46E-04	1.53E-06		1.72E-04	3.98E-05	4.32E-04
Chloroform	1.85E-04	2.99E-06		2.36E-04	5.05E-05	5.48E-04
Di-n-butyl phthalate	2.74E-05	5.72E-06		1.46E-05		
Di-n-octylphthalate	1.53E-04	7.48E-03		7.91E-05		
Dibromochloromethane	1.10E-04	7.76E-07		1.20E-04	2.99E-05	3.25E-04
Tetrachloroethene	2.67E-04	1.79E-04		2.29E-04	7.29E-05	7.92E-04
Trichloroethene	4.44E-04	1.29E-05		4.27E-04	1.21E-04	1.32E-03
Vinyl chloride	3.84E-04	5.09E-06		8.49E-04	1.05E-04	1.14E-03
cis-1,2-Dichloroethene	3.85E-04	7.00E-06		5.34E-04	1.05E-04	1.14E-0[illegible]
Actinium-228						
Alpha activity						
Beta activity						
Cesium-137						
Lead-210						
Lead-212						
Lead-214						
Neptunium-237						
Plutonium-239						
Potassium-40						
Technetium-99						
Thorium-228						
Thorium-230						
Thorium-234						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Chromium	2.64E-05	4.63E-05	1.23E-09	5.47E-03		
Uranium	1.89E-05	3.31E-05	8.84E-10	3.93E-03		
Zinc	9.62E-05	1.68E-04	4.49E-09	4.01E-02		
Acenaphthene	5.48E-08	1.92E-07	2.56E-12	1.24E-05		
Anthracene	1.10E-07	3.84E-07	5.11E-12	2.46E-05		
Benz(a)anthracene	4.79E-07	1.68E-06	2.24E-11	1.01E-04		
Benzo(a)pyrene	4.11E-07	1.44E-06	1.92E-11	8.58E-05		
Benzo(b)fluoranthene	5.89E-07	2.06E-06	2.75E-11	1.23E-04		
Benzo(ghi)perylene	2.33E-07	8.15E-07	1.09E-11	4.84E-05		
Benzo(k)fluoranthene	3.84E-07	1.34E-06	1.79E-11	7.96E-05		
Chrysene	5.48E-07	1.92E-06	2.56E-11	1.15E-04		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Fluoranthene	1.18E-06	4.12E-06	5.50E-11	2.54E-04		
Indeno(1,2,3-cd)pyrene	2.47E-07	8.63E-07	1.15E-11	5.13E-05		
PCB-1260	5.89E-08	1.24E-07	2.75E-12	1.22E-05		
Phenanthrene	6.44E-07	2.25E-06	3.00E-11	1.42E-04		
Polychlorinated biphenyl	5.89E-08	1.24E-07	2.75E-12	1.23E-05		
Pyrene	9.32E-07	3.26E-06	4.35E-11	2.01E-04		
Alpha activity						
Beta activity						
Uranium-235						
Uranium-238						

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Antimony	5.49E-07	9.60E-07	2.56E-11	1.18E-04		
Beryllium	4.43E-07	7.75E-07	2.07E-11	9.26E-05		
Cadmium	2.78E-07	9.74E-08	1.30E-11	8.81E-05		
mium	2.78E-05	4.86E-05	1.29E-09	5.75E-03		
[illegible]	1.67E-02	2.93E-02	7.80E-07	3.46E+00		
Lead	1.78E-05	3.12E-05	8.32E-10	3.70E-03		
Vanadium	2.26E-05	3.96E-05	1.06E-09	4.71E-03		
Benz(a)anthracene	4.11E-07	1.44E-06	1.92E-11	8.63E-05		
Benzo(a)pyrene	5.48E-07	1.92E-06	2.56E-11	1.14E-04		
Benzo(b)fluoranthene	7.24E-07	2.53E-06	3.38E-11	1.51E-04		
Benzo(k)fluoranthene	4.11E-07	1.44E-06	1.92E-11	8.53E-05		
Chrysene	3.97E-07	1.39E-06	1.85E-11	8.34E-05		
Fluoranthene	5.48E-07	1.92E-06	2.56E-11	1.18E-04		
Pyrene	5.48E-07	1.92E-06	2.56E-11	1.18E-04		
Alpha activity						
Beta activity						
Uranium-238						

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	1.67E+00	3.03E-03		8.64E-01		
Antimony	3.81E-04	6.91E-07		2.02E-04		
Arsenic	7.98E-04	1.45E-06		4.23E-04		
Barium	1.15E-02	2.09E-05		5.99E-03		
Beryllium	2.77E-04	5.03E-07		1.44E-04		
Bromide	1.26E-02					
Cadmium	4.05E-05	7.36E-08		2.89E-05		
Chromium	3.09E-03	5.61E-06		1.60E-03		
Cobalt	2.71E-03	4.91E-06		1.49E-03		
Copper	6.03E-03	1.09E-05		3.80E-03		
Iron	1.06E+01	1.93E-02		5.49E+00		
[illegible]	8.97E-04	1.63E-06		4.64E-04		
nese	8.38E-02	1.52E-04		5.15E-02		
ury	4.51E-06	8.18E-09		4.26E-06		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Nickel	5.39E-03	9.79E-06		3.17E-03		
Nitrate	1.30E+00	2.36E-03				
Orthophosphate	9.86E-04					
Silver	3.48E-04	6.31E-07		1.79E-04		
Tetraoxo-sulfate(1-)	3.61E-01					
Thallium	1.62E-05	2.94E-08		8.39E-06		
Uranium	1.00E-04	1.82E-07		5.18E-05		
Vanadium	4.21E-03	7.65E-06		2.18E-03		
Zinc	2.10E-02	3.80E-05		1.87E-02		
1,1-Dichloroethene	1.82E-04	2.94E-06		2.74E-04	4.96E-05	5.39E-04
Bis(2-ethylhexyl)phthalate	2.74E-05	1.16E-06		1.46E-05		
Bromodichloromethane	1.10E-04	1.15E-06		1.29E-04	2.99E-05	3.25E-04
Carbon tetrachloride	1.94E-03	7.73E-05		1.51E-03	5.29E-04	5.74E-03
Chloroform	7.91E-04	1.28E-05		1.01E-03	2.16E-04	2.35E-03
Di-n-butyl phthalate	2.74E-05	5.72E-06		1.46E-05		
Di-n-octylphthalate	2.74E-05	1.34E-03		1.41E-05		
N-Nitroso-di-n-propylamine	2.74E-05	1.39E-07		6.05E-05		
Tetrachloroethene	6.02E-04	4.04E-04		5.16E-04	1.64E-04	1.78E-03
Toluene	9.86E-04	8.06E-05		8.03E-04	2.69E-04	2.92E-03
Trichloroethene	2.24E-01	6.52E-03		2.16E-01	6.13E-02	6.65E-01
Vinyl chloride	3.64E-03	4.83E-05		8.05E-03	9.95E-04	1.08E-02
cis-1,2-Dichloroethene	1.01E-02	1.84E-04		1.40E-02	2.77E-03	3.01E-02
trans-1,2-Dichloroethene	3.37E-04	6.55E-07		2.12E-03	9.20E-05	1.00E-0[illegible]
Alpha activity						
Americium-241						
Beta activity						
Cesium-137						
Lead-210						
Lead-214						
Neptunium-237						
Plutonium-239						
Technetium-99						
Thorium-228						
Thorium-230						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	1.95E-02	3.40E-02	9.08E-07	4.04E+00		
Antimony	8.22E-07	1.44E-06	3.84E-11	1.77E-04		
Cadmium	4.79E-07	1.68E-07	2.24E-11	1.52E-04		
Chromium	3.23E-05	5.66E-05	1.51E-09	6.69E-03		
Benz(a)anthracene	9.59E-08	3.36E-07	4.47E-12	2.01E-05		
Benzo(a)pyrene	1.10E-07	3.84E-07	5.11E-12	2.29E-05		
Benzo(b)fluoranthene	9.59E-08	3.36E-07	4.47E-12	2.00E-05		
Benzo(k)fluoranthene	8.22E-08	2.88E-07	3.84E-12	1.71E-05		
Chrysene	1.10E-07	3.84E-07	5.11E-12	2.30E-05		
Fluoranthene	2.05E-07	7.19E-07	9.59E-12	4.43E-05		
PCB-1262	5.21E-08	1.09E-07	2.43E-12	1.09E-05		
Phenanthrene	9.59E-08	3.36E-07	4.47E-12	2.11E-05		
Polychlorinated biphenyl	5.21E-08	1.09E-07	2.43E-12	1.09E-05		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Pyrene	1.64E-07	5.75E-07	7.67E-12	3.55E-05		
Alpha activity						
Beta activity						

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Antimony	1.99E-06	3.48E-06	9.28E-11	4.27E-04		
Beryllium	5.17E-07	9.04E-07	2.41E-11	1.08E-04		
Cadmium	4.97E-07	1.74E-07	2.32E-11	1.57E-04		
Chromium	2.91E-05	5.09E-05	1.36E-09	6.03E-03		
Iron	2.33E-02	4.08E-02	1.09E-06	4.83E+00		
Thallium	9.62E-07	1.68E-06	4.49E-11	2.00E-04		
Uranium	6.87E-05	1.20E-04	3.20E-09	1.42E-02		
Zinc	6.89E-05	1.21E-04	3.21E-09	2.87E-02		
Acenaphthene	1.36E-06	4.75E-06	6.33E-11	3.07E-04		
[illegible]cenaphthylene	3.01E-07	1.05E-06	1.41E-11	7.56E-05		
[illegible]racene	2.49E-06	8.72E-06	1.16E-10	5.58E-04		
[illegible](a)anthracene	6.87E-06	2.41E-05	3.21E-10	1.44E-03		
Benzo(a)pyrene	6.62E-06	2.32E-05	3.09E-10	1.38E-03		
Benzo(b)fluoranthene	7.00E-06	2.45E-05	3.27E-10	1.46E-03		
Benzo(ghi)perylene	3.24E-06	1.13E-05	1.51E-10	6.74E-04		
Benzo(k)fluoranthene	4.62E-06	1.62E-05	2.16E-10	9.60E-04		
Bis(2-ethylhexyl)phthalate	1.10E-07	3.84E-07	5.11E-12	2.36E-05		
Chrysene	6.19E-06	2.17E-05	2.89E-10	1.30E-03		
Dibenz(a,h)anthracene	1.78E-06	6.23E-06	8.31E-11	3.70E-04		
Fluoranthene	1.49E-05	5.23E-05	6.97E-10	3.22E-03		
Fluorene	1.64E-06	5.75E-06	7.67E-11	3.68E-04		
Indeno(1,2,3-cd)pyrene	2.47E-06	8.65E-06	1.15E-10	5.14E-04		
Naphthalene	3.29E-09	1.15E-08	1.53E-13	9.26E-07		
PCB-1260	5.21E-08	1.09E-07	2.43E-12	1.08E-05		
Phenanthrene	7.83E-06	2.74E-05	3.65E-10	1.72E-03		
Polychlorinated biphenyl	5.21E-08	1.09E-07	2.43E-12	1.09E-05		
Pyrene	1.26E-05	4.41E-05	5.88E-10	2.72E-03		
Alpha activity						
Beta activity						
Neptunium-237						
Uranium-235						
Uranium-238						

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	9.97E-03	1.74E-02	4.65E-07	2.07E+00		
Antimony	1.36E-06	2.38E-06	6.34E-11	2.92E-04		
Arsenic	1.81E-05	3.16E-05	8.43E-10	3.88E-03		
[illegible]llium	4.31E-07	7.54E-07	2.01E-11	9.01E-05		
[illegible]um	1.24E-06	4.34E-07	5.79E-11	3.92E-04		
[illegible]nium	1.72E-05	3.01E-05	8.03E-10	3.56E-03		

Table 1.55a. Noncarcinogenic chronic daily intakes for the adult residential user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Cobalt	6.50E-06	1.14E-05	3.03E-10	1.46E-03		
Uranium	4.97E-05	8.70E-05	2.32E-09	1.03E-02		
Zinc	4.11E-05	7.19E-05	1.92E-09	1.71E-02		
2-Methylnaphthalene	1.23E-06	4.32E-06	5.75E-11	2.96E-04		
Acenaphthene	4.61E-06	1.61E-05	2.15E-10	1.04E-03		
Anthracene	2.00E-05	6.99E-05	9.32E-10	4.48E-03		
Benz(a)anthracene	2.76E-05	9.65E-05	1.29E-09	5.79E-03		
Benzo(a)pyrene	2.48E-05	8.68E-05	1.16E-09	5.18E-03		
Benzo(b)fluoranthene	3.09E-05	1.08E-04	1.44E-09	6.44E-03		
Benzo(ghi)perylene	5.07E-06	1.77E-05	2.37E-10	1.05E-03		
Benzo(k)fluoranthene	3.04E-05	1.06E-04	1.42E-09	6.32E-03		
Bis(2-ethylhexyl)phthalate	1.37E-07	4.79E-07	6.39E-12	2.96E-05		
Chrysene	2.97E-05	1.04E-04	1.39E-09	6.24E-03		
Di-n-butyl phthalate	2.81E-07	9.83E-07	1.31E-11	6.06E-05		
Dibenz(a,h)anthracene	5.14E-06	1.80E-05	2.40E-10	1.07E-03		
Fluoranthene	6.18E-05	2.16E-04	2.89E-09	1.33E-02		
Fluorene	4.28E-06	1.50E-05	2.00E-10	9.60E-04		
Indeno(1,2,3-cd)pyrene	5.20E-06	1.82E-05	2.43E-10	1.08E-03		
Naphthalene	1.99E-06	6.96E-06	9.29E-11	5.60E-04		
PCB-1254	1.32E-06	2.76E-06	6.14E-11	2.75E-04		
PCB-1260	2.19E-08	4.60E-08	1.02E-12	4.55E-06		
Phenanthrene	4.79E-05	1.68E-04	2.24E-09	1.06E-02		
Polychlorinated biphenyl	7.68E-07	1.61E-06	3.59E-11	1.61E-04		
Pyrene	5.41E-05	1.89E-04	2.52E-09	1.17E-02		
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-234						
Uranium-235						
Uranium-238						

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	5.94E+00	8.55E-03		4.00E+00		
Arsenic	1.74E-02	2.51E-05		1.20E-02		
Barium	2.33E-02	3.35E-05		1.58E-02		
Beryllium	5.53E-04	7.97E-07		3.75E-04		
Bromide	2.97E-03					
Cadmium	1.25E-04	1.81E-07		1.16E-04		
Chromium	1.62E-02	2.33E-05		1.09E-02		
Cobalt	4.67E-03	6.73E-06		3.35E-03		
Iron	1.44E+01	2.07E-02		9.68E+00		
Lead	7.55E-03	1.09E-05		5.09E-03		
Manganese	1.04E-01	1.50E-04		8.34E-02		
Nickel	7.36E-03	1.06E-05		5.63E-03		
Nitrate	3.50E-02	5.05E-05				
Orthophosphate	6.68E-03					
Selenium	1.94E-03	2.80E-06		1.67E-03		
Tetraoxo-sulfate(1-)	1.13E+00					
Thallium	3.96E-05	5.71E-08		2.67E-05		
Vanadium	6.73E-02	9.69E-05		4.55E-02		
Zinc	5.20E-01	7.49E-04		6.05E-01		
1,1-Dichloroethene	4.78E-04	6.13E-06		9.40E-04	2.61E-04	2.84E-03
1,2-Dichloroethane	6.61E-05	5.05E-07		1.72E-04	3.61E-05	3.92E-04
Bis(2-ethylhexyl)phthalate	3.45E-04	1.16E-05		2.39E-04		
Bromodichloromethane	3.52E-04	2.94E-06		5.42E-04	1.92E-04	2.09E-03
...oroform	4.46E-04	5.72E-06		7.42E-04	2.44E-04	2.65E-03
...n-butyl phthalate	6.61E-05	1.10E-05		4.58E-05		
Di-n-octylphthalate	3.70E-04	1.43E-02		2.49E-04		
Dibromochloromethane	2.65E-04	1.49E-06		3.78E-04	1.44E-04	1.57E-03
Tetrachloroethene	6.44E-04	3.43E-04		7.20E-04	3.52E-04	3.82E-03
Trichloroethene	1.07E-03	2.47E-05		1.34E-03	5.85E-04	6.36E-03
Vinyl chloride	9.28E-04	9.75E-06		2.67E-03	5.07E-04	5.50E-03
cis-1,2-Dichloroethene	9.30E-04	1.34E-05		1.68E-03	5.08E-04	5.52E-03
Actinium-228						
Alpha activity						
Beta activity						
Cesium-137						
Lead-210						
Lead-212						
Lead-214						
Neptunium-237						
Plutonium-239						
Potassium-40						
Technetium-99						
Thorium-228						
Thorium-230						
Thorium-234						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
...minum	4.03E+00	5.80E-03		2.72E+00		
...mony	9.19E-04	1.32E-06		6.36E-04		
...enic	1.93E-03	2.77E-06		1.33E-03		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Barium	2.78E-02	4.00E-05		1.88E-02		
Beryllium	6.70E-04	9.64E-07		4.54E-04		
Bromide	3.05E-02					
Cadmium	9.79E-05	1.41E-07		9.08E-05		
Chromium	7.46E-03	1.07E-05		5.02E-03		
Cobalt	6.53E-03	9.40E-06		4.67E-03		
Copper	1.45E-02	2.09E-05		1.19E-02		
Iron	2.56E+01	3.69E-02		1.73E+01		
Lead	2.16E-03	3.12E-06		1.46E-03		
Manganese	2.02E-01	2.91E-04		1.62E-01		
Mercury	1.09E-05	1.57E-08		1.34E-05		
Nickel	1.30E-02	1.87E-05		9.97E-03		
Nitrate	3.13E+00	4.51E-03				
Orthophosphate	2.38E-03					
Silver	8.39E-04	1.21E-06		5.65E-04		
Tetraoxo-sulfate(1-)	8.72E-01					
Thallium	3.91E-05	5.64E-08		2.64E-05		
Uranium	2.42E-04	3.48E-07		1.63E-04		
Vanadium	1.02E-02	1.46E-05		6.87E-03		
Zinc	5.06E-02	7.28E-05		5.88E-02		
1,1-Dichloroethene	4.39E-04	5.62E-06		8.63E-04	2.40E-04	2.60E-03
Bis(2-ethylhexyl)phthalate	6.61E-05	2.23E-06		4.58E-05		
Bromodichloromethane	2.65E-04	2.21E-06		4.07E-04	1.44E-04	1.57E-0
Carbon tetrachloride	4.67E-03	1.48E-04		4.73E-03	2.55E-03	2.77E-0.
Chloroform	1.91E-03	2.45E-05		3.18E-03	1.04E-03	1.13E-02
Di-n-butyl phthalate	6.61E-05	1.10E-05		4.58E-05		
Di-n-octylphthalate	6.61E-05	2.56E-03		4.45E-05		
N-Nitroso-di-n-propylamine	6.61E-05	2.67E-07		1.90E-04		
Tetrachloroethene	1.45E-03	7.74E-04		1.62E-03	7.93E-04	8.61E-03
Toluene	2.38E-03	1.54E-04		2.53E-03	1.30E-03	1.41E-02
Trichloroethene	5.42E-01	1.25E-02		6.79E-01	2.96E-01	3.21E+00
Vinyl chloride	8.80E-03	9.25E-05		2.53E-02	4.80E-03	5.22E-02
cis-1,2-Dichloroethene	2.45E-02	3.52E-04		4.42E-02	1.34E-02	1.45E-01
trans-1,2-Dichloroethene	8.14E-04	1.25E-06		6.68E-03	4.44E-04	4.83E-03
Alpha activity						
Americium-241						
Beta activity						
Cesium-137						
Lead-210						
Lead-214						
Neptunium-237						
Plutonium-239						
Technetium-99						
Thorium-228						
Thorium-230						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	7.83E-02	7.30E-02	1.83E-06	5.31E+00		
Antimony	1.54E-05	1.44E-05	3.60E-10	1.08E-03		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Arsenic	7.06E-05	6.59E-05	1.65E-09	4.96E-03		
Beryllium	3.82E-06	3.56E-06	8.91E-11	2.61E-04		
Cadmium	5.87E-06	1.09E-06	1.37E-10	6.07E-04		
Chromium	1.57E-04	1.46E-04	3.66E-09	1.06E-02		
Cobalt	5.36E-05	5.00E-05	1.25E-09	3.95E-03		
Iron	1.44E-01	1.35E-01	3.37E-06	9.77E+00		
Lead	1.06E-04	9.84E-05	2.46E-09	7.16E-03		
Thallium	9.02E-06	8.41E-06	2.10E-10	6.12E-04		
Uranium	3.49E-04	3.26E-04	8.15E-09	2.37E-02		
Vanadium	1.89E-04	1.76E-04	4.40E-09	1.28E-02		
Zinc	3.39E-04	3.16E-04	7.91E-09	4.62E-02		
2-Methylnaphthalene	7.10E-06	1.32E-05	1.66E-10	5.57E-04		
Acenaphthene	1.65E-05	3.08E-05	3.85E-10	1.22E-03		
Acenaphthylene	2.91E-06	5.43E-06	6.79E-11	2.38E-04		
Anthracene	3.20E-05	5.97E-05	7.47E-10	2.34E-03		
Benz(a)anthracene	5.01E-05	9.35E-05	1.17E-09	3.44E-03		
Benzo(a)pyrene	4.90E-05	9.15E-05	1.14E-09	3.34E-03		
Benzo(b)fluoranthene	5.76E-05	1.07E-04	1.34E-09	3.93E-03		
Benzo(ghi)perylene	2.80E-05	5.22E-05	6.53E-10	1.90E-03		
Benzo(k)fluoranthene	4.67E-05	8.71E-05	1.09E-09	3.17E-03		
Bis(2-ethylhexyl)phthalate	1.32E-06	2.47E-06	3.09E-11	9.32E-05		
Chrysene	5.29E-05	9.87E-05	1.23E-09	3.63E-03		
n-butyl phthalate	9.85E-06	1.84E-05	2.30E-10	6.95E-04		
enz(a,h)anthracene	1.45E-05	2.71E-05	3.39E-10	9.86E-04		
Fluoranthene	1.00E-04	1.87E-04	2.34E-09	7.07E-03		
Fluorene	1.26E-05	2.35E-05	2.94E-10	9.21E-04		
Indeno(1,2,3-cd)pyrene	2.65E-05	4.94E-05	6.18E-10	1.80E-03		
Naphthalene	8.51E-06	1.59E-05	1.99E-10	7.83E-04		
PCB-1254	2.24E-06	2.51E-06	5.23E-11	1.53E-04		
PCB-1260	1.23E-06	1.38E-06	2.88E-11	8.35E-05		
PCB-1262	5.03E-07	5.62E-07	1.17E-11	3.43E-05		
Phenanthrene	7.03E-05	1.31E-04	1.64E-09	5.05E-03		
Polychlorinated biphenyl	3.96E-06	4.43E-06	9.24E-11	2.70E-04		
Pyrene	8.86E-05	1.65E-04	2.07E-09	6.24E-03		
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-234						
Uranium-235						
Uranium-238						

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Di-n-butyl phthalate	1.59E-05	2.96E-05	3.70E-10	1.12E-03		
Alpha activity						
Beta activity						

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Cadmium	5.03E-06	9.37E-07	1.17E-10	5.19E-04		
Chromium	1.80E-04	1.68E-04	4.20E-09	1.22E-02		
Thallium	1.59E-05	1.48E-05	3.70E-10	1.08E-03		
Uranium	3.62E-04	3.37E-04	8.44E-09	2.45E-02		
Acenaphthene	1.72E-06	3.21E-06	4.01E-11	1.27E-04		
Anthracene	2.91E-06	5.43E-06	6.79E-11	2.13E-04		
Benz(a)anthracene	9.55E-06	1.78E-05	2.23E-10	6.55E-04		
Benzo(a)pyrene	1.05E-05	1.96E-05	2.45E-10	7.17E-04		
Benzo(b)fluoranthene	1.85E-05	3.45E-05	4.32E-10	1.26E-03		
Benzo(ghi)perylene	4.89E-06	9.13E-06	1.14E-10	3.32E-04		
Benzo(k)fluoranthene	1.15E-05	2.15E-05	2.68E-10	7.80E-04		
Chrysene	1.05E-05	1.96E-05	2.45E-10	7.21E-04		
Di-n-butyl phthalate	1.63E-05	3.03E-05	3.79E-10	1.15E-03		
Dibenz(a,h)anthracene	2.12E-06	3.95E-06	4.94E-11	1.44E-04		
Fluoranthene	2.78E-05	5.18E-05	6.48E-10	1.96E-03		
Fluorene	1.19E-06	2.22E-06	2.78E-11	8.72E-05		
Indeno(1,2,3-cd)pyrene	5.56E-06	1.04E-05	1.30E-10	3.77E-04		
PCB-1260	4.36E-05	4.88E-05	1.02E-09	2.96E-03		
Phenanthrene	1.54E-05	2.86E-05	3.58E-10	1.10E-03		
Polychlorinated biphenyl	1.32E-04	1.48E-04	3.09E-09	9.03E-03		
Pyrene	2.38E-05	4.44E-05	5.55E-10	1.68E-03		
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-235						
Uranium-238						

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	1.83E-01	1.71E-01	4.27E-06	1.24E+01		
Antimony	3.84E-05	3.58E-05	8.95E-10	2.69E-03		
Chromium	1.37E-04	1.28E-04	3.21E-09	9.30E-03		
Uranium	3.47E-04	3.23E-04	8.09E-09	2.35E-02		
Benz(a)anthracene	5.29E-07	9.87E-07	1.23E-11	3.63E-05		
Benzo(a)pyrene	5.29E-07	9.87E-07	1.23E-11	3.61E-05		
Benzo(b)fluoranthene	5.29E-07	9.87E-07	1.23E-11	3.61E-05		
Benzo(k)fluoranthene	6.61E-07	1.23E-06	1.54E-11	4.49E-05		
Chrysene	5.29E-07	9.87E-07	1.23E-11	3.63E-05		
Fluoranthene	1.12E-06	2.09E-06	2.62E-11	7.91E-05		
PCB-1260	7.41E-08	8.29E-08	1.73E-12	5.02E-06		
Phenanthrene	5.29E-07	9.87E-07	1.23E-11	3.80E-05		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Polychlorinated biphenyl	7.41E-08	8.29E-08	1.73E-12	5.06E-06		
Pyrene	6.39E-07	1.19E-06	1.49E-11	4.50E-05		
Alpha activity						
Beta activity						
Uranium-235						
Uranium-238						

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Antimony	1.85E-05	1.73E-05	4.32E-10	1.30E-03		
Beryllium	9.13E-06	8.51E-06	2.13E-10	6.23E-04		
Cadmium	3.97E-06	7.40E-07	9.26E-11	4.10E-04		
Chromium	3.60E-04	3.35E-04	8.39E-09	2.43E-02		
Thallium	3.97E-06	3.70E-06	9.26E-11	2.69E-04		
Uranium	1.83E-04	1.71E-04	4.27E-09	1.24E-02		
Acenaphthene	6.61E-07	1.23E-06	1.54E-11	4.89E-05		
hracene	2.12E-06	3.95E-06	4.94E-11	1.55E-04		
z(a)anthracene	4.50E-06	8.39E-06	1.05E-10	3.08E-04		
Benzo(a)pyrene	3.70E-06	6.91E-06	8.64E-11	2.52E-04		
Benzo(b)fluoranthene	3.44E-06	6.41E-06	8.02E-11	2.34E-04		
Benzo(ghi)perylene	1.72E-06	3.21E-06	4.01E-11	1.17E-04		
Benzo(k)fluoranthene	3.84E-06	7.15E-06	8.95E-11	2.60E-04		
Bis(2-ethylhexyl)phthalate	1.06E-06	1.97E-06	2.47E-11	7.46E-05		
Chrysene	4.63E-06	8.63E-06	1.08E-10	3.18E-04		
Di-n-butyl phthalate	5.29E-07	9.87E-07	1.23E-11	3.73E-05		
Fluoranthene	1.11E-05	2.07E-05	2.59E-10	7.83E-04		
Fluorene	6.61E-07	1.23E-06	1.54E-11	4.84E-05		
Indeno(1,2,3-cd)pyrene	1.85E-06	3.45E-06	4.32E-11	1.26E-04		
Phenanthrene	5.35E-06	9.99E-06	1.25E-10	3.85E-04		
Pyrene	5.18E-06	9.66E-06	1.21E-10	3.65E-04		
Alpha activity						
Beta activity						
Neptunium-237						
Uranium-235						
Uranium-238						

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	5.94E+00	8.55E-03		4.00E+00		
Arsenic	1.74E-02	2.51E-05		1.20E-02		
Barium	2.33E-02	3.35E-05		1.58E-02		
Beryllium	5.53E-04	7.97E-07		3.75E-04		
Bromide	2.97E-03					
Cadmium	1.25E-04	1.81E-07		1.16E-04		
omium	1.62E-02	2.33E-05		1.09E-02		
lt	4.67E-03	6.73E-06		3.35E-03		
n	1.44E+01	2.07E-02		9.68E+00		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Lead	7.55E-03	1.09E-05		5.09E-03		
Manganese	1.04E-01	1.50E-04		8.34E-02		
Nickel	7.36E-03	1.06E-05		5.63E-03		
Nitrate	3.50E-02	5.05E-05				
Orthophosphate	6.68E-03					
Selenium	1.94E-03	2.80E-06		1.67E-03		
Tetraoxo-sulfate(1-)	1.13E+00					
Thallium	3.96E-05	5.71E-08		2.67E-05		
Vanadium	6.73E-02	9.69E-05		4.55E-02		
Zinc	5.20E-01	7.49E-04		6.05E-01		
1,1-Dichloroethene	4.78E-04	6.13E-06		9.40E-04	2.61E-04	2.84E-03
1,2-Dichloroethane	6.61E-05	5.05E-07		1.72E-04	3.61E-05	3.92E-04
Bis(2-ethylhexyl)phthalate	3.45E-04	1.16E-05		2.39E-04		
Bromodichloromethane	3.52E-04	2.94E-06		5.42E-04	1.92E-04	2.09E-03
Chloroform	4.46E-04	5.72E-06		7.42E-04	2.44E-04	2.65E-03
Di-n-butyl phthalate	6.61E-05	1.10E-05		4.58E-05		
Di-n-octylphthalate	3.70E-04	1.43E-02		2.49E-04		
Dibromochloromethane	2.65E-04	1.49E-06		3.78E-04	1.44E-04	1.57E-03
Tetrachloroethene	6.44E-04	3.43E-04		7.20E-04	3.52E-04	3.82E-03
Trichloroethene	1.07E-03	2.47E-05		1.34E-03	5.85E-04	6.36E-03
Vinyl chloride	9.28E-04	9.75E-06		2.67E-03	5.07E-04	5.50E-03
cis-1,2-Dichloroethene	9.30E-04	1.34E-05		1.68E-03	5.08E-04	5.52E-03
Actinium-228						
Alpha activity						
Beta activity						
Cesium-137						
Lead-210						
Lead-212						
Lead-214						
Neptunium-237						
Plutonium-239						
Potassium-40						
Technetium-99						
Thorium-228						
Thorium-230						
Thorium-234						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Chromium	2.55E-04	2.38E-04	5.96E-09	1.73E-02		
Uranium	1.83E-04	1.71E-04	4.27E-09	1.24E-02		
Zinc	9.28E-04	8.66E-04	2.17E-08	1.26E-01		
Acenaphthene	5.29E-07	9.87E-07	1.23E-11	3.92E-05		
Anthracene	1.06E-06	1.97E-06	2.47E-11	7.75E-05		
Benz(a)anthracene	4.63E-06	8.63E-06	1.08E-10	3.18E-04		
Benzo(a)pyrene	3.97E-06	7.40E-06	9.26E-11	2.71E-04		
Benzo(b)fluoranthene	5.69E-06	1.06E-05	1.33E-10	3.88E-04		
Benzo(ghi)perylene	2.25E-06	4.19E-06	5.25E-11	1.53E-04		
Benzo(k)fluoranthene	3.70E-06	6.91E-06	8.64E-11	2.51E-04		
Chrysene	5.29E-06	9.87E-06	1.23E-10	3.63E-04		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Fluoranthene	1.14E-05	2.12E-05	2.65E-10	8.02E-04		
Indeno(1,2,3-cd)pyrene	2.38E-06	4.44E-06	5.55E-11	1.62E-04		
PCB-1260	5.69E-07	6.36E-07	1.33E-11	3.85E-05		
Phenanthrene	6.22E-06	1.16E-05	1.45E-10	4.47E-04		
Polychlorinated biphenyl	5.69E-07	6.36E-07	1.33E-11	3.88E-05		
Pyrene	8.99E-06	1.68E-05	2.10E-10	6.34E-04		
Alpha activity						
Beta activity						
Uranium-235						
Uranium-238						

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Antimony	5.30E-06	4.94E-06	1.24E-10	3.72E-04		
Beryllium	4.28E-06	3.99E-06	9.98E-11	2.92E-04		
Cadmium	2.69E-06	5.01E-07	6.27E-11	2.78E-04		
omium	2.68E-04	2.50E-04	6.25E-09	1.81E-02		
a	1.61E-01	1.50E-01	3.77E-06	1.09E+01		
Lead	1.72E-04	1.61E-04	4.02E-09	1.17E-02		
Vanadium	2.18E-04	2.04E-04	5.10E-09	1.48E-02		
Benz(a)anthracene	3.97E-06	7.40E-06	9.26E-11	2.72E-04		
Benzo(a)pyrene	5.29E-06	9.87E-06	1.23E-10	3.61E-04		
Benzo(b)fluoranthene	6.99E-06	1.30E-05	1.63E-10	4.77E-04		
Benzo(k)fluoranthene	3.97E-06	7.40E-06	9.26E-11	2.69E-04		
Chrysene	3.84E-06	7.15E-06	8.95E-11	2.63E-04		
Fluoranthene	5.29E-06	9.87E-06	1.23E-10	3.73E-04		
Pyrene	5.29E-06	9.87E-06	1.23E-10	3.73E-04		
Alpha activity						
Beta activity						
Uranium-238						

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	4.03E+00	5.80E-03		2.72E+00		
Antimony	9.19E-04	1.32E-06		6.36E-04		
Arsenic	1.93E-03	2.77E-06		1.33E-03		
Barium	2.78E-02	4.00E-05		1.88E-02		
Beryllium	6.70E-04	9.64E-07		4.54E-04		
Bromide	3.05E-02					
Cadmium	9.79E-05	1.41E-07		9.08E-05		
Chromium	7.46E-03	1.07E-05		5.02E-03		
Cobalt	6.53E-03	9.40E-06		4.67E-03		
Copper	1.45E-02	2.09E-05		1.19E-02		
Iron	2.56E+01	3.69E-02		1.73E+01		
d	2.16E-03	3.12E-06		1.46E-03		
anese	2.02E-01	2.91E-04		1.62E-01		
cury	1.09E-05	1.57E-08		1.34E-05		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Nickel	1.30E-02	1.87E-05		9.97E-03		
Nitrate	3.13E+00	4.51E-03				
Orthophosphate	2.38E-03					
Silver	8.39E-04	1.21E-06		5.65E-04		
Tetraoxo-sulfate(1-)	8.72E-01					
Thallium	3.91E-05	5.64E-08		2.64E-05		
Uranium	2.42E-04	3.48E-07		1.63E-04		
Vanadium	1.02E-02	1.46E-05		6.87E-03		
Zinc	5.06E-02	7.28E-05		5.88E-02		
1,1-Dichloroethene	4.39E-04	5.62E-06		8.63E-04	2.40E-04	2.60E-03
Bis(2-ethylhexyl)phthalate	6.61E-05	2.23E-06		4.58E-05		
Bromodichloromethane	2.65E-04	2.21E-06		4.07E-04	1.44E-04	1.57E-03
Carbon tetrachloride	4.67E-03	1.48E-04		4.73E-03	2.55E-03	2.77E-02
Chloroform	1.91E-03	2.45E-05		3.18E-03	1.04E-03	1.13E-02
Di-n-butyl phthalate	6.61E-05	1.10E-05		4.58E-05		
Di-n-octylphthalate	6.61E-05	2.56E-03		4.45E-05		
N-Nitroso-di-n-propylamine	6.61E-05	2.67E-07		1.90E-04		
Tetrachloroethene	1.45E-03	7.74E-04		1.62E-03	7.93E-04	8.61E-03
Toluene	2.38E-03	1.54E-04		2.53E-03	1.30E-03	1.41E-02
Trichloroethene	5.42E-01	1.25E-02		6.79E-01	2.96E-01	3.21E+00
Vinyl chloride	8.80E-03	9.25E-05		2.53E-02	4.80E-03	5.22E-02
cis-1,2-Dichloroethene	2.45E-02	3.52E-04		4.42E-02	1.34E-02	1.45E-0
trans-1,2-Dichloroethene	8.14E-04	1.25E-06		6.68E-03	4.44E-04	4.83E-
Alpha activity						
Americium-241						
Beta activity						
Cesium-137						
Lead-210						
Lead-214						
Neptunium-237						
Plutonium-239						
Technetium-99						
Thorium-228						
Thorium-230						
Uranium-234						
Uranium-235						
Uranium-238						

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	1.88E-01	1.75E-01	4.38E-06	1.27E+01		
Antimony	7.94E-06	7.40E-06	1.85E-10	5.57E-04		
Cadmium	4.63E-06	8.63E-07	1.08E-10	4.78E-04		
Chromium	3.12E-04	2.91E-04	7.28E-09	2.11E-02		
Benz(a)anthracene	9.26E-07	1.73E-06	2.16E-11	6.35E-05		
Benzo(a)pyrene	1.06E-06	1.97E-06	2.47E-11	7.21E-05		
Benzo(b)fluoranthene	9.26E-07	1.73E-06	2.16E-11	6.31E-05		
Benzo(k)fluoranthene	7.94E-07	1.48E-06	1.85E-11	5.38E-05		
Chrysene	1.06E-06	1.97E-06	2.47E-11	7.26E-05		
Fluoranthene	1.98E-06	3.70E-06	4.63E-11	1.40E-04		
PCB-1262	5.03E-07	5.62E-07	1.17E-11	3.43E-05		
Phenanthrene	9.26E-07	1.73E-06	2.16E-11	6.66E-05		
Polychlorinated biphenyl	5.03E-07	5.62E-07	1.17E-11	3.43E-05		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Pyrene	1.59E-06	2.96E-06	3.70E-11	1.12E-04		
Alpha activity						
Beta activity						

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Antimony	1.92E-05	1.79E-05	4.48E-10	1.35E-03		
Beryllium	4.99E-06	4.65E-06	1.16E-10	3.40E-04		
Cadmium	4.80E-06	8.94E-07	1.12E-10	4.96E-04		
Chromium	2.81E-04	2.62E-04	6.56E-09	1.90E-02		
Iron	2.25E-01	2.10E-01	5.25E-06	1.52E+01		
Thallium	9.29E-06	8.66E-06	2.17E-10	6.30E-04		
Uranium	6.63E-04	6.18E-04	1.55E-08	4.49E-02		
Zinc	6.65E-04	6.20E-04	1.55E-08	9.06E-02		
Acenaphthene	1.31E-05	2.44E-05	3.05E-10	9.69E-04		
cenaphthylene	2.91E-06	5.43E-06	6.79E-11	2.38E-04		
racene	2.41E-05	4.49E-05	5.61E-10	1.76E-03		
(a)anthracene	6.64E-05	1.24E-04	1.55E-09	4.55E-03		
Benzo(a)pyrene	6.39E-05	1.19E-04	1.49E-09	4.36E-03		
Benzo(b)fluoranthene	6.76E-05	1.26E-04	1.58E-09	4.61E-03		
Benzo(ghi)perylene	3.13E-05	5.84E-05	7.30E-10	2.12E-03		
Benzo(k)fluoranthene	4.46E-05	8.33E-05	1.04E-09	3.03E-03		
Bis(2-ethylhexyl)phthalate	1.06E-06	1.97E-06	2.47E-11	7.46E-05		
Chrysene	5.97E-05	1.11E-04	1.39E-09	4.10E-03		
Dibenz(a,h)anthracene	1.72E-05	3.21E-05	4.01E-10	1.17E-03		
Fluoranthene	1.44E-04	2.69E-04	3.37E-09	1.02E-02		
Fluorene	1.59E-05	2.96E-05	3.70E-10	1.16E-03		
Indeno(1,2,3-cd)pyrene	2.39E-05	4.45E-05	5.57E-10	1.62E-03		
Naphthalene	3.17E-08	5.92E-08	7.41E-13	2.92E-06		
PCB-1260	5.03E-07	5.62E-07	1.17E-11	3.41E-05		
Phenanthrene	7.56E-05	1.41E-04	1.76E-09	5.44E-03		
Polychlorinated biphenyl	5.03E-07	5.62E-07	1.17E-11	3.43E-05		
Pyrene	1.22E-04	2.27E-04	2.84E-09	8.57E-03		
Alpha activity						
Beta activity						
Neptunium-237						
Uranium-235						
Uranium-238						

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Aluminum	9.63E-02	8.98E-02	2.25E-06	6.53E+00		
Antimony	1.31E-05	1.22E-05	3.06E-10	9.21E-04		
Arsenic	1.74E-04	1.63E-04	4.07E-09	1.22E-02		
llium	4.16E-06	3.88E-06	9.71E-11	2.84E-04		
um	1.20E-05	2.23E-06	2.79E-10	1.24E-03		
ium	1.66E-04	1.55E-04	3.87E-09	1.12E-02		

Table 1.55b. Noncarcinogenic chronic daily intakes for the child residential user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use
Cobalt	6.27E-05	5.85E-05	1.46E-09	4.62E-03		
Uranium	4.80E-04	4.47E-04	1.12E-08	3.25E-02		
Zinc	3.97E-04	3.70E-04	9.26E-09	5.41E-02		
2-Methylnaphthalene	1.19E-05	2.22E-05	2.78E-10	9.35E-04		
Acenaphthene	4.45E-05	8.30E-05	1.04E-09	3.29E-03		
Anthracene	1.93E-04	3.60E-04	4.50E-09	1.41E-02		
Benz(a)anthracene	2.66E-04	4.96E-04	6.21E-09	1.83E-02		
Benzo(a)pyrene	2.39E-04	4.47E-04	5.59E-09	1.63E-02		
Benzo(b)fluoranthene	2.98E-04	5.56E-04	6.95E-09	2.03E-02		
Benzo(ghi)perylene	4.89E-05	9.13E-05	1.14E-09	3.32E-03		
Benzo(k)fluoranthene	2.94E-04	5.48E-04	6.85E-09	1.99E-02		
Bis(2-ethylhexyl)phthalate	1.32E-06	2.47E-06	3.09E-11	9.32E-05		
Chrysene	2.87E-04	5.35E-04	6.69E-09	1.97E-02		
Di-n-butyl phthalate	2.71E-06	5.06E-06	6.33E-11	1.91E-04		
Dibenz(a,h)anthracene	4.97E-05	9.26E-05	1.16E-09	3.37E-03		
Fluoranthene	5.97E-04	1.11E-03	1.39E-08	4.21E-02		
Fluorene	4.14E-05	7.71E-05	9.65E-10	3.03E-03		
Indeno(1,2,3-cd)pyrene	5.03E-05	9.37E-05	1.17E-09	3.41E-03		
Naphthalene	1.92E-05	3.58E-05	4.48E-10	1.77E-03		
PCB-1254	1.27E-05	1.42E-05	2.96E-10	8.67E-04		
PCB-1260	2.12E-07	2.37E-07	4.94E-12	1.43E-05		
Phenanthrene	4.63E-04	8.63E-04	1.08E-08	3.33E-02		
Polychlorinated biphenyl	7.42E-06	8.30E-06	1.73E-10	5.06E-04		
Pyrene	5.22E-04	9.74E-04	1.22E-08	3.68E-02		
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-234						
Uranium-235						
Uranium-238						

Table 1.56a. Noncarcinogenic chronic daily intakes for the adult recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	3.75E-04	1.51E-04	3.14E-06
Antimony	2.31E-09	9.08E-10	2.43E-11
Arsenic	5.10E-07	2.02E-07	4.28E-09
Beryllium	1.25E-08	4.99E-09	1.25E-10
Cadmium	2.25E-08	8.20E-09	3.44E-07
Chromium	5.10E-06	2.02E-06	4.18E-08
Cobalt	2.02E-08	7.97E-09	
Iron	9.41E-03	3.77E-03	3.93E-03
Lead	1.77E-07	6.89E-08	1.40E-09
Thallium	1.15E-06	4.63E-07	9.46E-09
Uranium	3.58E-07	1.42E-07	9.96E-06
Vanadium	1.51E-06	6.08E-07	1.27E-08
Zinc	4.99E-04	1.79E-04	
2-Methylnaphthalene	7.85E-09	2.97E-09	
Acenaphthene	3.76E-08	1.45E-08	
Acenaphthylene	2.30E-09	8.63E-10	
Anthracene	8.82E-08	3.41E-08	
Benz(a)anthracene	2.11E-06	8.43E-07	
Benzo(a)pyrene	5.05E-06	2.02E-06	2.31E-06
Benzo(b)fluoranthene	5.94E-06	2.38E-06	
Benzo(ghi)perylene	8.95E-06	3.59E-06	
Benzo(k)fluoranthene	2.35E-05	9.46E-06	
Bis(2-ethylhexyl)phthalate	9.94E-09	3.91E-09	
Chrysene	2.23E-06	8.90E-07	
Di-n-butyl phthalate	7.41E-08	2.91E-08	
Dibenz(a,h)anthracene	7.33E-06	2.94E-06	
Fluoranthene	7.54E-07	2.97E-07	
Fluorene	3.47E-08	1.34E-08	
Indeno(1,2,3-cd)pyrene	8.48E-06	3.40E-06	
Naphthalene	3.63E-09	1.33E-09	
PCB-1254	1.85E-07	7.39E-08	2.12E-07
PCB-1260	1.23E-06	4.96E-07	1.14E-07
PCB-1262	4.14E-08	1.66E-08	
Phenanthrene	2.87E-07	1.12E-07	6.04E-07
Polychlorinated biphenyl	3.26E-07	1.31E-07	
Pyrene	6.66E-07	2.62E-07	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.56a. Noncarcinogenic chronic daily intakes for the adult recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Di-n-butyl phthalate	3.21E-09	3.51E-08	
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Cadmium	1.27E-10	1.29E-09	1.26E-08
Chromium	3.87E-08	4.25E-07	2.06E-09
Thallium	1.34E-08	1.49E-07	7.14E-10
Uranium	2.45E-09	2.71E-08	4.42E-07
Acenaphthene	2.59E-11	2.77E-10	
Anthracene	5.30E-11	5.69E-10	
Benz(a)anthracene	2.66E-09	2.95E-08	
Benzo(a)pyrene	7.15E-09	7.96E-08	2.13E-08
Benzo(b)fluoranthene	1.26E-08	1.40E-07	
Benzo(ghi)perylene	1.03E-08	1.15E-07	
Benzo(k)fluoranthene	3.83E-08	4.27E-07	
Chrysene	2.93E-09	3.24E-08	
Di-n-butyl phthalate	8.06E-10	8.81E-09	
Dibenz(a,h)anthracene	7.04E-09	7.86E-08	
Fluoranthene	1.38E-09	1.51E-08	
Fluorene	2.17E-11	2.33E-10	
Indeno(1,2,3-cd)pyrene	1.17E-08	1.31E-07	
PCB-1260	2.88E-07	3.22E-06	1.74E-07
Phenanthrene	4.13E-10	4.48E-09	5.66E-09
Polychlorinated biphenyl	7.19E-08	7.99E-07	
Pyrene	1.18E-09	1.29E-08	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	5.04E-05	3.52E-04	2.74E-06
Antimony	3.29E-10	2.25E-09	2.25E-11
Chromium	2.57E-07	1.77E-06	1.37E-08
Uranium	2.04E-08	1.41E-07	3.69E-06
Benz(a)anthracene	1.28E-09	8.90E-09	
Benzo(a)pyrene	3.14E-09	2.18E-08	9.32E-09
Benzo(b)fluoranthene	3.14E-09	2.18E-08	
Benzo(k)fluoranthene	1.92E-08	1.34E-07	
Chrysene	1.28E-09	8.90E-09	
Fluoranthene	4.85E-10	3.32E-09	
PCB-1260	4.26E-09	2.98E-08	2.57E-09
Phenanthrene	1.24E-10	8.41E-10	1.70E-09
Polychlorinated biphenyl	3.51E-10	2.44E-09	
Pyrene	2.76E-10	1.89E-09	
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

Table 1.56a. Noncarcinogenic chronic daily intakes for the adult recreational user

---------------------------------- SECTOR=Far North/Northwest MEDIA=Surface soil ----------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.59E-10	1.09E-09	1.09E-11
Beryllium	1.71E-09	1.19E-08	1.12E-10
Cadmium	8.73E-10	5.55E-09	8.68E-08
Chromium	6.73E-07	4.63E-06	3.58E-08
Thallium	2.91E-08	2.04E-07	1.55E-09
Uranium	1.08E-08	7.46E-08	1.95E-06
Acenaphthene	8.67E-11	5.81E-10	
Anthracene	3.36E-10	2.26E-09	
Benz(a)anthracene	1.09E-08	7.57E-08	
Benzo(a)pyrene	2.19E-08	1.53E-07	6.52E-08
Benzo(b)fluoranthene	2.04E-08	1.42E-07	
Benzo(ghi)perylene	3.16E-08	2.21E-07	
Benzo(k)fluoranthene	1.11E-07	7.77E-07	
Bis(2-ethylhexyl)phthalate	4.57E-10	3.13E-09	
Chrysene	1.12E-08	7.79E-08	
Di-n-butyl phthalate	2.29E-10	1.56E-09	
Fluoranthene	4.80E-09	3.28E-08	
Fluorene	1.05E-10	7.06E-10	
Indeno(1,2,3-cd)pyrene	3.40E-08	2.38E-07	
Phenanthrene	1.26E-09	8.51E-09	1.72E-08
Pyrene	2.24E-09	1.53E-08	
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

---------------------------------- SECTOR=Northeast MEDIA=Surface soil ----------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Chromium	9.21E-08	1.01E-06	4.90E-09
Uranium	2.08E-09	2.30E-08	3.76E-07
Zinc	1.52E-05	1.51E-04	
Acenaphthene	1.34E-11	1.43E-10	
Anthracene	3.24E-11	3.48E-10	
Benz(a)anthracene	2.17E-09	2.40E-08	
Benzo(a)pyrene	4.54E-09	5.05E-08	1.35E-08
Benzo(b)fluoranthene	6.51E-09	7.24E-08	
Benzo(ghi)perylene	7.98E-09	8.90E-08	
Benzo(k)fluoranthene	2.07E-08	2.31E-07	
Chrysene	2.48E-09	2.75E-08	
Fluoranthene	9.49E-10	1.04E-08	
Indeno(1,2,3-cd)pyrene	8.45E-09	9.42E-08	
PCB-1260	6.32E-09	7.06E-08	3.80E-09
Phenanthrene	2.82E-10	3.05E-09	3.85E-09
Polychlorinated biphenyl	5.20E-10	5.78E-09	
Pyrene	7.50E-10	8.20E-09	
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

---------------------------------- SECTOR=Northwest MEDIA=Surface soil ----------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.03E-11	1.12E-10	7.04E-13

Table 1.56a. Noncarcinogenic chronic daily intakes for the adult recreational user

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Beryllium	1.81E-10	2.02E-09	1.18E-11
Cadmium	1.34E-10	1.36E-09	1.33E-08
Chromium	1.13E-07	1.24E-06	6.03E-09
Iron	1.37E-04	1.52E-03	3.71E-04
Lead	3.76E-09	4.06E-08	1.93E-10
Vanadium	2.28E-08	2.54E-07	1.24E-09
Benz(a)anthracene	2.18E-09	2.41E-08	
Benzo(a)pyrene	7.09E-09	7.89E-08	2.11E-08
Benzo(b)fluoranthene	9.37E-09	1.04E-07	
Benzo(k)fluoranthene	2.60E-08	2.90E-07	
Chrysene	2.10E-09	2.33E-08	
Fluoranthene	5.17E-10	5.65E-09	
Pyrene	5.17E-10	5.65E-09	
Alpha activity			
Beta activity			
Uranium-238			

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.63E-05	1.82E-04	8.86E-07
Antimony	2.14E-11	2.35E-10	1.47E-12
Cadmium	3.21E-10	3.25E-09	3.19E-08
Chromium	1.84E-07	2.02E-06	9.78E-09
Benz(a)anthracene	7.07E-10	7.83E-09	
Benzo(a)pyrene	1.97E-09	2.20E-08	5.87E-09
Benzo(b)fluoranthene	1.73E-09	1.92E-08	
Benzo(k)fluoranthene	7.24E-09	8.09E-08	
Chrysene	8.08E-10	8.95E-09	
Fluoranthene	2.70E-10	2.95E-09	
PCB-1262	7.49E-10	8.33E-09	
Phenanthrene	6.84E-11	7.40E-10	9.36E-10
Polychlorinated biphenyl	7.49E-10	8.33E-09	
Pyrene	2.16E-10	2.36E-09	
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	7.77E-11	8.50E-10	5.32E-12
Beryllium	4.41E-10	4.91E-09	2.88E-11
Cadmium	4.97E-10	5.05E-09	4.95E-08
Chromium	2.48E-07	2.72E-06	1.32E-08
Iron	3.98E-04	4.43E-03	1.08E-03
Thallium	3.22E-08	3.59E-07	1.71E-09
Uranium	1.84E-08	2.04E-07	3.33E-06
Zinc	2.65E-05	2.64E-04	
Acenaphthene	8.08E-10	8.65E-09	
Acenaphthylene	6.24E-11	6.50E-10	
Anthracene	1.80E-09	1.93E-08	
Benz(a)anthracene	7.58E-08	8.41E-07	
Benzo(a)pyrene	1.79E-07	1.99E-06	5.31E-07
Benzo(b)fluoranthene	1.89E-07	2.10E-06	
Benzo(ghi)perylene	2.71E-07	3.02E-06	

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Table 1.56a. Noncarcinogenic chronic daily intakes for the adult recreational user

------------------------------------ SECTOR=Southwest MEDIA=Surface soil ------------------------------------
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Benzo(k)fluoranthene	6.10E-07	6.81E-06	
Bis(2-ethylhexyl)phthalate	2.16E-10	2.35E-09	
Chrysene	6.83E-08	7.57E-07	
Dibenz(a,h)anthracene	2.35E-07	2.62E-06	
Fluoranthene	2.94E-08	3.21E-07	
Fluorene	1.19E-09	1.27E-08	
Indeno(1,2,3-cd)pyrene	2.07E-07	2.31E-06	
Naphthalene	3.67E-13	3.75E-12	
PCB-1260	1.36E-08	1.52E-07	8.21E-09
Phenanthrene	8.36E-09	9.05E-08	1.14E-07
Polychlorinated biphenyl	1.12E-09	1.25E-08	
Pyrene	2.48E-08	2.71E-07	
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

------------------------------------ SECTOR=West MEDIA=Surface soil ------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	4.80E-06	5.35E-05	2.61E-07
Antimony	2.04E-11	2.23E-10	1.39E-12
Arsenic	1.31E-08	1.44E-07	7.14E-10
Beryllium	1.41E-10	1.57E-09	9.22E-12
Cadmium	4.76E-10	4.83E-09	4.74E-08
Chromium	5.62E-08	6.17E-07	2.99E-09
Cobalt	2.46E-10	2.69E-09	
Uranium	5.11E-09	5.66E-08	9.24E-07
Zinc	6.07E-06	6.05E-05	
2-Methylnaphthalene	1.37E-10	1.44E-09	
Acenaphthene	1.06E-09	1.13E-08	
Anthracene	5.53E-09	5.94E-08	
Benz(a)anthracene	1.17E-07	1.29E-06	
Benzo(a)pyrene	2.57E-07	2.86E-06	7.63E-07
Benzo(b)fluoranthene	3.19E-07	3.55E-06	
Benzo(ghi)perylene	1.63E-07	1.82E-06	
Benzo(k)fluoranthene	1.54E-06	1.72E-05	
Bis(2-ethylhexyl)phthalate	1.03E-10	1.13E-09	
Chrysene	1.26E-07	1.39E-06	
Di-n-butyl phthalate	2.12E-10	2.32E-09	
Dibenz(a,h)anthracene	2.60E-07	2.91E-06	
Fluoranthene	4.67E-08	5.10E-07	
Fluorene	1.19E-09	1.27E-08	
Indeno(1,2,3-cd)pyrene	1.67E-07	1.86E-06	
Naphthalene	8.53E-11	8.70E-10	
PCB-1254	1.09E-08	1.21E-07	8.11E-08
PCB-1260	2.20E-09	2.46E-08	1.33E-09
Phenanthrene	1.96E-08	2.13E-07	2.69E-07
Polychlorinated biphenyl	6.35E-09	7.06E-08	
Pyrene	4.08E-08	4.46E-07	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.56b. Noncarcinogenic chronic daily intakes for the child recreational user

------------------------------------- SECTOR=WAG 6 MEDIA=Surface soil -------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	3.96E-04	1.46E-04	3.03E-06
Antimony	2.43E-09	8.77E-10	2.35E-11
Arsenic	5.39E-07	1.95E-07	4.13E-09
Beryllium	1.32E-08	4.82E-09	1.21E-10
Cadmium	2.37E-08	7.92E-09	3.32E-07
Chromium	5.38E-06	1.95E-06	4.03E-08
Cobalt	2.14E-08	7.69E-09	
Iron	9.94E-03	3.64E-03	3.80E-03
Lead	1.87E-07	6.65E-08	1.35E-09
Thallium	1.22E-06	4.47E-07	9.14E-09
Uranium	3.78E-07	1.38E-07	9.61E-06
Vanadium	1.60E-06	5.87E-07	1.23E-08
Zinc	5.27E-04	1.73E-04	
2-Methylnaphthalene	8.29E-09	2.87E-09	
Acenaphthene	3.98E-08	1.40E-08	
Acenaphthylene	2.43E-09	8.33E-10	
Anthracene	9.32E-08	3.30E-08	
Benz(a)anthracene	2.23E-06	8.14E-07	
Benzo(a)pyrene	5.34E-06	1.95E-06	2.23E-06
Benzo(b)fluoranthene	6.27E-06	2.30E-06	
Benzo(ghi)perylene	9.45E-06	3.47E-06	
Benzo(k)fluoranthene	2.49E-05	9.14E-06	
Bis(2-ethylhexyl)phthalate	1.05E-08	3.78E-09	
Chrysene	2.36E-06	8.60E-07	
Di-n-butyl phthalate	7.82E-08	2.81E-08	
Dibenz(a,h)anthracene	7.74E-06	2.84E-06	
Fluoranthene	7.97E-07	2.86E-07	
Fluorene	3.66E-08	1.30E-08	
Indeno(1,2,3-cd)pyrene	8.95E-06	3.29E-06	
Naphthalene	3.83E-09	1.29E-09	
PCB-1254	1.95E-07	7.14E-08	2.05E-07
PCB-1260	1.30E-06	4.79E-07	1.10E-07
PCB-1262	4.37E-08	1.60E-08	
Phenanthrene	3.03E-07	1.08E-07	5.83E-07
Polychlorinated biphenyl	3.44E-07	1.26E-07	
Pyrene	7.03E-07	2.53E-07	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.56b. Noncarcinogenic chronic daily intakes for the child recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Di-n-butyl phthalate	3.39E-09	3.38E-08	
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Cadmium	1.34E-10	1.24E-09	1.22E-08
Chromium	4.08E-08	4.10E-07	1.99E-09
Thallium	1.41E-08	1.44E-07	6.89E-10
Uranium	2.58E-09	2.61E-08	4.27E-07
Acenaphthene	2.73E-11	2.67E-10	
Anthracene	5.59E-11	5.50E-10	
Benz(a)anthracene	2.81E-09	2.84E-08	
Benzo(a)pyrene	7.55E-09	7.68E-08	2.05E-08
Benzo(b)fluoranthene	1.33E-08	1.35E-07	
Benzo(ghi)perylene	1.09E-08	1.11E-07	
Benzo(k)fluoranthene	4.04E-08	4.13E-07	
Chrysene	3.09E-09	3.13E-08	
Di-n-butyl phthalate	8.52E-10	8.51E-09	
Dibenz(a,h)anthracene	7.44E-09	7.59E-08	
Fluoranthene	1.46E-09	1.45E-08	
Fluorene	2.29E-11	2.25E-10	
Indeno(1,2,3-cd)pyrene	1.24E-08	1.26E-07	
PCB-1260	3.05E-07	3.11E-06	1.68E-07
Phenanthrene	4.37E-10	4.32E-09	5.46E-09
Polychlorinated biphenyl	7.59E-08	7.72E-07	
Pyrene	1.25E-09	1.25E-08	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	5.32E-05	3.40E-04	2.65E-06
Antimony	3.48E-10	2.18E-09	2.18E-11
Chromium	2.71E-07	1.71E-06	1.32E-08
Uranium	2.16E-08	1.37E-07	3.56E-06
Benz(a)anthracene	1.35E-09	8.60E-09	
Benzo(a)pyrene	3.31E-09	2.11E-08	9.00E-09
Benzo(b)fluoranthene	3.31E-09	2.11E-08	
Benzo(k)fluoranthene	2.03E-08	1.29E-07	
Chrysene	1.35E-09	8.60E-09	
Fluoranthene	5.12E-10	3.20E-09	
PCB-1260	4.50E-09	2.88E-08	2.48E-09
Phenanthrene	1.31E-10	8.12E-10	1.64E-09
Polychlorinated biphenyl	3.70E-10	2.36E-09	
Pyrene	2.91E-10	1.82E-09	
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

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Table 1.56b. Noncarcinogenic chronic daily intakes for the child recreational user

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.68E-10	1.05E-09	1.05E-11
Beryllium	1.81E-09	1.15E-08	1.08E-10
Cadmium	9.22E-10	5.36E-09	8.38E-08
Chromium	7.10E-07	4.47E-06	3.46E-08
Thallium	3.08E-08	1.97E-07	1.50E-09
Uranium	1.14E-08	7.20E-08	1.88E-06
Acenaphthene	9.15E-11	5.61E-10	
Anthracene	3.54E-10	2.18E-09	
Benz(a)anthracene	1.15E-08	7.31E-08	
Benzo(a)pyrene	2.32E-08	1.48E-07	6.30E-08
Benzo(b)fluoranthene	2.15E-08	1.37E-07	
Benzo(ghi)perylene	3.34E-08	2.13E-07	
Benzo(k)fluoranthene	1.17E-07	7.50E-07	
Bis(2-ethylhexyl)phthalate	4.83E-10	3.02E-09	
Chrysene	1.19E-08	7.52E-08	
Di-n-butyl phthalate	2.41E-10	1.51E-09	
Fluoranthene	5.07E-09	3.17E-08	
Fluorene	1.11E-10	6.81E-10	
Indeno(1,2,3-cd)pyrene	3.59E-08	2.30E-07	
Phenanthrene	1.33E-09	8.22E-09	1.66E-08
Pyrene	2.36E-09	1.48E-08	
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Chromium	9.73E-08	9.77E-07	4.74E-09
Uranium	2.20E-09	2.22E-08	3.63E-07
Zinc	1.60E-05	1.46E-04	
Acenaphthene	1.41E-11	1.38E-10	
Anthracene	3.42E-11	3.36E-10	
Benz(a)anthracene	2.29E-09	2.32E-08	
Benzo(a)pyrene	4.79E-09	4.88E-08	1.30E-08
Benzo(b)fluoranthene	6.87E-09	6.99E-08	
Benzo(ghi)perylene	8.43E-09	8.59E-08	
Benzo(k)fluoranthene	2.19E-08	2.23E-07	
Chrysene	2.62E-09	2.65E-08	
Fluoranthene	1.00E-09	1.00E-08	
Indeno(1,2,3-cd)pyrene	8.92E-09	9.10E-08	
PCB-1260	6.67E-09	6.81E-08	3.67E-09
Phenanthrene	2.97E-10	2.94E-09	3.72E-09
Polychlorinated biphenyl	5.49E-10	5.58E-09	
Pyrene	7.92E-10	7.91E-09	
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.09E-11	1.09E-10	6.80E-13

Table 1.56b. Noncarcinogenic chronic daily intakes for the child recreational user

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Beryllium	1.92E-10	1.95E-09	1.14E-11
Cadmium	1.41E-10	1.31E-09	1.28E-08
Chromium	1.20E-07	1.20E-06	5.82E-09
Iron	1.45E-04	1.47E-03	3.59E-04
Lead	3.97E-09	3.92E-08	1.86E-10
Vanadium	2.41E-08	2.45E-07	1.20E-09
Benz(a)anthracene	2.30E-09	2.33E-08	
Benzo(a)pyrene	7.49E-09	7.62E-08	2.03E-08
Benzo(b)fluoranthene	9.89E-09	1.01E-07	
Benzo(k)fluoranthene	2.75E-08	2.80E-07	
Chrysene	2.22E-09	2.25E-08	
Fluoranthene	5.46E-10	5.45E-09	
Pyrene	5.46E-10	5.45E-09	
Alpha activity			
Beta activity			
Uranium-238			

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.72E-05	1.76E-04	8.55E-07
Antimony	2.26E-11	2.26E-10	1.42E-12
Cadmium	3.39E-10	3.14E-09	3.08E-08
Chromium	1.94E-07	1.95E-06	9.44E-09
Benz(a)anthracene	7.46E-10	7.56E-09	
Benzo(a)pyrene	2.08E-09	2.12E-08	5.66E-09
Benzo(b)fluoranthene	1.82E-09	1.86E-08	
Benzo(k)fluoranthene	7.65E-09	7.81E-08	
Chrysene	8.53E-10	8.64E-09	
Fluoranthene	2.85E-10	2.85E-09	
PCB-1262	7.91E-10	8.04E-09	
Phenanthrene	7.22E-11	7.15E-10	9.03E-10
Polychlorinated biphenyl	7.91E-10	8.04E-09	
Pyrene	2.28E-10	2.28E-09	
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	8.20E-11	8.21E-10	5.14E-12
Beryllium	4.66E-10	4.74E-09	2.78E-11
Cadmium	5.25E-10	4.87E-09	4.77E-08
Chromium	2.62E-07	2.63E-06	1.27E-08
Iron	4.20E-04	4.28E-03	1.04E-03
Thallium	3.40E-08	3.47E-07	1.66E-09
Uranium	1.94E-08	1.97E-07	3.21E-06
Zinc	2.80E-05	2.55E-04	
Acenaphthene	8.54E-10	8.36E-09	
Acenaphthylene	6.59E-11	6.27E-10	
Anthracene	1.90E-09	1.87E-08	
Benz(a)anthracene	8.01E-08	8.12E-07	
Benzo(a)pyrene	1.89E-07	1.92E-06	5.12E-07
Benzo(b)fluoranthene	1.99E-07	2.03E-06	
Benzo(ghi)perylene	2.86E-07	2.92E-06	

Table 1.56b. Noncarcinogenic chronic daily intakes for the child recreational user

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Benzo(k)fluoranthene	6.44E-07	6.58E-06	
Bis(2-ethylhexyl)phthalate	2.28E-10	2.27E-09	
Chrysene	7.21E-08	7.31E-07	
Dibenz(a,h)anthracene	2.48E-07	2.53E-06	
Fluoranthene	3.10E-08	3.10E-07	
Fluorene	1.25E-09	1.23E-08	
Indeno(1,2,3-cd)pyrene	2.18E-07	2.23E-06	
Naphthalene	3.88E-13	3.62E-12	
PCB-1260	1.44E-08	1.47E-07	7.93E-09
Phenanthrene	8.83E-09	8.74E-08	1.10E-07
Polychlorinated biphenyl	1.18E-09	1.20E-08	
Pyrene	2.62E-08	2.61E-07	
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	5.06E-06	5.17E-05	2.52E-07
Antimony	2.15E-11	2.15E-10	1.35E-12
Arsenic	1.39E-08	1.39E-07	6.89E-10
Beryllium	1.49E-10	1.52E-09	8.90E-12
Cadmium	5.03E-10	4.67E-09	4.57E-08
Chromium	5.93E-08	5.96E-07	2.89E-09
Cobalt	2.60E-10	2.60E-09	
Uranium	5.40E-09	5.46E-08	8.92E-07
Zinc	6.41E-06	5.84E-05	
2-Methylnaphthalene	1.45E-10	1.39E-09	
Acenaphthene	1.11E-09	1.09E-08	
Anthracene	5.84E-09	5.74E-08	
Benz(a)anthracene	1.23E-07	1.25E-06	
Benzo(a)pyrene	2.71E-07	2.76E-06	7.37E-07
Benzo(b)fluoranthene	3.37E-07	3.43E-06	
Benzo(ghi)perylene	1.72E-07	1.75E-06	
Benzo(k)fluoranthene	1.63E-06	1.66E-05	
Bis(2-ethylhexyl)phthalate	1.09E-10	1.09E-09	
Chrysene	1.33E-07	1.35E-06	
Di-n-butyl phthalate	2.24E-10	2.24E-09	
Dibenz(a,h)anthracene	2.75E-07	2.81E-06	
Fluoranthene	4.93E-08	4.92E-07	
Fluorene	1.25E-09	1.23E-08	
Indeno(1,2,3-cd)pyrene	1.76E-07	1.80E-06	
Naphthalene	9.00E-11	8.40E-10	
PCB-1254	1.15E-08	1.17E-07	7.83E-08
PCB-1260	2.33E-09	2.38E-08	1.28E-09
Phenanthrene	2.07E-08	2.05E-07	2.60E-07
Polychlorinated biphenyl	6.71E-09	6.82E-08	
Pyrene	4.31E-08	4.31E-07	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.56c. Noncarcinogenic chronic daily intakes for the teen recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	6.11E-04	1.22E-04	2.61E-06
Antimony	3.75E-09	7.35E-10	2.02E-11
Arsenic	8.31E-07	1.63E-07	3.55E-09
Beryllium	2.03E-08	4.04E-09	1.04E-10
Cadmium	3.66E-08	6.64E-09	2.86E-07
Chromium	8.30E-06	1.63E-06	3.47E-08
Cobalt	3.30E-08	6.44E-09	
Iron	1.53E-02	3.05E-03	3.27E-03
Lead	2.88E-07	5.57E-08	1.17E-09
Thallium	1.88E-06	3.75E-07	7.87E-09
Uranium	5.82E-07	1.15E-07	8.28E-06
Vanadium	2.46E-06	4.92E-07	1.06E-08
Zinc	8.12E-04	1.45E-04	
2-Methylnaphthalene	1.28E-08	2.40E-09	
Acenaphthene	6.13E-08	1.17E-08	
Acenaphthylene	3.75E-09	6.98E-10	
Anthracene	1.44E-07	2.76E-08	
Benz(a)anthracene	3.44E-06	6.82E-07	
Benzo(a)pyrene	8.23E-06	1.64E-06	1.92E-06
Benzo(b)fluoranthene	9.67E-06	1.93E-06	
Benzo(ghi)perylene	1.46E-05	2.91E-06	
Benzo(k)fluoranthene	3.83E-05	7.66E-06	
Bis(2-ethylhexyl)phthalate	1.62E-08	3.16E-09	
Chrysene	3.63E-06	7.20E-07	
Di-n-butyl phthalate	1.21E-07	2.36E-08	
Dibenz(a,h)anthracene	1.19E-05	2.38E-06	
Fluoranthene	1.23E-06	2.40E-07	
Fluorene	5.65E-08	1.09E-08	
Indeno(1,2,3-cd)pyrene	1.38E-05	2.75E-06	
Naphthalene	5.91E-09	1.08E-09	
PCB-1254	3.01E-07	5.98E-08	1.76E-07
PCB-1260	2.01E-06	4.01E-07	9.51E-08
PCB-1262	6.74E-08	1.34E-08	
Phenanthrene	4.67E-07	9.04E-08	5.02E-07
Polychlorinated biphenyl	5.31E-07	1.06E-07	
Pyrene	1.08E-06	2.12E-07	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.56c. Noncarcinogenic chronic daily intakes for the teen recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Di-n-butyl phthalate	5.22E-09	2.84E-08	
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Cadmium	2.07E-10	1.04E-09	1.05E-08
Chromium	6.29E-08	3.44E-07	1.71E-09
Thallium	2.18E-08	1.21E-07	5.93E-10
Uranium	3.98E-09	2.19E-08	3.67E-07
Acenaphthene	4.21E-11	2.24E-10	
Anthracene	8.62E-11	4.60E-10	
Benz(a)anthracene	4.33E-09	2.38E-08	
Benzo(a)pyrene	1.16E-08	6.44E-08	1.77E-08
Benzo(b)fluoranthene	2.05E-08	1.13E-07	
Benzo(ghi)perylene	1.68E-08	9.32E-08	
Benzo(k)fluoranthene	6.23E-08	3.46E-07	
Chrysene	4.76E-09	2.62E-08	
Di-n-butyl phthalate	1.31E-09	7.13E-09	
Dibenz(a,h)anthracene	1.15E-08	6.36E-08	
Fluoranthene	2.24E-09	1.22E-08	
Fluorene	3.53E-11	1.88E-10	
Indeno(1,2,3-cd)pyrene	1.91E-08	1.06E-07	
PCB-1260	4.69E-07	2.61E-06	1.44E-07
Phenanthrene	6.73E-10	3.62E-09	4.70E-09
Polychlorinated biphenyl	1.17E-07	6.46E-07	
Pyrene	1.92E-09	1.04E-08	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	8.20E-05	2.85E-04	2.28E-06
Antimony	5.36E-10	1.82E-09	1.87E-11
Chromium	4.18E-07	1.43E-06	1.14E-08
Uranium	3.32E-08	1.14E-07	3.07E-06
Benz(a)anthracene	2.09E-09	7.20E-09	
Benzo(a)pyrene	5.10E-09	1.77E-08	7.75E-09
Benzo(b)fluoranthene	5.10E-09	1.77E-08	
Benzo(k)fluoranthene	3.12E-08	1.08E-07	
Chrysene	2.09E-09	7.20E-09	
Fluoranthene	7.90E-10	2.68E-09	
PCB-1260	6.94E-09	2.41E-08	2.13E-09
Phenanthrene	2.02E-10	6.81E-10	1.41E-09
Polychlorinated biphenyl	5.71E-10	1.97E-09	
Pyrene	4.49E-10	1.53E-09	
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

Table 1.56c. Noncarcinogenic chronic daily intakes for the teen recreational user

------------------------------------ SECTOR=Far North/Northwest MEDIA=Surface soil ------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	2.59E-10	8.81E-10	9.05E-12
Beryllium	2.79E-09	9.65E-09	9.29E-11
Cadmium	1.42E-09	4.49E-09	7.22E-08
Chromium	1.10E-06	3.74E-06	2.98E-08
Thallium	4.74E-08	1.65E-07	1.29E-09
Uranium	1.75E-08	6.04E-08	1.62E-06
Acenaphthene	1.41E-10	4.70E-10	
Anthracene	5.46E-10	1.83E-09	
Benz(a)anthracene	1.78E-08	6.12E-08	
Benzo(a)pyrene	3.57E-08	1.24E-07	5.42E-08
Benzo(b)fluoranthene	3.32E-08	1.15E-07	
Benzo(ghi)perylene	5.15E-08	1.79E-07	
Benzo(k)fluoranthene	1.81E-07	6.29E-07	
Bis(2-ethylhexyl)phthalate	7.44E-10	2.53E-09	
Chrysene	1.83E-08	6.30E-08	
Di-n-butyl phthalate	3.72E-10	1.27E-09	
Fluoranthene	7.82E-09	2.66E-08	
Fluorene	1.71E-10	5.71E-10	
Indeno(1,2,3-cd)pyrene	5.54E-08	1.92E-07	
Phenanthrene	2.04E-09	6.89E-09	1.43E-08
Pyrene	3.64E-09	1.24E-08	
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

------------------------------------ SECTOR=Northeast MEDIA=Surface soil ------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Chromium	1.50E-07	8.19E-07	4.08E-09
Uranium	3.39E-09	1.86E-08	3.12E-07
Zinc	2.47E-05	1.22E-04	
Acenaphthene	2.18E-11	1.16E-10	
Anthracene	5.27E-11	2.82E-10	
Benz(a)anthracene	3.53E-09	1.94E-08	
Benzo(a)pyrene	7.39E-09	4.09E-08	1.12E-08
Benzo(b)fluoranthene	1.06E-08	5.86E-08	
Benzo(ghi)perylene	1.30E-08	7.20E-08	
Benzo(k)fluoranthene	3.37E-08	1.87E-07	
Chrysene	4.03E-09	2.22E-08	
Fluoranthene	1.54E-09	8.39E-09	
Indeno(1,2,3-cd)pyrene	1.38E-08	7.62E-08	
PCB-1260	1.03E-08	5.71E-08	3.16E-09
Phenanthrene	4.58E-10	2.47E-09	3.20E-09
Polychlorinated biphenyl	8.46E-10	4.68E-09	
Pyrene	1.22E-09	6.63E-09	
Alpha activity			
Beta activity			
Uranium-235			
Uranium-238			

------------------------------------ SECTOR=Northwest MEDIA=Surface soil ------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.67E-11	9.10E-11	5.85E-13

Table 1.56c. Noncarcinogenic chronic daily intakes for the teen recreational user

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Beryllium	2.95E-10	1.63E-09	9.85E-12
Cadmium	2.18E-10	1.10E-09	1.11E-08
Chromium	1.84E-07	1.01E-06	5.01E-09
Iron	2.23E-04	1.23E-03	3.09E-04
Lead	6.12E-09	3.28E-08	1.60E-10
Vanadium	3.71E-08	2.06E-07	1.03E-09
Benz(a)anthracene	3.54E-09	1.95E-08	
Benzo(a)pyrene	1.15E-08	6.38E-08	1.75E-08
Benzo(b)fluoranthene	1.52E-08	8.43E-08	
Benzo(k)fluoranthene	4.23E-08	2.35E-07	
Chrysene	3.42E-09	1.89E-08	
Fluoranthene	8.42E-10	4.57E-09	
Pyrene	8.42E-10	4.57E-09	
Alpha activity			
Beta activity			
Uranium-238			

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	2.65E-05	1.47E-04	7.36E-07
Antimony	3.49E-11	1.90E-10	1.22E-12
Cadmium	5.22E-10	2.63E-09	2.65E-08
Chromium	2.99E-07	1.63E-06	8.13E-09
Benz(a)anthracene	1.15E-09	6.34E-09	
Benzo(a)pyrene	3.21E-09	1.78E-08	4.88E-09
Benzo(b)fluoranthene	2.81E-09	1.55E-08	
Benzo(k)fluoranthene	1.18E-08	6.54E-08	
Chrysene	1.31E-09	7.24E-09	
Fluoranthene	4.39E-10	2.39E-09	
PCB-1262	1.22E-09	6.74E-09	
Phenanthrene	1.11E-10	5.99E-10	7.78E-10
Polychlorinated biphenyl	1.22E-09	6.74E-09	
Pyrene	3.51E-10	1.91E-09	
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.26E-10	6.88E-10	4.42E-12
Beryllium	7.18E-10	3.97E-09	2.39E-11
Cadmium	8.10E-10	4.08E-09	4.11E-08
Chromium	4.03E-07	2.20E-06	1.10E-08
Iron	6.48E-04	3.58E-03	8.97E-04
Thallium	5.23E-08	2.90E-07	1.43E-09
Uranium	3.00E-08	1.65E-07	2.77E-06
Zinc	4.31E-05	2.14E-04	
Acenaphthene	1.32E-09	7.00E-09	
Acenaphthylene	1.02E-10	5.26E-10	
Anthracene	2.93E-09	1.56E-08	
Benz(a)anthracene	1.23E-07	6.80E-07	
Benzo(a)pyrene	2.91E-07	1.61E-06	4.41E-07
Benzo(b)fluoranthene	3.08E-07	1.70E-06	
Benzo(ghi)perylene	4.41E-07	2.45E-06	

Table 1.56c. Noncarcinogenic chronic daily intakes for the teen recreational user

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Benzo(k)fluoranthene	9.93E-07	5.51E-06	
Bis(2-ethylhexyl)phthalate	3.51E-10	1.90E-09	
Chrysene	1.11E-07	6.12E-07	
Dibenz(a,h)anthracene	3.83E-07	2.12E-06	
Fluoranthene	4.78E-08	2.60E-07	
Fluorene	1.93E-09	1.03E-08	
Indeno(1,2,3-cd)pyrene	3.36E-07	1.87E-06	
Naphthalene	5.98E-13	3.03E-12	
PCB-1260	2.22E-08	1.23E-07	6.82E-09
Phenanthrene	1.36E-08	7.32E-08	9.51E-08
Polychlorinated biphenyl	1.83E-09	1.01E-08	
Pyrene	4.03E-08	2.19E-07	
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	7.81E-06	4.33E-05	2.17E-07
Antimony	3.31E-11	1.80E-10	1.16E-12
Arsenic	2.14E-08	1.17E-07	5.93E-10
Beryllium	2.30E-10	1.27E-09	7.66E-12
Cadmium	7.76E-10	3.91E-09	3.94E-08
Chromium	9.14E-08	4.99E-07	2.48E-09
Cobalt	4.01E-10	2.18E-09	
Uranium	8.32E-09	4.58E-08	7.68E-07
Zinc	9.88E-06	4.89E-05	
2-Methylnaphthalene	2.23E-10	1.17E-09	
Acenaphthene	1.72E-09	9.14E-09	
Anthracene	9.00E-09	4.81E-08	
Benz(a)anthracene	1.90E-07	1.05E-06	
Benzo(a)pyrene	4.18E-07	2.31E-06	6.34E-07
Benzo(b)fluoranthene	5.20E-07	2.88E-06	
Benzo(ghi)perylene	2.65E-07	1.47E-06	
Benzo(k)fluoranthene	2.51E-06	1.39E-05	
Bis(2-ethylhexyl)phthalate	1.68E-10	9.14E-10	
Chrysene	2.05E-07	1.13E-06	
Di-n-butyl phthalate	3.45E-10	1.87E-09	
Dibenz(a,h)anthracene	4.24E-07	2.35E-06	
Fluoranthene	7.60E-08	4.12E-07	
Fluorene	1.93E-09	1.03E-08	
Indeno(1,2,3-cd)pyrene	2.72E-07	1.51E-06	
Naphthalene	1.39E-10	7.04E-10	
PCB-1254	1.77E-08	9.78E-08	6.74E-08
PCB-1260	3.59E-09	1.99E-08	1.10E-09
Phenanthrene	3.20E-08	1.72E-07	2.23E-07
Polychlorinated biphenyl	1.03E-08	5.71E-08	
Pyrene	6.65E-08	3.61E-07	
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.06E-02	9.24E-03	2.01E-07
Antimony	1.90E-06	8.52E-07	1.85E-11
Arsenic	1.15E-05	5.14E-06	1.12E-10
Barium	1.87E-04	8.40E-05	1.82E-09
Beryllium	1.05E-06	4.72E-07	1.02E-11
Cadmium	3.33E-07	2.98E-08	3.23E-12
Chromium	3.62E-05	1.62E-05	3.53E-10
Cobalt	1.22E-05	5.47E-06	1.19E-10
Copper	2.47E-04	1.11E-04	2.40E-09
Iron	3.41E-02	1.53E-02	3.32E-07
Lead	2.03E-05	9.09E-06	1.97E-10
Manganese	7.37E-04	3.30E-04	7.17E-09
Mercury	2.41E-07	1.08E-07	2.34E-12
Nickel	4.40E-04	1.97E-04	4.28E-09
Silver	1.10E-06	4.91E-07	1.07E-11
Thallium	1.28E-06	5.73E-07	1.24E-11
Uranium	5.83E-05	2.61E-05	5.67E-10
Vanadium	4.87E-05	2.18E-05	4.74E-10
Zinc	6.60E-05	2.96E-05	6.42E-10
1,1,2-Trichloroethane	6.43E-08	1.44E-07	7.62E-08
1,1-Dichloroethene	1.26E-06	2.83E-06	8.34E-06
2,4-Dinitrotoluene	1.59E-06	1.42E-06	1.54E-11
2,6-Dinitrotoluene	1.50E-06	1.35E-06	1.46E-11
2-Hexanone	1.53E-08	3.42E-08	1.49E-13
2-Methylnaphthalene	2.35E-06	2.11E-06	2.29E-11
Acenaphthene	2.00E-06	1.79E-06	1.95E-11
Acenaphthylene	7.65E-07	6.85E-07	7.44E-12
Anthracene	3.57E-06	3.20E-06	3.47E-11
Benz(a)anthracene	2.94E-06	2.64E-06	2.86E-11
Benzo(a)pyrene	2.86E-06	2.56E-06	2.78E-11
Benzo(b)fluoranthene	3.45E-06	3.09E-06	3.35E-11
Benzo(ghi)perylene	2.12E-06	1.90E-06	2.06E-11
Benzo(k)fluoranthene	3.91E-06	3.50E-06	3.80E-11
Bis(2-ethylhexyl)phthalate	2.08E-06	1.86E-06	2.02E-11
Butyl benzyl phthalate	1.51E-06	1.35E-06	1.47E-11
Carbon tetrachloride	6.82E-08	1.53E-07	1.50E-07
Chrysene	3.06E-06	2.74E-06	2.97E-11
Di-n-butyl phthalate	2.48E-06	2.22E-06	2.41E-11
Di-n-octylphthalate	2.11E-06	1.89E-06	2.05E-11
Dibenz(a,h)anthracene	2.19E-06	1.96E-06	2.13E-11
Fluoranthene	5.24E-06	4.69E-06	5.09E-11
Fluorene	2.00E-06	1.79E-06	1.94E-11
Indeno(1,2,3-cd)pyrene	2.09E-06	1.87E-06	2.03E-11
Iodomethane	5.54E-08		
Methylene chloride	5.48E-08	1.23E-07	2.46E-07
N-Nitroso-di-n-propylamine	2.20E-06	1.97E-06	2.14E-11
N-Nitrosodiphenylamine	2.56E-06	2.29E-06	2.49E-11
Naphthalene	2.12E-06	1.90E-06	2.06E-11
PCB-1254	2.97E-07	1.60E-07	2.89E-12
PCB-1260	4.76E-07	2.56E-07	4.63E-12
PCB-1262	1.32E-07	7.10E-08	1.28E-12
Phenanthrene	4.21E-06	3.77E-06	4.10E-11
Polychlorinated biphenyl	1.80E-06	9.65E-07	1.75E-11
Pyrene	5.09E-06	4.56E-06	4.95E-11
Tetrachloroethene	6.79E-08	1.52E-07	1.28E-07
Trichloroethene	6.13E-04	1.37E-03	1.35E-03
Vinyl chloride	4.52E-06	1.01E-05	2.18E-02
trans-1,2-Dichloroethene	4.92E-05	1.10E-04	4.78E-10
Alpha activity			
Beta activity			
Cesium-137			

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Neptunium-237			
Plutonium-239			
Technetium-99			
Thorium-230			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=Central MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Antimony	9.90E-06	4.43E-06	9.63E-11
Cadmium	6.88E-07	6.17E-08	6.69E-12
Chromium	7.74E-05	3.47E-05	7.53E-10
Iron	5.78E-02	2.59E-02	5.62E-07
Thallium	1.27E-06	5.69E-07	1.23E-11
Bis(2-ethylhexyl)phthalate	1.39E-07	1.25E-07	1.35E-12
Di-n-butyl phthalate	2.87E-06	2.58E-06	2.80E-11
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			

SECTOR=East MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.59E-02	1.16E-02	2.52E-07
Antimony	1.13E-06	5.07E-07	1.10E-11
Arsenic	1.30E-05	5.81E-06	1.26E-10
Beryllium	1.02E-06	4.57E-07	9.93E-12
Cadmium	9.36E-07	8.38E-08	9.10E-12
Chromium	3.15E-05	1.41E-05	3.06E-10
Cobalt	1.56E-05	6.97E-06	1.51E-10
Lead	1.98E-05	8.87E-06	1.93E-10
Manganese	9.30E-04	4.17E-04	9.05E-09
Thallium	1.21E-06	5.42E-07	1.18E-11
Uranium	1.79E-05	8.02E-06	1.74E-10
Acenaphthene	4.52E-07	4.05E-07	4.39E-12
Anthracene	1.42E-06	1.27E-06	1.38E-11
Benz(a)anthracene	1.46E-06	1.30E-06	1.42E-11
Benzo(a)pyrene	1.45E-06	1.30E-06	1.41E-11
Benzo(b)fluoranthene	1.53E-06	1.37E-06	1.49E-11
Benzo(ghi)perylene	1.27E-06	1.13E-06	1.23E-11
Benzo(k)fluoranthene	1.42E-06	1.27E-06	1.38E-11
Bis(2-ethylhexyl)phthalate	2.78E-07	2.49E-07	2.70E-12
Chrysene	1.46E-06	1.31E-06	1.42E-11
Di-n-butyl phthalate	2.52E-06	2.25E-06	2.45E-11
Dibenz(a,h)anthracene	5.56E-07	4.98E-07	5.41E-12
Fluoranthene	1.68E-06	1.51E-06	1.64E-11
Fluorene	3.13E-07	2.80E-07	3.04E-12
Indeno(1,2,3-cd)pyrene	1.39E-06	1.24E-06	1.35E-11
Naphthalene	1.39E-07	1.25E-07	1.35E-12
PCB-1260	8.41E-07	4.52E-07	8.18E-12
Phenanthrene	1.56E-06	1.40E-06	1.52E-11
Polychlorinated biphenyl	1.62E-06	8.72E-07	1.58E-11
Pyrene	1.65E-06	1.48E-06	1.60E-11
Trichloroethene	4.77E-06	1.07E-05	1.05E-05
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.53E-02	1.13E-02	2.46E-07
Antimony	8.78E-06	3.93E-06	8.54E-11
Arsenic	2.38E-05	1.06E-05	2.31E-10
Beryllium	1.58E-06	7.06E-07	1.53E-11
Cadmium	4.39E-07	3.94E-08	4.27E-12
Chromium	3.90E-05	1.75E-05	3.79E-10
Iron	4.88E-02	2.18E-02	4.74E-07
Lead	4.16E-05	1.86E-05	4.05E-10
Manganese	1.91E-03	8.53E-04	1.85E-08
Thallium	1.44E-06	6.44E-07	1.40E-11
Uranium	6.50E-05	2.91E-05	6.32E-10
Vanadium	8.14E-05	3.65E-05	7.92E-10
Benz(a)anthracene	4.52E-07	4.05E-07	4.39E-12
Benzo(a)pyrene	5.21E-07	4.67E-07	5.07E-12
Benzo(b)fluoranthene	6.26E-07	5.60E-07	6.08E-12
Benzo(ghi)perylene	2.15E-07	1.93E-07	2.10E-12
Benzo(k)fluoranthene	5.21E-07	4.67E-07	5.07E-12
Bis(2-ethylhexyl)phthalate	2.43E-07	2.18E-07	2.37E-12
Butyl benzyl phthalate	1.39E-07	1.25E-07	1.35E-12
Chrysene	5.21E-07	4.67E-07	5.07E-12
Di-n-butyl phthalate	1.62E-06	1.46E-06	1.58E-11
Fluoranthene	7.65E-07	6.85E-07	7.44E-12
Indeno(1,2,3-cd)pyrene	2.33E-07	2.09E-07	2.26E-12
PCB-1254	1.01E-07	5.43E-08	9.83E-13
PCB-1260	1.02E-07	5.46E-08	9.88E-13
Phenanthrene	2.43E-07	2.18E-07	2.37E-12
Polychlorinated biphenyl	2.64E-07	1.42E-07	2.57E-12
Pyrene	7.65E-07	6.85E-07	7.44E-12
Alpha activity			
Beta activity			
Cesium-137			
Uranium-235			
Uranium-238			

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.58E-02	1.15E-02	2.50E-07
Antimony	4.19E-06	1.88E-06	4.07E-11
Arsenic	1.56E-05	6.97E-06	1.51E-10
Beryllium	1.22E-06	5.48E-07	1.19E-11
Cadmium	1.00E-06	8.99E-08	9.76E-12
Chromium	1.11E-04	4.96E-05	1.08E-09
Cobalt	1.73E-05	7.73E-06	1.68E-10
Copper	5.41E-03	2.42E-03	5.26E-08
Iron	4.86E-02	2.18E-02	4.72E-07
Lead	4.69E-05	2.10E-05	4.56E-10
Manganese	1.24E-03	5.58E-04	1.21E-08
Mercury	3.12E-07	1.40E-07	3.03E-12
Nickel	9.92E-03	4.45E-03	9.65E-08
Thallium	1.76E-06	7.87E-07	1.71E-11
Uranium	1.48E-03	6.63E-04	1.44E-08
Zinc	1.23E-04	5.51E-05	1.20E-09
2,4-Dinitrotoluene	1.43E-06	1.28E-06	1.39E-11
Acenaphthene	1.74E-07	1.56E-07	1.69E-12
Anthracene	5.56E-07	4.98E-07	5.41E-12
Benz(a)anthracene	1.18E-06	1.06E-06	1.15E-11

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Benzo(a)pyrene	9.73E-07	8.72E-07	9.46E-12
Benzo(b)fluoranthene	9.04E-07	8.10E-07	8.79E-12
Benzo(ghi)perylene	4.52E-07	4.05E-07	4.39E-12
Benzo(k)fluoranthene	1.01E-06	9.03E-07	9.80E-12
Bis(2-ethylhexyl)phthalate	3.20E-07	2.87E-07	3.11E-12
Chrysene	1.22E-06	1.09E-06	1.18E-11
Di-n-butyl phthalate	2.22E-06	1.99E-06	2.16E-11
Fluoranthene	1.42E-06	1.27E-06	1.38E-11
Fluorene	1.74E-07	1.56E-07	1.69E-12
Indeno(1,2,3-cd)pyrene	4.87E-07	4.36E-07	4.73E-12
N-Nitrosodiphenylamine	1.45E-06	1.29E-06	1.41E-11
PCB-1254	8.18E-08	4.40E-08	7.95E-13
PCB-1260	1.07E-07	5.75E-08	1.04E-12
Phenanthrene	1.44E-06	1.29E-06	1.40E-11
Polychlorinated biphenyl	2.19E-07	1.18E-07	2.13E-12
Pyrene	1.44E-06	1.29E-06	1.40E-11
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Plutonium-239			
Technetium-99			
Thorium-230			
Uranium-234			
Uranium-235			
Uranium-238			

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.16E-02	9.68E-03	2.10E-07
Antimony	4.06E-06	1.82E-06	3.95E-11
Arsenic	8.27E-06	3.70E-06	8.04E-11
Barium	1.83E-04	8.18E-05	1.78E-09
Beryllium	1.00E-06	4.49E-07	9.74E-12
Cadmium	2.70E-07	2.42E-08	2.63E-12
Chromium	3.69E-05	1.65E-05	3.59E-10
Cobalt	1.39E-05	6.20E-06	1.35E-10
Manganese	7.47E-04	3.35E-04	7.27E-09
Thallium	2.48E-06	1.11E-06	2.41E-11
Uranium	1.20E-04	5.38E-05	1.17E-09
Vanadium	5.13E-05	2.30E-05	4.99E-10
Zinc	6.02E-05	2.70E-05	5.85E-10
2,6-Dinitrotoluene	1.34E-06	1.20E-06	1.30E-11
Acenaphthene	1.45E-06	1.30E-06	1.41E-11
Anthracene	1.55E-06	1.39E-06	1.51E-11
Benz(a)anthracene	3.54E-06	3.18E-06	3.45E-11
Benzo(a)pyrene	3.19E-06	2.86E-06	3.10E-11
Benzo(b)fluoranthene	3.56E-06	3.19E-06	3.46E-11
Benzo(ghi)perylene	1.55E-06	1.39E-06	1.50E-11
Benzo(k)fluoranthene	2.70E-06	2.42E-06	2.63E-11
Bis(2-ethylhexyl)phthalate	2.09E-07	1.87E-07	2.03E-12
Chrysene	3.64E-06	3.27E-06	3.54E-11
Di-n-butyl phthalate	1.53E-06	1.37E-06	1.49E-11
Dibenz(a,h)anthracene	1.38E-06	1.24E-06	1.35E-11
Fluoranthene	2.53E-06	2.27E-06	2.46E-11

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Fluorene	1.40E-06	1.25E-06	1.36E-11
Indeno(1,2,3-cd)pyrene	2.41E-06	2.16E-06	2.35E-11
N-Nitroso-di-n-propylamine	1.37E-06	1.23E-06	1.33E-11
Naphthalene	1.38E-06	1.24E-06	1.34E-11
PCB-1254	1.81E-08	9.71E-09	1.76E-13
PCB-1260	8.10E-08	4.35E-08	7.88E-13
Phenanthrene	2.16E-06	1.93E-06	2.10E-11
Polychlorinated biphenyl	1.49E-07	8.03E-08	1.45E-12
Pyrene	2.34E-06	2.09E-06	2.27E-11
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.12E-02	9.48E-03	2.06E-07
Antimony	3.54E-06	1.59E-06	3.44E-11
Arsenic	9.47E-06	4.24E-06	9.21E-11
Beryllium	1.19E-06	5.34E-07	1.16E-11
Cadmium	3.61E-07	3.24E-08	3.51E-12
Chromium	4.11E-05	1.84E-05	3.99E-10
Cobalt	1.40E-05	6.27E-06	1.36E-10
Iron	3.73E-02	1.67E-02	3.63E-07
Lead	2.16E-05	9.68E-06	2.10E-10
Manganese	8.00E-04	3.58E-04	7.78E-09
Mercury	2.77E-07	1.24E-07	2.69E-12
Thallium	1.15E-06	5.16E-07	1.12E-11
Uranium	3.50E-05	1.57E-05	3.40E-10
Vanadium	5.80E-05	2.60E-05	5.64E-10
Benz(a)anthracene	1.04E-06	9.34E-07	1.01E-11
Benzo(a)pyrene	1.38E-06	1.24E-06	1.34E-11
Benzo(b)fluoranthene	1.39E-06	1.24E-06	1.35E-11
Benzo(k)fluoranthene	1.04E-06	9.34E-07	1.01E-11
Bis(2-ethylhexyl)phthalate	2.78E-07	2.49E-07	2.70E-12
Chrysene	1.01E-06	9.03E-07	9.80E-12
Di-n-butyl phthalate	1.39E-07	1.25E-07	1.35E-12
Fluoranthene	1.38E-06	1.24E-06	1.34E-11
N-Nitroso-di-n-propylamine	1.71E-06	1.53E-06	1.66E-11
Phenanthrene	1.74E-07	1.56E-07	1.69E-12
Polychlorinated biphenyl	1.74E-06	9.34E-07	1.69E-11
Pyrene	1.38E-06	1.24E-06	1.34E-11
Alpha activity			
Beta activity			
Neptunium-237			
Uranium-235			
Uranium-238			

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.09E-02	9.37E-03	2.03E-07
Antimony	1.73E-06	7.74E-07	1.68E-11
Arsenic	1.02E-05	4.56E-06	9.91E-11
Barium	2.12E-04	9.49E-05	2.06E-09
Beryllium	1.11E-06	4.97E-07	1.08E-11
Cadmium	5.04E-07	4.52E-08	4.90E-12
Chromium	3.20E-05	1.43E-05	3.11E-10
Cobalt	1.19E-05	5.31E-06	1.15E-10
Iron	3.43E-02	1.53E-02	3.33E-07
Lead	1.92E-05	8.60E-06	1.87E-10
Manganese	7.13E-04	3.19E-04	6.93E-09
Mercury	1.17E-07	5.22E-08	1.13E-12
Thallium	1.27E-06	5.70E-07	1.24E-11
Uranium	1.19E-05	5.33E-06	1.16E-10
Vanadium	4.86E-05	2.18E-05	4.72E-10
Zinc	6.56E-05	2.94E-05	6.38E-10
1,1,2-Trichloroethane	5.75E-08	1.29E-07	6.81E-08
1,1-Dichloroethene	1.20E-06	2.69E-06	7.93E-06
Acenaphthene	1.15E-06	1.03E-06	1.12E-11
Anthracene	1.80E-06	1.61E-06	1.75E-11
Benz(a)anthracene	1.85E-06	1.66E-06	1.80E-11
Benzo(a)pyrene	1.85E-06	1.66E-06	1.80E-11
Benzo(b)fluoranthene	1.89E-06	1.70E-06	1.84E-11
Benzo(ghi)perylene	1.81E-06	1.62E-06	1.76E-11
Benzo(k)fluoranthene	1.78E-06	1.60E-06	1.73E-11
Bis(2-ethylhexyl)phthalate	2.67E-07	2.39E-07	2.59E-12
Carbon tetrachloride	7.26E-08	1.63E-07	1.59E-07
Chrysene	1.88E-06	1.68E-06	1.83E-11
Di-n-butyl phthalate	1.45E-06	1.30E-06	1.41E-11
Di-n-octylphthalate	2.09E-07	1.87E-07	2.03E-12
Dibenz(a,h)anthracene	1.60E-06	1.43E-06	1.55E-11
Fluoranthene	1.47E-06	1.32E-06	1.43E-11
Fluorene	6.95E-07	6.23E-07	6.76E-12
Indeno(1,2,3-cd)pyrene	1.81E-06	1.62E-06	1.76E-11
Naphthalene	5.56E-07	4.98E-07	5.41E-12
PCB-1254	3.42E-07	1.84E-07	3.32E-12
PCB-1262	8.49E-08	4.56E-08	8.26E-13
Phenanthrene	1.86E-06	1.66E-06	1.81E-11
Polychlorinated biphenyl	1.75E-06	9.41E-07	1.70E-11
Pyrene	1.60E-06	1.44E-06	1.56E-11
Tetrachloroethene	7.13E-08	1.60E-07	1.35E-07
Trichloroethene	2.29E-05	5.13E-05	5.06E-05
Vinyl chloride	4.25E-07	9.53E-07	2.05E-03
trans-1,2-Dichloroethene	1.39E-04	3.10E-04	1.35E-09
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	1.93E-02	8.65E-03	1.88E-07
Antimony	3.95E-06	1.77E-06	3.84E-11
Arsenic	1.28E-05	5.74E-06	1.25E-10

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Barium	2.06E-04	9.25E-05	2.01E-09
Beryllium	1.12E-06	5.03E-07	1.09E-11
Cadmium	6.02E-07	5.40E-08	5.86E-12
Chromium	3.15E-05	1.41E-05	3.06E-10
Iron	3.54E-02	1.59E-02	3.44E-07
Lead	1.93E-05	8.63E-06	1.87E-10
Manganese	7.22E-04	3.23E-04	7.02E-09
Mercury	1.06E-07	4.73E-08	1.03E-12
Silver	8.04E-07	3.60E-07	7.82E-12
Thallium	1.16E-06	5.18E-07	1.12E-11
Uranium	1.71E-05	7.67E-06	1.66E-10
Vanadium	4.44E-05	1.99E-05	4.32E-10
Zinc	7.28E-05	3.26E-05	7.08E-10
2-Hexanone	1.53E-08	3.42E-08	1.49E-13
Acenaphthene	1.56E-06	1.40E-06	1.52E-11
Acenaphthylene	7.65E-07	6.85E-07	7.44E-12
Anthracene	1.64E-06	1.47E-06	1.60E-11
Benz(a)anthracene	2.18E-06	1.96E-06	2.12E-11
Benzo(a)pyrene	2.24E-06	2.00E-06	2.17E-11
Benzo(b)fluoranthene	2.23E-06	1.99E-06	2.17E-11
Benzo(ghi)perylene	1.71E-06	1.54E-06	1.67E-11
Benzo(k)fluoranthene	2.00E-06	1.79E-06	1.95E-11
Bis(2-ethylhexyl)phthalate	5.59E-07	5.01E-07	5.44E-12
Butyl benzyl phthalate	1.51E-06	1.35E-06	1.47E-11
Chrysene	2.26E-06	2.03E-06	2.20E-11
Di-n-butyl phthalate	3.89E-06	3.48E-06	3.78E-11
Di-n-octylphthalate	2.11E-06	1.89E-06	2.05E-11
Dibenz(a,h)anthracene	1.90E-06	1.70E-06	1.85E-11
Fluoranthene	2.78E-06	2.49E-06	2.71E-11
Fluorene	9.91E-07	8.88E-07	9.64E-12
Indeno(1,2,3-cd)pyrene	1.76E-06	1.57E-06	1.71E-11
Iodomethane	5.39E-08		
Methylene chloride	6.90E-08	1.54E-07	3.10E-07
N-Nitroso-di-n-propylamine	2.02E-06	1.81E-06	1.97E-11
N-Nitrosodiphenylamine	2.02E-06	1.81E-06	1.97E-11
Naphthalene	4.17E-07	3.74E-07	4.06E-12
PCB-1260	9.98E-08	5.36E-08	9.70E-13
Phenanthrene	2.28E-06	2.04E-06	2.22E-11
Polychlorinated biphenyl	1.32E-07	7.10E-08	1.28E-12
Pyrene	2.70E-06	2.42E-06	2.63E-11
Trichloroethene	1.24E-06	2.78E-06	2.74E-06
Vinyl chloride	1.22E-07	2.72E-07	5.87E-04
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-235			
Uranium-238			

SECTOR=West MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Aluminum	2.61E-02	1.17E-02	2.54E-07
Antimony	2.85E-06	1.27E-06	2.77E-11
Arsenic	1.51E-04	6.77E-05	1.47E-09
Barium	2.22E-04	9.94E-05	2.16E-09

531059

Table 1.57. Noncarcinogenic chronic daily intakes for excavation worker

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil
Beryllium	1.12E-06	5.00E-07	1.08E-11
Cadmium	1.30E-06	1.17E-07	1.27E-11
Chromium	3.91E-05	1.75E-05	3.81E-10
Cobalt	1.39E-05	6.23E-06	1.35E-10
Uranium	1.67E-04	7.47E-05	1.62E-09
Vanadium	5.25E-05	2.35E-05	5.11E-10
Zinc	8.48E-05	3.80E-05	8.24E-10
2-Methylnaphthalene	2.21E-06	1.98E-06	2.15E-11
Acenaphthene	8.05E-06	7.21E-06	7.83E-11
Anthracene	1.35E-05	1.21E-05	1.32E-10
Benz(a)anthracene	1.61E-05	1.44E-05	1.56E-10
Benzo(a)pyrene	1.51E-05	1.35E-05	1.47E-10
Benzo(b)fluoranthene	1.77E-05	1.59E-05	1.72E-10
Benzo(ghi)perylene	8.99E-06	8.05E-06	8.74E-11
Benzo(k)fluoranthene	1.57E-05	1.41E-05	1.53E-10
Bis(2-ethylhexyl)phthalate	3.48E-07	3.11E-07	3.38E-12
Chrysene	1.72E-05	1.54E-05	1.67E-10
Di-n-butyl phthalate	7.12E-07	6.38E-07	6.93E-12
Dibenz(a,h)anthracene	8.45E-06	7.57E-06	8.22E-11
Fluoranthene	2.97E-05	2.66E-05	2.89E-10
Fluorene	5.81E-06	5.20E-06	5.65E-11
Indeno(1,2,3-cd)pyrene	9.22E-06	8.26E-06	8.97E-11
Naphthalene	3.29E-06	2.94E-06	3.20E-11
PCB-1254	9.05E-07	4.87E-07	8.80E-12
PCB-1260	5.56E-08	2.99E-08	5.41E-13
Phenanthrene	2.43E-05	2.18E-05	2.37E-10
Polychlorinated biphenyl	8.28E-07	4.45E-07	8.05E-12
Pyrene	2.82E-05	2.52E-05	2.74E-10
Trichloroethene	3.66E-06	8.20E-06	8.10E-06
Alpha activity			
Beta activity			
Cesium-137			
Neptunium-237			
Uranium-234			
Uranium-235			
Uranium-238			

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	3.14E-01	1.14E-03			
Arsenic	9.19E-04	3.34E-06			
Barium	1.23E-03	4.47E-06			
Beryllium	2.92E-05	1.06E-07			
Bromide	1.57E-04				
Cadmium	6.63E-06	2.41E-08			
Chromium	8.56E-04	3.11E-06			
Cobalt	2.47E-04	8.97E-07			
Iron	7.60E-01	2.76E-03			
Lead	3.99E-04	1.45E-06			
Manganese	5.51E-03	2.00E-05			
Nickel	3.89E-04	1.41E-06			
Nitrate	1.85E-03	6.72E-06			
Orthophosphate	3.53E-04				
Selenium	1.03E-04	3.73E-07			
Tetraoxo-sulfate(1-)	5.99E-02				
Thallium	2.09E-06	7.60E-09			
Vanadium	3.56E-03	1.29E-05			
Zinc	2.75E-02	9.98E-05			
1,1-Dichloroethene	2.53E-05	8.16E-07		1.38E-05	
1,2-Dichloroethane	3.49E-06	6.72E-08		1.91E-06	
Bis(2-ethylhexyl)phthalate	1.82E-05	1.55E-06			
Bromodichloromethane	1.86E-05	3.92E-07		1.02E-05	
Chloroform	2.36E-05	7.62E-07		1.29E-05	
Di-n-butyl phthalate	3.49E-06	1.46E-06			
Di-n-octylphthalate	1.96E-05	1.91E-03			
Dibromochloromethane	1.40E-05	1.98E-07		7.63E-06	
Tetrachloroethene	3.40E-05	4.57E-05		1.86E-05	
Trichloroethene	5.66E-05	3.29E-06		3.09E-05	
Vinyl chloride	4.90E-05	1.30E-06		2.68E-05	
cis-1,2-Dichloroethene	4.92E-05	1.78E-06		2.68E-05	
Actinium-228	1.70E+05				
Alpha activity	1.92E+05				
Beta activity	1.74E+06				
Cesium-137	7.69E+04				
Lead-210	2.63E+06				
Lead-212	1.41E+05				
Lead-214	7.56E+04				
Neptunium-237	5.05E+04				
Plutonium-239	8.32E+03				
Potassium-40	4.25E+05				
Technetium-99	1.94E+06				
Thorium-228	7.69E+03				
Thorium-230	8.52E+03				
Thorium-234	4.49E+06				
Uranium-234	1.18E+04				
Uranium-235	7.23E+04				
Uranium-238	7.85E+03				

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	2.13E-01	7.73E-04			
Antimony	4.86E-05	1.76E-07			
Arsenic	1.02E-04	3.69E-07			

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Barium	1.47E-03	5.33E-06			
Beryllium	3.54E-05	1.28E-07			
Bromide	1.61E-03				
Cadmium	5.17E-06	1.88E-08			
Chromium	3.94E-04	1.43E-06			
Cobalt	3.45E-04	1.25E-06			
Copper	7.69E-04	2.79E-06			
Iron	1.35E+00	4.92E-03			
Lead	1.14E-04	4.15E-07			
Manganese	1.07E-02	3.88E-05			
Mercury	5.75E-07	2.09E-09			
Nickel	6.88E-04	2.50E-06			
Nitrate	1.66E-01	6.01E-04			
Orthophosphate	1.26E-04				
Silver	4.44E-05	1.61E-07			
Tetraoxo-sulfate(1-)	4.61E-02				
Thallium	2.07E-06	7.51E-09			
Uranium	1.28E-05	4.64E-08			
Vanadium	5.37E-04	1.95E-06			
Zinc	2.67E-03	9.70E-06			
1,1-Dichloroethene	2.32E-05	7.49E-07		1.27E-05	
Bis(2-ethylhexyl)phthalate	3.49E-06	2.97E-07			
Bromodichloromethane	1.40E-05	2.94E-07		7.63E-06	
Carbon tetrachloride	2.47E-04	1.97E-05		1.35E-04	
Chloroform	1.01E-04	3.26E-06		5.51E-05	
Di-n-butyl phthalate	3.49E-06	1.46E-06			
Di-n-octylphthalate	3.49E-06	3.41E-04			
N-Nitroso-di-n-propylamine	3.49E-06	3.55E-08			
Tetrachloroethene	7.67E-05	1.03E-04		4.19E-05	
Toluene	1.26E-04	2.06E-05		6.87E-05	
Trichloroethene	2.86E-02	1.66E-03		1.56E-02	
Vinyl chloride	4.65E-04	1.23E-05		2.54E-04	
cis-1,2-Dichloroethene	1.29E-03	4.69E-05		7.06E-04	
trans-1,2-Dichloroethene	4.30E-05	1.67E-07		2.35E-05	
Alpha activity	1.06E+05				
Americium-241	1.05E+04				
Beta activity	2.01E+06				
Cesium-137	6.81E+04				
Lead-210	6.25E+05				
Lead-214	4.63E+04				
Neptunium-237	8.46E+04				
Plutonium-239	2.86E+02				
Technetium-99	1.67E+07				
Thorium-228	4.75E+03				
Thorium-230	6.83E+03				
Uranium-234	1.04E+04				
Uranium-235	7.35E+02				
Uranium-238	1.04E+05				

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	1.03E-03	4.45E-03	9.66E-08		
Antimony	2.04E-07	8.78E-07	1.91E-11		

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Arsenic	9.33E-07	4.01E-06	8.71E-11		
Beryllium	5.05E-08	2.17E-07	4.71E-12		
Cadmium	7.75E-08	6.67E-08	7.24E-12		
Chromium	2.07E-06	8.90E-06	1.93E-10		
Cobalt	7.08E-07	3.05E-06	6.61E-11		
Iron	1.91E-03	8.19E-03	1.78E-07		
Lead	1.39E-06	6.00E-06	1.30E-10		
Thallium	1.19E-07	5.12E-07	1.11E-11		
Uranium	4.61E-06	1.98E-05	4.31E-10		
Vanadium	2.49E-06	1.07E-05	2.33E-10		
Zinc	4.48E-06	1.93E-05	4.18E-10		
2-Methylnaphthalene	9.37E-08	8.06E-07	8.75E-12		
Acenaphthene	2.18E-07	1.88E-06	2.04E-11		
Acenaphthylene	3.84E-08	3.31E-07	3.59E-12		
Anthracene	4.23E-07	3.64E-06	3.95E-11		
Benz(a)anthracene	6.62E-07	5.69E-06	6.18E-11		
Benzo(a)pyrene	6.48E-07	5.57E-06	6.05E-11		
Benzo(b)fluoranthene	7.61E-07	6.55E-06	7.11E-11		
Benzo(ghi)perylene	3.70E-07	3.18E-06	3.45E-11		
Benzo(k)fluoranthene	6.17E-07	5.31E-06	5.76E-11		
Bis(2-ethylhexyl)phthalate	1.75E-08	1.50E-07	1.63E-12		
Chrysene	6.99E-07	6.01E-06	6.52E-11		
Di-n-butyl phthalate	1.30E-07	1.12E-06	1.22E-11		
Dibenz(a,h)anthracene	1.92E-07	1.65E-06	1.79E-11		
Fluoranthene	1.33E-06	1.14E-05	1.24E-10		
Fluorene	1.66E-07	1.43E-06	1.55E-11		
Indeno(1,2,3-cd)pyrene	3.50E-07	3.01E-06	3.27E-11		
Naphthalene	1.12E-07	9.67E-07	1.05E-11		
PCB-1254	2.96E-08	1.53E-07	2.77E-12		
PCB-1260	1.63E-08	8.40E-08	1.52E-12		
PCB-1262	6.64E-09	3.43E-08	6.20E-13		
Phenanthrene	9.28E-07	7.98E-06	8.67E-11		
Polychlorinated biphenyl	5.23E-08	2.70E-07	4.89E-12		
Pyrene	1.17E-06	1.01E-05	1.09E-10		
Alpha activity	6.81E+03				9.95E+01
Beta activity	1.50E+04				2.19E+02
Cesium-137	1.17E+02		1.09E-02		1.71E+00
Neptunium-237	1.99E+02		1.86E-02		2.90E+00
Uranium-234	2.05E+03		1.91E-01		3.00E+01
Uranium-235	1.21E+02		1.13E-02		1.77E+00
Uranium-238	2.74E+03		2.56E-01		4.01E+01

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Di-n-butyl phthalate	2.10E-07	1.80E-06	1.96E-11		
Alpha activity	3.24E+03				4.74E+01
Beta activity	8.37E+03				1.22E+02

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Cadmium	6.64E-08	5.71E-08	6.20E-12		
Chromium	2.38E-06	1.02E-05	2.22E-10		
Thallium	2.10E-07	9.02E-07	1.96E-11		
Uranium	4.78E-06	2.05E-05	4.46E-10		
Acenaphthene	2.27E-08	1.95E-07	2.12E-12		
Anthracene	3.84E-08	3.31E-07	3.59E-12		
Benz(a)anthracene	1.26E-07	1.08E-06	1.18E-11		
Benzo(a)pyrene	1.39E-07	1.19E-06	1.30E-11		
Benzo(b)fluoranthene	2.45E-07	2.10E-06	2.28E-11		
Benzo(ghi)perylene	6.46E-08	5.56E-07	6.04E-12		
Benzo(k)fluoranthene	1.52E-07	1.31E-06	1.42E-11		
Chrysene	1.39E-07	1.19E-06	1.30E-11		
Di-n-butyl phthalate	2.15E-07	1.85E-06	2.00E-11		
Dibenz(a,h)anthracene	2.80E-08	2.40E-07	2.61E-12		
Fluoranthene	3.67E-07	3.16E-06	3.43E-11		
Fluorene	1.57E-08	1.35E-07	1.47E-12		
Indeno(1,2,3-cd)pyrene	7.34E-08	6.31E-07	6.85E-12		
PCB-1260	5.77E-07	2.98E-06	5.38E-11		
Phenanthrene	2.03E-07	1.74E-06	1.89E-11		
Polychlorinated biphenyl	1.75E-06	9.02E-06	1.63E-10		
Pyrene	3.15E-07	2.70E-06	2.94E-11		
Alpha activity	1.04E+04				1.52E+02
Beta activity	1.34E+04				1.95E+02
Cesium-137	1.56E+02		1.46E-02		2.28E+00
Neptunium-237	1.25E+02		1.17E-02		1.83E+00
Uranium-235	1.25E+02		1.17E-02		1.83E+00
Uranium-238	2.84E+03		2.65E-01		4.16E+01

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	2.42E-03	1.04E-02	2.26E-07		
Antimony	5.07E-07	2.18E-06	4.73E-11		
Chromium	1.82E-06	7.81E-06	1.70E-10		
Uranium	4.58E-06	1.97E-05	4.27E-10		
Benz(a)anthracene	6.99E-09	6.01E-08	6.53E-13		
Benzo(a)pyrene	6.99E-09	6.01E-08	6.53E-13		
Benzo(b)fluoranthene	6.99E-09	6.01E-08	6.53E-13		
Benzo(k)fluoranthene	8.74E-09	7.51E-08	8.16E-13		
Chrysene	6.99E-09	6.01E-08	6.53E-13		
Fluoranthene	1.48E-08	1.28E-07	1.38E-12		
PCB-1260	9.78E-10	5.05E-09	9.14E-14		
Phenanthrene	6.99E-09	6.01E-08	6.53E-13		

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Polychlorinated biphenyl	9.78E-10	5.05E-09	9.14E-14		
Pyrene	8.44E-09	7.26E-08	7.88E-13		
Alpha activity	6.96E+03				1.02E+02
Beta activity	1.38E+04				2.01E+02
Uranium-235	1.56E+02		1.46E-02		2.28E+00
Uranium-238	2.72E+03		2.54E-01		3.97E+01

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Antimony	2.45E-07	1.05E-06	2.28E-11		
Beryllium	1.21E-07	5.18E-07	1.13E-11		
Cadmium	5.24E-08	4.51E-08	4.89E-12		
Chromium	4.75E-06	2.04E-05	4.44E-10		
Thallium	5.24E-08	2.25E-07	4.89E-12		
Uranium	2.42E-06	1.04E-05	2.26E-10		
Acenaphthene	8.74E-09	7.51E-08	8.16E-13		
Anthracene	2.80E-08	2.40E-07	2.61E-12		
Benz(a)anthracene	5.94E-08	5.11E-07	5.55E-12		
Benzo(a)pyrene	4.89E-08	4.21E-07	4.57E-12		
Benzo(b)fluoranthene	4.54E-08	3.91E-07	4.24E-12		
Benzo(ghi)perylene	2.27E-08	1.95E-07	2.12E-12		
Benzo(k)fluoranthene	5.07E-08	4.36E-07	4.73E-12		
Bis(2-ethylhexyl)phthalate	1.40E-08	1.20E-07	1.31E-12		
Chrysene	6.12E-08	5.26E-07	5.71E-12		
Di-n-butyl phthalate	6.99E-09	6.01E-08	6.53E-13		
Fluoranthene	1.47E-07	1.26E-06	1.37E-11		
Fluorene	8.74E-09	7.51E-08	8.16E-13		
Indeno(1,2,3-cd)pyrene	2.45E-08	2.10E-07	2.28E-12		
Phenanthrene	7.07E-08	6.08E-07	6.60E-12		
Pyrene	6.84E-08	5.88E-07	6.39E-12		
Alpha activity	3.32E+03				4.85E+01
Beta activity	1.11E+04				1.62E+02
Neptunium-237	1.88E+02		1.75E-02		2.74E+00
Uranium-235	6.25E+01		5.84E-03		9.13E-01
Uranium-238	1.44E+03		1.34E-01		2.10E+01

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	3.14E-01	1.14E-03			
Arsenic	9.19E-04	3.34E-06			
Barium	1.23E-03	4.47E-06			
Beryllium	2.92E-05	1.06E-07			
Bromide	1.57E-04				
Cadmium	6.63E-06	2.41E-08			
Chromium	8.56E-04	3.11E-06			
Cobalt	2.47E-04	8.97E-07			
Iron	7.60E-01	2.76E-03			

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=McNairy MEDIA=Ground water (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Lead	3.99E-04	1.45E-06			
Manganese	5.51E-03	2.00E-05			
Nickel	3.89E-04	1.41E-06			
Nitrate	1.85E-03	6.72E-06			
Orthophosphate	3.53E-04				
Selenium	1.03E-04	3.73E-07			
Tetraoxo-sulfate(1-)	5.99E-02				
Thallium	2.09E-06	7.60E-09			
Vanadium	3.56E-03	1.29E-05			
Zinc	2.75E-02	9.98E-05			
1,1-Dichloroethene	2.53E-05	8.16E-07		1.38E-05	
1,2-Dichloroethane	3.49E-06	6.72E-08		1.91E-06	
Bis(2-ethylhexyl)phthalate	1.82E-05	1.55E-06			
Bromodichloromethane	1.86E-05	3.92E-07		1.02E-05	
Chloroform	2.36E-05	7.62E-07		1.29E-05	
Di-n-butyl phthalate	3.49E-06	1.46E-06			
Di-n-octylphthalate	1.96E-05	1.91E-03			
Dibromochloromethane	1.40E-05	1.98E-07		7.63E-06	
Tetrachloroethene	3.40E-05	4.57E-05		1.86E-05	
Trichloroethene	5.66E-05	3.29E-06		3.09E-05	
Vinyl chloride	4.90E-05	1.30E-06		2.68E-05	
cis-1,2-Dichloroethene	4.92E-05	1.78E-06		2.68E-05	
Actinium-228	1.70E+05				
Alpha activity	1.92E+05				
Beta activity	1.74E+06				
Cesium-137	7.69E+04				
Lead-210	2.63E+06				
Lead-212	1.41E+05				
Lead-214	7.56E+04				
Neptunium-237	5.05E+04				
Plutonium-239	8.32E+03				
Potassium-40	4.25E+05				
Technetium-99	1.94E+06				
Thorium-228	7.69E+03				
Thorium-230	8.52E+03				
Thorium-234	4.49E+06				
Uranium-234	1.18E+04				
Uranium-235	7.23E+04				
Uranium-238	7.85E+03				

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Chromium	3.37E-06	1.45E-05	3.15E-10		
Uranium	2.42E-06	1.04E-05	2.26E-10		
Zinc	1.23E-05	5.27E-05	1.15E-09		
Acenaphthene	6.99E-09	6.01E-08	6.53E-13		
Anthracene	1.40E-08	1.20E-07	1.31E-12		
Benz(a)anthracene	6.12E-08	5.26E-07	5.71E-12		
Benzo(a)pyrene	5.24E-08	4.51E-07	4.89E-12		
Benzo(b)fluoranthene	7.51E-08	6.46E-07	7.01E-12		
Benzo(ghi)perylene	2.97E-08	2.55E-07	2.77E-12		
Benzo(k)fluoranthene	4.89E-08	4.21E-07	4.57E-12		
Chrysene	6.99E-08	6.01E-07	6.53E-12		

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Fluoranthene	1.50E-07	1.29E-06	1.40E-11		
Indeno(1,2,3-cd)pyrene	3.15E-08	2.70E-07	2.94E-12		
PCB-1260	7.51E-09	3.88E-08	7.01E-13		
Phenanthrene	8.21E-08	7.06E-07	7.67E-12		
Polychlorinated biphenyl	7.51E-09	3.88E-08	7.01E-13		
Pyrene	1.19E-07	1.02E-06	1.11E-11		
Alpha activity	9.97E+03				1.46E+02
Beta activity	1.59E+04				2.32E+02
Uranium-235	6.25E+01		5.84E-03		9.13E-01
Uranium-238	1.44E+03		1.34E-01		2.10E+01

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Antimony	7.00E-08	3.01E-07	6.53E-12		
Beryllium	5.65E-08	2.43E-07	5.28E-12		
Cadmium	3.55E-08	3.05E-08	3.31E-12		
Chromium	3.54E-06	1.52E-05	3.30E-10		
Iron	2.13E-03	9.17E-03	1.99E-07		
Lead	2.27E-06	9.78E-06	2.12E-10		
Vanadium	2.89E-06	1.24E-05	2.69E-10		
Benz(a)anthracene	5.24E-08	4.51E-07	4.89E-12		
Benzo(a)pyrene	6.99E-08	6.01E-07	6.53E-12		
Benzo(b)fluoranthene	9.24E-08	7.94E-07	8.62E-12		
Benzo(k)fluoranthene	5.24E-08	4.51E-07	4.89E-12		
Chrysene	5.07E-08	4.36E-07	4.73E-12		
Fluoranthene	6.99E-08	6.01E-07	6.53E-12		
Pyrene	6.99E-08	6.01E-07	6.53E-12		
Alpha activity	5.67E+03				8.28E+01
Beta activity	1.53E+04				2.24E+02
Uranium-238	1.00E+03		9.34E-02		1.46E+01

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	2.13E-01	7.73E-04			
Antimony	4.86E-05	1.76E-07			
Arsenic	1.02E-04	3.69E-07			
Barium	1.47E-03	5.33E-06			
Beryllium	3.54E-05	1.28E-07			
Bromide	1.61E-03				
Cadmium	5.17E-06	1.88E-08			
Chromium	3.94E-04	1.43E-06			
Cobalt	3.45E-04	1.25E-06			
Copper	7.69E-04	2.79E-06			
Iron	1.35E+00	4.92E-03			
Lead	1.14E-04	4.15E-07			
Manganese	1.07E-02	3.88E-05			
Mercury	5.75E-07	2.09E-09			

531067

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Nickel	6.88E-04	2.50E-06			
Nitrate	1.66E-01	6.01E-04			
Orthophosphate	1.26E-04				
Silver	4.44E-05	1.61E-07			
Tetraoxo-sulfate(1-)	4.61E-02				
Thallium	2.07E-06	7.51E-09			
Uranium	1.28E-05	4.64E-08			
Vanadium	5.37E-04	1.95E-06			
Zinc	2.67E-03	9.70E-06			
1,1-Dichloroethene	2.32E-05	7.49E-07		1.27E-05	
Bis(2-ethylhexyl)phthalate	3.49E-06	2.97E-07			
Bromodichloromethane	1.40E-05	2.94E-07		7.63E-06	
Carbon tetrachloride	2.47E-04	1.97E-05		1.35E-04	
Chloroform	1.01E-04	3.26E-06		5.51E-05	
Di-n-butyl phthalate	3.49E-06	1.46E-06			
Di-n-octylphthalate	3.49E-06	3.41E-04			
N-Nitroso-di-n-propylamine	3.49E-06	3.55E-08			
Tetrachloroethene	7.67E-05	1.03E-04		4.19E-05	
Toluene	1.26E-04	2.06E-05		6.87E-05	
Trichloroethene	2.86E-02	1.66E-03		1.56E-02	
Vinyl chloride	4.65E-04	1.23E-05		2.54E-04	
cis-1,2-Dichloroethene	1.29E-03	4.69E-05		7.06E-04	
trans-1,2-Dichloroethene	4.30E-05	1.67E-07		2.35E-05	
Alpha activity	1.06E+05				
Americium-241	1.05E+04				
Beta activity	2.01E+06				
Cesium-137	6.81E+04				
Lead-210	6.25E+05				
Lead-214	4.63E+04				
Neptunium-237	8.46E+04				
Plutonium-239	2.86E+02				
Technetium-99	1.67E+07				
Thorium-228	4.75E+03				
Thorium-230	6.83E+03				
Uranium-234	1.04E+04				
Uranium-235	7.35E+02				
Uranium-238	1.04E+05				

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	2.48E-03	1.07E-02	2.32E-07		
Antimony	1.05E-07	4.51E-07	9.79E-12		
Cadmium	6.12E-08	5.26E-08	5.71E-12		
Chromium	4.12E-06	1.77E-05	3.85E-10		
Benz(a)anthracene	1.22E-08	1.05E-07	1.14E-12		
Benzo(a)pyrene	1.40E-08	1.20E-07	1.31E-12		
Benzo(b)fluoranthene	1.22E-08	1.05E-07	1.14E-12		
Benzo(k)fluoranthene	1.05E-08	9.02E-08	9.79E-13		
Chrysene	1.40E-08	1.20E-07	1.31E-12		
Fluoranthene	2.62E-08	2.25E-07	2.45E-12		
PCB-1262	6.64E-09	3.43E-08	6.20E-13		
Phenanthrene	1.22E-08	1.05E-07	1.14E-12		
Polychlorinated biphenyl	6.64E-09	3.43E-08	6.20E-13		

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

SECTOR=Southeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Pyrene	2.10E-08	1.80E-07	1.96E-12		
Alpha activity	5.15E+03				7.53E+01
Beta activity	7.58E+03				1.11E+02

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Antimony	2.54E-07	1.09E-06	2.37E-11		
Beryllium	6.59E-08	2.83E-07	6.15E-12		
Cadmium	6.34E-08	5.45E-08	5.91E-12		
Chromium	3.71E-06	1.60E-05	3.47E-10		
Iron	2.97E-03	1.28E-02	2.78E-07		
Thallium	1.23E-07	5.28E-07	1.15E-11		
Uranium	8.76E-06	3.77E-05	8.18E-10		
Zinc	8.79E-06	3.78E-05	8.20E-10		
Acenaphthene	1.73E-07	1.49E-06	1.61E-11		
Acenaphthylene	3.84E-08	3.31E-07	3.59E-12		
Anthracene	3.18E-07	2.73E-06	2.97E-11		
Benz(a)anthracene	8.77E-07	7.54E-06	8.18E-11		
Benzo(a)pyrene	8.45E-07	7.26E-06	7.89E-11		
Benzo(b)fluoranthene	8.93E-07	7.68E-06	8.34E-11		
Benzo(ghi)perylene	4.13E-07	3.55E-06	3.86E-11		
Benzo(k)fluoranthene	5.90E-07	5.07E-06	5.51E-11		
Bis(2-ethylhexyl)phthalate	1.40E-08	1.20E-07	1.31E-12		
Chrysene	7.89E-07	6.79E-06	7.37E-11		
Dibenz(a,h)anthracene	2.27E-07	1.95E-06	2.12E-11		
Fluoranthene	1.91E-06	1.64E-05	1.78E-10		
Fluorene	2.10E-07	1.80E-06	1.96E-11		
Indeno(1,2,3-cd)pyrene	3.15E-07	2.71E-06	2.94E-11		
Naphthalene	4.19E-10	3.61E-09	3.92E-14		
PCB-1260	6.64E-09	3.43E-08	6.20E-13		
Phenanthrene	9.99E-07	8.59E-06	9.33E-11		
Polychlorinated biphenyl	6.64E-09	3.43E-08	6.20E-13		
Pyrene	1.61E-06	1.38E-05	1.50E-10		
Alpha activity	4.95E+03				7.23E+01
Beta activity	1.82E+04				2.66E+02
Neptunium-237	9.38E+01		8.75E-03		1.37E+00
Uranium-235	1.88E+02		1.75E-02		2.74E+00
Uranium-238	5.22E+03		4.87E-01		7.63E+01

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Aluminum	1.27E-03	5.47E-03	1.19E-07		
Antimony	1.73E-07	7.45E-07	1.62E-11		
Arsenic	2.31E-06	9.91E-06	2.15E-10		
Beryllium	5.50E-08	2.36E-07	5.13E-12		
Cadmium	1.58E-07	1.36E-07	1.48E-11		
Chromium	2.19E-06	9.43E-06	2.05E-10		

Table 1.58. Carcinogenic chronic daily intakes for future industrial worker

-- SECTOR=West MEDIA=Surface soil --
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure
Cobalt	8.29E-07	3.56E-06	7.74E-11		
Uranium	6.34E-06	2.73E-05	5.92E-10		
Zinc	5.24E-06	2.25E-05	4.89E-10		
2-Methylnaphthalene	1.57E-07	1.35E-06	1.47E-11		
Acenaphthene	5.88E-07	5.06E-06	5.49E-11		
Anthracene	2.55E-06	2.19E-05	2.38E-10		
Benz(a)anthracene	3.52E-06	3.02E-05	3.28E-10		
Benzo(a)pyrene	3.16E-06	2.72E-05	2.95E-10		
Benzo(b)fluoranthene	3.94E-06	3.39E-05	3.68E-10		
Benzo(ghi)perylene	6.47E-07	5.56E-06	6.04E-11		
Benzo(k)fluoranthene	3.88E-06	3.34E-05	3.62E-10		
Bis(2-ethylhexyl)phthalate	1.75E-08	1.50E-07	1.63E-12		
Chrysene	3.79E-06	3.26E-05	3.54E-10		
Di-n-butyl phthalate	3.58E-08	3.08E-07	3.34E-12		
Dibenz(a,h)anthracene	6.56E-07	5.64E-06	6.12E-11		
Fluoranthene	7.89E-06	6.78E-05	7.36E-10		
Fluorene	5.46E-07	4.70E-06	5.10E-11		
Indeno(1,2,3-cd)pyrene	6.64E-07	5.71E-06	6.20E-11		
Naphthalene	2.54E-07	2.18E-06	2.37E-11		
PCB-1254	1.68E-07	8.66E-07	1.57E-11		
PCB-1260	2.80E-09	1.44E-08	2.61E-13		
Phenanthrene	6.12E-06	5.26E-05	5.71E-10		
Polychlorinated biphenyl	9.80E-08	5.06E-07	9.15E-12		
Pyrene	6.90E-06	5.93E-05	6.44E-10		
Alpha activity	2.03E+04				2.96E+02
Beta activity	3.48E+04				5.09E+02
Cesium-137	2.10E+02		1.96E-02		3.07E+00
Neptunium-237	4.75E+02		4.44E-02		6.94E+00
Uranium-234	2.96E+03		2.76E-01		4.33E+01
Uranium-235	2.06E+02		1.93E-02		3.02E+00
Uranium-238	3.77E+03		3.52E-01		5.51E+01

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	1.19E+00	2.17E-03				6.18E-01	
Arsenic	3.50E-03	6.36E-06				1.86E-03	
Barium	4.69E-03	8.51E-06				2.44E-03	
Beryllium	1.11E-04	2.02E-07				5.79E-05	
Bromide	5.98E-04						
Cadmium	2.52E-05	4.58E-08				1.80E-05	
Chromium	3.26E-03	5.91E-06				1.68E-03	
Cobalt	9.41E-04	1.71E-06				5.17E-04	
Iron	2.89E+00	5.25E-03				1.50E+00	
Lead	1.52E-03	2.76E-06				7.86E-04	
Manganese	2.10E-02	3.81E-05				1.29E-02	
Nickel	1.48E-03	2.69E-06				8.70E-04	
Nitrate	7.05E-03	1.28E-05					
Orthophosphate	1.34E-03						
Selenium	3.91E-04	7.10E-07				2.58E-04	
Tetraoxo-sulfate(1-)	2.28E-01						
Thallium	7.97E-06	1.45E-08				4.13E-06	
Vanadium	1.35E-02	2.46E-05				7.02E-03	
Zinc	1.05E-01	1.90E-04				9.34E-02	
1,1-Dichloroethene	9.62E-05	1.55E-06		2.63E-05	2.85E-04	1.45E-04	
1,2-Dichloroethane	1.33E-05	1.28E-07		3.63E-06	3.95E-05	2.66E-05	
Bis(2-ethylhexyl)phthalate	6.93E-05	2.94E-06				3.69E-05	
Bromodichloromethane	7.08E-05	7.45E-07		1.93E-05	2.10E-04	8.36E-05	
loroform	8.98E-05	1.45E-06		2.45E-05	2.66E-04	1.15E-04	
-n-butyl phthalate	1.33E-05	2.78E-06				7.08E-06	
Di-n-octylphthalate	7.45E-05	3.63E-03				3.84E-05	
Dibromochloromethane	5.32E-05	3.77E-07		1.45E-05	1.58E-04	5.84E-05	
Tetrachloroethene	1.30E-04	8.71E-05		3.54E-05	3.84E-04	1.11E-04	
Trichloroethene	2.16E-04	6.26E-06		5.89E-05	6.39E-04	2.07E-04	
Vinyl chloride	1.87E-04	2.47E-06		5.10E-05	5.54E-04	4.13E-04	
cis-1,2-Dichloroethene	1.87E-04	3.40E-06		5.11E-05	5.55E-04	2.59E-04	
Actinium-228	6.47E+05					1.79E+03	
Alpha activity	7.32E+05						
Beta activity	6.62E+06						
Cesium-137	2.93E+05					1.27E+05	
Lead-210	1.00E+07					4.02E+06	
Lead-212	5.36E+05					2.52E+03	
Lead-214	2.88E+05					5.89E+01	
Neptunium-237	1.92E+05					1.00E+05	
Plutonium-239	3.17E+04					1.63E+04	
Potassium-40	1.62E+06					1.53E+06	
Technetium-99	7.37E+06					2.19E+09	
Thorium-228	2.93E+04					5.39E+03	
Thorium-230	3.24E+04					1.67E+04	
Thorium-234	1.71E+07					1.67E+06	
Uranium-234	4.48E+04					2.32E+04	
Uranium-235	2.75E+05					1.42E+05	
Uranium-238	2.99E+04					1.55E+04	

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	8.11E-01	1.47E-03				4.20E-01	
imony	1.85E-04	3.36E-07				9.81E-05	
senic	3.88E-04	7.03E-07				2.06E-04	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Barium	5.59E-03	1.01E-05				2.91E-03	
Beryllium	1.35E-04	2.45E-07				7.00E-05	
Bromide	6.13E-03						
Cadmium	1.97E-05	3.57E-08				1.40E-05	
Chromium	1.50E-03	2.73E-06				7.75E-04	
Cobalt	1.31E-03	2.38E-06				7.22E-04	
Copper	2.93E-03	5.31E-06				1.84E-03	
Iron	5.16E+00	9.36E-03				2.67E+00	
Lead	4.36E-04	7.90E-07				2.25E-04	
Manganese	4.07E-02	7.39E-05				2.50E-02	
Mercury	2.19E-06	3.97E-09				2.07E-06	
Nickel	2.62E-03	4.76E-06				1.54E-03	
Nitrate	6.30E-01	1.14E-03					
Orthophosphate	4.79E-04						
Silver	1.69E-04	3.07E-07				8.72E-05	
Tetraoxo-sulfate(1-)	1.75E-01						
Thallium	7.88E-06	1.43E-08				4.08E-06	
Uranium	4.87E-05	8.83E-08				2.52E-05	
Vanadium	2.05E-03	3.71E-06				1.06E-03	
Zinc	1.02E-02	1.85E-05				9.08E-03	
1,1-Dichloroethene	8.83E-05	1.43E-06		2.41E-05	2.62E-04	1.33E-04	
Bis(2-ethylhexyl)phthalate	1.33E-05	5.65E-07				7.08E-06	
Bromodichloromethane	5.32E-05	5.60E-07		1.45E-05	1.58E-04	6.29E-05	
Carbon tetrachloride	9.41E-04	3.76E-05		2.57E-04	2.79E-03	7.31E-04	
Chloroform	3.84E-04	6.21E-06		1.05E-04	1.14E-03	4.90E-04	
Di-n-butyl phthalate	1.33E-05	2.78E-06				7.08E-06	
Di-n-octylphthalate	1.33E-05	6.49E-04				6.87E-06	
N-Nitroso-di-n-propylamine	1.33E-05	6.76E-08				2.94E-05	
Tetrachloroethene	2.92E-04	1.96E-04		7.98E-05	8.67E-04	2.50E-04	
Toluene	4.79E-04	3.91E-05		1.31E-04	1.42E-03	3.90E-04	
Trichloroethene	1.09E-01	3.17E-03		2.98E-02	3.23E-01	1.05E-01	
Vinyl chloride	1.77E-03	2.34E-05		4.83E-04	5.25E-03	3.91E-03	
cis-1,2-Dichloroethene	4.92E-03	8.94E-05		1.34E-03	1.46E-02	6.82E-03	
trans-1,2-Dichloroethene	1.64E-04	3.18E-07		4.47E-05	4.86E-04	1.03E-03	
Alpha activity	4.04E+05						
Americium-241	4.00E+04					2.03E+04	
Beta activity	7.65E+06						
Cesium-137	2.59E+05					1.13E+05	
Lead-210	2.38E+06					9.54E+05	
Lead-214	1.76E+05					3.60E+01	
Neptunium-237	3.22E+05					1.68E+05	
Plutonium-239	1.09E+03					5.61E+02	
Technetium-99	6.38E+07					1.89E+10	
Thorium-228	1.81E+04					3.33E+03	
Thorium-230	2.60E+04					1.34E+04	
Uranium-234	3.95E+04					2.04E+04	
Uranium-235	2.80E+03					1.45E+03	
Uranium-238	3.95E+05					2.05E+05	

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	3.94E-03	6.89E-03	1.84E-07			8.18E-01	
Antimony	7.77E-07	1.36E-06	3.63E-11			1.67E-04	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Arsenic	3.55E-06	6.22E-06	1.66E-10			7.64E-04	
Beryllium	1.92E-07	3.36E-07	8.97E-12			4.01E-05	
Cadmium	2.95E-07	1.03E-07	1.38E-11			9.34E-05	
Chromium	7.88E-06	1.38E-05	3.68E-10			1.63E-03	
Cobalt	2.70E-06	4.72E-06	1.26E-10			6.08E-04	
Iron	7.26E-03	1.27E-02	3.39E-07			1.50E+00	
Lead	5.31E-06	9.29E-06	2.48E-10			1.10E-03	
Thallium	4.54E-07	7.94E-07	2.12E-11			9.43E-05	
Uranium	1.76E-05	3.07E-05	8.20E-10			3.64E-03	
Vanadium	9.48E-06	1.66E-05	4.43E-10			1.97E-03	
Zinc	1.71E-05	2.99E-05	7.96E-10			7.12E-03	
2-Methylnaphthalene	3.57E-07	1.25E-06	1.67E-11			8.58E-05	
Acenaphthene	8.31E-07	2.91E-06	3.88E-11			1.88E-04	
Acenaphthylene	1.46E-07	5.12E-07	6.83E-12			3.67E-05	
Anthracene	1.61E-06	5.63E-06	7.51E-11			3.61E-04	
Benz(a)anthracene	2.52E-06	8.82E-06	1.18E-10			5.29E-04	
Benzo(a)pyrene	2.47E-06	8.63E-06	1.15E-10			5.15E-04	
Benzo(b)fluoranthene	2.90E-06	1.01E-05	1.35E-10			6.05E-04	
Benzo(ghi)perylene	1.41E-06	4.93E-06	6.57E-11			2.93E-04	
Benzo(k)fluoranthene	2.35E-06	8.22E-06	1.10E-10			4.88E-04	
Bis(2-ethylhexyl)phthalate	6.65E-08	2.33E-07	3.10E-12			1.44E-05	
Chrysene	2.66E-06	9.31E-06	1.24E-10			5.59E-04	
n-butyl phthalate	4.96E-07	1.74E-06	2.31E-11			1.07E-04	
enz(a,h)anthracene	7.31E-07	2.56E-06	3.41E-11			1.52E-04	
Fluoranthene	5.05E-06	1.77E-05	2.36E-10			1.09E-03	
Fluorene	6.33E-07	2.22E-06	2.95E-11			1.42E-04	
Indeno(1,2,3-cd)pyrene	1.33E-06	4.67E-06	6.22E-11			2.77E-04	
Naphthalene	4.28E-07	1.50E-06	2.00E-11			1.21E-04	
PCB-1254	1.13E-07	2.37E-07	5.27E-12			2.36E-05	
PCB-1260	6.20E-08	1.30E-07	2.89E-12			1.29E-05	
PCB-1262	2.53E-08	5.31E-08	1.18E-12			5.28E-06	
Phenanthrene	3.54E-06	1.24E-05	1.65E-10			7.78E-04	
Polychlorinated biphenyl	1.99E-07	4.19E-07	9.30E-12			4.17E-05	
Pyrene	4.46E-06	1.56E-05	2.08E-10			9.61E-04	
Alpha activity	2.59E+04						5.68E+02
Beta activity	5.70E+04						1.25E+03
Cesium-137	4.45E+02		2.08E-02			9.80E+04	9.75E+00
Neptunium-237	7.57E+02		3.53E-02			1.59E+05	1.66E+01
Uranium-234	7.81E+03		3.64E-01			1.62E+06	1.71E+02
Uranium-235	4.61E+02		2.15E-02			9.58E+04	1.01E+01
Uranium-238	1.04E+04		4.87E-01			2.18E+06	2.29E+02

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Di-n-butyl phthalate	7.98E-07	2.79E-06	3.73E-11			1.72E-04	
Alpha activity	1.23E+04						2.71E+02
Beta activity	3.19E+04						6.98E+02

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Cadmium	2.53E-07	8.85E-08	1.18E-11			8.00E-05	
Chromium	9.06E-06	1.59E-05	4.23E-10			1.88E-03	
Thallium	7.98E-07	1.40E-06	3.73E-11			1.66E-04	
Uranium	1.82E-05	3.18E-05	8.49E-10			3.78E-03	
Acenaphthene	8.65E-08	3.03E-07	4.04E-12			1.96E-05	
Anthracene	1.46E-07	5.12E-07	6.83E-12			3.28E-05	
Benz(a)anthracene	4.80E-07	1.68E-06	2.24E-11			1.01E-04	
Benzo(a)pyrene	5.29E-07	1.85E-06	2.47E-11			1.10E-04	
Benzo(b)fluoranthene	9.32E-07	3.26E-06	4.35E-11			1.94E-04	
Benzo(ghi)perylene	2.46E-07	8.62E-07	1.15E-11			5.12E-05	
Benzo(k)fluoranthene	5.79E-07	2.03E-06	2.70E-11			1.20E-04	
Chrysene	5.29E-07	1.85E-06	2.47E-11			1.11E-04	
Di-n-butyl phthalate	8.18E-07	2.86E-06	3.82E-11			1.76E-04	
Dibenz(a,h)anthracene	1.06E-07	3.73E-07	4.97E-12			2.21E-05	
Fluoranthene	1.40E-06	4.89E-06	6.52E-11			3.01E-04	
Fluorene	5.99E-08	2.10E-07	2.79E-12			1.34E-05	
Indeno(1,2,3-cd)pyrene	2.79E-07	9.78E-07	1.30E-11			5.81E-05	
PCB-1260	2.20E-06	4.61E-06	1.02E-10			4.55E-04	
Phenanthrene	7.72E-07	2.70E-06	3.60E-11			1.70E-04	
Polychlorinated biphenyl	6.65E-06	1.40E-05	3.10E-10			1.39E-03	
Pyrene	1.20E-06	4.19E-06	5.59E-11			2.58E-04	
Alpha activity	3.95E+04						8.66E+02
Beta activity	5.09E+04						1.11E+03
Cesium-137	5.95E+02		2.78E-02			1.31E+05	1.30E+01
Neptunium-237	4.76E+02		2.22E-02			9.98E+04	1.04E+01
Uranium-235	4.76E+02		2.22E-02			9.88E+04	1.04E+01
Uranium-238	1.08E+04		5.05E-01			2.26E+06	2.37E+02

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	9.20E-03	1.61E-02	4.29E-07			1.91E+00	
Antimony	1.93E-06	3.38E-06	9.00E-11			4.15E-04	
Chromium	6.91E-06	1.21E-05	3.23E-10			1.43E-03	
Uranium	1.74E-05	3.05E-05	8.14E-10			3.62E-03	
Benz(a)anthracene	2.66E-08	9.32E-08	1.24E-12			5.59E-06	
Benzo(a)pyrene	2.66E-08	9.32E-08	1.24E-12			5.56E-06	
Benzo(b)fluoranthene	2.66E-08	9.32E-08	1.24E-12			5.56E-06	
Benzo(k)fluoranthene	3.33E-08	1.16E-07	1.55E-12			6.91E-06	
Chrysene	2.66E-08	9.32E-08	1.24E-12			5.59E-06	
Fluoranthene	5.65E-08	1.98E-07	2.63E-12			1.22E-05	
PCB-1260	3.73E-09	7.82E-09	1.74E-13			7.73E-07	
Phenanthrene	2.66E-08	9.32E-08	1.24E-12			5.86E-06	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Polychlorinated biphenyl	3.73E-09	7.82E-09	1.74E-13			7.79E-07	
Pyrene	3.21E-08	1.12E-07	1.50E-12			6.93E-06	
Alpha activity	2.65E+04						5.81E+02
Beta activity	5.24E+04						1.15E+03
Uranium-235	5.95E+02		2.78E-02			1.24E+05	1.30E+01
Uranium-238	1.04E+04		4.83E-01			2.16E+06	2.27E+02

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Antimony	9.32E-07	1.63E-06	4.35E-11			2.00E-04	
Beryllium	4.59E-07	8.03E-07	2.14E-11			9.59E-05	
Cadmium	2.00E-07	6.99E-08	9.31E-12			6.32E-05	
Chromium	1.81E-05	3.17E-05	8.44E-10			3.75E-03	
Thallium	2.00E-07	3.49E-07	9.31E-12			4.15E-05	
Uranium	9.20E-06	1.61E-05	4.29E-10			1.91E-03	
enaphthene	3.33E-08	1.16E-07	1.55E-12			7.54E-06	
hracene	1.06E-07	3.73E-07	4.97E-12			2.39E-05	
z(a)anthracene	2.26E-07	7.92E-07	1.06E-11			4.75E-05	
Benzo(a)pyrene	1.86E-07	6.52E-07	8.69E-12			3.89E-05	
Benzo(b)fluoranthene	1.73E-07	6.05E-07	8.07E-12			3.61E-05	
Benzo(ghi)perylene	8.65E-08	3.03E-07	4.04E-12			1.80E-05	
Benzo(k)fluoranthene	1.93E-07	6.75E-07	9.00E-12			4.01E-05	
Bis(2-ethylhexyl)phthalate	5.32E-08	1.86E-07	2.48E-12			1.15E-05	
Chrysene	2.33E-07	8.15E-07	1.09E-11			4.89E-05	
Di-n-butyl phthalate	2.66E-08	9.32E-08	1.24E-12			5.74E-06	
Fluoranthene	5.59E-07	1.96E-06	2.61E-11			1.21E-04	
Fluorene	3.33E-08	1.16E-07	1.55E-12			7.46E-06	
Indeno(1,2,3-cd)pyrene	9.32E-08	3.26E-07	4.35E-12			1.94E-05	
Phenanthrene	2.69E-07	9.43E-07	1.26E-11			5.93E-05	
Pyrene	2.61E-07	9.12E-07	1.22E-11			5.62E-05	
Alpha activity	1.26E+04						2.77E+02
Beta activity	4.23E+04						9.27E+02
Neptunium-237	7.14E+02		3.33E-02			1.50E+05	1.56E+01
Uranium-235	2.38E+02		1.11E-02			4.94E+04	5.22E+00
Uranium-238	5.47E+03		2.55E-01			1.14E+06	1.20E+02

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	1.19E+00	2.17E-03				6.18E-01	
Arsenic	3.50E-03	6.36E-06				1.86E-03	
Barium	4.69E-03	8.51E-06				2.44E-03	
Beryllium	1.11E-04	2.02E-07				5.79E-05	
Bromide	5.98E-04						
Cadmium	2.52E-05	4.58E-08				1.80E-05	
omium	3.26E-03	5.91E-06				1.68E-03	
alt	9.41E-04	1.71E-06				5.17E-04	
on	2.89E+00	5.25E-03				1.50E+00	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Lead	1.52E-03	2.76E-06				7.86E-04	
Manganese	2.10E-02	3.81E-05				1.29E-02	
Nickel	1.48E-03	2.69E-06				8.70E-04	
Nitrate	7.05E-03	1.28E-05					
Orthophosphate	1.34E-03						
Selenium	3.91E-04	7.10E-07				2.58E-04	
Tetraoxo-sulfate(1-)	2.28E-01						
Thallium	7.97E-06	1.45E-08				4.13E-06	
Vanadium	1.35E-02	2.46E-05				7.02E-03	
Zinc	1.05E-01	1.90E-04				9.34E-02	
1,1-Dichloroethene	9.62E-05	1.55E-06		2.63E-05	2.85E-04	1.45E-04	
1,2-Dichloroethane	1.33E-05	1.28E-07		3.63E-06	3.95E-05	2.66E-05	
Bis(2-ethylhexyl)phthalate	6.93E-05	2.94E-06				3.69E-05	
Bromodichloromethane	7.08E-05	7.45E-07		1.93E-05	2.10E-04	8.36E-05	
Chloroform	8.98E-05	1.45E-06		2.45E-05	2.66E-04	1.15E-04	
Di-n-butyl phthalate	1.33E-05	2.78E-06				7.08E-06	
Di-n-octylphthalate	7.45E-05	3.63E-03				3.84E-05	
Dibromochloromethane	5.32E-05	3.77E-07		1.45E-05	1.58E-04	5.84E-05	
Tetrachloroethene	1.30E-04	8.71E-05		3.54E-05	3.84E-04	1.11E-04	
Trichloroethene	2.16E-04	6.26E-06		5.89E-05	6.39E-04	2.07E-04	
Vinyl chloride	1.87E-04	2.47E-06		5.10E-05	5.54E-04	4.13E-04	
cis-1,2-Dichloroethene	1.87E-04	3.40E-06		5.11E-05	5.55E-04	2.59E-04	
Actinium-228	6.47E+05					1.79E+03	
Alpha activity	7.32E+05						
Beta activity	6.62E+06						
Cesium-137	2.93E+05					1.27E+05	
Lead-210	1.00E+07					4.02E+06	
Lead-212	5.36E+05					2.52E+03	
Lead-214	2.88E+05					5.89E+01	
Neptunium-237	1.92E+05					1.00E+05	
Plutonium-239	3.17E+04					1.63E+04	
Potassium-40	1.62E+06					1.53E+06	
Technetium-99	7.37E+06					2.19E+09	
Thorium-228	2.93E+04					5.39E+03	
Thorium-230	3.24E+04					1.67E+04	
Thorium-234	1.71E+07					1.67E+06	
Uranium-234	4.48E+04					2.32E+04	
Uranium-235	2.75E+05					1.42E+05	
Uranium-238	2.99E+04					1.55E+04	

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Chromium	1.28E-05	2.25E-05	5.99E-10			2.66E-03	
Uranium	9.20E-06	1.61E-05	4.29E-10			1.91E-03	
Zinc	4.67E-05	8.17E-05	2.18E-09			1.95E-02	
Acenaphthene	2.66E-08	9.32E-08	1.24E-12			6.03E-06	
Anthracene	5.32E-08	1.86E-07	2.48E-12			1.19E-05	
Benz(a)anthracene	2.33E-07	8.15E-07	1.09E-11			4.89E-05	
Benzo(a)pyrene	2.00E-07	6.99E-07	9.31E-12			4.17E-05	
Benzo(b)fluoranthene	2.86E-07	1.00E-06	1.34E-11			5.97E-05	
Benzo(ghi)perylene	1.13E-07	3.96E-07	5.28E-12			2.35E-05	
Benzo(k)fluoranthene	1.86E-07	6.52E-07	8.69E-12			3.87E-05	
Chrysene	2.66E-07	9.32E-07	1.24E-11			5.59E-05	

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Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Fluoranthene	5.72E-07	2.00E-06	2.67E-11			1.23E-04	
Indeno(1,2,3-cd)pyrene	1.20E-07	4.19E-07	5.59E-12			2.49E-05	
PCB-1260	2.86E-08	6.01E-08	1.34E-12			5.93E-06	
Phenanthrene	3.13E-07	1.09E-06	1.46E-11			6.88E-05	
Polychlorinated biphenyl	2.86E-08	6.01E-08	1.34E-12			5.98E-06	
Pyrene	4.52E-07	1.58E-06	2.11E-11			9.76E-05	
Alpha activity	3.80E+04						8.32E+02
Beta activity	6.05E+04						1.33E+03
Uranium-235	2.38E+02		1.11E-02			4.94E+04	5.22E+00
Uranium-238	5.47E+03		2.55E-01			1.14E+06	1.20E+02

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Antimony	2.66E-07	4.66E-07	1.24E-11			5.73E-05	
Beryllium	2.15E-07	3.77E-07	1.00E-11			4.50E-05	
Cadmium	1.35E-07	4.73E-08	6.31E-12			4.28E-05	
omium	1.35E-05	2.36E-05	6.29E-10			2.79E-03	
on	8.12E-03	1.42E-02	3.79E-07			1.68E+00	
Lead	8.66E-06	1.52E-05	4.04E-10			1.80E-03	
Vanadium	1.10E-05	1.92E-05	5.13E-10			2.29E-03	
Benz(a)anthracene	2.00E-07	6.99E-07	9.31E-12			4.19E-05	
Benzo(a)pyrene	2.66E-07	9.32E-07	1.24E-11			5.56E-05	
Benzo(b)fluoranthene	3.52E-07	1.23E-06	1.64E-11			7.34E-05	
Benzo(k)fluoranthene	2.00E-07	6.99E-07	9.31E-12			4.15E-05	
Chrysene	1.93E-07	6.75E-07	9.00E-12			4.05E-05	
Fluoranthene	2.66E-07	9.32E-07	1.24E-11			5.74E-05	
Pyrene	2.66E-07	9.32E-07	1.24E-11			5.74E-05	
Alpha activity	2.16E+04						4.73E+02
Beta activity	5.84E+04						1.28E+03
Uranium-238	3.81E+03		1.78E-01			7.94E+05	8.35E+01

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	8.11E-01	1.47E-03				4.20E-01	
Antimony	1.85E-04	3.36E-07				9.81E-05	
Arsenic	3.88E-04	7.03E-07				2.06E-04	
Barium	5.59E-03	1.01E-05				2.91E-03	
Beryllium	1.35E-04	2.45E-07				7.00E-05	
Bromide	6.13E-03						
Cadmium	1.97E-05	3.57E-08				1.40E-05	
Chromium	1.50E-03	2.73E-06				7.75E-04	
Cobalt	1.31E-03	2.38E-06				7.22E-04	
Copper	2.93E-03	5.31E-06				1.84E-03	
Iron	5.16E+00	9.36E-03				2.67E+00	
d	4.36E-04	7.90E-07				2.25E-04	
ganese	4.07E-02	7.39E-05				2.50E-02	
cury	2.19E-06	3.97E-09				2.07E-06	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Nickel	2.62E-03	4.76E-06				1.54E-03	
Nitrate	6.30E-01	1.14E-03					
Orthophosphate	4.79E-04						
Silver	1.69E-04	3.07E-07				8.72E-05	
Tetraoxo-sulfate(1-)	1.75E-01						
Thallium	7.88E-06	1.43E-08				4.08E-06	
Uranium	4.87E-05	8.83E-08				2.52E-05	
Vanadium	2.05E-03	3.71E-06				1.06E-03	
Zinc	1.02E-02	1.85E-05				9.08E-03	
1,1-Dichloroethene	8.83E-05	1.43E-06		2.41E-05	2.62E-04	1.33E-04	
Bis(2-ethylhexyl)phthalate	1.33E-05	5.65E-07				7.08E-06	
Bromodichloromethane	5.32E-05	5.60E-07		1.45E-05	1.58E-04	6.29E-05	
Carbon tetrachloride	9.41E-04	3.76E-05		2.57E-04	2.79E-03	7.31E-04	
Chloroform	3.84E-04	6.21E-06		1.05E-04	1.14E-03	4.90E-04	
Di-n-butyl phthalate	1.33E-05	2.78E-06				7.08E-06	
Di-n-octylphthalate	1.33E-05	6.49E-04				6.87E-06	
N-Nitroso-di-n-propylamine	1.33E-05	6.76E-08				2.94E-05	
Tetrachloroethene	2.92E-04	1.96E-04		7.98E-05	8.67E-04	2.50E-04	
Toluene	4.79E-04	3.91E-05		1.31E-04	1.42E-03	3.90E-04	
Trichloroethene	1.09E-01	3.17E-03		2.98E-02	3.23E-01	1.05E-01	
Vinyl chloride	1.77E-03	2.34E-05		4.83E-04	5.25E-03	3.91E-03	
cis-1,2-Dichloroethene	4.92E-03	8.94E-05		1.34E-03	1.46E-02	6.82E-03	
trans-1,2-Dichloroethene	1.64E-04	3.18E-07		4.47E-05	4.86E-04	1.03E-03	
Alpha activity	4.04E+05						
Americium-241	4.00E+04					2.03E+04	
Beta activity	7.65E+06						
Cesium-137	2.59E+05					1.13E+05	
Lead-210	2.38E+06					9.54E+05	
Lead-214	1.76E+05					3.60E+01	
Neptunium-237	3.22E+05					1.68E+05	
Plutonium-239	1.09E+03					5.61E+02	
Technetium-99	6.38E+07					1.89E+10	
Thorium-228	1.81E+04					3.33E+03	
Thorium-230	2.60E+04					1.34E+04	
Uranium-234	3.95E+04					2.04E+04	
Uranium-235	2.80E+03					1.45E+03	
Uranium-238	3.95E+05					2.05E+05	

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	9.45E-03	1.65E-02	4.41E-07			1.96E+00	
Antimony	3.99E-07	6.99E-07	1.86E-11			8.58E-05	
Cadmium	2.33E-07	8.15E-08	1.09E-11			7.37E-05	
Chromium	1.57E-05	2.75E-05	7.33E-10			3.25E-03	
Benz(a)anthracene	4.66E-08	1.63E-07	2.17E-12			9.78E-06	
Benzo(a)pyrene	5.32E-08	1.86E-07	2.48E-12			1.11E-05	
Benzo(b)fluoranthene	4.66E-08	1.63E-07	2.17E-12			9.72E-06	
Benzo(k)fluoranthene	3.99E-08	1.40E-07	1.86E-12			8.29E-06	
Chrysene	5.32E-08	1.86E-07	2.48E-12			1.12E-05	
Fluoranthene	9.98E-08	3.49E-07	4.66E-12			2.15E-05	
PCB-1262	2.53E-08	5.31E-08	1.18E-12			5.28E-06	
Phenanthrene	4.66E-08	1.63E-07	2.17E-12			1.03E-05	
Polychlorinated biphenyl	2.53E-08	5.31E-08	1.18E-12			5.28E-06	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Pyrene	7.98E-08	2.79E-07	3.73E-12			1.72E-05	
Alpha activity	1.96E+04						4.30E+02
Beta activity	2.89E+04						6.33E+02

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Antimony	9.66E-07	1.69E-06	4.51E-11			2.08E-04	
Beryllium	2.51E-07	4.39E-07	1.17E-11			5.24E-05	
Cadmium	2.41E-07	8.44E-08	1.13E-11			7.63E-05	
Chromium	1.41E-05	2.47E-05	6.60E-10			2.93E-03	
Iron	1.13E-02	1.98E-02	5.28E-07			2.35E+00	
Thallium	4.67E-07	8.18E-07	2.18E-11			9.71E-05	
Uranium	3.34E-05	5.84E-05	1.56E-09			6.92E-03	
Zinc	3.35E-05	5.86E-05	1.56E-09			1.40E-02	
Acenaphthene	6.59E-07	2.30E-06	3.07E-11			1.49E-04	
^cenaphthylene	1.46E-07	5.12E-07	6.83E-12			3.67E-05	
hracene	1.21E-06	4.24E-06	5.65E-11			2.71E-04	
.z(a)anthracene	3.34E-06	1.17E-05	1.56E-10			7.01E-04	
Benzo(a)pyrene	3.22E-06	1.13E-05	1.50E-10			6.71E-04	
Benzo(b)fluoranthene	3.40E-06	1.19E-05	1.59E-10			7.10E-04	
Benzo(ghi)perylene	1.57E-06	5.51E-06	7.34E-11			3.27E-04	
Benzo(k)fluoranthene	2.25E-06	7.86E-06	1.05E-10			4.66E-04	
Bis(2-ethylhexyl)phthalate	5.32E-08	1.86E-07	2.48E-12			1.15E-05	
Chrysene	3.01E-06	1.05E-05	1.40E-10			6.31E-04	
Dibenz(a,h)anthracene	8.65E-07	3.03E-06	4.04E-11			1.80E-04	
Fluoranthene	7.26E-06	2.54E-05	3.39E-10			1.57E-03	
Fluorene	7.98E-07	2.79E-06	3.73E-11			1.79E-04	
Indeno(1,2,3-cd)pyrene	1.20E-06	4.20E-06	5.60E-11			2.49E-04	
Naphthalene	1.60E-09	5.59E-09	7.45E-14			4.50E-07	
PCB-1260	2.53E-08	5.31E-08	1.18E-12			5.24E-06	
Phenanthrene	3.80E-06	1.33E-05	1.77E-10			8.37E-04	
Polychlorinated biphenyl	2.53E-08	5.31E-08	1.18E-12			5.28E-06	
Pyrene	6.12E-06	2.14E-05	2.85E-10			1.32E-03	
Alpha activity	1.89E+04						4.13E+02
Beta activity	6.94E+04						1.52E+03
Neptunium-237	3.57E+02		1.67E-02			7.49E+04	7.82E+00
Uranium-235	7.14E+02		3.33E-02			1.48E+05	1.56E+01
Uranium-238	1.99E+04		9.27E-01			4.14E+06	4.36E+02

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	4.84E-03	8.47E-03	2.26E-07			1.01E+00	
Antimony	6.60E-07	1.15E-06	3.08E-11			1.42E-04	
Arsenic	8.78E-06	1.54E-05	4.10E-10			1.89E-03	
˜ ˜yllium	2.09E-07	3.66E-07	9.77E-12			4.37E-05	
ıium	6.02E-07	2.11E-07	2.81E-11			1.91E-04	
.omium	8.35E-06	1.46E-05	3.90E-10			1.73E-03	

Table 1.59a. Carcinogenic chronic daily intakes for the adult residential user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Cobalt	3.16E-06	5.52E-06	1.47E-10			7.11E-04	
Uranium	2.41E-05	4.22E-05	1.13E-09			5.01E-03	
Zinc	2.00E-05	3.49E-05	9.31E-10			8.32E-03	
2-Methylnaphthalene	5.99E-07	2.10E-06	2.79E-11			1.44E-04	
Acenaphthene	2.24E-06	7.84E-06	1.04E-10			5.07E-04	
Anthracene	9.70E-06	3.40E-05	4.53E-10			2.17E-03	
Benz(a)anthracene	1.34E-05	4.69E-05	6.25E-10			2.81E-03	
Benzo(a)pyrene	1.20E-05	4.22E-05	5.62E-10			2.51E-03	
Benzo(b)fluoranthene	1.50E-05	5.25E-05	7.00E-10			3.13E-03	
Benzo(ghi)perylene	2.46E-06	8.62E-06	1.15E-10			5.12E-04	
Benzo(k)fluoranthene	1.48E-05	5.17E-05	6.90E-10			3.07E-03	
Bis(2-ethylhexyl)phthalate	6.65E-08	2.33E-07	3.10E-12			1.44E-05	
Chrysene	1.44E-05	5.05E-05	6.73E-10			3.03E-03	
Di-n-butyl phthalate	1.36E-07	4.77E-07	6.36E-12			2.94E-05	
Dibenz(a,h)anthracene	2.50E-06	8.74E-06	1.17E-10			5.19E-04	
Fluoranthene	3.00E-05	1.05E-04	1.40E-09			6.48E-03	
Fluorene	2.08E-06	7.28E-06	9.71E-11			4.66E-04	
Indeno(1,2,3-cd)pyrene	2.53E-06	8.85E-06	1.18E-10			5.25E-04	
Naphthalene	9.66E-07	3.38E-06	4.51E-11			2.72E-04	
PCB-1254	6.39E-07	1.34E-06	2.98E-11			1.33E-04	
PCB-1260	1.06E-08	2.24E-08	4.97E-13			2.21E-06	
Phenanthrene	2.33E-05	8.15E-05	1.09E-09			5.13E-03	
Polychlorinated biphenyl	3.73E-07	7.84E-07	1.74E-11			7.80E-05	
Pyrene	2.63E-05	9.20E-05	1.23E-09			5.67E-03	
Alpha activity	7.72E+04						1.69E+03
Beta activity	1.33E+05						2.91E+03
Cesium-137	8.00E+02		3.73E-02			1.76E+05	1.75E+01
Neptunium-237	1.81E+03		8.44E-02			3.80E+05	3.97E+01
Uranium-234	1.13E+04		5.26E-01			2.34E+06	2.47E+02
Uranium-235	7.86E+02		3.67E-02			1.63E+05	1.72E+01
Uranium-238	1.44E+04		6.70E-01			2.99E+06	3.15E+02

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	5.09E-01	7.33E-04				3.43E-01	
Arsenic	1.49E-03	2.15E-06				1.03E-03	
Barium	2.00E-03	2.88E-06				1.35E-03	
Beryllium	4.74E-05	6.83E-08				3.21E-05	
Bromide	2.55E-04						
Cadmium	1.07E-05	1.55E-08				9.98E-06	
Chromium	1.39E-03	2.00E-06				9.34E-04	
Cobalt	4.01E-04	5.77E-07				2.87E-04	
Iron	1.23E+00	1.77E-03				8.30E-01	
Lead	6.47E-04	9.32E-07				4.36E-04	
Manganese	8.93E-03	1.29E-05				7.15E-03	
Nickel	6.31E-04	9.08E-07				4.83E-04	
Nitrate	3.00E-03	4.33E-06					
Orthophosphate	5.73E-04						
Selenium	1.67E-04	2.40E-07				1.43E-04	
Tetraoxo-sulfate(1-)	9.72E-02						
Thallium	3.40E-06	4.89E-09				2.29E-06	
Vanadium	5.77E-03	8.31E-06				3.90E-03	
Zinc	4.46E-02	6.42E-05				5.19E-02	
1,1-Dichloroethene	4.10E-05	5.25E-07		2.24E-05	2.43E-04	8.06E-05	
1,2-Dichloroethane	5.67E-06	4.33E-08		3.10E-06	3.36E-05	1.48E-05	
Bis(2-ethylhexyl)phthalate	2.95E-05	9.95E-07				2.05E-05	
Bromodichloromethane	3.02E-05	2.52E-07		1.65E-05	1.79E-04	4.64E-05	
oroform	3.82E-05	4.90E-07		2.09E-05	2.27E-04	6.36E-05	
n-butyl phthalate	5.67E-06	9.39E-07				3.93E-06	
Di-n-octylphthalate	3.17E-05	1.23E-03				2.13E-05	
Dibromochloromethane	2.27E-05	1.27E-07		1.24E-05	1.34E-04	3.24E-05	
Tetrachloroethene	5.52E-05	2.94E-05		3.02E-05	3.28E-04	6.17E-05	
Trichloroethene	9.18E-05	2.12E-06		5.02E-05	5.45E-04	1.15E-04	
Vinyl chloride	7.95E-05	8.36E-07		4.34E-05	4.72E-04	2.29E-04	
cis-1,2-Dichloroethene	7.97E-05	1.15E-06		4.35E-05	4.73E-04	1.44E-04	
Actinium-228	5.71E+04					2.05E+02	
Alpha activity	6.46E+04						
Beta activity	5.84E+05						
Cesium-137	2.58E+04					1.47E+04	
Lead-210	8.84E+05					4.62E+05	
Lead-212	4.73E+04					2.90E+02	
Lead-214	2.54E+04					6.77E+00	
Neptunium-237	1.70E+04					1.15E+04	
Plutonium-239	2.79E+03					1.88E+03	
Potassium-40	1.43E+05					1.76E+05	
Technetium-99	6.51E+05					2.52E+08	
Thorium-228	2.58E+03					6.20E+02	
Thorium-230	2.86E+03					1.93E+03	
Thorium-234	1.51E+06					1.92E+05	
Uranium-234	3.96E+03					2.67E+03	
Uranium-235	2.43E+04					1.64E+04	
Uranium-238	2.64E+03					1.78E+03	

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	3.45E-01	4.97E-04				2.33E-01	
.mony	7.88E-05	1.13E-07				5.45E-05	
.enic	1.65E-04	2.38E-07				1.14E-04	

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Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Barium	2.38E-03	3.43E-06				1.61E-03	
Beryllium	5.74E-05	8.26E-08				3.89E-05	
Bromide	2.61E-03						
Cadmium	8.39E-06	1.21E-08				7.79E-06	
Chromium	6.40E-04	9.21E-07				4.30E-04	
Cobalt	5.60E-04	8.06E-07				4.01E-04	
Copper	1.25E-03	1.80E-06				1.02E-03	
Iron	2.20E+00	3.16E-03				1.48E+00	
Lead	1.86E-04	2.67E-07				1.25E-04	
Manganese	1.73E-02	2.50E-05				1.39E-02	
Mercury	9.33E-07	1.34E-09				1.15E-06	
Nickel	1.12E-03	1.61E-06				8.54E-04	
Nitrate	2.69E-01	3.87E-04					
Orthophosphate	2.04E-04						
Silver	7.19E-05	1.04E-07				4.84E-05	
Tetraoxo-sulfate(1-)	7.47E-02						
Thallium	3.36E-06	4.83E-09				2.26E-06	
Uranium	2.07E-05	2.98E-08				1.40E-05	
Vanadium	8.72E-04	1.26E-06				5.89E-04	
Zinc	4.33E-03	6.24E-06				5.04E-03	
1,1-Dichloroethene	3.76E-05	4.82E-07		2.05E-05	2.23E-04	7.39E-05	
Bis(2-ethylhexyl)phthalate	5.67E-06	1.91E-07				3.93E-06	
Bromodichloromethane	2.27E-05	1.89E-07		1.24E-05	1.34E-04	3.49E-05	
Carbon tetrachloride	4.01E-04	1.27E-05		2.19E-04	2.38E-03	4.06E-04	
Chloroform	1.64E-04	2.10E-06		8.94E-05	9.71E-04	2.72E-04	
Di-n-butyl phthalate	5.67E-06	9.39E-07				3.93E-06	
Di-n-octylphthalate	5.67E-06	2.19E-04				3.81E-06	
N-Nitroso-di-n-propylamine	5.67E-06	2.29E-08				1.63E-05	
Tetrachloroethene	1.24E-04	6.63E-05		6.80E-05	7.38E-04	1.39E-04	
Toluene	2.04E-04	1.32E-05		1.11E-04	1.21E-03	2.17E-04	
Trichloroethene	4.64E-02	1.07E-03		2.54E-02	2.75E-01	5.82E-02	
Vinyl chloride	7.54E-04	7.92E-06		4.12E-04	4.47E-03	2.17E-03	
cis-1,2-Dichloroethene	2.10E-03	3.02E-05		1.15E-03	1.24E-02	3.78E-03	
trans-1,2-Dichloroethene	6.97E-05	1.08E-07		3.81E-05	4.14E-04	5.73E-04	
Alpha activity	3.56E+04						
Americium-241	3.53E+03					2.33E+03	
Beta activity	6.75E+05						
Cesium-137	2.29E+04					1.30E+04	
Lead-210	2.10E+05					1.10E+05	
Lead-214	1.55E+04					4.14E+00	
Neptunium-237	2.84E+04					1.93E+04	
Plutonium-239	9.60E+01					6.45E+01	
Technetium-99	5.63E+06					2.18E+09	
Thorium-228	1.60E+03					3.83E+02	
Thorium-230	2.30E+03					1.54E+03	
Uranium-234	3.48E+03					2.35E+03	
Uranium-235	2.47E+02					1.66E+02	
Uranium-238	3.49E+04					2.36E+04	

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	6.71E-03	6.26E-03	1.57E-07			4.55E-01	
Antimony	1.32E-06	1.23E-06	3.09E-11			9.30E-05	

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=WAG 6 MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Arsenic	6.05E-06	5.64E-06	1.41E-10			4.25E-04	
Beryllium	3.27E-07	3.05E-07	7.64E-12			2.23E-05	
Cadmium	5.03E-07	9.38E-08	1.17E-11			5.20E-05	
Chromium	1.34E-05	1.25E-05	3.13E-10			9.08E-04	
Cobalt	4.60E-06	4.28E-06	1.07E-10			3.38E-04	
Iron	1.24E-02	1.15E-02	2.88E-07			8.37E-01	
Lead	9.05E-06	8.44E-06	2.11E-10			6.13E-04	
Thallium	7.73E-07	7.21E-07	1.80E-11			5.25E-05	
Uranium	2.99E-05	2.79E-05	6.98E-10			2.03E-03	
Vanadium	1.62E-05	1.51E-05	3.77E-10			1.10E-03	
Zinc	2.91E-05	2.71E-05	6.78E-10			3.96E-03	
2-Methylnaphthalene	6.08E-07	1.13E-06	1.42E-11			4.78E-05	
Acenaphthene	1.42E-06	2.64E-06	3.30E-11			1.05E-04	
Acenaphthylene	2.49E-07	4.65E-07	5.82E-12			2.04E-05	
Anthracene	2.74E-06	5.12E-06	6.40E-11			2.01E-04	
Benz(a)anthracene	4.29E-06	8.01E-06	1.00E-10			2.95E-04	
Benzo(a)pyrene	4.20E-06	7.84E-06	9.81E-11			2.87E-04	
Benzo(b)fluoranthene	4.94E-06	9.21E-06	1.15E-10			3.37E-04	
Benzo(ghi)perylene	2.40E-06	4.47E-06	5.60E-11			1.63E-04	
Benzo(k)fluoranthene	4.00E-06	7.46E-06	9.34E-11			2.71E-04	
Bis(2-ethylhexyl)phthalate	1.13E-07	2.11E-07	2.64E-12			7.99E-06	
-hrysene	4.53E-06	8.46E-06	1.06E-10			3.11E-04	
-n-butyl phthalate	8.45E-07	1.58E-06	1.97E-11			5.95E-05	
benz(a,h)anthracene	1.25E-06	2.32E-06	2.91E-11			8.45E-05	
Fluoranthene	8.60E-06	1.60E-05	2.01E-10			6.06E-04	
Fluorene	1.08E-06	2.01E-06	2.52E-11			7.90E-05	
Indeno(1,2,3-cd)pyrene	2.27E-06	4.24E-06	5.30E-11			1.54E-04	
Naphthalene	7.29E-07	1.36E-06	1.70E-11			6.71E-05	
PCB-1254	1.92E-07	2.15E-07	4.49E-12			1.31E-05	
PCB-1260	1.06E-07	1.18E-07	2.46E-12			7.16E-06	
PCB-1262	4.31E-08	4.82E-08	1.01E-12			2.94E-06	
Phenanthrene	6.02E-06	1.12E-05	1.41E-10			4.33E-04	
Polychlorinated biphenyl	3.40E-07	3.80E-07	7.92E-12			2.32E-05	
Pyrene	7.59E-06	1.42E-05	1.77E-10			5.35E-04	
Alpha activity	9.15E+03						1.00E+02
Beta activity	2.01E+04						2.21E+02
Cesium-137	1.57E+02		3.66E-03			1.13E+04	1.72E+00
Neptunium-237	2.67E+02		6.23E-03			1.83E+04	2.93E+00
Uranium-234	2.76E+03		6.43E-02			1.87E+05	3.02E+01
Uranium-235	1.63E+02		3.80E-03			1.10E+04	1.78E+00
Uranium-238	3.69E+03		8.60E-02			2.51E+05	4.04E+01

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Di-n-butyl phthalate	1.36E-06	2.54E-06	3.17E-11			9.59E-05	
Alpha activity	4.36E+03						4.77E+01
Beta activity	1.12E+04						1.23E+02

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Cadmium	4.31E-07	8.03E-08	1.01E-11			4.45E-05	
Chromium	1.54E-05	1.44E-05	3.60E-10			1.04E-03	
Thallium	1.36E-06	1.27E-06	3.17E-11			9.23E-05	
Uranium	3.10E-05	2.89E-05	7.23E-10			2.10E-03	
Acenaphthene	1.47E-07	2.75E-07	3.44E-12			1.09E-05	
Anthracene	2.49E-07	4.65E-07	5.82E-12			1.83E-05	
Benz(a)anthracene	8.18E-07	1.53E-06	1.91E-11			5.61E-05	
Benzo(a)pyrene	9.01E-07	1.68E-06	2.10E-11			6.14E-05	
Benzo(b)fluoranthene	1.59E-06	2.96E-06	3.70E-11			1.08E-04	
Benzo(ghi)perylene	4.19E-07	7.82E-07	9.79E-12			2.85E-05	
Benzo(k)fluoranthene	9.86E-07	1.84E-06	2.30E-11			6.69E-05	
Chrysene	9.01E-07	1.68E-06	2.10E-11			6.18E-05	
Di-n-butyl phthalate	1.39E-06	2.60E-06	3.25E-11			9.82E-05	
Dibenz(a,h)anthracene	1.81E-07	3.38E-07	4.23E-12			1.23E-05	
Fluoranthene	2.38E-06	4.44E-06	5.55E-11			1.68E-04	
Fluorene	1.02E-07	1.90E-07	2.38E-12			7.47E-06	
Indeno(1,2,3-cd)pyrene	4.76E-07	8.88E-07	1.11E-11			3.23E-05	
PCB-1260	3.74E-06	4.19E-06	8.73E-11			2.53E-04	
Phenanthrene	1.32E-06	2.45E-06	3.07E-11			9.46E-05	
Polychlorinated biphenyl	1.13E-05	1.27E-05	2.64E-10			7.74E-04	
Pyrene	2.04E-06	3.81E-06	4.76E-11			1.44E-04	
Alpha activity	1.39E+04						1.53E+02
Beta activity	1.80E+04						1.97E+02
Cesium-137	2.10E+02		4.90E-03			1.51E+04	2.30E+00
Neptunium-237	1.68E+02		3.92E-03			1.15E+04	1.84E+00
Uranium-235	1.68E+02		3.92E-03			1.14E+04	1.84E+00
Uranium-238	3.82E+03		8.92E-02			2.60E+05	4.19E+01

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	1.57E-02	1.46E-02	3.66E-07			1.06E+00	
Antimony	3.29E-06	3.07E-06	7.67E-11			2.31E-04	
Chromium	1.18E-05	1.10E-05	2.75E-10			7.97E-04	
Uranium	2.97E-05	2.77E-05	6.93E-10			2.01E-03	
Benz(a)anthracene	4.53E-08	8.46E-08	1.06E-12			3.11E-06	
Benzo(a)pyrene	4.53E-08	8.46E-08	1.06E-12			3.09E-06	
Benzo(b)fluoranthene	4.53E-08	8.46E-08	1.06E-12			3.09E-06	
Benzo(k)fluoranthene	5.67E-08	1.06E-07	1.32E-12			3.84E-06	
Chrysene	4.53E-08	8.46E-08	1.06E-12			3.11E-06	
Fluoranthene	9.62E-08	1.79E-07	2.24E-12			6.78E-06	
PCB-1260	6.35E-09	7.10E-09	1.48E-13			4.30E-07	
Phenanthrene	4.53E-08	8.46E-08	1.06E-12			3.26E-06	

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Polychlorinated biphenyl	6.35E-09	7.10E-09	1.48E-13			4.33E-07	
Pyrene	5.47E-08	1.02E-07	1.28E-12			3.86E-06	
Alpha activity	9.36E+03						1.03E+02
Beta activity	1.85E+04						2.03E+02
Uranium-235	2.10E+02		4.90E-03			1.42E+04	2.30E+00
Uranium-238	3.65E+03		8.53E-02			2.49E+05	4.00E+01

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Antimony	1.59E-06	1.48E-06	3.70E-11			1.11E-04	
Beryllium	7.82E-07	7.29E-07	1.83E-11			5.34E-05	
Cadmium	3.40E-07	6.34E-08	7.93E-12			3.51E-05	
Chromium	3.08E-05	2.88E-05	7.19E-10			2.09E-03	
Thallium	3.40E-07	3.17E-07	7.93E-12			2.31E-05	
Uranium	1.57E-05	1.46E-05	3.66E-10			1.06E-03	
Acenaphthene	5.67E-08	1.06E-07	1.32E-12			4.20E-06	
[illegible]racene	1.81E-07	3.38E-07	4.23E-12			1.33E-05	
[illegible](a)anthracene	3.85E-07	7.19E-07	8.99E-12			2.64E-05	
[illegible]o(a)pyrene	3.17E-07	5.92E-07	7.41E-12			2.16E-05	
Benzo(b)fluoranthene	2.95E-07	5.50E-07	6.88E-12			2.01E-05	
Benzo(ghi)perylene	1.47E-07	2.75E-07	3.44E-12			1.00E-05	
Benzo(k)fluoranthene	3.29E-07	6.13E-07	7.67E-12			2.23E-05	
Bis(2-ethylhexyl)phthalate	9.07E-08	1.69E-07	2.12E-12			6.39E-06	
Chrysene	3.97E-07	7.40E-07	9.26E-12			2.72E-05	
Di-n-butyl phthalate	4.53E-08	8.46E-08	1.06E-12			3.20E-06	
Fluoranthene	9.52E-07	1.78E-06	2.22E-11			6.71E-05	
Fluorene	5.67E-08	1.06E-07	1.32E-12			4.15E-06	
Indeno(1,2,3-cd)pyrene	1.59E-07	2.96E-07	3.70E-12			1.08E-05	
Phenanthrene	4.59E-07	8.56E-07	1.07E-11			3.30E-05	
Pyrene	4.44E-07	8.28E-07	1.04E-11			3.13E-05	
Alpha activity	4.46E+03						4.89E+01
Beta activity	1.49E+04						1.64E+02
Neptunium-237	2.52E+02		5.88E-03			1.73E+04	2.76E+00
Uranium-235	8.40E+01		1.96E-03			5.70E+03	9.21E-01
Uranium-238	1.93E+03		4.51E-02			1.32E+05	2.12E+01

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	5.09E-01	7.33E-04				3.43E-01	
Arsenic	1.49E-03	2.15E-06				1.03E-03	
Barium	2.00E-03	2.88E-06				1.35E-03	
Beryllium	4.74E-05	6.83E-08				3.21E-05	
Bromide	2.55E-04						
Cadmium	1.07E-05	1.55E-08				9.98E-06	
[illegible]romium	1.39E-03	2.00E-06				9.34E-04	
	4.01E-04	5.77E-07				2.87E-04	
	1.23E+00	1.77E-03				8.30E-01	

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Lead	6.47E-04	9.32E-07				4.36E-04	
Manganese	8.93E-03	1.29E-05				7.15E-03	
Nickel	6.31E-04	9.08E-07				4.83E-04	
Nitrate	3.00E-03	4.33E-06					
Orthophosphate	5.73E-04						
Selenium	1.67E-04	2.40E-07				1.43E-04	
Tetraoxo-sulfate(1-)	9.72E-02						
Thallium	3.40E-06	4.89E-09				2.29E-06	
Vanadium	5.77E-03	8.31E-06				3.90E-03	
Zinc	4.46E-02	6.42E-05				5.19E-02	
1,1-Dichloroethene	4.10E-05	5.25E-07		2.24E-05	2.43E-04	8.06E-05	
1,2-Dichloroethane	5.67E-06	4.33E-08		3.10E-06	3.36E-05	1.48E-05	
Bis(2-ethylhexyl)phthalate	2.95E-05	9.95E-07				2.05E-05	
Bromodichloromethane	3.02E-05	2.52E-07		1.65E-05	1.79E-04	4.64E-05	
Chloroform	3.82E-05	4.90E-07		2.09E-05	2.27E-04	6.36E-05	
Di-n-butyl phthalate	5.67E-06	9.39E-07				3.93E-06	
Di-n-octylphthalate	3.17E-05	1.23E-03				2.13E-05	
Dibromochloromethane	2.27E-05	1.27E-07		1.24E-05	1.34E-04	3.24E-05	
Tetrachloroethene	5.52E-05	2.94E-05		3.02E-05	3.28E-04	6.17E-05	
Trichloroethene	9.18E-05	2.12E-06		5.02E-05	5.45E-04	1.15E-04	
Vinyl chloride	7.95E-05	8.36E-07		4.34E-05	4.72E-04	2.29E-04	
cis-1,2-Dichloroethene	7.97E-05	1.15E-06		4.35E-05	4.73E-04	1.44E-04	
Actinium-228	5.71E+04					2.05E+02	
Alpha activity	6.46E+04						
Beta activity	5.84E+05						
Cesium-137	2.58E+04					1.47E+04	
Lead-210	8.84E+05					4.62E+05	
Lead-212	4.73E+04					2.90E+02	
Lead-214	2.54E+04					6.77E+00	
Neptunium-237	1.70E+04					1.15E+04	
Plutonium-239	2.79E+03					1.88E+03	
Potassium-40	1.43E+05					1.76E+05	
Technetium-99	6.51E+05					2.52E+08	
Thorium-228	2.58E+03					6.20E+02	
Thorium-230	2.86E+03					1.93E+03	
Thorium-234	1.51E+06					1.92E+05	
Uranium-234	3.96E+03					2.67E+03	
Uranium-235	2.43E+04					1.64E+04	
Uranium-238	2.64E+03					1.78E+03	

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Chromium	2.19E-05	2.04E-05	5.10E-10			1.48E-03	
Uranium	1.57E-05	1.46E-05	3.66E-10			1.06E-03	
Zinc	7.96E-05	7.42E-05	1.86E-09			1.08E-02	
Acenaphthene	4.53E-08	8.46E-08	1.06E-12			3.36E-06	
Anthracene	9.07E-08	1.69E-07	2.12E-12			6.64E-06	
Benz(a)anthracene	3.97E-07	7.40E-07	9.26E-12			2.72E-05	
Benzo(a)pyrene	3.40E-07	6.34E-07	7.93E-12			2.32E-05	
Benzo(b)fluoranthene	4.87E-07	9.09E-07	1.14E-11			3.32E-05	
Benzo(ghi)perylene	1.93E-07	3.59E-07	4.50E-12			1.31E-05	
Benzo(k)fluoranthene	3.17E-07	5.92E-07	7.41E-12			2.15E-05	
Chrysene	4.53E-07	8.46E-07	1.06E-11			3.11E-05	

531085

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Fluoranthene	9.75E-07	1.82E-06	2.27E-11			6.87E-05	
Indeno(1,2,3-cd)pyrene	2.04E-07	3.81E-07	4.76E-12			1.39E-05	
PCB-1260	4.87E-08	5.45E-08	1.14E-12			3.30E-06	
Phenanthrene	5.33E-07	9.94E-07	1.24E-11			3.83E-05	
Polychlorinated biphenyl	4.87E-08	5.45E-08	1.14E-12			3.33E-06	
Pyrene	7.71E-07	1.44E-06	1.80E-11			5.43E-05	
Alpha activity	1.34E+04						1.47E+02
Beta activity	2.13E+04						2.34E+02
Uranium-235	8.40E+01		1.96E-03			5.70E+03	9.21E-01
Uranium-238	1.93E+03		4.51E-02			1.32E+05	2.12E+01

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Antimony	4.54E-07	4.23E-07	1.06E-11			3.19E-05	
Beryllium	3.67E-07	3.42E-07	8.56E-12			2.50E-05	
Cadmium	2.30E-07	4.30E-08	5.37E-12			2.38E-05	
omium	2.30E-05	2.14E-05	5.36E-10			1.55E-03	
[illegible]	1.38E-02	1.29E-02	3.23E-07			9.37E-01	
Lead	1.48E-05	1.38E-05	3.44E-10			1.00E-03	
Vanadium	1.87E-05	1.75E-05	4.37E-10			1.27E-03	
Benz(a)anthracene	3.40E-07	6.34E-07	7.93E-12			2.33E-05	
Benzo(a)pyrene	4.53E-07	8.46E-07	1.06E-11			3.09E-05	
Benzo(b)fluoranthene	5.99E-07	1.12E-06	1.40E-11			4.09E-05	
Benzo(k)fluoranthene	3.40E-07	6.34E-07	7.93E-12			2.31E-05	
Chrysene	3.29E-07	6.13E-07	7.67E-12			2.26E-05	
Fluoranthene	4.53E-07	8.46E-07	1.06E-11			3.20E-05	
Pyrene	4.53E-07	8.46E-07	1.06E-11			3.20E-05	
Alpha activity	7.61E+03						8.35E+01
Beta activity	2.06E+04						2.26E+02
Uranium-238	1.34E+03		3.14E-02			9.16E+04	1.47E+01

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	3.45E-01	4.97E-04				2.33E-01	
Antimony	7.88E-05	1.13E-07				5.45E-05	
Arsenic	1.65E-04	2.38E-07				1.14E-04	
Barium	2.38E-03	3.43E-06				1.61E-03	
Beryllium	5.74E-05	8.26E-08				3.89E-05	
Bromide	2.61E-03						
Cadmium	8.39E-06	1.21E-08				7.79E-06	
Chromium	6.40E-04	9.21E-07				4.30E-04	
Cobalt	5.60E-04	8.06E-07				4.01E-04	
Copper	1.25E-03	1.80E-06				1.02E-03	
Iron	2.20E+00	3.16E-03				1.48E+00	
d	1.86E-04	2.67E-07				1.25E-04	
anese	1.73E-02	2.50E-05				1.39E-02	
ury	9.33E-07	1.34E-09				1.15E-06	

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Nickel	1.12E-03	1.61E-06				8.54E-04	
Nitrate	2.69E-01	3.87E-04					
Orthophosphate	2.04E-04						
Silver	7.19E-05	1.04E-07				4.84E-05	
Tetraoxo-sulfate(1-)	7.47E-02						
Thallium	3.36E-06	4.83E-09				2.26E-06	
Uranium	2.07E-05	2.98E-08				1.40E-05	
Vanadium	8.72E-04	1.26E-06				5.89E-04	
Zinc	4.33E-03	6.24E-06				5.04E-03	
1,1-Dichloroethene	3.76E-05	4.82E-07		2.05E-05	2.23E-04	7.39E-05	
Bis(2-ethylhexyl)phthalate	5.67E-06	1.91E-07				3.93E-06	
Bromodichloromethane	2.27E-05	1.89E-07		1.24E-05	1.34E-04	3.49E-05	
Carbon tetrachloride	4.01E-04	1.27E-05		2.19E-04	2.38E-03	4.06E-04	
Chloroform	1.64E-04	2.10E-06		8.94E-05	9.71E-04	2.72E-04	
Di-n-butyl phthalate	5.67E-06	9.39E-07				3.93E-06	
Di-n-octylphthalate	5.67E-06	2.19E-04				3.81E-06	
N-Nitroso-di-n-propylamine	5.67E-06	2.29E-08				1.63E-05	
Tetrachloroethene	1.24E-04	6.63E-05		6.80E-05	7.38E-04	1.39E-04	
Toluene	2.04E-04	1.32E-05		1.11E-04	1.21E-03	2.17E-04	
Trichloroethene	4.64E-02	1.07E-03		2.54E-02	2.75E-01	5.82E-02	
Vinyl chloride	7.54E-04	7.92E-06		4.12E-04	4.47E-03	2.17E-03	
cis-1,2-Dichloroethene	2.10E-03	3.02E-05		1.15E-03	1.24E-02	3.78E-03	
trans-1,2-Dichloroethene	6.97E-05	1.08E-07		3.81E-05	4.14E-04	5.73E-04	
Alpha activity	3.56E+04						
Americium-241	3.53E+03					2.33E+03	
Beta activity	6.75E+05						
Cesium-137	2.29E+04					1.30E+04	
Lead-210	2.10E+05					1.10E+05	
Lead-214	1.55E+04					4.14E+00	
Neptunium-237	2.84E+04					1.93E+04	
Plutonium-239	9.60E+01					6.45E+01	
Technetium-99	5.63E+06					2.18E+09	
Thorium-228	1.60E+03					3.83E+02	
Thorium-230	2.30E+03					1.54E+03	
Uranium-234	3.48E+03					2.35E+03	
Uranium-235	2.47E+02					1.66E+02	
Uranium-238	3.49E+04					2.36E+04	

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	1.61E-02	1.50E-02	3.76E-07			1.09E+00	
Antimony	6.80E-07	6.34E-07	1.59E-11			4.78E-05	
Cadmium	3.97E-07	7.40E-08	9.26E-12			4.10E-05	
Chromium	2.68E-05	2.49E-05	6.24E-10			1.81E-03	
Benz(a)anthracene	7.94E-08	1.48E-07	1.85E-12			5.44E-06	
Benzo(a)pyrene	9.07E-08	1.69E-07	2.12E-12			6.18E-06	
Benzo(b)fluoranthene	7.94E-08	1.48E-07	1.85E-12			5.41E-06	
Benzo(k)fluoranthene	6.80E-08	1.27E-07	1.59E-12			4.61E-06	
Chrysene	9.07E-08	1.69E-07	2.12E-12			6.22E-06	
Fluoranthene	1.70E-07	3.17E-07	3.97E-12			1.20E-05	
PCB-1262	4.31E-08	4.82E-08	1.01E-12			2.94E-06	
Phenanthrene	7.94E-08	1.48E-07	1.85E-12			5.71E-06	
Polychlorinated biphenyl	4.31E-08	4.82E-08	1.01E-12			2.94E-06	

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=Southeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Pyrene	1.36E-07	2.54E-07	3.17E-12			9.59E-06	
Alpha activity	6.93E+03						7.59E+01
Beta activity	1.02E+04						1.12E+02

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Antimony	1.65E-06	1.53E-06	3.84E-11			1.16E-04	
Beryllium	4.28E-07	3.99E-07	9.97E-12			2.92E-05	
Cadmium	4.11E-07	7.67E-08	9.59E-12			4.25E-05	
Chromium	2.41E-05	2.25E-05	5.62E-10			1.63E-03	
Iron	1.93E-02	1.80E-02	4.50E-07			1.31E+00	
Thallium	7.96E-07	7.42E-07	1.86E-11			5.40E-05	
Uranium	5.68E-05	5.30E-05	1.33E-09			3.85E-03	
Zinc	5.70E-05	5.32E-05	1.33E-09			7.77E-03	
Acenaphthene	1.12E-06	2.09E-06	2.62E-11			8.31E-05	
aphthylene	2.49E-07	4.65E-07	5.82E-12			2.04E-05	
racene	2.06E-06	3.85E-06	4.81E-11			1.51E-04	
z(a)anthracene	5.69E-06	1.06E-05	1.33E-10			3.90E-04	
Benzo(a)pyrene	5.48E-06	1.02E-05	1.28E-10			3.74E-04	
Benzo(b)fluoranthene	5.80E-06	1.08E-05	1.35E-10			3.95E-04	
Benzo(ghi)perylene	2.68E-06	5.00E-06	6.26E-11			1.82E-04	
Benzo(k)fluoranthene	3.83E-06	7.14E-06	8.93E-11			2.60E-04	
Bis(2-ethylhexyl)phthalate	9.07E-08	1.69E-07	2.12E-12			6.39E-06	
Chrysene	5.12E-06	9.55E-06	1.19E-10			3.51E-04	
Dibenz(a,h)anthracene	1.47E-06	2.75E-06	3.44E-11			1.00E-04	
Fluoranthene	1.24E-05	2.31E-05	2.88E-10			8.71E-04	
Fluorene	1.36E-06	2.54E-06	3.17E-11			9.96E-05	
Indeno(1,2,3-cd)pyrene	2.04E-06	3.81E-06	4.77E-11			1.39E-04	
Naphthalene	2.72E-09	5.07E-09	6.35E-14			2.50E-07	
PCB-1260	4.31E-08	4.82E-08	1.01E-12			2.92E-06	
Phenanthrene	6.48E-06	1.21E-05	1.51E-10			4.66E-04	
Polychlorinated biphenyl	4.31E-08	4.82E-08	1.01E-12			2.94E-06	
Pyrene	1.04E-05	1.94E-05	2.43E-10			7.35E-04	
Alpha activity	6.65E+03						7.29E+01
Beta activity	2.45E+04						2.68E+02
Neptunium-237	1.26E+02		2.94E-03			8.63E+03	1.38E+00
Uranium-235	2.52E+02		5.88E-03			1.71E+04	2.76E+00
Uranium-238	7.01E+03		1.64E-01			4.78E+05	7.69E+01

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Aluminum	8.25E-03	7.69E-03	1.93E-07			5.60E-01	
Antimony	1.12E-06	1.05E-06	2.62E-11			7.89E-05	
rsenic	1.50E-05	1.39E-05	3.49E-10			1.05E-03	
llium	3.57E-07	3.33E-07	8.32E-12			2.43E-05	
ium	1.03E-06	1.91E-07	2.39E-11			1.06E-04	
Chromium	1.42E-05	1.33E-05	3.32E-10			9.63E-04	

Table 1.59b. Carcinogenic chronic daily intakes for the child residential user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure
Cobalt	5.38E-06	5.01E-06	1.25E-10			3.96E-04	
Uranium	4.11E-05	3.84E-05	9.60E-10			2.79E-03	
Zinc	3.40E-05	3.17E-05	7.93E-10			4.63E-03	
2-Methylnaphthalene	1.02E-06	1.90E-06	2.38E-11			8.01E-05	
Acenaphthene	3.82E-06	7.12E-06	8.90E-11			2.82E-04	
Anthracene	1.65E-05	3.08E-05	3.86E-10			1.21E-03	
Benz(a)anthracene	2.28E-05	4.25E-05	5.32E-10			1.56E-03	
Benzo(a)pyrene	2.05E-05	3.83E-05	4.79E-10			1.40E-03	
Benzo(b)fluoranthene	2.55E-05	4.76E-05	5.96E-10			1.74E-03	
Benzo(ghi)perylene	4.20E-06	7.82E-06	9.79E-11			2.85E-04	
Benzo(k)fluoranthene	2.52E-05	4.70E-05	5.87E-10			1.71E-03	
Bis(2-ethylhexyl)phthalate	1.13E-07	2.11E-07	2.64E-12			7.99E-06	
Chrysene	2.46E-05	4.59E-05	5.74E-10			1.69E-03	
Di-n-butyl phthalate	2.32E-07	4.33E-07	5.42E-12			1.64E-05	
Dibenz(a,h)anthracene	4.26E-06	7.94E-06	9.93E-11			2.89E-04	
Fluoranthene	5.12E-05	9.54E-05	1.19E-09			3.61E-03	
Fluorene	3.54E-06	6.61E-06	8.27E-11			2.60E-04	
Indeno(1,2,3-cd)pyrene	4.31E-06	8.03E-06	1.00E-10			2.92E-04	
Naphthalene	1.65E-06	3.07E-06	3.84E-11			1.52E-04	
PCB-1254	1.09E-06	1.22E-06	2.54E-11			7.43E-05	
PCB-1260	1.81E-08	2.03E-08	4.23E-13			1.23E-06	
Phenanthrene	3.97E-05	7.40E-05	9.26E-10			2.85E-03	
Polychlorinated biphenyl	6.36E-07	7.12E-07	1.48E-11			4.34E-05	
Pyrene	4.48E-05	8.35E-05	1.04E-09			3.16E-03	
Alpha activity	2.72E+04						2.98E+02
Beta activity	4.68E+04						5.13E+02
Cesium-137	2.82E+02		6.58E-03			2.03E+04	3.09E+00
Neptunium-237	6.39E+02		1.49E-02			4.38E+04	7.00E+00
Uranium-234	3.98E+03		9.28E-02			2.70E+05	4.36E+01
Uranium-235	2.77E+02		6.47E-03			1.88E+04	3.04E+00
Uranium-238	5.07E+03		1.18E-01			3.45E+05	5.55E+01

Table 1.60a. Carcinogenic chronic daily intakes for the adult recreational user

--------------------------------------- SECTOR=WAG 6 MEDIA=Surface soil ---------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.18E-04	4.74E-05	9.88E-07
Antimony	7.25E-10	2.85E-10	7.64E-12
Arsenic	1.60E-07	6.34E-08	1.34E-09
Beryllium	3.92E-09	1.57E-09	3.94E-11
Cadmium	7.06E-09	2.58E-09	1.08E-07
Chromium	1.60E-06	6.34E-07	1.31E-08
Cobalt	6.36E-09	2.50E-09	
Iron	2.96E-03	1.19E-03	1.24E-03
Lead	5.57E-08	2.17E-08	4.41E-10
Thallium	3.62E-07	1.46E-07	2.97E-09
Uranium	1.12E-07	4.48E-08	3.13E-06
Vanadium	4.76E-07	1.91E-07	4.00E-09
Zinc	1.57E-04	5.63E-05	
2-Methylnaphthalene	2.47E-09	9.34E-10	
Acenaphthene	1.18E-08	4.56E-09	
Acenaphthylene	7.24E-10	2.71E-10	
Anthracene	2.77E-08	1.07E-08	
Benz(a)anthracene	6.64E-07	2.65E-07	
Benzo(a)pyrene	1.59E-06	6.36E-07	7.27E-07
Benzo(b)fluoranthene	1.87E-06	7.48E-07	
Benzo(ghi)perylene	2.81E-06	1.13E-06	
Benzo(k)fluoranthene	7.40E-06	2.97E-06	
Bis(2-ethylhexyl)phthalate	3.12E-09	1.23E-09	
Chrysene	7.01E-07	2.80E-07	
Di-n-butyl phthalate	2.33E-08	9.16E-09	
Dibenz(a,h)anthracene	2.30E-06	9.25E-07	
Fluoranthene	2.37E-07	9.33E-08	
Fluorene	1.09E-08	4.22E-09	
Indeno(1,2,3-cd)pyrene	2.66E-06	1.07E-06	
Naphthalene	1.14E-09	4.19E-10	
PCB-1254	5.80E-08	2.32E-08	6.66E-08
PCB-1260	3.88E-07	1.56E-07	3.59E-08
PCB-1262	1.30E-08	5.21E-09	
Phenanthrene	9.01E-08	3.51E-08	1.90E-07
Polychlorinated biphenyl	1.03E-07	4.10E-08	
Pyrene	2.09E-07	8.23E-08	
Alpha activity			
Beta activity			
Cesium-137	7.81E+02	2.96E+02	
Neptunium-237	1.90E+01	7.44E+00	1.95E-01
Uranium-234	5.00E+01	1.99E+01	1.39E+03
Uranium-235	4.09E+00	1.62E+00	8.45E+01
Uranium-238	9.87E+01	3.91E+01	1.94E+03

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Table 1.60a. Carcinogenic chronic daily intakes for the adult recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Di-n-butyl phthalate	1.01E-09	1.10E-08	
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Cadmium	3.99E-11	4.05E-10	3.97E-09
Chromium	1.21E-08	1.33E-07	6.47E-10
Thallium	4.21E-09	4.69E-08	2.24E-10
Uranium	7.69E-10	8.51E-09	1.39E-07
Acenaphthene	8.13E-12	8.70E-11	
Anthracene	1.66E-11	1.79E-10	
Benz(a)anthracene	8.35E-10	9.26E-09	
Benzo(a)pyrene	2.25E-09	2.50E-08	6.68E-09
Benzo(b)fluoranthene	3.96E-09	4.40E-08	
Benzo(ghi)perylene	3.25E-09	3.62E-08	
Benzo(k)fluoranthene	1.20E-08	1.34E-07	
Chrysene	9.20E-10	1.02E-08	
Di-n-butyl phthalate	2.53E-10	2.77E-09	
Dibenz(a,h)anthracene	2.21E-09	2.47E-08	
Fluoranthene	4.33E-10	4.73E-09	
Fluorene	6.81E-12	7.32E-11	
Indeno(1,2,3-cd)pyrene	3.68E-09	4.11E-08	
PCB-1260	9.06E-08	1.01E-06	5.46E-08
Phenanthrene	1.30E-10	1.41E-09	1.78E-09
Polychlorinated biphenyl	2.26E-08	2.51E-07	
Pyrene	3.71E-10	4.06E-09	
Alpha activity			
Beta activity			
Cesium-137	6.89E+00	7.24E+01	
Neptunium-237	7.89E-02	8.57E-01	5.27E-03
Uranium-235	2.78E-02	3.06E-01	3.74E+00
Uranium-238	6.75E-01	7.42E+00	8.60E+01

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.58E-05	1.11E-04	8.61E-07
Antimony	1.03E-10	7.09E-10	7.08E-12
Chromium	8.08E-08	5.56E-07	4.30E-09
Uranium	6.42E-09	4.45E-08	1.16E-06
Benz(a)anthracene	4.03E-10	2.80E-09	
Benzo(a)pyrene	9.85E-10	6.86E-09	2.93E-09
Benzo(b)fluoranthene	9.85E-10	6.86E-09	
Benzo(k)fluoranthene	6.03E-09	4.21E-08	
Chrysene	4.03E-10	2.80E-09	
Fluoranthene	1.52E-10	1.04E-09	
PCB-1260	1.34E-09	9.37E-09	8.07E-10
Phenanthrene	3.90E-11	2.64E-10	5.34E-10
Polychlorinated biphenyl	1.10E-10	7.67E-10	
Pyrene	8.67E-11	5.93E-10	
Alpha activity			
Beta activity			
Uranium-235	3.03E-01	2.09E+00	4.07E+01
Uranium-238	5.63E+00	3.87E+01	7.17E+02

Table 1.60a. Carcinogenic chronic daily intakes for the adult recreational user

---------------------------------- SECTOR=Far North/Northwest MEDIA=Surface soil ----------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	4.99E-11	3.42E-10	3.42E-12
Beryllium	5.38E-10	3.75E-09	3.51E-11
Cadmium	2.74E-10	1.74E-09	2.73E-08
Chromium	2.11E-07	1.45E-06	1.13E-08
Thallium	9.16E-09	6.40E-08	4.88E-10
Uranium	3.39E-09	2.35E-08	6.12E-07
Acenaphthene	2.72E-11	1.83E-10	
Anthracene	1.05E-10	7.10E-10	
Benz(a)anthracene	3.43E-09	2.38E-08	
Benzo(a)pyrene	6.90E-09	4.81E-08	2.05E-08
Benzo(b)fluoranthene	6.41E-09	4.46E-08	
Benzo(ghi)perylene	9.93E-09	6.94E-08	
Benzo(k)fluoranthene	3.50E-08	2.44E-07	
Bis(2-ethylhexyl)phthalate	1.44E-10	9.83E-10	
Chrysene	3.53E-09	2.45E-08	
Di-n-butyl phthalate	7.19E-11	4.92E-10	
Fluoranthene	1.51E-09	1.03E-08	
Fluorene	3.30E-11	2.22E-10	
Indeno(1,2,3-cd)pyrene	1.07E-08	7.47E-08	
Phenanthrene	3.95E-10	2.68E-09	5.40E-09
Pyrene	7.03E-10	4.81E-09	
Alpha activity			
Beta activity			
Neptunium-237	1.03E+00	7.01E+00	6.88E-02
Uranium-235	1.21E-01	8.36E-01	1.63E+01
Uranium-238	2.97E+00	2.05E+01	3.79E+02

-------------------------------------- SECTOR=Northeast MEDIA=Surface soil --------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Chromium	2.90E-08	3.18E-07	1.54E-09
Uranium	6.54E-10	7.23E-09	1.18E-07
Zinc	4.76E-06	4.75E-05	
Acenaphthene	4.21E-12	4.50E-11	
Anthracene	1.02E-11	1.09E-10	
Benz(a)anthracene	6.81E-10	7.55E-09	
Benzo(a)pyrene	1.43E-09	1.59E-08	4.24E-09
Benzo(b)fluoranthene	2.05E-09	2.28E-08	
Benzo(ghi)perylene	2.51E-09	2.80E-08	
Benzo(k)fluoranthene	6.52E-09	7.27E-08	
Chrysene	7.78E-10	8.63E-09	
Fluoranthene	2.98E-10	3.26E-09	
Indeno(1,2,3-cd)pyrene	2.66E-09	2.96E-08	
PCB-1260	1.99E-09	2.22E-08	1.20E-09
Phenanthrene	8.85E-11	9.58E-10	1.21E-09
Polychlorinated biphenyl	1.63E-10	1.82E-09	
Pyrene	2.36E-10	2.58E-09	
Alpha activity			
Beta activity			
Uranium-235	2.34E-02	2.58E-01	3.14E+00
Uranium-238	5.74E-01	6.31E+00	7.32E+01

-------------------------------------- SECTOR=Northwest MEDIA=Surface soil --------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	3.23E-12	3.53E-11	2.21E-13

Table 1.60a. Carcinogenic chronic daily intakes for the adult recreational user

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Beryllium	5.70E-11	6.35E-10	3.72E-12
Cadmium	4.20E-11	4.26E-10	4.18E-09
Chromium	3.56E-08	3.91E-07	1.89E-09
Iron	4.30E-05	4.79E-04	1.17E-04
Lead	1.18E-09	1.28E-08	6.07E-11
Vanadium	7.16E-09	7.99E-08	3.91E-10
Benz(a)anthracene	6.84E-10	7.58E-09	
Benzo(a)pyrene	2.23E-09	2.48E-08	6.62E-09
Benzo(b)fluoranthene	2.94E-09	3.28E-08	
Benzo(k)fluoranthene	8.18E-09	9.13E-08	
Chrysene	6.61E-10	7.33E-09	
Fluoranthene	1.62E-10	1.77E-09	
Pyrene	1.62E-10	1.77E-09	
Alpha activity			
Beta activity			
Uranium-238	4.68E-01	5.14E+00	5.96E+01

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	5.12E-06	5.71E-05	2.78E-07
Antimony	6.74E-12	7.37E-11	4.61E-13
Cadmium	1.01E-10	1.02E-09	1.00E-08
Chromium	5.77E-08	6.34E-07	3.07E-09
Benz(a)anthracene	2.22E-10	2.46E-09	
Benzo(a)pyrene	6.20E-10	6.90E-09	1.84E-09
Benzo(b)fluoranthene	5.43E-10	6.04E-09	
Benzo(k)fluoranthene	2.28E-09	2.54E-08	
Chrysene	2.54E-10	2.81E-09	
Fluoranthene	8.48E-11	9.27E-10	
PCB-1262	2.35E-10	2.62E-09	
Phenanthrene	2.15E-11	2.33E-10	2.94E-10
Polychlorinated biphenyl	2.35E-10	2.62E-09	
Pyrene	6.79E-11	7.41E-10	
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	2.44E-11	2.67E-10	1.67E-12
Beryllium	1.39E-10	1.54E-09	9.05E-12
Cadmium	1.56E-10	1.59E-09	1.55E-08
Chromium	7.78E-08	8.55E-07	4.14E-09
Iron	1.25E-04	1.39E-03	3.39E-04
Thallium	1.01E-08	1.13E-07	5.39E-10
Uranium	5.79E-09	6.40E-08	1.05E-06
Zinc	8.33E-06	8.30E-05	
Acenaphthene	2.54E-10	2.72E-09	
Acenaphthylene	1.96E-11	2.04E-10	
Anthracene	5.65E-10	6.07E-09	
Benz(a)anthracene	2.38E-08	2.64E-07	
Benzo(a)pyrene	5.61E-08	6.25E-07	1.67E-07
Benzo(b)fluoranthene	5.94E-08	6.61E-07	
Benzo(ghi)perylene	8.52E-08	9.50E-07	

Table 1.60a. Carcinogenic chronic daily intakes for the adult recreational user

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Benzo(k)fluoranthene	1.92E-07	2.14E-06	
Bis(2-ethylhexyl)phthalate	6.77E-11	7.40E-10	
Chrysene	2.15E-08	2.38E-07	
Dibenz(a,h)anthracene	7.39E-08	8.24E-07	
Fluoranthene	9.23E-09	1.01E-07	
Fluorene	3.73E-10	4.01E-09	
Indeno(1,2,3-cd)pyrene	6.50E-08	7.25E-07	
Naphthalene	1.15E-13	1.18E-12	
PCB-1260	4.28E-09	4.79E-08	2.58E-09
Phenanthrene	2.63E-09	2.84E-08	3.60E-08
Polychlorinated biphenyl	3.52E-10	3.92E-09	
Pyrene	7.79E-09	8.51E-08	
Alpha activity			
Beta activity			
Neptunium-237	2.43E-01	2.64E+00	1.62E-02
Uranium-235	1.71E-01	1.89E+00	2.30E+01
Uranium-238	5.09E+00	5.59E+01	6.48E+02

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.51E-06	1.68E-05	8.20E-08
Antimony	6.40E-12	7.00E-11	4.38E-13
Arsenic	4.12E-09	4.53E-08	2.24E-10
Beryllium	4.44E-11	4.94E-10	2.90E-12
Cadmium	1.50E-10	1.52E-09	1.49E-08
Chromium	1.77E-08	1.94E-07	9.40E-10
Cobalt	7.74E-11	8.46E-10	
Uranium	1.61E-09	1.78E-08	2.90E-07
Zinc	1.91E-06	1.90E-05	
2-Methylnaphthalene	4.31E-11	4.53E-10	
Acenaphthene	3.32E-10	3.55E-09	
Anthracene	1.74E-09	1.87E-08	
Benz(a)anthracene	3.67E-08	4.07E-07	
Benzo(a)pyrene	8.07E-08	8.98E-07	2.40E-07
Benzo(b)fluoranthene	1.00E-07	1.12E-06	
Benzo(ghi)perylene	5.11E-08	5.71E-07	
Benzo(k)fluoranthene	4.84E-07	5.41E-06	
Bis(2-ethylhexyl)phthalate	3.25E-11	3.55E-10	
Chrysene	3.95E-08	4.38E-07	
Di-n-butyl phthalate	6.66E-11	7.28E-10	
Dibenz(a,h)anthracene	8.18E-08	9.14E-07	
Fluoranthene	1.47E-08	1.60E-07	
Fluorene	3.73E-10	4.01E-09	
Indeno(1,2,3-cd)pyrene	5.25E-08	5.86E-07	
Naphthalene	2.68E-11	2.73E-10	
PCB-1254	3.42E-09	3.80E-08	2.55E-08
PCB-1260	6.92E-10	7.73E-09	4.17E-10
Phenanthrene	6.17E-09	6.68E-08	8.45E-08
Polychlorinated biphenyl	2.00E-09	2.22E-08	
Pyrene	1.28E-08	1.40E-07	
Alpha activity			
Beta activity			
Cesium-137	1.46E+01	1.53E+02	
Neptunium-237	4.73E-01	5.14E+00	3.16E-02
Uranium-234	7.51E-01	8.30E+00	1.36E+02
Uranium-235	7.24E-02	7.97E-01	9.72E+00
Uranium-238	1.41E+00	1.55E+01	1.80E+02

Table 1.60b. Carcinogenic chronic daily intakes for the child recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	3.39E-05	1.25E-05	2.60E-07
Antimony	2.09E-10	7.52E-11	2.01E-12
Arsenic	4.62E-08	1.67E-08	3.54E-10
Beryllium	1.13E-09	4.13E-10	1.04E-11
Cadmium	2.03E-09	6.79E-10	2.85E-08
Chromium	4.61E-07	1.67E-07	3.46E-09
Cobalt	1.83E-09	6.59E-10	
Iron	8.52E-04	3.12E-04	3.25E-04
Lead	1.60E-08	5.70E-09	1.16E-10
Thallium	1.04E-07	3.83E-08	7.83E-10
Uranium	3.24E-08	1.18E-08	8.24E-07
Vanadium	1.37E-07	5.03E-08	1.05E-09
Zinc	4.51E-05	1.48E-05	
2-Methylnaphthalene	7.11E-10	2.46E-10	
Acenaphthene	3.41E-09	1.20E-09	
Acenaphthylene	2.08E-10	7.14E-11	
Anthracene	7.99E-09	2.83E-09	
Benz(a)anthracene	1.91E-07	6.98E-08	
Benzo(a)pyrene	4.58E-07	1.68E-07	1.91E-07
Benzo(b)fluoranthene	5.38E-07	1.97E-07	
Benzo(ghi)perylene	8.10E-07	2.97E-07	
Benzo(k)fluoranthene	2.13E-06	7.83E-07	
Bis(2-ethylhexyl)phthalate	9.00E-10	3.24E-10	
Chrysene	2.02E-07	7.37E-08	
Di-n-butyl phthalate	6.70E-09	2.41E-09	
Dibenz(a,h)anthracene	6.63E-07	2.44E-07	
Fluoranthene	6.83E-08	2.46E-08	
Fluorene	3.14E-09	1.11E-09	
Indeno(1,2,3-cd)pyrene	7.67E-07	2.82E-07	
Naphthalene	3.29E-10	1.10E-10	
PCB-1254	1.67E-08	6.12E-09	1.75E-08
PCB-1260	1.12E-07	4.11E-08	9.47E-09
PCB-1262	3.75E-09	1.37E-09	
Phenanthrene	2.60E-08	9.25E-09	5.00E-08
Polychlorinated biphenyl	2.95E-08	1.08E-08	
Pyrene	6.03E-08	2.17E-08	
Alpha activity			
Beta activity			
Cesium-137	4.66E+01	1.61E+01	
Neptunium-237	1.13E+00	4.06E-01	1.07E-02
Uranium-234	2.98E+00	1.09E+00	7.59E+01
Uranium-235	2.44E-01	8.84E-02	4.61E+00
Uranium-238	5.89E+00	2.13E+00	1.06E+02

Table 1.60b. Carcinogenic chronic daily intakes for the child recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Di-n-butyl phthalate	2.90E-10	2.90E-09	
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Cadmium	1.15E-11	1.07E-10	1.04E-09
Chromium	3.50E-09	3.51E-08	1.70E-10
Thallium	1.21E-09	1.24E-08	5.91E-11
Uranium	2.21E-10	2.24E-09	3.66E-08
Acenaphthene	2.34E-12	2.29E-11	
Anthracene	4.79E-12	4.71E-11	
Benz(a)anthracene	2.41E-10	2.44E-09	
Benzo(a)pyrene	6.47E-10	6.59E-09	1.76E-09
Benzo(b)fluoranthene	1.14E-09	1.16E-08	
Benzo(ghi)perylene	9.35E-10	9.53E-09	
Benzo(k)fluoranthene	3.47E-09	3.54E-08	
Chrysene	2.65E-10	2.68E-09	
Di-n-butyl phthalate	7.30E-11	7.29E-10	
Dibenz(a,h)anthracene	6.38E-10	6.51E-09	
Fluoranthene	1.25E-10	1.25E-09	
Fluorene	1.96E-12	1.93E-11	
Indeno(1,2,3-cd)pyrene	1.06E-09	1.08E-08	
PCB-1260	2.61E-08	2.67E-07	1.44E-08
Phenanthrene	3.74E-11	3.70E-10	4.68E-10
Polychlorinated biphenyl	6.51E-09	6.61E-08	
Pyrene	1.07E-10	1.07E-09	
Alpha activity			
Beta activity			
Cesium-137	4.11E-01	3.95E+00	
Neptunium-237	4.71E-03	4.68E-02	2.87E-04
Uranium-235	1.66E-03	1.67E-02	2.04E-01
Uranium-238	4.03E-02	4.05E-01	4.69E+00

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	4.56E-06	2.91E-05	2.27E-07
Antimony	2.98E-11	1.87E-10	1.87E-12
Chromium	2.33E-08	1.46E-07	1.13E-09
Uranium	1.85E-09	1.17E-08	3.05E-07
Benz(a)anthracene	1.16E-10	7.37E-10	
Benzo(a)pyrene	2.84E-10	1.81E-09	7.71E-10
Benzo(b)fluoranthene	2.84E-10	1.81E-09	
Benzo(k)fluoranthene	1.74E-09	1.11E-08	
Chrysene	1.16E-10	7.37E-10	
Fluoranthene	4.39E-11	2.75E-10	
PCB-1260	3.86E-10	2.47E-09	2.12E-10
Phenanthrene	1.12E-11	6.96E-11	1.41E-10
Polychlorinated biphenyl	3.17E-11	2.02E-10	
Pyrene	2.50E-11	1.56E-10	
Alpha activity			
Beta activity			
Uranium-235	1.81E-02	1.14E-01	2.22E+00
Uranium-238	3.36E-01	2.11E+00	3.91E+01

Table 1.60b. Carcinogenic chronic daily intakes for the child recreational user

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	1.44E-11	9.01E-11	9.01E-13
Beryllium	1.55E-10	9.88E-10	9.25E-12
Cadmium	7.90E-11	4.59E-10	7.19E-09
Chromium	6.09E-08	3.83E-07	2.96E-09
Thallium	2.64E-09	1.69E-08	1.29E-10
Uranium	9.75E-10	6.18E-09	1.61E-07
Acenaphthene	7.84E-12	4.81E-11	
Anthracene	3.04E-11	1.87E-10	
Benz(a)anthracene	9.87E-10	6.26E-09	
Benzo(a)pyrene	1.99E-09	1.27E-08	5.40E-09
Benzo(b)fluoranthene	1.84E-09	1.17E-08	
Benzo(ghi)perylene	2.86E-09	1.83E-08	
Benzo(k)fluoranthene	1.01E-08	6.43E-08	
Bis(2-ethylhexyl)phthalate	4.14E-11	2.59E-10	
Chrysene	1.02E-09	6.45E-09	
Di-n-butyl phthalate	2.07E-11	1.29E-10	
Fluoranthene	4.35E-10	2.72E-09	
Fluorene	9.49E-12	5.84E-11	
Indeno(1,2,3-cd)pyrene	3.08E-09	1.97E-08	
Phenanthrene	1.14E-10	7.05E-10	1.42E-09
Pyrene	2.03E-10	1.27E-09	
Alpha activity			
Beta activity			
Neptunium-237	6.15E-02	3.83E-01	3.75E-03
Uranium-235	7.23E-03	4.56E-02	8.88E-01
Uranium-238	1.77E-01	1.12E+00	2.07E+01

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Chromium	8.34E-09	8.38E-08	4.06E-10
Uranium	1.88E-10	1.90E-09	3.11E-08
Zinc	1.37E-06	1.25E-05	
Acenaphthene	1.21E-12	1.19E-11	
Anthracene	2.93E-12	2.88E-11	
Benz(a)anthracene	1.96E-10	1.99E-09	
Benzo(a)pyrene	4.11E-10	4.18E-09	1.12E-09
Benzo(b)fluoranthene	5.89E-10	5.99E-09	
Benzo(ghi)perylene	7.22E-10	7.37E-09	
Benzo(k)fluoranthene	1.88E-09	1.91E-08	
Chrysene	2.24E-10	2.27E-09	
Fluoranthene	8.59E-11	8.58E-10	
Indeno(1,2,3-cd)pyrene	7.65E-10	7.80E-09	
PCB-1260	5.72E-10	5.84E-09	3.15E-10
Phenanthrene	2.55E-11	2.52E-10	3.19E-10
Polychlorinated biphenyl	4.70E-11	4.78E-10	
Pyrene	6.79E-11	6.78E-10	
Alpha activity			
Beta activity			
Uranium-235	1.40E-03	1.41E-02	1.71E-01
Uranium-238	3.43E-02	3.44E-01	3.99E+00

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	9.30E-13	9.31E-12	5.82E-14

Table 1.60b. Carcinogenic chronic daily intakes for the child recreational user

SECTOR=Northwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Beryllium	1.64E-11	1.67E-10	9.80E-13
Cadmium	1.21E-11	1.12E-10	1.10E-09
Chromium	1.03E-08	1.03E-07	4.99E-10
Iron	1.24E-05	1.26E-04	3.07E-05
Lead	3.40E-10	3.36E-09	1.60E-11
Vanadium	2.06E-09	2.10E-08	1.03E-10
Benz(a)anthracene	1.97E-10	2.00E-09	
Benzo(a)pyrene	6.42E-10	6.53E-09	1.74E-09
Benzo(b)fluoranthene	8.48E-10	8.63E-09	
Benzo(k)fluoranthene	2.35E-09	2.40E-08	
Chrysene	1.90E-10	1.93E-09	
Fluoranthene	4.68E-11	4.67E-10	
Pyrene	4.68E-11	4.67E-10	
Alpha activity			
Beta activity			
Uranium-238	2.79E-02	2.80E-01	3.25E+00

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.47E-06	1.50E-05	7.33E-08
Antimony	1.94E-12	1.94E-11	1.21E-13
Cadmium	2.90E-11	2.69E-10	2.64E-09
Chromium	1.66E-08	1.67E-07	8.09E-10
Benz(a)anthracene	6.40E-11	6.48E-10	
Benzo(a)pyrene	1.79E-10	1.82E-09	4.86E-10
Benzo(b)fluoranthene	1.56E-10	1.59E-09	
Benzo(k)fluoranthene	6.56E-10	6.69E-09	
Chrysene	7.31E-11	7.41E-10	
Fluoranthene	2.44E-11	2.44E-10	
PCB-1262	6.78E-11	6.89E-10	
Phenanthrene	6.19E-12	6.13E-11	7.74E-11
Polychlorinated biphenyl	6.78E-11	6.89E-10	
Pyrene	1.95E-11	1.95E-10	
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	7.03E-12	7.03E-11	4.40E-13
Beryllium	3.99E-11	4.06E-10	2.38E-12
Cadmium	4.50E-11	4.18E-10	4.09E-09
Chromium	2.24E-08	2.25E-07	1.09E-09
Iron	3.60E-05	3.67E-04	8.93E-05
Thallium	2.91E-09	2.97E-08	1.42E-10
Uranium	1.67E-09	1.69E-08	2.75E-07
Zinc	2.40E-06	2.19E-05	
Acenaphthene	7.32E-11	7.16E-10	
Acenaphthylene	5.65E-12	5.38E-11	
Anthracene	1.63E-10	1.60E-09	
Benz(a)anthracene	6.87E-09	6.96E-08	
Benzo(a)pyrene	1.62E-08	1.64E-07	4.39E-08
Benzo(b)fluoranthene	1.71E-08	1.74E-07	
Benzo(ghi)perylene	2.45E-08	2.50E-07	

Table 1.60b. Carcinogenic chronic daily intakes for the child recreational user

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Benzo(k)fluoranthene	5.52E-08	5.64E-07	
Bis(2-ethylhexyl)phthalate	1.95E-11	1.95E-10	
Chrysene	6.18E-09	6.26E-08	
Dibenz(a,h)anthracene	2.13E-08	2.17E-07	
Fluoranthene	2.66E-09	2.66E-08	
Fluorene	1.07E-10	1.05E-09	
Indeno(1,2,3-cd)pyrene	1.87E-08	1.91E-07	
Naphthalene	3.32E-14	3.10E-13	
PCB-1260	1.23E-09	1.26E-08	6.79E-10
Phenanthrene	7.57E-10	7.49E-09	9.47E-09
Polychlorinated biphenyl	1.02E-10	1.03E-09	
Pyrene	2.24E-09	2.24E-08	
Alpha activity			
Beta activity			
Neptunium-237	1.45E-02	1.44E-01	8.85E-04
Uranium-235	1.02E-02	1.03E-01	1.26E+00
Uranium-238	3.04E-01	3.05E+00	3.54E+01

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	4.34E-07	4.43E-06	2.16E-08
Antimony	1.84E-12	1.84E-11	1.15E-13
Arsenic	1.19E-09	1.19E-08	5.91E-11
Beryllium	1.28E-11	1.30E-10	7.63E-13
Cadmium	4.31E-11	4.00E-10	3.92E-09
Chromium	5.08E-09	5.11E-08	2.47E-10
Cobalt	2.23E-11	2.23E-10	
Uranium	4.63E-10	4.68E-09	7.65E-08
Zinc	5.49E-07	5.01E-06	
2-Methylnaphthalene	1.24E-11	1.19E-10	
Acenaphthene	9.55E-11	9.35E-10	
Anthracene	5.01E-10	4.92E-09	
Benz(a)anthracene	1.06E-08	1.07E-07	
Benzo(a)pyrene	2.32E-08	2.36E-07	6.31E-08
Benzo(b)fluoranthene	2.89E-08	2.94E-07	
Benzo(ghi)perylene	1.47E-08	1.50E-07	
Benzo(k)fluoranthene	1.39E-07	1.42E-06	
Bis(2-ethylhexyl)phthalate	9.36E-12	9.35E-11	
Chrysene	1.14E-08	1.15E-07	
Di-n-butyl phthalate	1.92E-11	1.92E-10	
Dibenz(a,h)anthracene	2.36E-08	2.41E-07	
Fluoranthene	4.22E-09	4.22E-08	
Fluorene	1.07E-10	1.05E-09	
Indeno(1,2,3-cd)pyrene	1.51E-08	1.54E-07	
Naphthalene	7.72E-12	7.20E-11	
PCB-1254	9.84E-10	1.00E-08	6.71E-09
PCB-1260	1.99E-10	2.04E-09	1.10E-10
Phenanthrene	1.78E-09	1.76E-08	2.22E-08
Polychlorinated biphenyl	5.75E-10	5.84E-09	
Pyrene	3.70E-09	3.69E-08	
Alpha activity			
Beta activity			
Cesium-137	8.71E-01	8.37E+00	
Neptunium-237	2.82E-02	2.80E-01	1.72E-03
Uranium-234	4.48E-02	4.53E-01	7.40E+00
Uranium-235	4.32E-03	4.35E-02	5.30E-01
Uranium-238	8.42E-02	8.46E-01	9.80E+00

Table 1.60c. Carcinogenic chronic daily intakes for the teen recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.05E-04	2.09E-05	4.48E-07
Antimony	6.43E-10	1.26E-10	3.47E-12
Arsenic	1.42E-07	2.80E-08	6.09E-10
Beryllium	3.48E-09	6.93E-10	1.79E-11
Cadmium	6.27E-09	1.14E-09	4.90E-08
Chromium	1.42E-06	2.80E-07	5.95E-09
Cobalt	5.65E-09	1.10E-09	
Iron	2.63E-03	5.23E-04	5.60E-04
Lead	4.95E-08	9.55E-09	2.00E-10
Thallium	3.22E-07	6.42E-08	1.35E-09
Uranium	9.98E-08	1.98E-08	1.42E-06
Vanadium	4.22E-07	8.43E-08	1.81E-09
Zinc	1.39E-04	2.48E-05	
2-Methylnaphthalene	2.19E-09	4.12E-10	
Acenaphthene	1.05E-08	2.01E-09	
Acenaphthylene	6.43E-10	1.20E-10	
Anthracene	2.46E-08	4.73E-09	
Benz(a)anthracene	5.90E-07	1.17E-07	
Benzo(a)pyrene	1.41E-06	2.81E-07	3.30E-07
Benzo(b)fluoranthene	1.66E-06	3.30E-07	
Benzo(ghi)perylene	2.50E-06	4.98E-07	
Benzo(k)fluoranthene	6.57E-06	1.31E-06	
Bis(2-ethylhexyl)phthalate	2.77E-09	5.42E-10	
Chrysene	6.23E-07	1.23E-07	
Di-n-butyl phthalate	2.07E-08	4.04E-09	
Dibenz(a,h)anthracene	2.05E-06	4.08E-07	
Fluoranthene	2.11E-07	4.12E-08	
Fluorene	9.68E-09	1.86E-09	
Indeno(1,2,3-cd)pyrene	2.37E-06	4.72E-07	
Naphthalene	1.01E-09	1.85E-10	
PCB-1254	5.15E-08	1.03E-08	3.02E-08
PCB-1260	3.44E-07	6.88E-08	1.63E-08
PCB-1262	1.15E-08	2.30E-09	
Phenanthrene	8.00E-08	1.55E-08	8.61E-08
Polychlorinated biphenyl	9.10E-08	1.81E-08	
Pyrene	1.86E-07	3.63E-08	
Alpha activity			
Beta activity			
Cesium-137	4.26E+02	8.01E+01	
Neptunium-237	1.04E+01	2.02E+00	5.44E-02
Uranium-234	2.73E+01	5.40E+00	3.87E+02
Uranium-235	2.23E+00	4.39E-01	2.35E+01
Uranium-238	5.38E+01	1.06E+01	5.39E+02

Table 1.60c. Carcinogenic chronic daily intakes for the teen recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Di-n-butyl phthalate	8.96E-10	4.86E-09	
Alpha activity			
Beta activity			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Cadmium	3.54E-11	1.79E-10	1.80E-09
Chromium	1.08E-08	5.89E-08	2.93E-10
Thallium	3.73E-09	2.07E-08	1.02E-10
Uranium	6.83E-10	3.75E-09	6.30E-08
Acenaphthene	7.22E-12	3.84E-11	
Anthracene	1.48E-11	7.89E-11	
Benz(a)anthracene	7.42E-10	4.09E-09	
Benzo(a)pyrene	2.00E-09	1.10E-08	3.03E-09
Benzo(b)fluoranthene	3.52E-09	1.94E-08	
Benzo(ghi)perylene	2.88E-09	1.60E-08	
Benzo(k)fluoranthene	1.07E-08	5.93E-08	
Chrysene	8.17E-10	4.50E-09	
Di-n-butyl phthalate	2.25E-10	1.22E-09	
Dibenz(a,h)anthracene	1.97E-09	1.09E-08	
Fluoranthene	3.85E-10	2.09E-09	
Fluorene	6.05E-12	3.23E-11	
Indeno(1,2,3-cd)pyrene	3.27E-09	1.81E-08	
PCB-1260	8.05E-08	4.47E-07	2.47E-08
Phenanthrene	1.15E-10	6.21E-10	8.06E-10
Polychlorinated biphenyl	2.01E-08	1.11E-07	
Pyrene	3.30E-10	1.79E-09	
Alpha activity			
Beta activity			
Cesium-137	3.76E+00	1.96E+01	
Neptunium-237	4.30E-02	2.32E-01	1.47E-03
Uranium-235	1.52E-02	8.30E-02	1.04E+00
Uranium-238	3.68E-01	2.01E+00	2.40E+01

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.41E-05	4.88E-05	3.91E-07
Antimony	9.18E-11	3.13E-10	3.21E-12
Chromium	7.17E-08	2.45E-07	1.95E-09
Uranium	5.70E-09	1.96E-08	5.26E-07
Benz(a)anthracene	3.58E-10	1.23E-09	
Benzo(a)pyrene	8.75E-10	3.03E-09	1.33E-09
Benzo(b)fluoranthene	8.75E-10	3.03E-09	
Benzo(k)fluoranthene	5.35E-09	1.86E-08	
Chrysene	3.58E-10	1.23E-09	
Fluoranthene	1.35E-10	4.60E-10	
PCB-1260	1.19E-09	4.13E-09	3.66E-10
Phenanthrene	3.46E-11	1.17E-10	2.42E-10
Polychlorinated biphenyl	9.79E-11	3.39E-10	
Pyrene	7.70E-11	2.62E-10	
Alpha activity			
Beta activity			
Uranium-235	1.65E-01	5.66E-01	1.13E+01
Uranium-238	3.07E+00	1.05E+01	2.00E+02

Table 1.60c. Carcinogenic chronic daily intakes for the teen recreational user

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	4.43E-11	1.51E-10	1.55E-12
Beryllium	4.78E-10	1.66E-09	1.59E-11
Cadmium	2.44E-10	7.69E-10	1.24E-08
Chromium	1.88E-07	6.42E-07	5.10E-09
Thallium	8.13E-09	2.82E-08	2.21E-10
Uranium	3.01E-09	1.03E-08	2.77E-07
Acenaphthene	2.42E-11	8.05E-11	
Anthracene	9.36E-11	3.13E-10	
Benz(a)anthracene	3.04E-09	1.05E-08	
Benzo(a)pyrene	6.13E-09	2.12E-08	9.30E-09
Benzo(b)fluoranthene	5.69E-09	1.97E-08	
Benzo(ghi)perylene	8.82E-09	3.06E-08	
Benzo(k)fluoranthene	3.10E-08	1.08E-07	
Bis(2-ethylhexyl)phthalate	1.28E-10	4.34E-10	
Chrysene	3.13E-09	1.08E-08	
Di-n-butyl phthalate	6.38E-11	2.17E-10	
Fluoranthene	1.34E-09	4.55E-09	
Fluorene	2.93E-11	9.79E-11	
Indeno(1,2,3-cd)pyrene	9.50E-09	3.30E-08	
Phenanthrene	3.51E-10	1.18E-09	2.45E-09
Pyrene	6.25E-10	2.12E-09	
Alpha activity			
Beta activity			
Neptunium-237	5.63E-01	1.90E+00	1.92E-02
Uranium-235	6.61E-02	2.26E-01	4.53E+00
Uranium-238	1.62E+00	5.55E+00	1.06E+02

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Chromium	2.57E-08	1.40E-07	6.99E-10
Uranium	5.80E-10	3.19E-09	5.35E-08
Zinc	4.23E-06	2.10E-05	
Acenaphthene	3.73E-12	1.99E-11	
Anthracene	9.04E-12	4.83E-11	
Benz(a)anthracene	6.05E-10	3.33E-09	
Benzo(a)pyrene	1.27E-09	7.01E-09	1.92E-09
Benzo(b)fluoranthene	1.82E-09	1.00E-08	
Benzo(ghi)perylene	2.23E-09	1.23E-08	
Benzo(k)fluoranthene	5.79E-09	3.21E-08	
Chrysene	6.91E-10	3.81E-09	
Fluoranthene	2.65E-10	1.44E-09	
Indeno(1,2,3-cd)pyrene	2.36E-09	1.31E-08	
PCB-1260	1.76E-09	9.79E-09	5.42E-10
Phenanthrene	7.86E-11	4.23E-10	5.49E-10
Polychlorinated biphenyl	1.45E-10	8.01E-10	
Pyrene	2.09E-10	1.14E-09	
Alpha activity			
Beta activity			
Uranium-235	1.28E-02	6.98E-02	8.75E-01
Uranium-238	3.13E-01	1.71E+00	2.04E+01

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	2.87E-12	1.56E-11	1.00E-13

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Table 1.60c. Carcinogenic chronic daily intakes for the teen recreational user

SECTOR=Northwest MEDIA=Surface soil (continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Beryllium	5.06E-11	2.80E-10	1.69E-12
Cadmium	3.73E-11	1.88E-10	1.89E-09
Chromium	3.16E-08	1.73E-07	8.59E-10
Iron	3.82E-05	2.11E-04	5.29E-05
Lead	1.05E-09	5.63E-09	2.75E-11
Vanadium	6.36E-09	3.53E-08	1.77E-10
Benz(a)anthracene	6.07E-10	3.34E-09	
Benzo(a)pyrene	1.98E-09	1.09E-08	3.00E-09
Benzo(b)fluoranthene	2.61E-09	1.45E-08	
Benzo(k)fluoranthene	7.26E-09	4.03E-08	
Chrysene	5.87E-10	3.23E-09	
Fluoranthene	1.44E-10	7.83E-10	
Pyrene	1.44E-10	7.83E-10	
Alpha activity			
Beta activity			
Uranium-238	2.55E-01	1.39E+00	1.66E+01

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	4.54E-06	2.52E-05	1.26E-07
Antimony	5.98E-12	3.25E-11	2.09E-13
Cadmium	8.95E-11	4.51E-10	4.54E-09
Chromium	5.13E-08	2.80E-07	1.39E-09
Benz(a)anthracene	1.97E-10	1.09E-09	
Benzo(a)pyrene	5.51E-10	3.05E-09	8.36E-10
Benzo(b)fluoranthene	4.82E-10	2.67E-09	
Benzo(k)fluoranthene	2.02E-09	1.12E-08	
Chrysene	2.25E-10	1.24E-09	
Fluoranthene	7.53E-11	4.09E-10	
PCB-1262	2.09E-10	1.15E-09	
Phenanthrene	1.91E-11	1.03E-10	1.33E-10
Polychlorinated biphenyl	2.09E-10	1.15E-09	
Pyrene	6.03E-11	3.27E-10	
Alpha activity			
Beta activity			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Antimony	2.17E-11	1.18E-10	7.58E-13
Beryllium	1.23E-10	6.81E-10	4.10E-12
Cadmium	1.39E-10	7.00E-10	7.05E-09
Chromium	6.91E-08	3.77E-07	1.88E-09
Iron	1.11E-04	6.14E-04	1.54E-04
Thallium	8.97E-09	4.98E-08	2.44E-10
Uranium	5.14E-09	2.83E-08	4.74E-07
Zinc	7.40E-06	3.66E-05	
Acenaphthene	2.26E-10	1.20E-09	
Acenaphthylene	1.74E-11	9.01E-11	
Anthracene	5.02E-10	2.68E-09	
Benz(a)anthracene	2.12E-08	1.17E-07	
Benzo(a)pyrene	4.98E-08	2.76E-07	7.56E-08
Benzo(b)fluoranthene	5.27E-08	2.91E-07	
Benzo(ghi)perylene	7.57E-08	4.19E-07	

Table 1.60c. Carcinogenic chronic daily intakes for the teen recreational user

------------------------------------ SECTOR=Southwest MEDIA=Surface soil ------------------------------------
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Benzo(k)fluoranthene	1.70E-07	9.45E-07	
Bis(2-ethylhexyl)phthalate	6.01E-11	3.27E-10	
Chrysene	1.91E-08	1.05E-07	
Dibenz(a,h)anthracene	6.56E-08	3.64E-07	
Fluoranthene	8.20E-09	4.45E-08	
Fluorene	3.31E-10	1.77E-09	
Indeno(1,2,3-cd)pyrene	5.77E-08	3.20E-07	
Naphthalene	1.02E-13	5.20E-13	
PCB-1260	3.80E-09	2.11E-08	1.17E-09
Phenanthrene	2.33E-09	1.26E-08	1.63E-08
Polychlorinated biphenyl	3.13E-10	1.73E-09	
Pyrene	6.91E-09	3.75E-08	
Alpha activity			
Beta activity			
Neptunium-237	1.33E-01	7.16E-01	4.52E-03
Uranium-235	9.35E-02	5.12E-01	6.41E+00
Uranium-238	2.78E+00	1.52E+01	1.81E+02

------------------------------------ SECTOR=West MEDIA=Surface soil ------------------------------------

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail
Aluminum	1.34E-06	7.42E-06	3.72E-08
Antimony	5.68E-12	3.09E-11	1.99E-13
Arsenic	3.66E-09	2.00E-08	1.02E-10
Beryllium	3.94E-11	2.18E-10	1.31E-12
Cadmium	1.33E-10	6.71E-10	6.75E-09
Chromium	1.57E-08	8.56E-08	4.26E-10
Cobalt	6.88E-11	3.73E-10	
Uranium	1.43E-09	7.85E-09	1.32E-07
Zinc	1.69E-06	8.39E-06	
2-Methylnaphthalene	3.82E-11	2.00E-10	
Acenaphthene	2.94E-10	1.57E-09	
Anthracene	1.54E-09	8.24E-09	
Benz(a)anthracene	3.26E-08	1.79E-07	
Benzo(a)pyrene	7.16E-08	3.96E-07	1.09E-07
Benzo(b)fluoranthene	8.92E-08	4.93E-07	
Benzo(ghi)perylene	4.54E-08	2.52E-07	
Benzo(k)fluoranthene	4.30E-07	2.39E-06	
Bis(2-ethylhexyl)phthalate	2.89E-11	1.57E-10	
Chrysene	3.51E-08	1.93E-07	
Di-n-butyl phthalate	5.91E-11	3.21E-10	
Dibenz(a,h)anthracene	7.27E-08	4.03E-07	
Fluoranthene	1.30E-08	7.07E-08	
Fluorene	3.31E-10	1.77E-09	
Indeno(1,2,3-cd)pyrene	4.66E-08	2.58E-07	
Naphthalene	2.38E-11	1.21E-10	
PCB-1254	3.03E-09	1.68E-08	1.16E-08
PCB-1260	6.15E-10	3.41E-09	1.89E-10
Phenanthrene	5.48E-09	2.95E-08	3.83E-08
Polychlorinated biphenyl	1.77E-09	9.79E-09	
Pyrene	1.14E-08	6.19E-08	
Alpha activity			
Beta activity			
Cesium-137	7.96E+00	4.16E+01	
Neptunium-237	2.58E-01	1.39E+00	8.79E-03
Uranium-234	4.09E-01	2.25E+00	3.78E+01
Uranium-235	3.95E-02	2.16E-01	2.71E+00
Uranium-238	7.69E-01	4.20E+00	5.00E+01

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Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	7.37E-03	3.30E-03	7.17E-08	
Antimony	6.79E-07	3.04E-07	6.60E-12	
Arsenic	4.10E-06	1.84E-06	3.99E-11	
Barium	6.70E-05	3.00E-05	6.51E-10	
Beryllium	3.76E-07	1.69E-07	3.66E-12	
Cadmium	1.19E-07	1.06E-08	1.16E-12	
Chromium	1.29E-05	5.80E-06	1.26E-10	
Cobalt	4.36E-06	1.95E-06	4.24E-11	
Copper	8.82E-05	3.95E-05	8.58E-10	
Iron	1.22E-02	5.45E-03	1.18E-07	
Lead	7.25E-06	3.25E-06	7.05E-11	
Manganese	2.63E-04	1.18E-04	2.56E-09	
Mercury	8.60E-08	3.85E-08	8.36E-13	
Nickel	1.57E-04	7.04E-05	1.53E-09	
Silver	3.92E-07	1.75E-07	3.81E-12	
Thallium	4.57E-07	2.05E-07	4.45E-12	
Uranium	2.08E-05	9.32E-06	2.02E-10	
Vanadium	1.74E-05	7.79E-06	1.69E-10	
Zinc	2.36E-05	1.06E-05	2.29E-10	
1,1,2-Trichloroethane	2.30E-08	5.15E-08	2.72E-08	
1,1-Dichloroethene	4.51E-07	1.01E-06	2.98E-06	
2,4-Dinitrotoluene	5.67E-07	5.08E-07	5.52E-12	
2,6-Dinitrotoluene	5.36E-07	4.80E-07	5.21E-12	
2-Hexanone	5.46E-09	1.22E-08	5.31E-14	
2-Methylnaphthalene	8.41E-07	7.53E-07	8.18E-12	
Acenaphthene	7.14E-07	6.40E-07	6.95E-12	
Acenaphthylene	2.73E-07	2.45E-07	2.66E-12	
Anthracene	1.28E-06	1.14E-06	1.24E-11	
Benz(a)anthracene	1.05E-06	9.42E-07	1.02E-11	
Benzo(a)pyrene	1.02E-06	9.15E-07	9.93E-12	
Benzo(b)fluoranthene	1.23E-06	1.10E-06	1.20E-11	
Benzo(ghi)perylene	7.57E-07	6.78E-07	7.36E-12	
Benzo(k)fluoranthene	1.40E-06	1.25E-06	1.36E-11	
Bis(2-ethylhexyl)phthalate	7.42E-07	6.64E-07	7.21E-12	
Butyl benzyl phthalate	5.39E-07	4.83E-07	5.24E-12	
Carbon tetrachloride	2.44E-08	5.46E-08	5.34E-08	
Chrysene	1.09E-06	9.78E-07	1.06E-11	
Di-n-butyl phthalate	8.86E-07	7.93E-07	8.61E-12	
Di-n-octylphthalate	7.52E-07	6.74E-07	7.32E-12	
Dibenz(a,h)anthracene	7.83E-07	7.01E-07	7.61E-12	
Fluoranthene	1.87E-06	1.68E-06	1.82E-11	
Fluorene	7.13E-07	6.39E-07	6.93E-12	
Indeno(1,2,3-cd)pyrene	7.47E-07	6.69E-07	7.26E-12	
Iodomethane	1.98E-08			
Methylene chloride	1.96E-08	4.38E-08	8.78E-08	
N-Nitroso-di-n-propylamine	7.87E-07	7.05E-07	7.65E-12	
N-Nitrosodiphenylamine	9.15E-07	8.19E-07	8.90E-12	
Naphthalene	7.56E-07	6.77E-07	7.35E-12	
PCB-1254	1.06E-07	5.70E-08	1.03E-12	
PCB-1260	1.70E-07	9.14E-08	1.65E-12	
PCB-1262	4.72E-08	2.54E-08	4.59E-13	
Phenanthrene	1.50E-06	1.35E-06	1.46E-11	
Polychlorinated biphenyl	6.41E-07	3.45E-07	6.24E-12	
Pyrene	1.82E-06	1.63E-06	1.77E-11	
Tetrachloroethene	2.43E-08	5.43E-08	4.59E-08	
Trichloroethene	2.19E-04	4.90E-04	4.84E-04	
Vinyl chloride	1.62E-06	3.62E-06	7.80E-03	
trans-1,2-Dichloroethene	1.76E-05	3.93E-05	1.71E-10	
Alpha activity	6.93E+04			1.06E+02
Beta activity	2.80E+05			4.26E+02

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Cesium-137	8.96E+02		8.72E-03	1.36E+00
Neptunium-237	2.60E+03		2.53E-02	3.96E+00
Plutonium-239	7.17E+02		6.98E-03	1.09E+00
Technetium-99	1.98E+05		1.93E+00	3.02E+02
Thorium-230	3.75E+03		3.64E-02	5.70E+00
Uranium-234	9.14E+03		8.89E-02	1.39E+01
Uranium-235	5.61E+02		5.46E-03	8.54E-01
Uranium-238	1.24E+04		1.21E-01	1.89E+01

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=Central MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Antimony	3.54E-06	1.58E-06	3.44E-11	
Cadmium	2.46E-07	2.20E-08	2.39E-12	
Chromium	2.77E-05	1.24E-05	2.69E-10	
Iron	2.06E-02	9.24E-03	2.01E-07	
Thallium	4.53E-07	2.03E-07	4.41E-12	
Bis(2-ethylhexyl)phthalate	4.97E-08	4.45E-08	4.83E-13	
Di-n-butyl phthalate	1.03E-06	9.20E-07	9.98E-12	
Alpha activity	5.59E+04			8.51E+01
Beta activity	8.32E+04			1.27E+02
Cesium-137	5.19E+02		5.05E-03	7.90E-01
Neptunium-237	3.34E+02		3.24E-03	5.08E-01

SECTOR=East MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	9.26E-03	4.15E-03	9.00E-08	
Antimony	4.04E-07	1.81E-07	3.93E-12	
Arsenic	4.63E-06	2.07E-06	4.51E-11	
Beryllium	3.65E-07	1.63E-07	3.55E-12	
Cadmium	3.34E-07	2.99E-08	3.25E-12	
Chromium	1.12E-05	5.03E-06	1.09E-10	
Cobalt	5.56E-06	2.49E-06	5.40E-11	
Lead	7.07E-06	3.17E-06	6.88E-11	
Manganese	3.32E-04	1.49E-04	3.23E-09	
Thallium	4.33E-07	1.94E-07	4.21E-12	
Uranium	6.39E-06	2.86E-06	6.22E-11	
Acenaphthene	1.61E-07	1.45E-07	1.57E-12	
Anthracene	5.06E-07	4.53E-07	4.92E-12	
Benz(a)anthracene	5.20E-07	4.66E-07	5.06E-12	
Benzo(a)pyrene	5.18E-07	4.64E-07	5.04E-12	
Benzo(b)fluoranthene	5.46E-07	4.89E-07	5.31E-12	
Benzo(ghi)perylene	4.52E-07	4.05E-07	4.40E-12	
Benzo(k)fluoranthene	5.05E-07	4.53E-07	4.91E-12	
Bis(2-ethylhexyl)phthalate	9.93E-08	8.90E-08	9.66E-13	
Chrysene	5.21E-07	4.67E-07	5.07E-12	
Di-n-butyl phthalate	8.99E-07	8.05E-07	8.74E-12	
Dibenz(a,h)anthracene	1.99E-07	1.78E-07	1.93E-12	
Fluoranthene	6.01E-07	5.39E-07	5.85E-12	
Fluorene	1.12E-07	1.00E-07	1.09E-12	
Indeno(1,2,3-cd)pyrene	4.95E-07	4.44E-07	4.82E-12	
Naphthalene	4.97E-08	4.45E-08	4.83E-13	
PCB-1260	3.00E-07	1.61E-07	2.92E-12	
Phenanthrene	5.59E-07	5.01E-07	5.43E-12	
Polychlorinated biphenyl	5.79E-07	3.11E-07	5.64E-12	
Pyrene	5.89E-07	5.27E-07	5.73E-12	
Trichloroethene	1.70E-06	3.82E-06	3.77E-06	
Alpha activity	5.95E+04			9.06E+01
Beta activity	7.78E+04			1.18E+02
Cesium-137	4.81E+02		4.68E-03	7.33E-01
Neptunium-237	4.40E+02		4.27E-03	6.69E-01
Uranium-235	3.37E+02		3.27E-03	5.12E-01
Uranium-238	3.82E+03		3.72E-02	5.82E+00

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	9.02E-03	4.04E-03	8.77E-08	
Antimony	3.13E-06	1.40E-06	3.05E-11	
Arsenic	8.49E-06	3.80E-06	8.26E-11	
Beryllium	5.63E-07	2.52E-07	5.48E-12	
Cadmium	1.57E-07	1.41E-08	1.53E-12	
Chromium	1.39E-05	6.24E-06	1.35E-10	
Iron	1.74E-02	7.80E-03	1.69E-07	
Lead	1.49E-05	6.66E-06	1.45E-10	
Manganese	6.80E-04	3.05E-04	6.62E-09	
Thallium	5.13E-07	2.30E-07	4.99E-12	
Uranium	2.32E-05	1.04E-05	2.26E-10	
Vanadium	2.91E-05	1.30E-05	2.83E-10	
Benz(a)anthracene	1.61E-07	1.45E-07	1.57E-12	
Benzo(a)pyrene	1.86E-07	1.67E-07	1.81E-12	
Benzo(b)fluoranthene	2.23E-07	2.00E-07	2.17E-12	
Benzo(ghi)perylene	7.70E-08	6.89E-08	7.48E-13	
Benzo(k)fluoranthene	1.86E-07	1.67E-07	1.81E-12	
Bis(2-ethylhexyl)phthalate	8.69E-08	7.78E-08	8.45E-13	
Butyl benzyl phthalate	4.97E-08	4.45E-08	4.83E-13	
Chrysene	1.86E-07	1.67E-07	1.81E-12	
Di-n-butyl phthalate	5.80E-07	5.20E-07	5.64E-12	
Fluoranthene	2.73E-07	2.45E-07	2.66E-12	
Indeno(1,2,3-cd)pyrene	8.32E-08	7.45E-08	8.09E-13	
PCB-1254	3.61E-08	1.94E-08	3.51E-13	
PCB-1260	3.63E-08	1.95E-08	3.53E-13	
Phenanthrene	8.69E-08	7.78E-08	8.45E-13	
Polychlorinated biphenyl	9.43E-08	5.07E-08	9.17E-13	
Pyrene	2.73E-07	2.45E-07	2.66E-12	
Alpha activity	5.00E+04			7.61E+01
Beta activity	7.77E+04			1.18E+02
Cesium-137	5.91E+02		5.75E-03	9.00E-01
Uranium-235	7.50E+02		7.29E-03	1.14E+00
Uranium-238	1.38E+04		1.34E-01	2.10E+01

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	9.20E-03	4.12E-03	8.95E-08	
Antimony	1.50E-06	6.70E-07	1.45E-11	
Arsenic	5.56E-06	2.49E-06	5.40E-11	
Beryllium	4.37E-07	1.96E-07	4.25E-12	
Cadmium	3.59E-07	3.21E-08	3.49E-12	
Chromium	3.96E-05	1.77E-05	3.85E-10	
Cobalt	6.16E-06	2.76E-06	5.99E-11	
Copper	1.93E-03	8.65E-04	1.88E-08	
Iron	1.73E-02	7.77E-03	1.69E-07	
Lead	1.67E-05	7.50E-06	1.63E-10	
Manganese	4.45E-04	1.99E-04	4.32E-09	
Mercury	1.11E-07	4.98E-08	1.08E-12	
Nickel	3.54E-03	1.59E-03	3.45E-08	
Thallium	6.28E-07	2.81E-07	6.10E-12	
Uranium	5.29E-04	2.37E-04	5.14E-09	
Zinc	4.39E-05	1.97E-05	4.27E-10	
2,4-Dinitrotoluene	5.11E-07	4.57E-07	4.97E-12	
Acenaphthene	6.21E-08	5.56E-08	6.04E-13	

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Anthracene	1.99E-07	1.78E-07	1.93E-12	
Benz(a)anthracene	4.22E-07	3.78E-07	4.10E-12	
Benzo(a)pyrene	3.48E-07	3.11E-07	3.38E-12	
Benzo(b)fluoranthene	3.23E-07	2.89E-07	3.14E-12	
Benzo(ghi)perylene	1.61E-07	1.45E-07	1.57E-12	
Benzo(k)fluoranthene	3.60E-07	3.22E-07	3.50E-12	
Bis(2-ethylhexyl)phthalate	1.14E-07	1.02E-07	1.11E-12	
Chrysene	4.34E-07	3.89E-07	4.23E-12	
Di-n-butyl phthalate	7.92E-07	7.10E-07	7.70E-12	
Fluoranthene	5.08E-07	4.55E-07	4.94E-12	
Fluorene	6.21E-08	5.56E-08	6.04E-13	
Indeno(1,2,3-cd)pyrene	1.74E-07	1.56E-07	1.69E-12	
N-Nitrosodiphenylamine	5.16E-07	4.62E-07	5.02E-12	
PCB-1254	2.92E-08	1.57E-08	2.84E-13	
PCB-1260	3.82E-08	2.05E-08	3.72E-13	
Phenanthrene	5.14E-07	4.60E-07	5.00E-12	
Polychlorinated biphenyl	7.82E-08	4.20E-08	7.61E-13	
Pyrene	5.14E-07	4.60E-07	5.00E-12	
Alpha activity	8.63E+04			1.31E+02
Beta activity	2.75E+05			4.19E+02
Cesium-137	7.37E+03		7.17E-02	1.12E+01
Neptunium-237	1.09E+04		1.06E-01	1.66E+01
Plutonium-239	3.77E+03		3.67E-02	5.74E+00
Technetium-99	1.07E+07		1.04E+02	1.64E+04
Thorium-230	1.22E+04		1.19E-01	1.86E+01
Uranium-234	1.48E+05		1.44E+00	2.25E+02
Uranium-235	2.72E+03		2.65E-02	4.15E+00
Uranium-238	3.15E+05		3.07E+00	4.80E+02

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	7.72E-03	3.46E-03	7.51E-08	
Antimony	1.45E-06	6.50E-07	1.41E-11	
Arsenic	2.95E-06	1.32E-06	2.87E-11	
Barium	6.52E-05	2.92E-05	6.34E-10	
Beryllium	3.58E-07	1.60E-07	3.48E-12	
Cadmium	9.65E-08	8.64E-09	9.38E-13	
Chromium	1.32E-05	5.91E-06	1.28E-10	
Cobalt	4.95E-06	2.22E-06	4.81E-11	
Manganese	2.67E-04	1.20E-04	2.59E-09	
Thallium	8.84E-07	3.96E-07	8.60E-12	
Uranium	4.29E-05	1.92E-05	4.17E-10	
Vanadium	1.83E-05	8.20E-06	1.78E-10	
Zinc	2.15E-05	9.63E-06	2.09E-10	
2,6-Dinitrotoluene	4.79E-07	4.29E-07	4.66E-12	
Acenaphthene	5.17E-07	4.63E-07	5.03E-12	
Anthracene	5.54E-07	4.96E-07	5.39E-12	
Benz(a)anthracene	1.27E-06	1.13E-06	1.23E-11	
Benzo(a)pyrene	1.14E-06	1.02E-06	1.11E-11	
Benzo(b)fluoranthene	1.27E-06	1.14E-06	1.24E-11	
Benzo(ghi)perylene	5.52E-07	4.95E-07	5.37E-12	
Benzo(k)fluoranthene	9.64E-07	8.64E-07	9.38E-12	
Bis(2-ethylhexyl)phthalate	7.45E-08	6.67E-08	7.24E-13	

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Chrysene	1.30E-06	1.17E-06	1.27E-11	
Di-n-butyl phthalate	5.45E-07	4.89E-07	5.30E-12	
Dibenz(a,h)anthracene	4.94E-07	4.43E-07	4.81E-12	
Fluoranthene	9.04E-07	8.10E-07	8.79E-12	
Fluorene	4.99E-07	4.47E-07	4.86E-12	
Indeno(1,2,3-cd)pyrene	8.62E-07	7.73E-07	8.39E-12	
N-Nitroso-di-n-propylamine	4.89E-07	4.38E-07	4.75E-12	
Naphthalene	4.93E-07	4.42E-07	4.80E-12	
PCB-1254	6.45E-09	3.47E-09	6.28E-14	
PCB-1260	2.89E-08	1.56E-08	2.81E-13	
Phenanthrene	7.71E-07	6.90E-07	7.50E-12	
Polychlorinated biphenyl	5.34E-08	2.87E-08	5.19E-13	
Pyrene	8.35E-07	7.48E-07	8.12E-12	
Alpha activity	4.63E+04			7.05E+01
Beta activity	8.20E+04			1.25E+02
Neptunium-237	4.45E+02		4.33E-03	6.77E-01
Uranium-234	2.49E+04		2.42E-01	3.79E+01
Uranium-235	9.45E+02		9.19E-03	1.44E+00
Uranium-238	2.56E+04		2.48E-01	3.89E+01

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	7.56E-03	3.38E-03	7.35E-08	
Antimony	1.26E-06	5.66E-07	1.23E-11	
Arsenic	3.38E-06	1.51E-06	3.29E-11	
Beryllium	4.26E-07	1.91E-07	4.14E-12	
Cadmium	1.29E-07	1.16E-08	1.26E-12	
Chromium	1.47E-05	6.57E-06	1.43E-10	
Cobalt	5.00E-06	2.24E-06	4.86E-11	
Iron	1.33E-02	5.97E-03	1.30E-07	
Lead	7.72E-06	3.46E-06	7.51E-11	
Manganese	2.86E-04	1.28E-04	2.78E-09	
Mercury	9.89E-08	4.43E-08	9.61E-13	
Thallium	4.12E-07	1.84E-07	4.00E-12	
Uranium	1.25E-05	5.60E-06	1.22E-10	
Vanadium	2.07E-05	9.28E-06	2.02E-10	
Benz(a)anthracene	3.72E-07	3.34E-07	3.62E-12	
Benzo(a)pyrene	4.94E-07	4.42E-07	4.80E-12	
Benzo(b)fluoranthene	4.95E-07	4.44E-07	4.82E-12	
Benzo(k)fluoranthene	3.72E-07	3.34E-07	3.62E-12	
Bis(2-ethylhexyl)phthalate	9.93E-08	8.90E-08	9.66E-13	
Chrysene	3.60E-07	3.22E-07	3.50E-12	
Di-n-butyl phthalate	4.97E-08	4.45E-08	4.83E-13	
Fluoranthene	4.93E-07	4.41E-07	4.79E-12	
N-Nitroso-di-n-propylamine	6.09E-07	5.46E-07	5.92E-12	
Phenanthrene	6.21E-08	5.56E-08	6.04E-13	
Polychlorinated biphenyl	6.21E-07	3.34E-07	6.04E-12	
Pyrene	4.93E-07	4.42E-07	4.79E-12	
Alpha activity	4.95E+04			7.54E+01
Beta activity	8.70E+04			1.32E+02
Neptunium-237	9.19E+02		8.94E-03	1.40E+00
Uranium-235	4.29E+02		4.17E-03	6.53E-01
Uranium-238	7.44E+03		7.24E-02	1.13E+01

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	7.47E-03	3.35E-03	7.27E-08	
Antimony	6.17E-07	2.76E-07	6.00E-12	
Arsenic	3.64E-06	1.63E-06	3.54E-11	
Barium	7.57E-05	3.39E-05	7.36E-10	
Beryllium	3.96E-07	1.77E-07	3.85E-12	
Cadmium	1.80E-07	1.61E-08	1.75E-12	
Chromium	1.14E-05	5.12E-06	1.11E-10	
Cobalt	4.23E-06	1.90E-06	4.12E-11	
Iron	1.22E-02	5.48E-03	1.19E-07	
Lead	6.86E-06	3.07E-06	6.67E-11	
Manganese	2.55E-04	1.14E-04	2.48E-09	
Mercury	4.16E-08	1.86E-08	4.05E-13	
Thallium	4.55E-07	2.04E-07	4.42E-12	
Uranium	4.25E-06	1.91E-06	4.14E-11	
Vanadium	1.73E-05	7.77E-06	1.69E-10	
Zinc	2.34E-05	1.05E-05	2.28E-10	
1,1,2-Trichloroethane	2.05E-08	4.60E-08	2.43E-08	
1,1-Dichloroethene	4.29E-07	9.60E-07	2.83E-06	
Acenaphthene	4.10E-07	3.67E-07	3.98E-12	
Anthracene	6.42E-07	5.75E-07	6.25E-12	
Benz(a)anthracene	6.62E-07	5.93E-07	6.44E-12	
Benzo(a)pyrene	6.60E-07	5.92E-07	6.42E-12	
Benzo(b)fluoranthene	6.76E-07	6.05E-07	6.57E-12	
Benzo(ghi)perylene	6.46E-07	5.78E-07	6.28E-12	
Benzo(k)fluoranthene	6.37E-07	5.70E-07	6.19E-12	
Bis(2-ethylhexyl)phthalate	9.52E-08	8.53E-08	9.26E-13	
Carbon tetrachloride	2.59E-08	5.81E-08	5.69E-08	
Chrysene	6.71E-07	6.01E-07	6.53E-12	
Di-n-butyl phthalate	5.18E-07	4.64E-07	5.04E-12	
Di-n-octylphthalate	7.45E-08	6.67E-08	7.24E-13	
Dibenz(a,h)anthracene	5.71E-07	5.12E-07	5.55E-12	
Fluoranthene	5.24E-07	4.70E-07	5.10E-12	
Fluorene	2.48E-07	2.22E-07	2.41E-12	
Indeno(1,2,3-cd)pyrene	6.45E-07	5.78E-07	6.27E-12	
Naphthalene	1.99E-07	1.78E-07	1.93E-12	
PCB-1254	1.22E-07	6.56E-08	1.19E-12	
PCB-1262	3.03E-08	1.63E-08	2.95E-13	
Phenanthrene	6.63E-07	5.94E-07	6.45E-12	
Polychlorinated biphenyl	6.25E-07	3.36E-07	6.08E-12	
Pyrene	5.73E-07	5.13E-07	5.57E-12	
Tetrachloroethene	2.55E-08	5.70E-08	4.81E-08	
Trichloroethene	8.18E-06	1.83E-05	1.81E-05	
Vinyl chloride	1.52E-07	3.40E-07	7.33E-04	
trans-1,2-Dichloroethene	4.95E-05	1.11E-04	4.81E-10	
Alpha activity	4.91E+04			7.47E+01
Beta activity	7.49E+04			1.14E+02
Cesium-137	4.22E+02		4.11E-03	6.43E-01
Neptunium-237	6.28E+02		6.11E-03	9.57E-01
Uranium-235	2.33E+02		2.27E-03	3.55E-01
Uranium-238	2.55E+03		2.48E-02	3.88E+00

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	6.90E-03	3.09E-03	6.71E-08	

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

------------------------------------ SECTOR=Southwest MEDIA=Subsurface soil ------------------------------------
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Antimony	1.41E-06	6.32E-07	1.37E-11	
Arsenic	4.58E-06	2.05E-06	4.45E-11	
Barium	7.37E-05	3.30E-05	7.17E-10	
Beryllium	4.01E-07	1.80E-07	3.90E-12	
Cadmium	2.15E-07	1.93E-08	2.09E-12	
Chromium	1.12E-05	5.03E-06	1.09E-10	
Iron	1.26E-02	5.66E-03	1.23E-07	
Lead	6.88E-06	3.08E-06	6.69E-11	
Manganese	2.58E-04	1.15E-04	2.51E-09	
Mercury	3.77E-08	1.69E-08	3.67E-13	
Silver	2.87E-07	1.29E-07	2.79E-12	
Thallium	4.13E-07	1.85E-07	4.01E-12	
Uranium	6.11E-06	2.74E-06	5.94E-11	
Vanadium	1.59E-05	7.11E-06	1.54E-10	
Zinc	2.60E-05	1.16E-05	2.53E-10	
2-Hexanone	5.46E-09	1.22E-08	5.31E-14	
Acenaphthene	5.57E-07	4.99E-07	5.42E-12	
Acenaphthylene	2.73E-07	2.45E-07	2.66E-12	
Anthracene	5.86E-07	5.25E-07	5.70E-12	
Benz(a)anthracene	7.80E-07	6.99E-07	7.59E-12	
Benzo(a)pyrene	7.98E-07	7.15E-07	7.76E-12	
Benzo(b)fluoranthene	7.95E-07	7.12E-07	7.73E-12	
Benzo(ghi)perylene	6.12E-07	5.49E-07	5.96E-12	
Benzo(k)fluoranthene	7.15E-07	6.41E-07	6.96E-12	
Bis(2-ethylhexyl)phthalate	2.00E-07	1.79E-07	1.94E-12	
Butyl benzyl phthalate	5.39E-07	4.83E-07	5.24E-12	
Chrysene	8.08E-07	7.24E-07	7.86E-12	
Di-n-butyl phthalate	1.39E-06	1.24E-06	1.35E-11	
Di-n-octylphthalate	7.52E-07	6.74E-07	7.32E-12	
Dibenz(a,h)anthracene	6.79E-07	6.09E-07	6.61E-12	
Fluoranthene	9.94E-07	8.90E-07	9.67E-12	
Fluorene	3.54E-07	3.17E-07	3.44E-12	
Indeno(1,2,3-cd)pyrene	6.27E-07	5.62E-07	6.10E-12	
Iodomethane	1.93E-08			
Methylene chloride	2.46E-08	5.52E-08	1.11E-07	
N-Nitroso-di-n-propylamine	7.22E-07	6.47E-07	7.03E-12	
N-Nitrosodiphenylamine	7.22E-07	6.47E-07	7.03E-12	
Naphthalene	1.49E-07	1.33E-07	1.45E-12	
PCB-1260	3.56E-08	1.92E-08	3.47E-13	
Phenanthrene	8.15E-07	7.30E-07	7.93E-12	
Polychlorinated biphenyl	4.72E-08	2.54E-08	4.59E-13	
Pyrene	9.65E-07	8.64E-07	9.38E-12	
Trichloroethene	4.43E-07	9.92E-07	9.79E-07	
Vinyl chloride	4.34E-08	9.73E-08	2.10E-04	
Alpha activity	4.25E+04			6.47E+01
Beta activity	9.14E+04			1.39E+02
Cesium-137	4.65E+02		4.53E-03	7.08E-01
Neptunium-237	4.52E+02		4.39E-03	6.88E-01
Uranium-235	6.13E+02		5.96E-03	9.33E-01
Uranium-238	3.65E+03		3.55E-02	5.56E+00

Table 1.61. Carcinogenic chronic daily intakes for excavation worker

SECTOR=West MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure
Aluminum	9.31E-03	4.17E-03	9.06E-08	
Antimony	1.02E-06	4.55E-07	9.88E-12	
Arsenic	5.40E-05	2.42E-05	5.25E-10	
Barium	7.92E-05	3.55E-05	7.71E-10	
Beryllium	3.98E-07	1.78E-07	3.87E-12	
Cadmium	4.66E-07	4.17E-08	4.53E-12	
Chromium	1.40E-05	6.26E-06	1.36E-10	
Cobalt	4.97E-06	2.22E-06	4.83E-11	
Uranium	5.96E-05	2.67E-05	5.79E-10	
Vanadium	1.88E-05	8.40E-06	1.82E-10	
Zinc	3.03E-05	1.36E-05	2.94E-10	
2-Methylnaphthalene	7.88E-07	7.06E-07	7.66E-12	
Acenaphthene	2.87E-06	2.57E-06	2.79E-11	
Anthracene	4.84E-06	4.33E-06	4.70E-11	
Benz(a)anthracene	5.74E-06	5.15E-06	5.59E-11	
Benzo(a)pyrene	5.38E-06	4.82E-06	5.23E-11	
Benzo(b)fluoranthene	6.33E-06	5.67E-06	6.15E-11	
Benzo(ghi)perylene	3.21E-06	2.88E-06	3.12E-11	
Benzo(k)fluoranthene	5.62E-06	5.04E-06	5.47E-11	
Bis(2-ethylhexyl)phthalate	1.24E-07	1.11E-07	1.21E-12	
Chrysene	6.15E-06	5.51E-06	5.98E-11	
Di-n-butyl phthalate	2.54E-07	2.28E-07	2.47E-12	
Dibenz(a,h)anthracene	3.02E-06	2.70E-06	2.93E-11	
Fluoranthene	1.06E-05	9.51E-06	1.03E-10	
Fluorene	2.07E-06	1.86E-06	2.02E-11	
Indeno(1,2,3-cd)pyrene	3.29E-06	2.95E-06	3.20E-11	
Naphthalene	1.17E-06	1.05E-06	1.14E-11	
PCB-1254	3.23E-07	1.74E-07	3.14E-12	
PCB-1260	1.99E-08	1.07E-08	1.93E-13	
Phenanthrene	8.69E-06	7.78E-06	8.45E-11	
Polychlorinated biphenyl	2.96E-07	1.59E-07	2.88E-12	
Pyrene	1.01E-05	9.01E-06	9.79E-11	
Trichloroethene	1.31E-06	2.93E-06	2.89E-06	
Alpha activity	1.84E+05			2.80E+02
Beta activity	3.20E+05			4.88E+02
Cesium-137	8.85E+02		8.60E-03	1.35E+00
Neptunium-237	1.91E+03		1.85E-02	2.90E+00
Uranium-234	2.69E+04		2.62E-01	4.10E+01
Uranium-235	1.20E+03		1.17E-02	1.83E+00
Uranium-238	3.53E+04		3.43E-01	5.38E+01

Table 1.62. Chronic toxicity values for the ingestion and inhalation pathways (carcinogenic effects)

Analyte	Oral Slope Factor[a]	Oral Slope Factor Source	Inhalation Slope Factor[b]	Inhalation Slope Factor Source	Classification Weight of Evidence (J)	Type of Cancers
			Inorganics			
Aluminum					NA	
Antimony					NA	
Arsenic	1.50e+00	A	5.00e+01	B	A	Respiratory system tumors
Barium					NA	
Beryllium	4.30e+00	A	8.40e+00	B	B2	Breast, uterus, lung, and bone tumors
Bromide					NA	
Cadmium (diet)			6.10e+00	B	B1	Respiratory track and lung tumors
Cadmium (water)			6.10e+00	B	B1	Respiratory track and lung tumors
Chromium			4.10e+01	B	A	Lung tumors
Cobalt					NA	
Copper					D	
Iron					NA	
Lead					B2	
Manganese (diet)					D	
Manganese (water)					D	
Mercury					C	
Nickel					NA	
Nitrate					NA	
Orthophosphate					NA	
Selenium					D	
Silver					D	
Tetraoxo-sulfate(1-)					NA	
Thallium					NA	
Uranium					NA	
Vanadium					NA	
Zinc					D	
			Organics			
1,1,2-Trichloroethane	5.70e-02	A	5.70e-02	B	C	Liver tumors
1,1-Dichloroethene	6.00e-01	A	1.20e+00	B	C	Kidney adenocarcinoma
1,2-Dichloroethane	9.10e-02	A	9.10e-02	B	B2	Circulatory system sarcoma
2,4-Dinitrotoluene	6.80e-01	A,C			B2	
2,6-Dinitrotoluene	6.80e-01	A,C			B2	
2-Hexanone					NA	
2-Methylnaphthalene					NA	
Acenaphthene					NA	
Acenaphthylene					NA	
Anthracene					D	
Benz(a)anthracene	7.30e-01	E	3.10e-01	E	B2	Stomach tumors
Benzo(a)pyrene	7.30e+00	A	3.10e+00	H	B2	Stomach, nasal, larynx, and trachea tumors
Benzo(b)fluoranthene	7.30e-01	E	3.10e-01	E	B2	Tumors
Benzo(ghi)perylene					D	
Benzo(k)fluoranthene	7.30e-02	E	3.10e-02	E	B2	Skin and lung tumors
Bis(2-ethylhexyl)phthalate	1.40e-02	A			B2	Hepatocellular carcinoma and liver neoplastic nodule
Bromodichloromethane	6.20e-02	A			B2	

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Table 1.62. (Continued)

Analyte	Oral Slope Factor[a]	Oral Slope Factor Source	Inhalation Slope Factor[b]	Inhalation Slope Factor Source	Classification Weight of Evidence (J)	Type of Cancers
Butyl benzyl phthalate					C	
Carbon tetrachloride	1.30e-01	A	5.30e-02	B	B2	Liver tumors
Chloroform	6.10e-03	A	8.10e-02	B	B2	Colon, bladder, rectum, and liver carcinoma
Chrysene	7.30e-03	E	3.10e-03	E	B2	Carcinomas
Di-n-butyl phthalate					D	
Di-n-octylphthalate					NA	
Dibenz(a,h)anthracene	7.30e+00	E	3.10e+00	E	B2	Immunodepressive effects
Dibromochloromethane	8.40e-02	A			C	Hepatocellular adenomas or carcinoma
Fluoranthene					D	
Fluorene					D	
Indeno(1,2,3-cd)pyrene	7.30e-01	E	3.10e-01	E	B2	Tumors
Iodomethane					NA	
Methylene chloride	7.50e-03	A	1.65e-03	F	B2	Liver hepatocellular carcinoma and neoplastic nodule
N-Nitroso-di-n-propylamine	7.00e+00	A			B2	Hepatocellular carcinomas
N-Nitrosodiphenylamine	4.90e-03	A			B2	Transitional cell carcinoma of the bladder
Naphthalene					D	
PCB-1254	2.00e+00	D	2.00e+00	D	NA	Liver hepatocellular, adenomas, carcinomas, and cholangiomas
PCB-1260	2.00e+00	D	2.00e+00	D	B2	Trabecular carcinoma, adenocarcinoma, and neoplastic nodule
PCB-1262	2.00e+00	A,D	2.00e+00	E	B2	Hepatocellular and hemangiosarcoma tumors
Phenanthrene					D	
Polychlorinated biphenyl	2.00e+00	A,D	2.00e+00	E	B2	Hepatocellular and hemangiosarcoma tumors
Pyrene					D	
Tetrachloroethene	5.20e-02	G	2.00e-03	G	NA	Leukemia and liver cancer
Toluene					D	
Trichloroethene	1.10e-02	G	6.00e-03	G	NA	Liver and lung cancer
Vinyl chloride	1.90e+00	B	3.00e-01	B	A	Liver, lung, degestive track, and brain tumors
cis-1,2-Dichloroethene					D	
trans-1,2-Dichloroethene					D	

Radionuclides

	Oral Slope Factor[a] (Risk/pCi)	Oral Slope Factor Source	Inhalation Slope Factor (Risk/pCi)	Inhalation Slope Factor Source	ICRP Lung Class (I)	Type of Cancer
Actinium-228	1.62e-12	B	3.27e-11	B	W	Various
Americium-241	3.28e-10	B	3.85e-08	B	W	Various
Cesium-137+D	3.16e-11	B	1.91e-11	B	D	Various
Lead-210+D	1.01e-09	B	3.86e-09	B	D	Various
Lead-212	1.80e-11	B	3.85e-11	B	D	Various
Lead-214	2.94e-13	B	6.23e-12	B	D	Various
Neptunium-237+D	3.00e-10	B	3.45e-08	B	W	Various

Table 1.62. (Continued)

	Oral Slope Factor[a] (Risk/pCi)	Oral Slope Factor Source	Inhalation Slope Factor (Risk/pCi)	Inhalation Slope Factor Source	ICRP Lung Class (I)	Type of Cancer
Plutonium-239	3.16e-10	B	2.78e-08	B	Y	Various
Potassium-40	1.25e-11	B	7.46e-12	B	D	Various
Technetium-99	1.40e-12	B	2.89e-12	B	W	Various
Thorium-228+D	2.31e-10	B	9.68e-08	B	Y	Various
Thorium-230	3.75e-11	B	1.72e-08	B	Y	Various
Thorium-234	1.93e-11	B	1.90e-11	B	Y	Various
Uranium-234	4.44e-11	B	1.40e-08	B	Y	Various
Uranium-235+D	4.70e-11	B	1.30e-08	B	Y	Various
Uranium-238+D	6.20e-11	B	1.24e-08	B	Y	Various

[a]The units for these oral slope factors are $(mg/kg\text{-}d)^{-1}$ for nonradionuclides and (Risk/pCi) for radionuclides.
[b] The units for these inhalation slope factors are $(mg/kg\text{-}d)^{-1}$ for nonradionuclides and (Risk/pCi) for radionuclides.
(A) Source: Integrated Risk Information System (IRIS)
(B) Source: Health Effects and Environmental Affects Summary Table (HEAST) 1995
(C) Listed as "Dinitrotoluene mixture, 2,4-/2,6-" in IRIS. The value is based on a study using technical grade DNT.
(D) The cancer potency of PCB mixtures is determined using a three-tiered approach that depends on the information available. Criteria for use of the High Risk and Persistence Tier include: food chain exposure; sediment or soil ingestion; dust or aerosol inhalation; dermal exposure if an absorption factor has been applied; any early-life exposure; and the presence of dioxin-like, tumor-promoting, or persistent congeners. This value, 2.00E+00 per (mg/kg)/day, is the upper-bound slope factor for the High Risk and Persistence Tier. The central-estimate slope factor for this tier is 1.00+00 per (mg/kg)/day.
(E) Region 4 has adopted a Toxicity Equivalency Factor (TEF) methodology for carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and dioxins and furans on the Target Compound List as described in Supplemental Guidance from RAGS:Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance) (November 1995). These TEFs are based on the potency of each compound relative to that of benzo(a)pyrene (BaP) and 2,3,7,8-TCDD. The following TEFs were used to convert each PAH concentration to an equivalent concentration of BaP: (1) benzo(a)pyrene, TEF=1.0; (2) benz(a)anthracene, TEF=0.1; (3) benzo(b)fluoranthene, TEF=0.1; (4) benzo(k)fluoranthene, TEF=0.01; (5) chrysene, TEF=0.001; (6) dibenz(a,h)anthracene, TEF=1.0; (7) indeno(1,2,3-cd)pyrene, TEF=0.1. The following TEFs were used to convert each dioxin and furan concentration to an equivalent concentration of TCDD: (1) 2,3,7,8-TCDD, TEF=1.0; (2) 2,3,7,8-PeCDD, TEF=0.5; (3) 2,3,7,8-HxCdd, TEF=0.1; (4) 2,3,7,8-HpCdd, TEF=0.01; (5) OCDD, TEF=0.001; (6) 2,3,7,8-TCDF, TEF=0.1; (7) 1,2,3,7,8-PeCDF, TEF=0.5; (8) 2,3,4,7,8-PeCDF, TEF=0.05; (9) 2,3,7,8-HxCDF, TEF=0.1; (10) 2,3,7,8-HpCDF, TEF=0.01; and (11) OCDF, TEF=0.001.
(F) The Inhalation Slope Factor was calculated from inhalation unit risk as described in Supplemental Guidance from RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance) (November 1995).
(G) The Risk Assessment Program has contacted Superfund and been given provisional values which should be used for DOE-ORR projects. This value should be clearly documented as provisional. For other projects, Superfund Health Risk Technical Support Center should be contacted directly (513)569-7300.
(H) Provisional inhalation toxicity values have been developed by the National Center for Environmental Assessment (NCEA). RAGS: Region 4 Bulletins, Human Health Risk Assessment (Interim Guidance) (November 1995).
(I) Lung clearance classification recommended by the International Commission on Radiological Protection (ICRP): Y = Year, W = Week, D = Day, * = Gas.
(J) Codes used for Classification Weight-of-evidence assigned by EPA are as follows:

A=Known human carcinogen.
B1=Probable human carcinogen based on limited human data.
B2=Probable human carcinogen based on animal data. Human data inadequate or limited.
C=Possible human carcinogen.
D=Cannot be classified because of inadequate data.
E=Evidence that analyte is not carcinogenic.

NA = No information available
Note: Blank cells indicate that data are not available or are not appropriate.

531117

Table 1.63. Chronic toxicity values for the ingestion and inhalation pathways (noncarcinogenic effects)

Analyte	Oral Reference Dose (mg/kg-day)	Oral Reference Dose Source	Inhalation Reference Dose (mg/kg-day)	Inhalation Reference Dose Source	RfD basis (vehicle)	Target Organ Critical Effect	Confidence Level	Uncertainty Factor/Modifying Factor
					Inorganics			
Aluminum	1.00e+00	I			NA	NA	NA	(O)UF=NA
Antimony	4.00e-04	A			Or - water	Liver, Heart, and developmental toxicity	Low	(O)UF=1000
Arsenic	3.00e-04	A			Or - water	Skin	Medium	(O)UF=3
Barium	7.00e-02	A	1.43e-04	B,C	Or, Inh	Increased blood pressure, baritosis	(O)Medium (I)NA	(O)UF=3, (I) UF=1000
Beryllium	5.00e-03	A			Or	Weight loss	Low	(O)UF=100
Bromide								
Cadmium (diet)	1.00e-03	A	5.71e-05	I	Or	Renal toxicity, Bone	High	(O)UF=10 (I)UF=NA
Cadmium (water)	5.00e-04	A	5.71e-05	I	Or - water	Renal toxicity, Bone	High	(O)UF=10 (I)UF=NA
Chromium	5.00e-03	A			Or	GI, lungs	Low	(O)UF=500
Cobalt	6.00e-02	I			NA	NA	NA	NA
Copper	4.00e-02	E			NA	NA	NA	NA
Iron	3.00e-01	I			NA	NA	NA	NA
Lead	1.00e-07	J	2.86e-04	J	Or	Changes in levels of blood enzymes	(O)Low (I)NA	(O)UF=NA (I)UF=NA
Manganese (diet)	1.40e-01	A,D	1.43e-05	A	Or, Inh	CNS, lungs	Medium	(O)UF=1, (I)UF=1000
Manganese (water)	4.60e-02	A,D	1.43e-05	A	Or, Inh	CNS, lungs	Medium	(O)UF=1, (O)MF=3, (I)UF=1000
Mercury (inorganic salts)	3.00e-04	A,H	8.57e-05	H	Or, Inh	Kidney, CNS, autoimmune effects	(O)High (I) NA	(O)UF=1000, (I)UF=NA
Nickel	2.00e-02	A,G			Or - diet	Weight loss	Medium	(O)UF=100, (O)MF=3
Nitrate	1.60e+00	A			Or - water	Methemoglobinemia and vasodilatation	High	(O)UF=1
Orthophosphate								
Selenium	5.00e-03	A			Or	Clinical selenosis	High	(O)UF=3
Silver	5.00e-03	A			Or	Argyria	Low	(O)UF=3
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	3.00e-03	A			Or	Weight loss and nephrotoxicity	Medium	(O)UF=1000

531118

Table 1.63. (Continued)

Analyte	Oral Reference Dose (mg/kg-day)	Oral Reference Dose Source	Inhalation Reference Dose (mg/kg-day)	Inhalation Reference Dose Source	RfD basis (vehicle)	Target Organ Critical Effect	Confidence Level	Uncertainty Factor/Modifying Factor
Vanadium	7.00e-03	B			Or-water	Kidney, blood	NA	(O)UF=100
Zinc	3.00e-01	A			Or	Lung, GI, and hypochromic microcyctic anemia	Medium	(O)UF=10
					Organics			
1,1,2-Trichloroethane	4.00e-03	A			Or - water	Liver	Medium	(O)UF=1000
1,1-Dichloroethene	9.00e-03	A			Or, Inh	Kidney, Liver	Medium	(O)UF=1000
1,2-Dichloroethane			2.86e-03	H	NA	NA	NA	NA
2,4-Dinitrotoluene	2.00e-03	A			Or	Neurotoxicity, biliary tract hyperplasia	High	(O)UF=100
2,6-Dinitrotoluene	1.00e-03	B			NA	NA	NA	NA
2-Hexanone								
2-Methylnaphthalene								
Acenaphthene	6.00e-02	A			Or	Hepatotoxicity	(O)Low	(O)UF=3000
Acenaphthylene								
Anthracene	3.00e-01	A			Or	No observed effects	(O)Low	(O)UF=3000
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	2.00e-02	A			Or	Liver	Medium	(O)UF=1000
Bromodichloromethane	2.00e-02	A			Or	Renal cytomegaly	Medium	(O)UF=1000
Butyl benzyl phthalate	2.00e-01	A			Or	Weight loss in liver and brain	Low	(O)UF=1000
Carbon tetrachloride	7.00e-04	A	5.71e-04	H	Or	Liver	Medium	(O)UF=1000 (I)UF=NA
Chloroform	1.00e-02	A			Or	Liver	Medium	(O)UF=1000
Chrysene								
Di-n-butyl phthalate	1.00e-01	A			NA	NA	NA	NA
Di-n-octylphthalate	2.00e-02	B			NA	NA	NA	UF=1000
Dibenz(a,h)anthracene								
Dibromochloromethane	2.00e-02	A			Or	Hepatic lesions	Medium	(O)UF=1000

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Table 1.63. (Continued)

Analyte	Oral Reference Dose (mg/kg-day)	Oral Reference Dose Source	Inhalation Reference Dose (mg/kg-day)	Inhalation Reference Dose Source	RfD basis (vehicle)	Target Organ Critical Effect	Confidence Level	Uncertainty Factor/Modifying Factor
Fluoranthene	4.00e-02	A			Or	Nephropathy, liver, blood	Low	(O)UF=3000
Fluorene	4.00e-02	A			Or	Decreased RBC, blood	Low	(O)UF=3000
Indeno(1,2,3-cd)pyrene								
Iodomethane								
Methylene chloride	6.00e-02	A	8.57e-01	B	Or - water, Inh	Liver	(O)Medium (I)NA	(O)UF=100 (I)UF=100
N-Nitroso-di-n-propylamine								
N-Nitrosodiphenylamine								
Naphthalene	3.57e-02	H			NA	NA	NA	NA
PCB-1254	2.00e-05	A			Or	Immune system toxicity	NA	(O)UF=300
PCB-1260								
PCB-1262								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	3.00e-02	A			Or	Kidney	Low	(O)UF=3000
Tetrachloroethene	1.00e-02	A			Or	Hepatotoxicity, weight gain	Medium	(O)UF=1000
Toluene	2.00e-01	A	1.14e-01	A	Or, Inh	Liver, kidney, CNS	(O)Medium (I)NA	(O)UF=1000, (I)UF=300
Trichloroethene	6.00e-03	H			Or - water	Liver toxicity	NA	NA
Vinyl chloride								
cis-1,2-Dichloroethene	1.00e-02	B			Or - water	Decreased hematocrit, liver	NA	(O)UF=NA
trans-1,2-Dichloroethene	2.00e-02	A			Or - water	Increased serum alkaline phosphatase	Low	(O)UF=1000
Radionuclides								
Actinium-228								
Alpha activity								
Americium-241								
Beta activity								
Cesium-137								
Lead-210								
Lead-212								

531120

Table 1.63. (Continued)

Analyte	Oral Reference Dose (mg/kg-day)	Oral Reference Dose Source	Inhalation Reference Dose (mg/kg-day)	Inhalation Reference Dose Source	RfD basis (vehicle)	Target Organ Critical Effect	Confidence Level	Uncertainty Factor/Modifying Factor
Lead-214								
Neptunium-237								
Plutonium-239								
Potassium-40								
Technetium-99								
Thorium-228								
Thorium-230								
Thorium-234								
Uranium-234								
Uranium-235								
Uranium-238								

Notes: Blank cells indicate that data are not available or are not appropriate; NA=information not readily available at this time; RfD=reference dose; CNS=central nervous system; UF=uncertainty factor; the default value for MF (modifying factor) is one (1); and codes used for RfD basis are Inh=inhalation and Or=oral.
A=Source: Integrated Risk Information System (IRIS) 1998.
B=Source: Health Effects and Environmental Affects Summary Table (HEAST) 1995.
C=This value was derived from methodology that is not current with the interim inhalation methodology used by the RfD/RfC Work Group (see HEAST Table 2 for details). Table 2 lists subchronic and chronic non-cancer toxicity values that are found in Agency documents methods that are not currently practiced by the RfD/RfC Work Group. These values are considered to be adequate provisional values for risk assessment purposes at Superfund and RCRA sites, but are subject to being reviewed by the RfD/RfC Work Group and revised when necessary to reflect current work group practices.
D=IRIS no longer separates manganese values for chronic oral RfDs into water and diet RfDs. The chronic oral RfD is now for the total oral intake of manganese. HEAST manganese values remain separated into subchronic oral RfD (water) and subchronic oral RfD (diet). Since it was necessary to keep the RfD categories for both diet and water on the table to list HEAST values, the IRIS chronic oral RfD for water was changed from 5.00E-03 to 1.40E-01 (the new manganese value for total oral intake) and footnoted "m". The oral toxicity values for 'Manganese (Diet)' are to be used for food uses only while the oral toxicity values for 'Manganese (Water)' are to be used for water and soil uses.
E=HEAST concluded that toxicity data were inadequate for calculation of oral RfDs for copper and substituted the current drinking water standard (MCLG) of 1.3 mg/L.
G=This entry was formerly listed as Nickel (metallic) with the CAS number 7440-02-0. The chemical name was changed so that it more accurately indicates the chemicals used in the studies from which the values were derived. Several different nickel salts were used, so the listing of one CAS number is not appropriate and has been replaced with the work VARIOUS. The values remain unchanged. Risk Assessment Program assigns these values to Nickel (metallic), although they are no longer listed with that chemical name.
H=The Risk Assessment Program contacted Superfund and been given provisional values which should be used for DOE-ORR projects. This value should be clearly documented as provisional. For other projects, Superfund Health Risk Technical Support Center.
I=Value taken from *EPA Region III Risk-Based Concentration Table* (EPA 1996).
J=Value used based on guidance from the Kentucky Department of Environmental Protection.
All withdrawn values should be clearly documented when used in any risk assessment activity.

Table 1.64. Chronic toxicity values for absorbed dose and external exposure (carcinogenic effects)

Analyte	Oral Slope Factor[a] (mg/kg-d)$^{-1}$	GI absorption Factor	Absorbed Dose Cancer Slope Factor[b] (mg/kg-d)$^{-1}$
		Inorganics	
Aluminum			
Antimony			
Arsenic	1.50e+00	41	3.66e+00
Barium			
Beryllium	4.30e+00	1	4.30e+02
Bromide			
Cadmium (diet)			
Cadmium (water)			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Manganese (diet)			
Manganese (water)			
Mercury			
Nickel			
Nitrate			
Orthophosphate			
Selenium			
Silver			
Tetraoxo-sulfate(1-)			
Thallium			
Uranium			
Vanadium			
Zinc			
		Organics	
1,1,2-Trichloroethane	5.70e-02	81	7.04e-02
1,1-Dichloroethene	6.00e-01	100	6.00e-01
1,2-Dichloroethane	9.10e-02	100	9.10e-02
2,4-Dinitrotoluene	6.80e-01	85	8.00e-01
2,6-Dinitrotoluene	6.80e-01	85	8.00e-01
2-Hexanone			
2-Methylnaphthalene			
Acenaphthene			
Acenaphthylene			
Anthracene			
Benz(a)anthracene	7.30e-01	31	2.35e+00
Benzo(a)pyrene	7.30e+00	31	2.35e+01
Benzo(b)fluoranthene	7.30e-01	31	2.35e+00
Benzo(ghi)perylene			
Benzo(k)fluoranthene	7.30e-02	31	2.35e-01
Bis(2-ethylhexyl)phthalate	1.40e-02	19	7.37e-02
Bromodichloromethane	6.20e-02	98	6.33e-02
Butyl benzyl phthalate			
Carbon tetrachloride	1.30e-01	65	2.00e-01
Chloroform	6.10e-03	20	3.05e-02

Table 1.64. (Continued)

Analyte	Oral Slope Factor[a] (mg/kg-d)$^{-1}$	GI absorption Factor	Absorbed Dose Cancer Slope Factor[b] (mg/kg-d)$^{-1}$
Chrysene	7.30e-03	31	2.35e-02
Di-n-butyl phthalate			
Di-n-octylphthalate			
Dibenz(a,h)anthracene	7.30e+00	31	2.35e+01
Dibromochloromethane	8.40e-02	60	1.40e-01
Fluoranthene			
Fluorene			
Indeno(1,2,3-cd)pyrene	7.30e-01	31	2.35e+00
Iodomethane			
Methylene chloride	7.50e-03	95	7.89e-03
N-Nitroso-di-n-propylamine	7.00e+00	25	2.80e+01
N-Nitrosodiphenylamine	4.90e-03	25	1.96e-02
Naphthalene			
PCB-1254	2.00e+00	90	2.22e+00
PCB-1260	2.00e+00	90	2.22e+00
PCB-1262	2.00e+00	90	2.22e+00
Phenanthrene			
Polychlorinated biphenyl	2.00e+00	90	2.22e+00
Pyrene			
Tetrachloroethene	5.20e-02	100	5.20e-02
Toluene			
Trichloroethene	1.10e-02	15	7.33e-02
Vinyl chloride	1.90e+00	100	1.90e+00
cis-1,2-Dichloroethene			
trans-1,2-Dichloroethene			

Radionuclides

	Oral Slope Factor (Risk/pCi)	External Exposure Slope Factor (risk x g/pCi x y)
Actinium-228	1.62e-12	3.28e-06
Americium-241	3.28e-10	4.59e-09
Cesium-137+D	3.16e-11	2.09e-06
Lead-210+D	1.01e-09	1.45e-10
Lead-212	1.80e-11	3.00e-07
Lead-214	2.94e-13	7.09e-07
Neptunium-237+D	3.00e-10	4.62e-07
Plutonium-239	3.16e-10	1.26e-11
Potassium-40	1.25e-11	6.11e-07
Technetium-99	1.40e-12	6.19e-13
Thorium-228+D	2.31e-10	6.20e-06
Thorium-230	3.75e-11	4.40e-11
Thorium-234	1.93e-11	3.50e-09
Uranium-234	4.44e-11	2.14e-11
Uranium-235+D	4.70e-11	2.65e-07
Uranium-238+D	6.20e-11	6.57e-08

[a]See Table 1.62 for source of administered cancer slope factor; this value is equivalent to the cancer slope factor.
[b]Absorbed cancer slope factor calculated by dividing administered cancer slope factor by GI absorption factor; this value is used in the BHHRA to calculate contribution to cancer risk from dermal exposure.
Note: Blank cells indicate that data are not available or are not appropriate.

Table 1.65. Chronic toxicity values for absorbed doses (noncarcinogenic effects)

Analyte	Oral Reference dose[a] (mg/kg-day)	GI Absorption Factor (%)	Absorbed Dose Reference Dose[b] (mg/kg-day)
Inorganics			
Aluminum	1.00e+00	10	1.00e-01
Antimony	4.00e-04	2	8.00e-06
Arsenic	3.00e-04	41	1.23e-04
Barium	7.00e-02	7	4.90e-03
Beryllium	5.00e-03	1	5.00e-05
Bromide			
Cadmium (diet)	1.00e-03	1	1.00e-05
Cadmium (water)	5.00e-04	1	5.00e-06
Chromium	5.00e-03	2	1.00e-04
Cobalt	6.00e-02	80	4.80e-02
Copper	4.00e-02	30	1.20e-02
Iron	3.00e-01	15	4.50e-02
Lead	1.00e-07	15	1.50e-08
Manganese (diet)	1.40e-01	4	5.60e-03
Manganese (water)	4.60e-02	4	1.87e-03
Mercury	3.00e-04	7	2.10e-05
Nickel	2.00e-02	27	5.40e-03
Nitrate	1.60e+00	50	8.00e-01
Orthophosphate			
Selenium	5.00e-03	44	2.20e-03
Silver	5.00e-03	18	9.00e-04
Tetraoxo-sulfate(1-)			
Thallium			
Uranium	3.00e-03	85	2.55e-03
Vanadium	7.00e-03	1	7.00e-05
Zinc	3.00e-01	20	6.00e-02
Organics			
1,1,2-Trichloroethane	4.00e-03	81	3.24e-03
1,1-Dichloroethene	9.00e-03	100	9.00e-03
1,2-Dichloroethane			
2,4-Dinitrotoluene	2.00e-03	85	1.70e-03
2,6-Dinitrotoluene	1.00e-03	85	8.50e-04
2-Hexanone			
2-Methylnaphthalene			
Acenaphthene	6.00e-02	31	1.86e-02
Acenaphthylene			
Anthracene	3.00e-01	76	2.28e-01
Benz(a)anthracene			
Benzo(a)pyrene			
Benzo(b)fluoranthene			
Benzo(ghi)perylene			
Benzo(k)fluoranthene			
Bis(2-ethylhexyl)phthalate	2.00e-02	19	3.80e-03
Bromodichloromethane	2.00e-02	98	1.96e-02
Butyl benzyl phthalate	2.00e-01	61	1.22e-01
Carbon tetrachloride	7.00e-04	65	4.55e-04
Chloroform	1.00e-02	20	2.00e-03
Chrysene			
Di-n-butyl phthalate	1.00e-01	100	1.00e-01

Table 1.65. (Continued)

Analyte	Oral Reference dose[a] (mg/kg-day)	GI Absorption Factor (%)	Absorbed Dose Reference Dose[b] (mg/kg-day)
Di-n-octylphthalate	2.00e-02	90	1.80e-02
Dibenz(a,h)anthracene			
Dibromochloromethane	2.00e-02	60	1.20e-02
Fluoranthene	4.00e-02	31	1.24e-02
Fluorene	4.00e-02	50	2.00e-02
Indeno(1,2,3-cd)pyrene			
Iodomethane			
Methylene chloride	6.00e-02	95	5.70e-02
N-Nitroso-di-n-propylamine			
N-Nitrosodiphenylamine			
Naphthalene	3.57e-02	80	2.86e-02
PCB-1254	2.00e-05	90	1.80e-05
PCB-1260			
PCB-1262			
Phenanthrene			
Polychlorinated biphenyl			
Pyrene	3.00e-02	31	9.30e-03
Tetrachloroethene	1.00e-02	100	1.00e-02
Toluene	2.00e-01	80	1.60e-01
Trichloroethene	6.00e-03	15	9.00e-04
Vinyl chloride			
cis-1,2-Dichloroethene	1.00e-02	100	1.00e-02
trans-1,2-Dichloroethene	2.00e-02	100	2.00e-02

Note: Blank cells indicate that data are not available or are not appropriate.
[a]See Table 1.63 for the source of the administered reference dose; this value is equivalent to the reference dose for the oral route of exposure in Table 1.63.
[b]Absorbed reference dose calculated by multiplying the administered reference dose by the GI absorption factor; the absorbed dose reference dose value is used to calculate contribution to systemic toxicity from dermal exposure to a particular analyte.

Table 1.66. Systemic toxicity for the current industrial worker

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	2.90E-03	1.25E-01		1.27E-01	0.01
Antimony	1.43E-03	3.07E-01		3.09E-01	0.03
Arsenic	8.71E-03	9.13E-02		1.00E-01	0.01
Beryllium	2.83E-05	1.22E-02		1.22E-02	0.00
Cadmium	2.17E-04	1.87E-02	3.55E-07	1.89E-02	0.00
Chromium	1.16E-03	2.49E-01		2.50E-01	0.02
Cobalt	3.30E-05	1.78E-04		2.11E-04	0.00
Iron	1.78E-02	5.10E-01		5.28E-01	0.05
Lead	3.90E+01	1.12E+03	1.28E-06	1.16E+03	99.84
Thallium					
Uranium	4.31E-03	2.18E-02		2.61E-02	0.00
Vanadium	9.96E-04	4.28E-01		4.29E-01	0.04
Zinc	4.18E-05	8.99E-04		9.41E-04	0.00
2-Methylnaphthalene					
Acenaphthene	1.02E-05	2.83E-04		2.93E-04	0.00
Acenaphthylene					
Anthracene	3.95E-06	4.46E-05		4.86E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	2.45E-06	1.11E-04		1.13E-04	0.00
Chrysene					
Di-n-butyl phthalate	3.65E-06	3.13E-05		3.50E-05	0.00
Dibenz(a,h)anthracene					
Fluoranthene	9.28E-05	2.57E-03		2.67E-03	0.00
Fluorene	1.16E-05	2.00E-04		2.12E-04	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	8.82E-06	9.48E-05		1.04E-04	0.00
PCB-1254	4.15E-03	2.38E-02		2.79E-02	0.00
PCB-1260					
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.09E-04	3.03E-03		3.14E-03	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	3.91E+01	1.12E+03	1.63E-06	1.16E+03	
Fraction of Total	3.37E-02	9.66E-01	1.41E-09		

531125

Table 1.66. Systemic toxicity for the current industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Di-n-butyl phthalate	5.87E-06	5.05E-05		5.64E-05	100.0
Alpha activity					
Beta activity					
Pathway Total	5.87E-06	5.05E-05		5.64E-05	
Fraction of Total	1.04E-01	8.96E-01			

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Cadmium	1.86E-04	1.60E-02	3.04E-07	1.62E-02	4.86
Chromium	1.33E-03	2.86E-01		2.88E-01	86.51
Thallium					
Uranium	4.46E-03	2.26E-02		2.70E-02	8.12
Acenaphthene	1.06E-06	2.94E-05		3.05E-05	0.01
Anthracene	3.59E-07	4.06E-06		4.42E-06	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Di-n-butyl phthalate	6.01E-06	5.17E-05		5.77E-05	0.02
Dibenz(a,h)anthracene					
Fluoranthene	2.57E-05	7.13E-04		7.38E-04	0.22
Fluorene	1.10E-06	1.89E-05		2.00E-05	0.01
Indeno(1,2,3-cd)pyrene					
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.94E-05	8.14E-04		8.44E-04	0.25
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	6.04E-03	3.27E-01	3.04E-07	3.33E-01	
Fraction of Total	1.82E-02	9.82E-01	9.14E-07		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	6.77E-03	2.91E-01		2.98E-01	22.73
Antimony	3.55E-03	7.63E-01		7.66E-01	58.51
Chromium	1.02E-03	2.19E-01		2.20E-01	16.77
Uranium	4.27E-03	2.16E-02		2.59E-02	1.98
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					

Table 1.66. Systemic toxicity for the current industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Chrysene					
Fluoranthene	1.04E-06	2.88E-05		2.98E-05	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	7.87E-07	2.18E-05		2.26E-05	0.00
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	1.56E-02	1.29E+00		1.31E+00	
Fraction of Total	1.19E-02	9.88E-01			

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Antimony	1.71E-03	3.68E-01		3.70E-01	36.95
Beryllium	6.75E-05	2.90E-02		2.91E-02	2.91
Cadmium	1.47E-04	1.26E-02	2.40E-07	1.28E-02	1.28
Chromium	2.66E-03	5.72E-01		5.75E-01	57.44
Thallium					
Uranium	2.25E-03	1.14E-02		1.37E-02	1.36
Acenaphthene	4.08E-07	1.13E-05		1.17E-05	0.00
Anthracene	2.61E-07	2.95E-06		3.21E-06	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.96E-06	8.86E-05		9.05E-05	0.01
Chrysene					
Di-n-butyl phthalate	1.96E-07	1.68E-06		1.88E-06	0.00
Fluoranthene	1.03E-05	2.85E-04		2.95E-04	0.03
Fluorene	6.12E-07	1.05E-05		1.11E-05	0.00
Indeno(1,2,3-cd)pyrene					
Phenanthrene					
Pyrene	6.39E-06	1.77E-04		1.84E-04	0.02
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	6.86E-03	9.94E-01	2.40E-07	1.00E+00	
Fraction of Total	6.86E-03	9.93E-01	2.40E-07		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Chromium	1.89E-03	4.06E-01		4.08E-01	96.03

Table 1.66. Systemic toxicity for the current industrial worker

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Uranium	2.25E-03	1.14E-02		1.37E-02	3.22
Zinc	1.14E-04	2.46E-03		2.58E-03	0.61
Acenaphthene	3.26E-07	9.05E-06		9.37E-06	0.00
Anthracene	1.30E-07	1.48E-06		1.61E-06	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.05E-05	2.92E-04		3.02E-04	0.07
Indeno(1,2,3-cd)pyrene					
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.11E-05	3.08E-04		3.19E-04	0.08
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	4.28E-03	4.20E-01		4.25E-01	
Fraction of Total	1.01E-02	9.90E-01			

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Antimony	4.90E-04	1.05E-01		1.06E-01	0.01
Beryllium	3.16E-05	1.36E-02		1.36E-02	0.00
Cadmium	9.94E-05	8.55E-03	1.63E-07	8.65E-03	0.00
Chromium	1.98E-03	4.26E-01		4.28E-01	0.02
Iron	1.99E-02	5.70E-01		5.90E-01	0.03
Lead	6.37E+01	1.83E+03	2.08E-06	1.89E+03	99.91
Vanadium	1.15E-03	4.96E-01		4.97E-01	0.03
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	4.89E-06	1.36E-04		1.41E-04	0.00
Pyrene	6.52E-06	1.81E-04		1.87E-04	0.00
Alpha activity					
Beta activity					
Uranium-238					
Pathway Total	6.37E+01	1.83E+03	2.24E-06	1.89E+03	
Fraction of Total	3.37E-02	9.66E-01	1.19E-09		

Table 1.66. Systemic toxicity for the current industrial worker

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	6.95E-03	2.99E-01		3.06E-01	31.26
Antimony	7.34E-04	1.58E-01		1.59E-01	16.21
Cadmium	1.71E-04	1.47E-02	2.80E-07	1.49E-02	1.52
Chromium	2.31E-03	4.96E-01		4.99E-01	51.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.83E-06	5.09E-05		5.27E-05	0.01
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.96E-06	5.43E-05		5.62E-05	0.01
Alpha activity					
Beta activity					
Pathway Total	1.02E-02	9.68E-01	2.80E-07	9.78E-01	
Fraction of Total	1.04E-02	9.90E-01	2.86E-07		

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Antimony	1.78E-03	3.82E-01		3.84E-01	21.95
Beryllium	3.69E-05	1.59E-02		1.59E-02	0.91
Cadmium	1.77E-04	1.53E-02	2.90E-07	1.54E-02	0.88
Chromium	2.08E-03	4.47E-01		4.49E-01	25.70
Iron	2.77E-02	7.95E-01		8.23E-01	47.11
Thallium					
Uranium	8.18E-03	4.14E-02		4.95E-02	2.83
Zinc	8.20E-05	1.76E-03		1.85E-03	0.11
Acenaphthene	8.07E-06	2.24E-04		2.32E-04	0.01
Acenaphthylene					
Anthracene	2.97E-06	3.36E-05		3.65E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.96E-06	8.86E-05		9.05E-05	0.01
Chrysene					
Dibenz(a,h)anthracene					
Fluoranthene	1.33E-04	3.70E-03		3.83E-03	0.22
Fluorene	1.47E-05	2.52E-04		2.67E-04	0.02
Indeno(1,2,3-cd)pyrene					
Naphthalene	3.29E-08	3.54E-07		3.86E-07	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.50E-04	4.16E-03		4.31E-03	0.25
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	4.04E-02	1.71E+00	2.90E-07	1.75E+00	

Table 1.66. Systemic toxicity for the current industrial worker

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Fraction of Total	2.31E-02	9.77E-01	1.66E-07		

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Chemical Total	% of Total
Aluminum	3.56E-03	1.53E-01		1.57E-01	12.90
Antimony	1.21E-03	2.61E-01		2.62E-01	21.57
Arsenic	2.15E-02	2.26E-01		2.47E-01	20.35
Beryllium	3.08E-05	1.32E-02		1.33E-02	1.09
Cadmium	4.43E-04	3.81E-02	7.24E-07	3.85E-02	3.17
Chromium	1.23E-03	2.64E-01		2.65E-01	21.84
Cobalt	3.87E-05	2.08E-04		2.46E-04	0.02
Uranium	5.92E-03	2.99E-02		3.58E-02	2.95
Zinc	4.89E-05	1.05E-03		1.10E-03	0.09
2-Methylnaphthalene					
Acenaphthene	2.74E-05	7.61E-04		7.89E-04	0.06
Anthracene	2.38E-05	2.69E-04		2.93E-04	0.02
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	2.45E-06	1.11E-04		1.13E-04	0.01
Chrysene					
Di-n-butyl phthalate	1.00E-06	8.63E-06		9.63E-06	0.00
Dibenz(a,h)anthracene					
Fluoranthene	5.52E-04	1.53E-02		1.59E-02	1.31
Fluorene	3.82E-05	6.58E-04		6.96E-04	0.06
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.99E-05	2.14E-04		2.34E-04	0.02
PCB-1254	2.35E-02	1.35E-01		1.58E-01	13.02
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	6.44E-04	1.79E-02		1.85E-02	1.52
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	5.88E-02	1.16E+00	7.24E-07	1.21E+00	
Fraction of Total	4.84E-02	9.52E-01	5.96E-07		

Table 1.67. Excess lifetime cancer risks for the current industrial worker

--------------------------------------- SECTOR=WAG 6 MEDIA=Surface soil ---------------------------------------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	1.4E-06	1.5E-05	4.4E-09		1.6E-05	4.81
Beryllium	2.2E-07	9.3E-05	4.0E-11		9.4E-05	27.98
Cadmium			4.4E-11		4.4E-11	0.00
Chromium			7.9E-09		7.9E-09	0.00
Cobalt						
Iron						
Lead						
Thallium						
Uranium						
Vanadium						
Zinc						
2-Methylnaphthalene						
Acenaphthene						
Acenaphthylene						
Anthracene						
Benz(a)anthracene	4.8E-07	1.3E-05	1.9E-11		1.4E-05	4.16
Benzo(a)pyrene	4.7E-06	1.3E-04	1.9E-10		1.4E-04	40.67
Benzo(b)fluoranthene	5.6E-07	1.5E-05	2.2E-11		1.6E-05	4.78
Benzo(ghi)perylene						
Benzo(k)fluoranthene	4.5E-08	1.2E-06	1.8E-12		1.3E-06	0.39
Bis(2-ethylhexyl)phthalate	2.4E-10	1.1E-08			1.1E-08	0.00
Chrysene	5.1E-09	1.4E-07	2.0E-13		1.5E-07	0.04
Di-n-butyl phthalate						
Dibenz(a,h)anthracene	1.4E-06	3.9E-05	5.6E-11		4.0E-05	12.05
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	2.6E-07	7.1E-06	1.0E-11		7.3E-06	2.20
Naphthalene						
PCB-1254	5.9E-08	3.4E-07	5.5E-12		4.0E-07	0.12
PCB-1260	3.3E-08	1.9E-07	3.0E-12		2.2E-07	0.07
PCB-1262	1.3E-08	7.6E-08	1.2E-12		8.9E-08	0.03
Phenanthrene						
Polychlorinated biphenyl	1.0E-07	6.0E-07	9.8E-12		7.0E-07	0.21
Pyrene						
Alpha activity						
Beta activity						
Cesium-137	3.7E-09		2.1E-13	3.6E-06	3.6E-06	1.07
Neptunium-237	6.0E-08		6.4E-10	1.3E-06	1.4E-06	0.42
Uranium-234	9.1E-08		2.7E-09	6.4E-10	9.4E-08	0.03
Uranium-235	5.7E-09		1.5E-10	4.7E-07	4.8E-07	0.14
Uranium-238	1.7E-07		3.2E-09	2.6E-06	2.8E-06	0.84
Pathway Total	9.6E-06	3.2E-04	1.9E-08	8.0E-06	3.3E-04	
Fraction of Total	2.9E-02	9.5E-01	5.8E-05	2.4E-02		

Table 1.67. Excess lifetime cancer risks for the current industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Di-n-butyl phthalate						
Alpha activity						
Beta activity						
Pathway Total						
Fraction of Total						

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Cadmium			3.8E-11		3.8E-11	0.00
Chromium			9.1E-09		9.1E-09	0.01
Thallium						
Uranium						
Acenaphthene						
Anthracene						
Benz(a)anthracene	9.2E-08	2.6E-06	3.6E-12		2.6E-06	3.11
Benzo(a)pyrene	1.0E-06	2.8E-05	4.0E-11		2.9E-05	34.27
Benzo(b)fluoranthene	1.8E-07	5.0E-06	7.1E-12		5.1E-06	6.04
Benzo(ghi)perylene						
Benzo(k)fluoranthene	1.1E-08	3.1E-07	4.4E-13		3.2E-07	0.38
Chrysene	1.0E-09	2.8E-08	4.0E-14		2.9E-08	0.03
Di-n-butyl phthalate						
Dibenz(a,h)anthracene	2.0E-07	5.7E-06	8.1E-12		5.9E-06	6.90
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	5.4E-08	1.5E-06	2.1E-12		1.5E-06	1.81
PCB-1260	1.2E-06	6.6E-06	1.1E-10		7.8E-06	9.13
Phenanthrene						
Polychlorinated biphenyl	3.5E-06	2.0E-05	3.3E-10		2.4E-05	27.67
Pyrene						
Alpha activity						
Beta activity						
Cesium-137	4.9E-09		2.8E-13	4.8E-06	4.8E-06	5.62
Neptunium-237	3.8E-08		4.0E-10	8.4E-07	8.8E-07	1.04
Uranium-235	5.9E-09		1.5E-10	4.8E-07	4.9E-07	0.58
Uranium-238	1.8E-07		3.3E-09	2.7E-06	2.9E-06	3.42
Pathway Total	6.4E-06	7.0E-05	1.3E-08	8.8E-06	8.5E-05	
Fraction of Total	7.6E-02	8.2E-01	1.6E-04	1.0E-01		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Chromium			7.0E-09		7.0E-09	0.13
Uranium						
Benz(a)anthracene	5.1E-09	1.4E-07	2.0E-13		1.5E-07	2.82
Benzo(a)pyrene	5.1E-08	1.4E-06	2.0E-12		1.5E-06	28.16
Benzo(b)fluoranthene	5.1E-09	1.4E-07	2.0E-13		1.5E-07	2.82
Benzo(k)fluoranthene	6.4E-10	1.8E-08	2.5E-14		1.8E-08	0.35

Table 1.67. Excess lifetime cancer risks for the current industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Chrysene	5.1E-11	1.4E-09	2.0E-15		1.5E-09	0.03
Fluoranthene						
PCB-1260	2.0E-09	1.1E-08	1.8E-13		1.3E-08	0.25
Phenanthrene						
Polychlorinated biphenyl	2.0E-09	1.1E-08	1.8E-13		1.3E-08	0.25
Pyrene						
Alpha activity						
Beta activity						
Uranium-235	7.3E-09		1.9E-10	6.1E-07	6.1E-07	11.76
Uranium-238	1.7E-07		3.1E-09	2.6E-06	2.8E-06	53.42
Pathway Total	2.4E-07	1.7E-06	1.0E-08	3.2E-06	5.2E-06	
Fraction of Total	4.6E-02	3.3E-01	2.0E-03	6.2E-01		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Antimony						
Beryllium	5.2E-07	2.2E-04	9.5E-11		2.2E-04	93.25
Cadmium			3.0E-11		3.0E-11	0.00
Chromium			1.8E-08		1.8E-08	0.01
Thallium						
Uranium						
Acenaphthene						
Anthracene						
Benz(a)anthracene	4.3E-08	1.2E-06	1.7E-12		1.2E-06	0.52
Benzo(a)pyrene	3.6E-07	9.9E-06	1.4E-11		1.0E-05	4.28
Benzo(b)fluoranthene	3.3E-08	9.2E-07	1.3E-12		9.5E-07	0.40
Benzo(ghi)perylene						
Benzo(k)fluoranthene	3.7E-09	1.0E-07	1.5E-13		1.1E-07	0.04
Bis(2-ethylhexyl)phthalate	2.0E-10	8.9E-09			9.1E-09	0.00
Chrysene	4.5E-10	1.2E-08	1.8E-14		1.3E-08	0.01
Di-n-butyl phthalate						
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	1.8E-08	5.0E-07	7.1E-13		5.1E-07	0.21
Phenanthrene						
Pyrene						
Alpha activity						
Beta activity						
Neptunium-237	5.6E-08		6.0E-10	1.3E-06	1.3E-06	0.55
Uranium-235	2.9E-09		7.6E-11	2.4E-07	2.5E-07	0.10
Uranium-238	8.9E-08		1.7E-09	1.4E-06	1.5E-06	0.61
Pathway Total	1.1E-06	2.4E-04	2.1E-08	2.9E-06	2.4E-04	
Fraction of Total	4.7E-03	9.8E-01	8.6E-05	1.2E-02		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Chromium			1.3E-08		1.3E-08	0.08

Table 1.67. Excess lifetime cancer risks for the current industrial worker

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Uranium						
Zinc						
Acenaphthene						
Anthracene						
Benz(a)anthracene	4.5E-08	1.2E-06	1.8E-12		1.3E-06	7.75
Benzo(a)pyrene	3.8E-07	1.1E-05	1.5E-11		1.1E-05	66.39
Benzo(b)fluoranthene	5.5E-08	1.5E-06	2.2E-12		1.6E-06	9.52
Benzo(ghi)perylene						
Benzo(k)fluoranthene	3.6E-09	9.9E-08	1.4E-13		1.0E-07	0.62
Chrysene	5.1E-10	1.4E-08	2.0E-14		1.5E-08	0.09
Fluoranthene						
Indeno(1,2,3-cd)pyrene	2.3E-08	6.4E-07	9.1E-13		6.6E-07	3.98
PCB-1260	1.5E-08	8.6E-08	1.4E-12		1.0E-07	0.61
Phenanthrene						
Polychlorinated biphenyl	1.5E-08	8.6E-08	1.4E-12		1.0E-07	0.61
Pyrene						
Alpha activity						
Beta activity						
Uranium-235	2.9E-09		7.6E-11	2.4E-07	2.5E-07	1.48
Uranium-238	8.9E-08		1.7E-09	1.4E-06	1.5E-06	8.88
Pathway Total	6.3E-07	1.4E-05	1.5E-08	1.6E-06	1.7E-05	
Fraction of Total	3.8E-02	8.6E-01	8.9E-04	9.8E-02		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Antimony						
Beryllium	2.4E-07	1.0E-04	4.4E-11		1.0E-04	84.74
Cadmium			2.0E-11		2.0E-11	0.00
Chromium			1.4E-08		1.4E-08	0.01
Iron						
Lead						
Vanadium						
Benz(a)anthracene	3.8E-08	1.1E-06	1.5E-12		1.1E-06	0.89
Benzo(a)pyrene	5.1E-07	1.4E-05	2.0E-11		1.5E-05	11.86
Benzo(b)fluoranthene	6.7E-08	1.9E-06	2.7E-12		1.9E-06	1.57
Benzo(k)fluoranthene	3.8E-09	1.1E-07	1.5E-13		1.1E-07	0.09
Chrysene	3.7E-10	1.0E-08	1.5E-14		1.1E-08	0.01
Fluoranthene						
Pyrene						
Alpha activity						
Beta activity						
Uranium-238	6.2E-08		1.2E-09	9.6E-07	1.0E-06	0.83
Pathway Total	9.3E-07	1.2E-04	1.5E-08	9.6E-07	1.2E-04	
Fraction of Total	7.5E-03	9.8E-01	1.2E-04	7.8E-03		

Table 1.67. Excess lifetime cancer risks for the current industrial worker

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Cadmium			3.5E-11		3.5E-11	0.00
Chromium			1.6E-08		1.6E-08	0.43
Benz(a)anthracene	8.9E-09	2.5E-07	3.5E-13		2.6E-07	7.00
Benzo(a)pyrene	1.0E-07	2.8E-06	4.0E-12		2.9E-06	80.01
Benzo(b)fluoranthene	8.9E-09	2.5E-07	3.5E-13		2.6E-07	7.00
Benzo(k)fluoranthene	7.7E-10	2.1E-08	3.0E-14		2.2E-08	0.60
Chrysene	1.0E-10	2.8E-09	4.0E-15		2.9E-09	0.08
Fluoranthene						
PCB-1262	1.3E-08	7.6E-08	1.2E-12		8.9E-08	2.44
Phenanthrene						
Polychlorinated biphenyl	1.3E-08	7.6E-08	1.2E-12		8.9E-08	2.44
Pyrene						
Alpha activity						
Beta activity						
Pathway Total	1.5E-07	3.5E-06	1.6E-08		3.7E-06	
Fraction of Total	4.0E-02	9.6E-01	4.3E-03			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Antimony						
Beryllium	2.8E-07	1.2E-04	5.2E-11		1.2E-04	30.60
Cadmium			3.6E-11		3.6E-11	0.00
Chromium			1.4E-08		1.4E-08	0.00
Iron						
Thallium						
Uranium						
Zinc						
Acenaphthene						
Acenaphthylene						
Anthracene						
Benz(a)anthracene	6.4E-07	1.8E-05	2.5E-11		1.8E-05	4.61
Benzo(a)pyrene	6.2E-06	1.7E-04	2.4E-10		1.8E-04	44.41
Benzo(b)fluoranthene	6.5E-07	1.8E-05	2.6E-11		1.9E-05	4.70
Benzo(ghi)perylene						
Benzo(k)fluoranthene	4.3E-08	1.2E-06	1.7E-12		1.2E-06	0.31
Bis(2-ethylhexyl)phthalate	2.0E-10	8.9E-09			9.1E-09	0.00
Chrysene	5.8E-09	1.6E-07	2.3E-13		1.7E-07	0.04
Dibenz(a,h)anthracene	1.7E-06	4.6E-05	6.6E-11		4.8E-05	11.94
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	2.3E-07	6.4E-06	9.1E-12		6.6E-06	1.66
Naphthalene						
PCB-1260	1.3E-08	7.6E-08	1.2E-12		8.9E-08	0.02
Phenanthrene						
Polychlorinated biphenyl	1.3E-08	7.6E-08	1.2E-12		8.9E-08	0.02
Pyrene						
Alpha activity						
Beta activity						
Neptunium-237	2.8E-08		3.0E-10	6.3E-07	6.6E-07	0.17
Uranium-235	8.8E-09		2.3E-10	7.3E-07	7.4E-07	0.18
Uranium-238	3.2E-07		6.0E-09	5.0E-06	5.3E-06	1.34
Pathway Total	1.0E-05	3.8E-04	2.1E-08	6.4E-06	4.0E-04	

Table 1.67. Excess lifetime cancer risks for the current industrial worker

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Fraction of Total	2.5E-02	9.6E-01	5.3E-05	1.6E-02		

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	3.5E-06	3.6E-05	1.1E-08		4.0E-05	3.48
Beryllium	2.4E-07	1.0E-04	4.3E-11		1.0E-04	8.93
Cadmium			9.0E-11		9.0E-11	0.00
Chromium			8.4E-09		8.4E-09	0.00
Cobalt						
Uranium						
Zinc						
2-Methylnaphthalene						
Acenaphthene						
Anthracene						
Benz(a)anthracene	2.6E-06	7.1E-05	1.0E-10		7.4E-05	6.47
Benzo(a)pyrene	2.3E-05	6.4E-04	9.2E-10		6.6E-04	58.20
Benzo(b)fluoranthene	2.9E-06	8.0E-05	1.1E-10		8.3E-05	7.24
Benzo(ghi)perylene						
Benzo(k)fluoranthene	2.8E-07	7.9E-06	1.1E-11		8.1E-06	0.71
Bis(2-ethylhexyl)phthalate	2.4E-10	1.1E-08			1.1E-08	0.00
Chrysene	2.8E-08	7.7E-07	1.1E-12		8.0E-07	0.07
Di-n-butyl phthalate						
Dibenz(a,h)anthracene	4.8E-06	1.3E-04	1.9E-10		1.4E-04	12.07
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	4.8E-07	1.3E-05	1.9E-11		1.4E-05	1.22
Naphthalene						
PCB-1254	3.4E-07	1.9E-06	3.1E-11		2.3E-06	0.20
PCB-1260	5.6E-09	3.2E-08	5.2E-13		3.8E-08	0.00
Phenanthrene						
Polychlorinated biphenyl	2.0E-07	1.1E-06	1.8E-11		1.3E-06	0.12
Pyrene						
Alpha activity						
Beta activity						
Cesium-137	6.6E-09		3.7E-13	6.4E-06	6.4E-06	0.56
Neptunium-237	1.4E-07		1.5E-09	3.2E-06	3.4E-06	0.29
Uranium-234	1.3E-07		3.9E-09	9.3E-10	1.4E-07	0.01
Uranium-235	9.7E-09		2.5E-10	8.0E-07	8.1E-07	0.07
Uranium-238	2.3E-07		4.4E-09	3.6E-06	3.9E-06	0.34
Pathway Total	3.9E-05	1.1E-03	3.1E-08	1.4E-05	1.1E-03	
Fraction of Total	3.4E-02	9.5E-01	2.7E-05	1.2E-02		

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	8.78E-01	3.19E-02			9.10E-01	0.01
Arsenic	8.58E+00	7.60E-02			8.66E+00	0.08
Barium	4.92E-02	2.55E-03			5.18E-02	0.00
Beryllium	1.64E-02	5.94E-03			2.23E-02	0.00
Bromide						
Cadmium	3.71E-02	1.35E-02			5.06E-02	0.00
Chromium	4.79E-01	8.70E-02			5.66E-01	0.00
Cobalt	1.15E-02	5.23E-05			1.16E-02	0.00
Iron	7.09E+00	1.72E-01			7.26E+00	0.06
Lead	1.12E+04	2.70E+02			1.14E+04	99.82
Manganese	3.35E-01	3.00E-02			3.65E-01	0.00
Nickel	5.44E-02	7.32E-04			5.52E-02	0.00
Nitrate	3.24E-03	2.35E-05			3.26E-03	0.00
Orthophosphate						
Selenium	5.75E-02	4.75E-04			5.80E-02	0.00
Tetraoxo-sulfate(1-)						
Thallium						
Vanadium	1.42E+00	5.17E-01			1.94E+00	0.02
Zinc	2.56E-01	4.66E-03			2.61E-01	0.00
1,1-Dichloroethene	7.86E-03	2.54E-04			8.11E-03	0.00
1,2-Dichloroethane				1.87E-03	1.87E-03	0.00
Bis(2-ethylhexyl)phthalate	2.55E-03	1.14E-03			3.69E-03	0.00
Bromodichloromethane	2.60E-03	5.59E-05			2.66E-03	0.00
Chloroform	6.60E-03	1.07E-03			7.67E-03	0.00
Di-n-butyl phthalate	9.78E-05	4.08E-05			1.39E-04	0.00
Di-n-octylphthalate	2.74E-03	2.97E-01			3.00E-01	0.00
Dibromochloromethane	1.96E-03	4.62E-05			2.00E-03	0.00
Tetrachloroethene	9.53E-03	1.28E-02			2.23E-02	0.00
Trichloroethene	2.64E-02	1.02E-02			3.67E-02	0.00
Vinyl chloride						
cis-1,2-Dichloroethene	1.38E-02	5.00E-04			1.43E-02	0.00
Actinium-228						
Alpha activity						
Beta activity						
Cesium-137						
Lead-210						
Lead-212						
Lead-214						
Neptunium-237						
Plutonium-239						
Potassium-40						
Technetium-99						
Thorium-228						
Thorium-230						
Thorium-234						
Uranium-234						
Uranium-235						
Uranium-238						
Pathway Total	1.12E+04	2.72E+02		1.87E-03	1.15E+04	
Fraction of Total	9.76E-01	2.37E-02		1.63E-07		

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	5.96E-01	2.16E-02			6.18E-01	0.02

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Antimony	3.40E-01	6.17E-02			4.02E-01	0.01
Arsenic	9.50E-01	8.41E-03			9.58E-01	0.03
Barium	5.87E-02	3.04E-03			6.17E-02	0.00
Beryllium	1.98E-02	7.19E-03			2.70E-02	0.00
Bromide						
Cadmium	2.90E-02	1.05E-02			3.95E-02	0.00
Chromium	2.21E-01	4.01E-02			2.61E-01	0.01
Cobalt	1.61E-02	7.31E-05			1.62E-02	0.00
Copper	5.38E-02	6.51E-04			5.45E-02	0.00
Iron	1.26E+01	3.06E-01			1.29E+01	0.39
Lead	3.20E+03	7.75E+01			3.28E+03	98.86
Manganese	6.51E-01	5.82E-02			7.09E-01	0.02
Mercury	5.37E-03	2.78E-04			5.64E-03	0.00
Nickel	9.63E-02	1.30E-03			9.76E-02	0.00
Nitrate	2.90E-01	2.10E-03			2.92E-01	0.01
Orthophosphate						
Silver	2.48E-02	5.01E-04			2.53E-02	0.00
Tetraoxo-sulfate(1-)						
Thallium						
Uranium	1.19E-02	5.09E-05			1.20E-02	0.00
Vanadium	2.15E-01	7.80E-02			2.93E-01	0.01
Zinc	2.49E-02	4.53E-04			2.54E-02	0.00
1,1-Dichloroethene	7.21E-03	2.33E-04			7.45E-03	0.00
bis(2-ethylhexyl)phthalate	4.89E-04	2.19E-04			7.08E-04	0.00
Bromodichloromethane	1.96E-03	4.20E-05			2.00E-03	0.00
Carbon tetrachloride	9.88E-01	1.21E-01		6.62E-01	1.77E+00	0.05
Chloroform	2.83E-02	4.57E-03			3.28E-02	0.00
Di-n-butyl phthalate	9.78E-05	4.08E-05			1.39E-04	0.00
Di-n-octylphthalate	4.89E-04	5.31E-02			5.35E-02	0.00
N-Nitroso-di-n-propylamine						
Tetrachloroethene	2.15E-02	2.89E-02			5.04E-02	0.00
Toluene	1.76E-03	3.60E-04		1.68E-03	3.80E-03	0.00
Trichloroethene	1.34E+01	5.17E+00			1.85E+01	0.56
Vinyl chloride						
cis-1,2-Dichloroethene	3.62E-01	1.31E-02			3.75E-01	0.01
trans-1,2-Dichloroethene	6.02E-03	2.34E-05			6.04E-03	0.00
Alpha activity						
Americium-241						
Beta activity						
Cesium-137						
Lead-210						
Lead-214						
Neptunium-237						
Plutonium-239						
Technetium-99						
Thorium-228						
Thorium-230						
Uranium-234						
Uranium-235						
Uranium-238						
Pathway Total	3.23E+03	8.35E+01		6.63E-01	3.32E+03	
Fraction of Total	9.75E-01	2.52E-02		2.00E-04		

531138

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	2.90E-03	1.25E-01			1.27E-01	0.01
Antimony	1.43E-03	3.07E-01			3.09E-01	0.03
Arsenic	8.71E-03	9.13E-02			1.00E-01	0.01
Beryllium	2.83E-05	1.22E-02			1.22E-02	0.00
Cadmium	2.17E-04	1.87E-02	3.55E-07		1.89E-02	0.00
Chromium	1.16E-03	2.49E-01			2.50E-01	0.02
Cobalt	3.30E-05	1.78E-04			2.11E-04	0.00
Iron	1.78E-02	5.10E-01			5.28E-01	0.05
Lead	3.90E+01	1.12E+03	1.28E-06		1.16E+03	99.84
Thallium						
Uranium	4.31E-03	2.18E-02			2.61E-02	0.00
Vanadium	9.96E-04	4.28E-01			4.29E-01	0.04
Zinc	4.18E-05	8.99E-04			9.41E-04	0.00
2-Methylnaphthalene						
Acenaphthene	1.02E-05	2.83E-04			2.93E-04	0.00
Acenaphthylene						
Anthracene	3.95E-06	4.46E-05			4.86E-05	0.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(ghi)perylene						
Benzo(k)fluoranthene						
Bis(2-ethylhexyl)phthalate	2.45E-06	1.11E-04			1.13E-04	0.00
Chrysene						
Di-n-butyl phthalate	3.65E-06	3.13E-05			3.50E-05	0.00
Dibenz(a,h)anthracene						
Fluoranthene	9.28E-05	2.57E-03			2.67E-03	0.00
Fluorene	1.16E-05	2.00E-04			2.12E-04	0.00
Indeno(1,2,3-cd)pyrene						
Naphthalene	8.82E-06	9.48E-05			1.04E-04	0.00
PCB-1254	4.15E-03	2.38E-02			2.79E-02	0.00
PCB-1260						
PCB-1262						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	1.09E-04	3.03E-03			3.14E-03	0.00
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-234						
Uranium-235						
Uranium-238						
Pathway Total	3.91E+01	1.12E+03	1.63E-06		1.16E+03	
Fraction of Total	3.37E-02	9.66E-01	1.41E-09			

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Di-n-butyl phthalate	5.87E-06	5.05E-05			5.64E-05	100.0
Alpha activity						
Beta activity						
Pathway Total	5.87E-06	5.05E-05			5.64E-05	
Fraction of Total	1.04E-01	8.96E-01				

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Cadmium	1.86E-04	1.60E-02	3.04E-07		1.62E-02	4.86
Chromium	1.33E-03	2.86E-01			2.88E-01	86.51
Thallium						
Uranium	4.46E-03	2.26E-02			2.70E-02	8.12
Acenaphthene	1.06E-06	2.94E-05			3.05E-05	0.01
Anthracene	3.59E-07	4.06E-06			4.42E-06	0.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
‾ ⁻nzo(ghi)perylene						
zo(k)fluoranthene						
.ysene						
Di-n-butyl phthalate	6.01E-06	5.17E-05			5.77E-05	0.02
Dibenz(a,h)anthracene						
Fluoranthene	2.57E-05	7.13E-04			7.38E-04	0.22
Fluorene	1.10E-06	1.89E-05			2.00E-05	0.01
Indeno(1,2,3-cd)pyrene						
PCB-1260						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	2.94E-05	8.14E-04			8.44E-04	0.25
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-235						
Uranium-238						
Pathway Total	6.04E-03	3.27E-01	3.04E-07		3.33E-01	
Fraction of Total	1.82E-02	9.82E-01	9.14E-07			

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	6.77E-03	2.91E-01			2.98E-01	22.73
Antimony	3.55E-03	7.63E-01			7.66E-01	58.51
Chromium	1.02E-03	2.19E-01			2.20E-01	16.77
Uranium	4.27E-03	2.16E-02			2.59E-02	1.98
Benz(a)anthracene						
Benzo(a)pyrene						
·o(b)fluoranthene						
ͻ(k)fluoranthene						

531140

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Chrysene						
Fluoranthene	1.04E-06	2.88E-05			2.98E-05	0.00
PCB-1260						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	7.87E-07	2.18E-05			2.26E-05	0.00
Alpha activity						
Beta activity						
Uranium-235						
Uranium-238						
Pathway Total	1.56E-02	1.29E+00			1.31E+00	
Fraction of Total	1.19E-02	9.88E-01				

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Antimony	1.71E-03	3.68E-01			3.70E-01	36.95
Beryllium	6.75E-05	2.90E-02			2.91E-02	2.91
Cadmium	1.47E-04	1.26E-02	2.40E-07		1.28E-02	1.28
Chromium	2.66E-03	5.72E-01			5.75E-01	57.44
Thallium						
Uranium	2.25E-03	1.14E-02			1.37E-02	1.36
Acenaphthene	4.08E-07	1.13E-05			1.17E-05	0.00
Anthracene	2.61E-07	2.95E-06			3.21E-06	0.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(ghi)perylene						
Benzo(k)fluoranthene						
Bis(2-ethylhexyl)phthalate	1.96E-06	8.86E-05			9.05E-05	0.01
Chrysene						
Di-n-butyl phthalate	1.96E-07	1.68E-06			1.88E-06	0.00
Fluoranthene	1.03E-05	2.85E-04			2.95E-04	0.03
Fluorene	6.12E-07	1.05E-05			1.11E-05	0.00
Indeno(1,2,3-cd)pyrene						
Phenanthrene						
Pyrene	6.39E-06	1.77E-04			1.84E-04	0.02
Alpha activity						
Beta activity						
Neptunium-237						
Uranium-235						
Uranium-238						
Pathway Total	6.86E-03	9.94E-01	2.40E-07		1.00E+00	
Fraction of Total	6.86E-03	9.93E-01	2.40E-07			

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	8.78E-01	3.19E-02			9.10E-01	0.01

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Arsenic	8.58E+00	7.60E-02			8.66E+00	0.08
Barium	4.92E-02	2.55E-03			5.18E-02	0.00
Beryllium	1.64E-02	5.94E-03			2.23E-02	0.00
Bromide						
Cadmium	3.71E-02	1.35E-02			5.06E-02	0.00
Chromium	4.79E-01	8.70E-02			5.66E-01	0.00
Cobalt	1.15E-02	5.23E-05			1.16E-02	0.00
Iron	7.09E+00	1.72E-01			7.26E+00	0.06
Lead	1.12E+04	2.70E+02			1.14E+04	99.82
Manganese	3.35E-01	3.00E-02			3.65E-01	0.00
Nickel	5.44E-02	7.32E-04			5.52E-02	0.00
Nitrate	3.24E-03	2.35E-05			3.26E-03	0.00
Orthophosphate						
Selenium	5.75E-02	4.75E-04			5.80E-02	0.00
Tetraoxo-sulfate(1-)						
Thallium						
Vanadium	1.42E+00	5.17E-01			1.94E+00	0.02
Zinc	2.56E-01	4.66E-03			2.61E-01	0.00
1,1-Dichloroethene	7.86E-03	2.54E-04			8.11E-03	0.00
1,2-Dichloroethane				1.87E-03	1.87E-03	0.00
Bis(2-ethylhexyl)phthalate	2.55E-03	1.14E-03			3.69E-03	0.00
Bromodichloromethane	2.60E-03	5.59E-05			2.66E-03	0.00
hloroform	6.60E-03	1.07E-03			7.67E-03	0.00
i-n-butyl phthalate	9.78E-05	4.08E-05			1.39E-04	0.00
Di-n-octylphthalate	2.74E-03	2.97E-01			3.00E-01	0.00
Dibromochloromethane	1.96E-03	4.62E-05			2.00E-03	0.00
Tetrachloroethene	9.53E-03	1.28E-02			2.23E-02	0.00
Trichloroethene	2.64E-02	1.02E-02			3.67E-02	0.00
Vinyl chloride						
cis-1,2-Dichloroethene	1.38E-02	5.00E-04			1.43E-02	0.00
Actinium-228						
Alpha activity						
Beta activity						
Cesium-137						
Lead-210						
Lead-212						
Lead-214						
Neptunium-237						
Plutonium-239						
Potassium-40						
Technetium-99						
Thorium-228						
Thorium-230						
Thorium-234						
Uranium-234						
Uranium-235						
Uranium-238						
Pathway Total	1.12E+04	2.72E+02		1.87E-03	1.15E+04	
Fraction of Total	9.76E-01	2.37E-02		1.63E-07		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
romium	1.89E-03	4.06E-01			4.08E-01	96.03

531142

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Uranium	2.25E-03	1.14E-02			1.37E-02	3.22
Zinc	1.14E-04	2.46E-03			2.58E-03	0.61
Acenaphthene	3.26E-07	9.05E-06			9.37E-06	0.00
Anthracene	1.30E-07	1.48E-06			1.61E-06	0.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(ghi)perylene						
Benzo(k)fluoranthene						
Chrysene						
Fluoranthene	1.05E-05	2.92E-04			3.02E-04	0.07
Indeno(1,2,3-cd)pyrene						
PCB-1260						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	1.11E-05	3.08E-04			3.19E-04	0.08
Alpha activity						
Beta activity						
Uranium-235						
Uranium-238						
Pathway Total	4.28E-03	4.20E-01			4.25E-01	
Fraction of Total	1.01E-02	9.90E-01				

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Antimony	4.90E-04	1.05E-01			1.06E-01	0.01
Beryllium	3.16E-05	1.36E-02			1.36E-02	0.00
Cadmium	9.94E-05	8.55E-03	1.63E-07		8.65E-03	0.00
Chromium	1.98E-03	4.26E-01			4.28E-01	0.02
Iron	1.99E-02	5.70E-01			5.90E-01	0.03
Lead	6.37E+01	1.83E+03	2.08E-06		1.89E+03	99.91
Vanadium	1.15E-03	4.96E-01			4.97E-01	0.03
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
Chrysene						
Fluoranthene	4.89E-06	1.36E-04			1.41E-04	0.00
Pyrene	6.52E-06	1.81E-04			1.87E-04	0.00
Alpha activity						
Beta activity						
Uranium-238						
Pathway Total	6.37E+01	1.83E+03	2.24E-06		1.89E+03	
Fraction of Total	3.37E-02	9.66E-01	1.19E-09			

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	5.96E-01	2.16E-02			6.18E-01	0.02
Antimony	3.40E-01	6.17E-02			4.02E-01	0.01
Arsenic	9.50E-01	8.41E-03			9.58E-01	0.03
Barium	5.87E-02	3.04E-03			6.17E-02	0.00
Beryllium	1.98E-02	7.19E-03			2.70E-02	0.00
Bromide						
Cadmium	2.90E-02	1.05E-02			3.95E-02	0.00
Chromium	2.21E-01	4.01E-02			2.61E-01	0.01
Cobalt	1.61E-02	7.31E-05			1.62E-02	0.00
Copper	5.38E-02	6.51E-04			5.45E-02	0.00
Iron	1.26E+01	3.06E-01			1.29E+01	0.39
Lead	3.20E+03	7.75E+01			3.28E+03	98.86
Manganese	6.51E-01	5.82E-02			7.09E-01	0.02
Mercury	5.37E-03	2.78E-04			5.64E-03	0.00
Nickel	9.63E-02	1.30E-03			9.76E-02	0.00
Nitrate	2.90E-01	2.10E-03			2.92E-01	0.01
Orthophosphate						
Silver	2.48E-02	5.01E-04			2.53E-02	0.00
Tetraoxo-sulfate(1-)						
Thallium						
Uranium	1.19E-02	5.09E-05			1.20E-02	0.00
Vanadium	2.15E-01	7.80E-02			2.93E-01	0.01
Zinc	2.49E-02	4.53E-04			2.54E-02	0.00
1-Dichloroethene	7.21E-03	2.33E-04			7.45E-03	0.00
;(2-ethylhexyl)phthalate	4.89E-04	2.19E-04			7.08E-04	0.00
-romodichloromethane	1.96E-03	4.20E-05			2.00E-03	0.00
Carbon tetrachloride	9.88E-01	1.21E-01		6.62E-01	1.77E+00	0.05
Chloroform	2.83E-02	4.57E-03			3.28E-02	0.00
Di-n-butyl phthalate	9.78E-05	4.08E-05			1.39E-04	0.00
Di-n-octylphthalate	4.89E-04	5.31E-02			5.35E-02	0.00
N-Nitroso-di-n-propylamine						
Tetrachloroethene	2.15E-02	2.89E-02			5.04E-02	0.00
Toluene	1.76E-03	3.60E-04		1.68E-03	3.80E-03	0.00
Trichloroethene	1.34E+01	5.17E+00			1.85E+01	0.56
Vinyl chloride						
cis-1,2-Dichloroethene	3.62E-01	1.31E-02			3.75E-01	0.01
trans-1,2-Dichloroethene	6.02E-03	2.34E-05			6.04E-03	0.00
Alpha activity						
Americium-241						
Beta activity						
Cesium-137						
Lead-210						
Lead-214						
Neptunium-237						
Plutonium-239						
Technetium-99						
Thorium-228						
Thorium-230						
Uranium-234						
Uranium-235						
Uranium-238						
Pathway Total	3.23E+03	8.35E+01		6.63E-01	3.32E+03	

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Fraction of Total	9.75E-01	2.52E-02		2.00E-04		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	6.95E-03	2.99E-01			3.06E-01	31.26
Antimony	7.34E-04	1.58E-01			1.59E-01	16.21
Cadmium	1.71E-04	1.47E-02	2.80E-07		1.49E-02	1.52
Chromium	2.31E-03	4.96E-01			4.99E-01	51.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(k)fluoranthene						
Chrysene						
Fluoranthene	1.83E-06	5.09E-05			5.27E-05	0.01
PCB-1262						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	1.96E-06	5.43E-05			5.62E-05	0.01
Alpha activity						
Beta activity						
Pathway Total	1.02E-02	9.68E-01	2.80E-07		9.78E-01	
Fraction of Total	1.04E-02	9.90E-01	2.86E-07			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Antimony	1.78E-03	3.82E-01			3.84E-01	21.95
Beryllium	3.69E-05	1.59E-02			1.59E-02	0.91
Cadmium	1.77E-04	1.53E-02	2.90E-07		1.54E-02	0.88
Chromium	2.08E-03	4.47E-01			4.49E-01	25.70
Iron	2.77E-02	7.95E-01			8.23E-01	47.11
Thallium						
Uranium	8.18E-03	4.14E-02			4.95E-02	2.83
Zinc	8.20E-05	1.76E-03			1.85E-03	0.11
Acenaphthene	8.07E-06	2.24E-04			2.32E-04	0.01
Acenaphthylene						
Anthracene	2.97E-06	3.36E-05			3.65E-05	0.00
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(ghi)perylene						
Benzo(k)fluoranthene						
Bis(2-ethylhexyl)phthalate	1.96E-06	8.86E-05			9.05E-05	0.01
Chrysene						
Dibenz(a,h)anthracene						
Fluoranthene	1.33E-04	3.70E-03			3.83E-03	0.22
Fluorene	1.47E-05	2.52E-04			2.67E-04	0.02
Indeno(1,2,3-cd)pyrene						

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Naphthalene	3.29E-08	3.54E-07			3.86E-07	0.00
PCB-1260						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	1.50E-04	4.16E-03			4.31E-03	0.25
Alpha activity						
Beta activity						
Neptunium-237						
Uranium-235						
Uranium-238						
Pathway Total	4.04E-02	1.71E+00	2.90E-07		1.75E+00	
Fraction of Total	2.31E-02	9.77E-01	1.66E-07			

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Aluminum	3.56E-03	1.53E-01			1.57E-01	12.90
ntimony	1.21E-03	2.61E-01			2.62E-01	21.57
rsenic	2.15E-02	2.26E-01			2.47E-01	20.35
Beryllium	3.08E-05	1.32E-02			1.33E-02	1.09
Cadmium	4.43E-04	3.81E-02	7.24E-07		3.85E-02	3.17
Chromium	1.23E-03	2.64E-01			2.65E-01	21.84
Cobalt	3.87E-05	2.08E-04			2.46E-04	0.02
Uranium	5.92E-03	2.99E-02			3.58E-02	2.95
Zinc	4.89E-05	1.05E-03			1.10E-03	0.09
2-Methylnaphthalene						
Acenaphthene	2.74E-05	7.61E-04			7.89E-04	0.06
Anthracene	2.38E-05	2.69E-04			2.93E-04	0.02
Benz(a)anthracene						
Benzo(a)pyrene						
Benzo(b)fluoranthene						
Benzo(ghi)perylene						
Benzo(k)fluoranthene						
Bis(2-ethylhexyl)phthalate	2.45E-06	1.11E-04			1.13E-04	0.01
Chrysene						
Di-n-butyl phthalate	1.00E-06	8.63E-06			9.63E-06	0.00
Dibenz(a,h)anthracene						
Fluoranthene	5.52E-04	1.53E-02			1.59E-02	1.31
Fluorene	3.82E-05	6.58E-04			6.96E-04	0.06
Indeno(1,2,3-cd)pyrene						
Naphthalene	1.99E-05	2.14E-04			2.34E-04	0.02
PCB-1254	2.35E-02	1.35E-01			1.58E-01	13.02
PCB-1260						
Phenanthrene						
Polychlorinated biphenyl						
Pyrene	6.44E-04	1.79E-02			1.85E-02	1.52
Alpha activity						
Beta activity						
Cesium-137						
Neptunium-237						
Uranium-234						
Uranium-235						
ranium-238						
athway Total	5.88E-02	1.16E+00	7.24E-07		1.21E+00	

Table 1.68. Systemic toxicity for the future industrial worker

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Chemical Total	% of Total
Fraction of Total	4.84E-02	9.52E-01	5.96E-07			

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	2.46E+00	4.46E-02		1.27E+00			3.78E+00	0.01
Arsenic	2.40E+01	1.06E-01		1.27E+01			3.69E+01	0.08
Barium	1.38E-01	3.58E-03		7.18E-02			2.13E-01	0.00
Beryllium	4.59E-02	8.32E-03		2.38E-02			7.80E-02	0.00
Bromide								
Cadmium	1.04E-01	1.89E-02		3.70E-02			1.60E-01	0.00
Chromium	1.34E+00	1.22E-01		6.93E-01			2.16E+00	0.00
Cobalt	3.23E-02	7.32E-05		1.77E-02			5.01E-02	0.00
Iron	1.99E+01	2.40E-01		1.03E+01			3.04E+01	0.06
Lead	3.13E+04	3.78E+02		1.62E+04			4.78E+04	99.82
Manganese	9.39E-01	4.20E-02		1.89E-01			1.17E+00	0.00
Nickel	1.52E-01	1.02E-03		8.96E-02			2.43E-01	0.00
Nitrate	9.07E-03	3.29E-05					9.11E-03	0.00
Orthophosphate								
Selenium	1.61E-01	6.65E-04		1.06E-01			2.68E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Vanadium	3.98E+00	7.23E-01		2.06E+00			6.77E+00	0.01
Zinc	7.18E-01	6.52E-03		6.41E-01			1.37E+00	0.00
1,1-Dichloroethene	2.20E-02	3.55E-04		3.32E-02			5.56E-02	0.00
1,2-Dichloroethane					2.62E-03	2.84E-02	3.10E-02	0.00
Bis(2-ethylhexyl)phthalate	7.14E-03	1.60E-03		3.80E-03			1.25E-02	0.00
Bromodichloromethane	7.29E-03	7.83E-05		8.61E-03			1.60E-02	0.00
Chloroform	1.85E-02	1.49E-03		2.36E-02			4.36E-02	0.00
Di-n-butyl phthalate	2.74E-04	5.72E-05		1.46E-04			4.77E-04	0.00
Di-n-octylphthalate	7.66E-03	4.16E-01		3.96E-03			4.27E-01	0.00
Dibromochloromethane	5.48E-03	6.46E-05		6.02E-03			1.16E-02	0.00
Tetrachloroethene	2.67E-02	1.79E-02		2.29E-02			6.75E-02	0.00
Trichloroethene	7.40E-02	1.43E-02		7.11E-02			1.59E-01	0.00
Vinyl chloride								
cis-1,2-Dichloroethene	3.85E-02	7.00E-04		5.34E-02			9.26E-02	0.00
Actinium-228								
Alpha activity								
Beta activity								
Cesium-137								
Lead-210								
Lead-212								
Lead-214								
Neptunium-237								
Plutonium-239								
Potassium-40								
Technetium-99								
Thorium-228								
Thorium-230								
Thorium-234								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	3.13E+04	3.80E+02		1.62E+04	2.62E-03	2.84E-02	4.79E+04	
Fraction of Total	6.54E-01	7.93E-03		3.38E-01	5.46E-08	5.93E-07		

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	1.67E+00	3.03E-02		8.64E-01			2.56E+00	0.02

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	9.52E-01	8.64E-02		5.05E-01			1.54E+00	0.01
Arsenic	2.66E+00	1.18E-02		1.41E+00			4.08E+00	0.03
Barium	1.64E-01	4.26E-03		8.55E-02			2.54E-01	0.00
Beryllium	5.55E-02	1.01E-02		2.88E-02			9.44E-02	0.00
Bromide								
Cadmium	8.11E-02	1.47E-02		2.89E-02			1.25E-01	0.00
Chromium	6.18E-01	5.61E-02		3.19E-01			9.94E-01	0.01
Cobalt	4.51E-02	1.02E-04		2.48E-02			7.00E-02	0.00
Copper	1.51E-01	9.11E-04		9.49E-02			2.47E-01	0.00
Iron	3.54E+01	4.28E-01		1.83E+01			5.41E+01	0.39
Lead	8.97E+03	1.08E+02		4.64E+03			1.37E+04	98.78
Manganese	1.82E+00	8.15E-02		3.68E-01			2.27E+00	0.02
Mercury	1.50E-02	3.90E-04		1.42E-02			2.96E-02	0.00
Nickel	2.70E-01	1.81E-03		1.58E-01			4.30E-01	0.00
Nitrate	8.11E-01	2.94E-03					8.14E-01	0.01
Orthophosphate								
Silver	6.95E-02	7.01E-04		3.59E-02			1.06E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	3.34E-02	7.13E-05		1.73E-02			5.07E-02	0.00
Vanadium	6.02E-01	1.09E-01		3.12E-01			1.02E+00	0.01
Zinc	6.98E-02	6.34E-04		6.23E-02			1.33E-01	0.00
1,1-Dichloroethene	2.02E-02	3.26E-04		3.05E-02			5.10E-02	0.[illegible]
Bis(2-ethylhexyl)phthalate	1.37E-03	3.06E-04		7.29E-04			2.40E-03	0.[illegible]
Bromodichloromethane	5.48E-03	5.89E-05		6.47E-03			1.20E-02	0.0[illegible]
Carbon tetrachloride	2.77E+00	1.70E-01		2.15E+00	9.26E-01	1.01E+01	1.61E+01	0.12
Chloroform	7.91E-02	6.39E-03		1.01E-01			1.87E-01	0.00
Di-n-butyl phthalate	2.74E-04	5.72E-05		1.46E-04			4.77E-04	0.00
Di-n-octylphthalate	1.37E-03	7.43E-02		7.07E-04			7.64E-02	0.00
N-Nitroso-di-n-propylamine								
Tetrachloroethene	6.02E-02	4.04E-02		5.16E-02			1.52E-01	0.00
Toluene	4.93E-03	5.03E-04		4.02E-03	2.36E-03	2.56E-02	3.74E-02	0.00
Trichloroethene	3.74E+01	7.24E+00		3.60E+01			8.06E+01	0.58
Vinyl chloride								
cis-1,2-Dichloroethene	1.01E+00	1.84E-02		1.40E+00			2.44E+00	0.02
trans-1,2-Dichloroethene	1.69E-02	3.28E-05		1.06E-01			1.23E-01	0.00
Alpha activity								
Americium-241								
Beta activity								
Cesium-137								
Lead-210								
Lead-214								
Neptunium-237								
Plutonium-239								
Technetium-99								
Thorium-228								
Thorium-230								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	9.05E+03	1.17E+02		4.70E+03	9.28E-01	1.01E+01	1.39E+04	
Fraction of Total	6.52E-01	8.42E-03		3.39E-01	6.69E-05	7.26E-04		

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	8.11E-03	1.42E-01		1.68E+00			1.83E+00	0.01
Antimony	4.00E-03	3.50E-01		8.60E-01			1.21E+00	0.01
Arsenic	2.44E-02	1.04E-01		5.24E+00			5.37E+00	0.02
Beryllium	7.91E-05	1.38E-02		1.65E-02			3.05E-02	0.00
Cadmium	6.08E-04	2.13E-02	4.97E-07	1.92E-01			2.14E-01	0.00
Chromium	3.25E-03	2.84E-01		6.72E-01			9.59E-01	0.00
Cobalt	9.25E-05	2.02E-04		2.09E-02			2.12E-02	0.00
Iron	4.98E-02	5.81E-01		1.03E+01			1.10E+01	0.05
Lead	1.09E+02	1.28E+03	1.79E-06	2.27E+04			2.41E+04	99.89
Thallium								
Uranium	1.21E-02	2.48E-02		2.50E+00			2.54E+00	0.01
Vanadium	2.79E-03	4.88E-01		5.80E-01			1.07E+00	0.00
Zinc	1.17E-04	1.02E-03		4.88E-02			5.00E-02	0.00
2-Methylnaphthalene								
Acenaphthene	2.85E-05	3.22E-04		6.46E-03			6.81E-03	0.00
Acenaphthylene								
Anthracene	1.10E-05	5.09E-05		2.48E-03			2.54E-03	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	6.85E-06	1.26E-04		1.48E-03			1.61E-03	0.00
rysene								
-n-butyl phthalate	1.02E-05	3.57E-05		2.20E-03			2.25E-03	0.00
Dibenz(a,h)anthracene								
Fluoranthene	2.60E-04	2.93E-03		5.61E-02			5.93E-02	0.00
Fluorene	3.26E-05	2.28E-04		7.30E-03			7.56E-03	0.00
Indeno(1,2,3-cd)pyrene								
Naphthalene	2.47E-05	1.08E-04		6.95E-03			7.09E-03	0.00
PCB-1254	1.16E-02	2.71E-02		2.43E+00			2.47E+00	0.01
PCB-1260								
PCB-1262								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	3.06E-04	3.45E-03		6.60E-02			6.97E-02	0.00
Alpha activity								
Beta activity								
Cesium-137								
Neptunium-237								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	1.09E+02	1.28E+03	2.28E-06	2.27E+04			2.41E+04	
Fraction of Total	4.54E-03	5.30E-02	9.47E-11	9.42E-01				

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Di-n-butyl phthalate	1.64E-05	5.75E-05		3.55E-03			3.62E-03	100.0
Alpha activity								
Beta activity								
Pathway Total	1.64E-05	5.75E-05		3.55E-03			3.62E-03	
Fraction of Total	4.54E-03	1.59E-02		9.80E-01				

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Cadmium	5.21E-04	1.82E-02	4.25E-07	1.65E-01			1.83E-01	4.64
Chromium	3.73E-03	3.26E-01		7.72E-01			1.10E+00	27.87
Thallium								
Uranium	1.25E-02	2.57E-02		2.59E+00			2.63E+00	66.47
Acenaphthene	2.97E-06	3.35E-05		6.73E-04			7.09E-04	0.02
Anthracene	1.00E-06	4.63E-06		2.25E-04			2.31E-04	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Chrysene								
Di-n-butyl phthalate	1.68E-05	5.89E-05		3.63E-03			3.71E-03	0.09
Dibenz(a,h)anthracene								
Fluoranthene	7.19E-05	8.12E-04		1.55E-02			1.64E-02	0.41
Fluorene	3.08E-06	2.16E-05		6.91E-04			7.16E-04	0.02
Indeno(1,2,3-cd)pyrene								
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	8.22E-05	9.28E-04		1.77E-02			1.87E-02	0.47
Alpha activity								
Beta activity								
Cesium-137								
Neptunium-237								
Uranium-235								
Uranium-238								
Pathway Total	1.69E-02	3.72E-01	4.25E-07	3.57E+00			3.96E+00	
Fraction of Total	4.28E-03	9.41E-02	1.08E-07	9.02E-01				

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	1.89E-02	3.31E-01		3.94E+00			4.29E+00	40.20
Antimony	9.93E-03	8.69E-01		2.13E+00			3.01E+00	28.27
Chromium	2.85E-03	2.49E-01		5.90E-01			8.41E-01	7.89
Uranium	1.20E-02	2.46E-02		2.48E+00			2.52E+00	23.63
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								

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Table 1.69a. Systemic toxicity for the future adult residential user

--------------------------------- SECTOR=Far East/Northeast MEDIA=Surface soil ---------------------------------
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Chrysene								
Fluoranthene	2.91E-06	3.28E-05		6.27E-04			6.63E-04	0.01
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	2.20E-06	2.49E-05		4.76E-04			5.03E-04	0.00
Alpha activity								
Beta activity								
Uranium-235								
Uranium-238								
Pathway Total	4.37E-02	1.47E+00		9.14E+00			1.07E+01	
Fraction of Total	4.10E-03	1.38E-01		8.58E-01				

--------------------------------- SECTOR=Far North/Northwest MEDIA=Surface soil ---------------------------------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	4.79E-03	4.20E-01		1.03E+00			1.45E+00	27.89
yllium	1.89E-04	3.31E-02		3.95E-02			7.28E-02	1.40
mium	4.11E-04	1.44E-02	3.36E-07	1.30E-01			1.45E-01	2.78
romium	7.45E-03	6.52E-01		1.54E+00			2.20E+00	42.22
Thallium								
Uranium	6.31E-03	1.30E-02		1.31E+00			1.33E+00	25.48
Acenaphthene	1.14E-06	1.29E-05		2.59E-04			2.73E-04	0.01
Anthracene	7.31E-07	3.36E-06		1.64E-04			1.68E-04	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	5.48E-06	1.01E-04		1.18E-03			1.29E-03	0.02
Chrysene								
Di-n-butyl phthalate	5.48E-07	1.92E-06		1.18E-04			1.21E-04	0.00
Fluoranthene	2.88E-05	3.25E-04		6.21E-03			6.56E-03	0.13
Fluorene	1.71E-06	1.20E-05		3.84E-04			3.98E-04	0.01
Indeno(1,2,3-cd)pyrene								
Phenanthrene								
Pyrene	1.79E-05	2.02E-04		3.86E-03			4.08E-03	0.08
Alpha activity								
Beta activity								
Neptunium-237								
Uranium-235								
Uranium-238								
Pathway Total	1.92E-02	1.13E+00	3.36E-07	4.06E+00			5.22E+00	
Fraction of Total	3.68E-03	2.17E-01	6.44E-08	7.79E-01				

--------------------------------------- SECTOR=McNairy MEDIA=Ground water ---------------------------------------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
inum	2.46E+00	4.46E-02		1.27E+00			3.78E+00	0.01

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Arsenic	2.40E+01	1.06E-01		1.27E+01			3.69E+01	0.08
Barium	1.38E-01	3.58E-03		7.18E-02			2.13E-01	0.00
Beryllium	4.59E-02	8.32E-03		2.38E-02			7.80E-02	0.00
Bromide								
Cadmium	1.04E-01	1.89E-02		3.70E-02			1.60E-01	0.00
Chromium	1.34E+00	1.22E-01		6.93E-01			2.16E+00	0.00
Cobalt	3.23E-02	7.32E-05		1.77E-02			5.01E-02	0.00
Iron	1.99E+01	2.40E-01		1.03E+01			3.04E+01	0.06
Lead	3.13E+04	3.78E+02		1.62E+04			4.78E+04	99.82
Manganese	9.39E-01	4.20E-02		1.89E-01			1.17E+00	0.00
Nickel	1.52E-01	1.02E-03		8.96E-02			2.43E-01	0.00
Nitrate	9.07E-03	3.29E-05					9.11E-03	0.00
Orthophosphate								
Selenium	1.61E-01	6.65E-04		1.06E-01			2.68E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Vanadium	3.98E+00	7.23E-01		2.06E+00			6.77E+00	0.01
Zinc	7.18E-01	6.52E-03		6.41E-01			1.37E+00	0.00
1,1-Dichloroethene	2.20E-02	3.55E-04		3.32E-02			5.56E-02	0.00
1,2-Dichloroethane					2.62E-03	2.84E-02	3.10E-02	0.00
Bis(2-ethylhexyl)phthalate	7.14E-03	1.60E-03		3.80E-03			1.25E-02	0.00
Bromodichloromethane	7.29E-03	7.83E-05		8.61E-03			1.60E-02	0.00
Chloroform	1.85E-02	1.49E-03		2.36E-02			4.36E-02	0.[illegible]
Di-n-butyl phthalate	2.74E-04	5.72E-05		1.46E-04			4.77E-04	0.[illegible]
Di-n-octylphthalate	7.66E-03	4.16E-01		3.96E-03			4.27E-01	0.0[illegible]
Dibromochloromethane	5.48E-03	6.46E-05		6.02E-03			1.16E-02	0.00
Tetrachloroethene	2.67E-02	1.79E-02		2.29E-02			6.75E-02	0.00
Trichloroethene	7.40E-02	1.43E-02		7.11E-02			1.59E-01	0.00
Vinyl chloride								
cis-1,2-Dichloroethene	3.85E-02	7.00E-04		5.34E-02			9.26E-02	0.00
Actinium-228								
Alpha activity								
Beta activity								
Cesium-137								
Lead-210								
Lead-212								
Lead-214								
Neptunium-237								
Plutonium-239								
Potassium-40								
Technetium-99								
Thorium-228								
Thorium-230								
Thorium-234								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	3.13E+04	3.80E+02		1.62E+04	2.62E-03	2.84E-02	4.79E+04	
Fraction of Total	6.54E-01	7.93E-03		3.38E-01	5.46E-08	5.93E-07		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Chromium	5.29E-03	4.63E-01		1.09E+00			1.56E+00	51.

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Uranium	6.31E-03	1.30E-02		1.31E+00			1.33E+00	43.68
Zinc	3.21E-04	2.80E-03		1.34E-01			1.37E-01	4.50
Acenaphthene	9.13E-07	1.03E-05		2.07E-04			2.18E-04	0.01
Anthracene	3.65E-07	1.68E-06		8.19E-05			8.39E-05	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Chrysene								
Fluoranthene	2.95E-05	3.33E-04		6.36E-03			6.72E-03	0.22
Indeno(1,2,3-cd)pyrene								
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	3.11E-05	3.51E-04		6.70E-03			7.08E-03	0.23
Alpha activity								
Beta activity								
Uranium-235								
Uranium-238								
Pathway Total	1.20E-02	4.79E-01		2.55E+00			3.04E+00	
Fraction of Total	3.94E-03	1.57E-01		8.39E-01				

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	1.37E-03	1.20E-01		2.95E-01			4.16E-01	0.00
Beryllium	8.86E-05	1.55E-02		1.85E-02			3.41E-02	0.00
Cadmium	2.78E-04	9.74E-03	2.27E-07	8.81E-02			9.81E-02	0.00
Chromium	5.55E-03	4.86E-01		1.15E+00			1.64E+00	0.00
Iron	5.57E-02	6.50E-01		1.15E+01			1.23E+01	0.03
Lead	1.78E+02	2.08E+03	2.91E-06	3.70E+04			3.93E+04	99.96
Vanadium	3.23E-03	5.66E-01		6.72E-01			1.24E+00	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Chrysene								
Fluoranthene	1.37E-05	1.55E-04		2.96E-03			3.12E-03	0.00
Pyrene	1.83E-05	2.06E-04		3.94E-03			4.17E-03	0.00
Alpha activity								
Beta activity								
Uranium-238								
Pathway Total	1.78E+02	2.08E+03	3.14E-06	3.70E+04			3.93E+04	
Fraction of Total	4.54E-03	5.30E-02	7.99E-11	9.42E-01				

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	1.67E+00	3.03E-02		8.64E-01			2.56E+00	0.02
Antimony	9.52E-01	8.64E-02		5.05E-01			1.54E+00	0.01
Arsenic	2.66E+00	1.18E-02		1.41E+00			4.08E+00	0.03
Barium	1.64E-01	4.26E-03		8.55E-02			2.54E-01	0.00
Beryllium	5.55E-02	1.01E-02		2.88E-02			9.44E-02	0.00
Bromide								
Cadmium	8.11E-02	1.47E-02		2.89E-02			1.25E-01	0.00
Chromium	6.18E-01	5.61E-02		3.19E-01			9.94E-01	0.01
Cobalt	4.51E-02	1.02E-04		2.48E-02			7.00E-02	0.00
Copper	1.51E-01	9.11E-04		9.49E-02			2.47E-01	0.00
Iron	3.54E+01	4.28E-01		1.83E+01			5.41E+01	0.39
Lead	8.97E+03	1.08E+02		4.64E+03			1.37E+04	98.78
Manganese	1.82E+00	8.15E-02		3.68E-01			2.27E+00	0.02
Mercury	1.50E-02	3.90E-04		1.42E-02			2.96E-02	0.00
Nickel	2.70E-01	1.81E-03		1.58E-01			4.30E-01	0.00
Nitrate	8.11E-01	2.94E-03					8.14E-01	0.01
Orthophosphate								
Silver	6.95E-02	7.01E-04		3.59E-02			1.06E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	3.34E-02	7.13E-05		1.73E-02			5.07E-02	0.00
Vanadium	6.02E-01	1.09E-01		3.12E-01			1.02E+00	0.01
Zinc	6.98E-02	6.34E-04		6.23E-02			1.33E-01	0.00
1,1-Dichloroethene	2.02E-02	3.26E-04		3.05E-02			5.10E-02	0.0
Bis(2-ethylhexyl)phthalate	1.37E-03	3.06E-04		7.29E-04			2.40E-03	0.
Bromodichloromethane	5.48E-03	5.89E-05		6.47E-03			1.20E-02	0.0
Carbon tetrachloride	2.77E+00	1.70E-01		2.15E+00	9.26E-01	1.01E+01	1.61E+01	0.12
Chloroform	7.91E-02	6.39E-03		1.01E-01			1.87E-01	0.00
Di-n-butyl phthalate	2.74E-04	5.72E-05		1.46E-04			4.77E-04	0.00
Di-n-octylphthalate	1.37E-03	7.43E-02		7.07E-04			7.64E-02	0.00
N-Nitroso-di-n-propylamine								
Tetrachloroethene	6.02E-02	4.04E-02		5.16E-02			1.52E-01	0.00
Toluene	4.93E-03	5.03E-04		4.02E-03	2.36E-03	2.56E-02	3.74E-02	0.00
Trichloroethene	3.74E+01	7.24E+00		3.60E+01			8.06E+01	0.58
Vinyl chloride								
cis-1,2-Dichloroethene	1.01E+00	1.84E-02		1.40E+00			2.44E+00	0.02
trans-1,2-Dichloroethene	1.69E-02	3.28E-05		1.06E-01			1.23E-01	0.00
Alpha activity								
Americium-241								
Beta activity								
Cesium-137								
Lead-210								
Lead-214								
Neptunium-237								
Plutonium-239								
Technetium-99								
Thorium-228								
Thorium-230								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	9.05E+03	1.17E+02		4.70E+03	9.28E-01	1.01E+01	1.39E+04	

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Fraction of Total	6.52E-01	8.42E-03		3.39E-01	6.69E-05	7.26E-04		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	1.95E-02	3.40E-01		4.04E+00			4.40E+00	61.93
Antimony	2.05E-03	1.80E-01		4.42E-01			6.23E-01	8.77
Cadmium	4.79E-04	1.68E-02	3.92E-07	1.52E-01			1.69E-01	2.38
Chromium	6.47E-03	5.66E-01		1.34E+00			1.91E+00	26.89
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Chrysene								
Fluoranthene	5.14E-06	5.80E-05		1.11E-03			1.17E-03	0.02
PCB-1262								
Phenanthrene								
ychlorinated biphenyl								
ene	5.48E-06	6.19E-05		1.18E-03			1.25E-03	0.02
Alpha activity								
Beta activity								
Pathway Total	2.85E-02	1.10E+00	3.92E-07	5.98E+00			7.11E+00	
Fraction of Total	4.00E-03	1.55E-01	5.51E-08	8.41E-01				

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	4.97E-03	4.35E-01		1.07E+00			1.51E+00	5.88
Beryllium	1.03E-04	1.81E-02		2.16E-02			3.98E-02	0.16
Cadmium	4.97E-04	1.74E-02	4.06E-07	1.57E-01			1.75E-01	0.68
Chromium	5.82E-03	5.09E-01		1.21E+00			1.72E+00	6.71
Iron	7.77E-02	9.06E-01		1.61E+01			1.71E+01	66.63
Thallium								
Uranium	2.29E-02	4.71E-02		4.75E+00			4.82E+00	18.79
Zinc	2.30E-04	2.01E-03		9.58E-02			9.80E-02	0.38
Acenaphthene	2.26E-05	2.55E-04		5.12E-03			5.40E-03	0.02
Acenaphthylene								
Anthracene	8.30E-06	3.82E-05		1.86E-03			1.91E-03	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	5.48E-06	1.01E-04		1.18E-03			1.29E-03	0.01
Chrysene								
Dibenz(a,h)anthracene								
oranthene	3.73E-04	4.22E-03		8.06E-02			8.52E-02	0.33
rene	4.11E-05	2.88E-04		9.21E-03			9.54E-03	0.04
no(1,2,3-cd)pyrene								

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=Southwest MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Naphthalene	9.21E-08	4.03E-07		2.59E-05			2.64E-05	0.00
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	4.20E-04	4.74E-03		9.06E-02			9.58E-02	0.37
Alpha activity								
Beta activity								
Neptunium-237								
Uranium-235								
Uranium-238								
Pathway Total	1.13E-01	1.95E+00	4.06E-07	2.36E+01			2.56E+01	
Fraction of Total	4.41E-03	7.58E-02	1.58E-08	9.20E-01				

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	9.97E-03	1.74E-01		2.07E+00			2.26E+00	6.20
Antimony	3.40E-03	2.97E-01		7.30E-01			1.03E+00	2.8
Arsenic	6.02E-02	2.57E-01		1.29E+01			1.33E+01	36.4
Beryllium	8.62E-05	1.51E-02		1.80E-02			3.32E-02	0.09
Cadmium	1.24E-03	4.34E-02	1.01E-06	3.92E-01			4.37E-01	1.20
Chromium	3.44E-03	3.01E-01		7.12E-01			1.02E+00	2.79
Cobalt	1.08E-04	2.37E-04		2.44E-02			2.48E-02	0.07
Uranium	1.66E-02	3.41E-02		3.44E+00			3.49E+00	9.58
Zinc	1.37E-04	1.20E-03		5.71E-02			5.85E-02	0.16
2-Methylnaphthalene								
Acenaphthene	7.68E-05	8.68E-04		1.74E-02			1.84E-02	0.05
Anthracene	6.66E-05	3.07E-04		1.49E-02			1.53E-02	0.04
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	6.85E-06	1.26E-04		1.48E-03			1.61E-03	0.00
Chrysene								
Di-n-butyl phthalate	2.81E-06	9.83E-06		6.06E-04			6.19E-04	0.00
Dibenz(a,h)anthracene								
Fluoranthene	1.55E-03	1.75E-02		3.34E-01			3.53E-01	0.97
Fluorene	1.07E-04	7.49E-04		2.40E-02			2.49E-02	0.07
Indeno(1,2,3-cd)pyrene								
Naphthalene	5.57E-05	2.44E-04		1.57E-02			1.60E-02	0.04
PCB-1254	6.58E-02	1.53E-01		1.37E+01			1.40E+01	38.34
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	1.80E-03	2.04E-02		3.89E-01			4.11E-01	1.13
Alpha activity								
Beta activity								
Cesium-137								
Neptunium-237								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	1.65E-01	1.32E+00	1.01E-06	3.49E+01			3.64E+01	

Table 1.69a. Systemic toxicity for the future adult residential user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Fraction of Total	4.52E-03	3.62E-02	2.78E-08	9.59E-01				

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	5.94E+00	8.55E-02		4.00E+00			1.00E+01	0.01
Arsenic	5.80E+01	2.04E-01		4.01E+01			9.83E+01	0.08
Barium	3.33E-01	6.85E-03		2.26E-01			5.65E-01	0.00
Beryllium	1.11E-01	1.59E-02		7.50E-02			2.02E-01	0.00
Bromide								
Cadmium	2.51E-01	3.61E-02		1.16E-01			4.03E-01	0.00
Chromium	3.24E+00	2.33E-01		2.18E+00			5.65E+00	0.00
Cobalt	7.79E-02	1.40E-04		5.58E-02			1.34E-01	0.00
Iron	4.79E+01	4.60E-01		3.23E+01			8.07E+01	0.06
Lead	7.55E+04	7.25E+02		5.09E+04			1.27E+05	99.82
Manganese	2.27E+00	8.04E-02		5.96E-01			2.94E+00	0.00
Nickel	3.68E-01	1.96E-03		2.82E-01			6.52E-01	0.00
Nitrate	2.19E-02	6.31E-05					2.20E-02	0.00
Orthophosphate								
Selenium	3.89E-01	1.27E-03		3.34E-01			7.24E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Vanadium	9.62E+00	1.38E+00		6.49E+00			1.75E+01	0.01
Zinc	1.73E+00	1.25E-02		2.02E+00			3.76E+00	0.00
1,1-Dichloroethene	5.31E-02	6.81E-04		1.04E-01			1.58E-01	0.00
1,2-Dichloroethane					1.26E-02	1.37E-01	1.50E-01	0.00
Bis(2-ethylhexyl)phthalate	1.72E-02	3.06E-03		1.19E-02			3.22E-02	0.00
Bromodichloromethane	1.76E-02	1.50E-04		2.71E-02			4.48E-02	0.00
Chloroform	4.46E-02	2.86E-03		7.42E-02			1.22E-01	0.[illegible]
Di-n-butyl phthalate	6.61E-04	1.10E-04		4.58E-04			1.23E-03	0.[illegible]
Di-n-octylphthalate	1.85E-02	7.96E-01		1.24E-02			8.27E-01	0.00
Dibromochloromethane	1.32E-02	1.24E-04		1.89E-02			3.23E-02	0.00
Tetrachloroethene	6.44E-02	3.43E-02		7.20E-02			1.71E-01	0.00
Trichloroethene	1.79E-01	2.74E-02		2.24E-01			4.30E-01	0.00
Vinyl chloride								
cis-1,2-Dichloroethene	9.30E-02	1.34E-03		1.68E-01			2.62E-01	0.00
Actinium-228								
Alpha activity								
Beta activity								
Cesium-137								
Lead-210								
Lead-212								
Lead-214								
Neptunium-237								
Plutonium-239								
Potassium-40								
Technetium-99								
Thorium-228								
Thorium-230								
Thorium-234								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	7.56E+04	7.28E+02		5.10E+04	1.26E-02	1.37E-01	1.27E+05	
Fraction of Total	5.94E-01	5.72E-03		4.00E-01	9.92E-08	1.08E-06		

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	4.03E+00	5.80E-02		2.72E+00			6.81E+00	0.[illegible]

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	2.30E+00	1.66E-01		1.59E+00			4.05E+00	0.01
Arsenic	6.42E+00	2.25E-02		4.44E+00			1.09E+01	0.03
Barium	3.97E-01	8.16E-03		2.69E-01			6.74E-01	0.00
Beryllium	1.34E-01	1.93E-02		9.07E-02			2.44E-01	0.00
Bromide								
Cadmium	1.96E-01	2.82E-02		9.08E-02			3.15E-01	0.00
Chromium	1.49E+00	1.07E-01		1.00E+00			2.60E+00	0.01
Cobalt	1.09E-01	1.96E-04		7.79E-02			1.87E-01	0.00
Copper	3.64E-01	1.75E-03		2.99E-01			6.64E-01	0.00
Iron	8.54E+01	8.20E-01		5.75E+01			1.44E+02	0.39
Lead	2.16E+04	2.08E+02		1.46E+04			3.64E+04	98.71
Manganese	4.40E+00	1.56E-01		1.16E+00			5.71E+00	0.02
Mercury	3.63E-02	7.46E-04		4.46E-02			8.16E-02	0.00
Nickel	6.51E-01	3.47E-03		4.98E-01			1.15E+00	0.00
Nitrate	1.96E+00	5.64E-03					1.96E+00	0.01
Orthophosphate								
Silver	1.68E-01	1.34E-03		1.13E-01			2.82E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	8.06E-02	1.37E-04		5.43E-02			1.35E-01	0.00
Vanadium	1.45E+00	2.09E-01		9.81E-01			2.64E+00	0.01
Zinc	1.69E-01	1.21E-03		1.96E-01			3.66E-01	0.00
-Dichloroethene	4.88E-02	6.25E-04		9.59E-02			1.45E-01	0.00
(2-ethylhexyl)phthalate	3.31E-03	5.86E-04		2.29E-03			6.19E-03	0.00
romodichloromethane	1.32E-02	1.13E-04		2.04E-02			3.37E-02	0.00
Carbon tetrachloride	6.68E+00	3.25E-01		6.76E+00	4.47E+00	4.86E+01	6.68E+01	0.18
Chloroform	1.91E-01	1.22E-02		3.18E-01			5.21E-01	0.00
Di-n-butyl phthalate	6.61E-04	1.10E-04		4.58E-04			1.23E-03	0.00
Di-n-octylphthalate	3.31E-03	1.42E-01		2.22E-03			1.48E-01	0.00
N-Nitroso-di-n-propylamine								
Tetrachloroethene	1.45E-01	7.74E-02		1.62E-01			3.85E-01	0.00
Toluene	1.19E-02	9.64E-04		1.26E-02	1.14E-02	1.24E-01	1.60E-01	0.00
Trichloroethene	9.03E+01	1.39E+01		1.13E+02			2.17E+02	0.59
Vinyl chloride								
cis-1,2-Dichloroethene	2.45E+00	3.52E-02		4.42E+00			6.90E+00	0.02
trans-1,2-Dichloroethene	4.07E-02	6.27E-05		3.34E-01			3.75E-01	0.00
Alpha activity								
Americium-241								
Beta activity								
Cesium-137								
Lead-210								
Lead-214								
Neptunium-237								
Plutonium-239								
Technetium-99								
Thorium-228								
Thorium-230								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	2.19E+04	2.24E+02		1.48E+04	4.48E+00	4.87E+01	3.69E+04	
Fraction of Total	5.92E-01	6.06E-03		4.01E-01	1.21E-04	1.32E-03		

Table 1.69b. Systemic toxicity for the future child residential user

-- SECTOR=WAG 6 MEDIA=Surface soil --

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	7.83E-02	7.30E-01		5.31E+00			6.12E+00	0.01
Antimony	3.86E-02	1.80E+00		2.71E+00			4.55E+00	0.01
Arsenic	2.35E-01	5.35E-01		1.65E+01			1.73E+01	0.02
Beryllium	7.64E-04	7.12E-02		5.21E-02			1.24E-01	0.00
Cadmium	5.87E-03	1.09E-01	2.40E-06	6.07E-01			7.22E-01	0.00
Chromium	3.13E-02	1.46E+00		2.12E+00			3.61E+00	0.00
Cobalt	8.93E-04	1.04E-03		6.58E-02			6.77E-02	0.00
Iron	4.81E-01	2.99E+00		3.26E+01			3.60E+01	0.05
Lead	1.06E+03	6.56E+03	8.62E-06	7.16E+04			7.92E+04	99.89
Thallium								
Uranium	1.16E-01	1.28E-01		7.89E+00			8.13E+00	0.01
Vanadium	2.69E-02	2.51E+00		1.83E+00			4.37E+00	0.01
Zinc	1.13E-03	5.27E-03		1.54E-01			1.60E-01	0.00
2-Methylnaphthalene								
Acenaphthene	2.75E-04	1.66E-03		2.04E-02			2.23E-02	0.00
Acenaphthylene								
Anthracene	1.07E-04	2.62E-04		7.81E-03			8.18E-03	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	6.61E-05	6.49E-04		4.66E-03			5.38E-03	0.00
Chrysene								
Di-n-butyl phthalate	9.85E-05	1.84E-04		6.95E-03			7.23E-03	0.(
Dibenz(a,h)anthracene								
Fluoranthene	2.51E-03	1.51E-02		1.77E-01			1.94E-01	0.00
Fluorene	3.15E-04	1.17E-03		2.30E-02			2.45E-02	0.00
Indeno(1,2,3-cd)pyrene								
Naphthalene	2.38E-04	5.56E-04		2.19E-02			2.27E-02	0.00
PCB-1254	1.12E-01	1.39E-01		7.66E+00			7.91E+00	0.01
PCB-1260								
PCB-1262								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	2.95E-03	1.78E-02		2.08E-01			2.29E-01	0.00
Alpha activity								
Beta activity								
Cesium-137								
Neptunium-237								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	1.06E+03	6.57E+03	1.10E-05	7.16E+04			7.93E+04	
Fraction of Total	1.33E-02	8.29E-02	1.39E-10	9.04E-01				

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Di-n-butyl phthalate	1.59E-04	2.96E-04		1.12E-02			1.16E-02	100.0
Alpha activity								
Beta activity								
Pathway Total	1.59E-04	2.96E-04		1.12E-02			1.16E-02	
Fraction of Total	1.36E-02	2.54E-02		9.61E-01				

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Cadmium	5.03E-03	9.37E-02	2.05E-06	5.19E-01			6.18E-01	4.64
Chromium	3.60E-02	1.68E+00		2.44E+00			4.15E+00	31.15
Thallium								
Uranium	1.21E-01	1.32E-01		8.17E+00			8.42E+00	63.21
Acenaphthene	2.87E-05	1.72E-04		2.12E-03			2.32E-03	0.02
Anthracene	9.70E-06	2.38E-05		7.10E-04			7.44E-04	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
zo(ghi)perylene								
zo(k)fluoranthene								
rysene								
Di-n-butyl phthalate	1.63E-04	3.03E-04		1.15E-02			1.19E-02	0.09
Dibenz(a,h)anthracene								
Fluoranthene	6.94E-04	4.18E-03		4.89E-02			5.38E-02	0.40
Fluorene	2.98E-05	1.11E-04		2.18E-03			2.32E-03	0.02
Indeno(1,2,3-cd)pyrene								
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	7.94E-04	4.77E-03		5.59E-02			6.15E-02	0.46
Alpha activity								
Beta activity								
Cesium-137								
Neptunium-237								
Uranium-235								
Uranium-238								
Pathway Total	1.63E-01	1.91E+00	2.05E-06	1.12E+01			1.33E+01	
Fraction of Total	1.23E-02	1.44E-01	1.54E-07	8.44E-01				

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	1.83E-01	1.71E+00		1.24E+01			1.43E+01	38.81
Antimony	9.59E-02	4.47E+00		6.73E+00			1.13E+01	30.67
Chromium	2.75E-02	1.28E+00		1.86E+00			3.17E+00	8.60
Uranium	1.16E-01	1.27E-01		7.83E+00			8.07E+00	21.91
Benz(a)anthracene								
enzo(a)pyrene								
o(b)fluoranthene								
o(k)fluoranthene								

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Chrysene								
Fluoranthene	2.81E-05	1.69E-04		1.98E-03			2.17E-03	0.01
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	2.13E-05	1.28E-04		1.50E-03			1.65E-03	0.00
Alpha activity								
Beta activity								
Uranium-235								
Uranium-238								
Pathway Total	4.22E-01	7.59E+00		2.88E+01			3.68E+01	
Fraction of Total	1.15E-02	2.06E-01		7.83E-01				

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	4.63E-02	2.16E+00		3.25E+00			5.45E+00	28.96
Beryllium	1.83E-03	1.70E-01		1.25E-01			2.97E-01	1.57
Cadmium	3.97E-03	7.40E-02	1.62E-06	4.10E-01			4.88E-01	2.59
Chromium	7.20E-02	3.35E+00		4.87E+00			8.29E+00	44.03
Thallium								
Uranium	6.10E-02	6.69E-02		4.13E+00			4.26E+00	22.61
Acenaphthene	1.10E-05	6.63E-05		8.16E-04			8.93E-04	0.00
Anthracene	7.05E-06	1.73E-05		5.16E-04			5.41E-04	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	5.29E-05	5.19E-04		3.73E-03			4.30E-03	0.02
Chrysene								
Di-n-butyl phthalate	5.29E-06	9.87E-06		3.73E-04			3.88E-04	0.00
Fluoranthene	2.78E-04	1.67E-03		1.96E-02			2.15E-02	0.11
Fluorene	1.65E-05	6.17E-05		1.21E-03			1.29E-03	0.01
Indeno(1,2,3-cd)pyrene								
Phenanthrene								
Pyrene	1.73E-04	1.04E-03		1.22E-02			1.34E-02	0.07
Alpha activity								
Beta activity								
Neptunium-237								
Uranium-235								
Uranium-238								
Pathway Total	1.86E-01	5.83E+00	1.62E-06	1.28E+01			1.88E+01	
Fraction of Total	9.85E-03	3.09E-01	8.61E-08	6.81E-01				

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	5.94E+00	8.55E-02		4.00E+00			1.00E+01	0.0[illegible]

Table 1.69b. Systemic toxicity for the future child residential user

------------------------------------ SECTOR=McNairy MEDIA=Ground water ------------------------------------
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Arsenic	5.80E+01	2.04E-01		4.01E+01			9.83E+01	0.08
Barium	3.33E-01	6.85E-03		2.26E-01			5.65E-01	0.00
Beryllium	1.11E-01	1.59E-02		7.50E-02			2.02E-01	0.00
Bromide								
Cadmium	2.51E-01	3.61E-02		1.16E-01			4.03E-01	0.00
Chromium	3.24E+00	2.33E-01		2.18E+00			5.65E+00	0.00
Cobalt	7.79E-02	1.40E-04		5.58E-02			1.34E-01	0.00
Iron	4.79E+01	4.60E-01		3.23E+01			8.07E+01	0.06
Lead	7.55E+04	7.25E+02		5.09E+04			1.27E+05	99.82
Manganese	2.27E+00	8.04E-02		5.96E-01			2.94E+00	0.00
Nickel	3.68E-01	1.96E-03		2.82E-01			6.52E-01	0.00
Nitrate	2.19E-02	6.31E-05					2.20E-02	0.00
Orthophosphate								
Selenium	3.89E-01	1.27E-03		3.34E-01			7.24E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Vanadium	9.62E+00	1.38E+00		6.49E+00			1.75E+01	0.01
Zinc	1.73E+00	1.25E-02		2.02E+00			3.76E+00	0.00
1,1-Dichloroethene	5.31E-02	6.81E-04		1.04E-01			1.58E-01	0.00
1,2-Dichloroethane					1.26E-02	1.37E-01	1.50E-01	0.00
Bis(2-ethylhexyl)phthalate	1.72E-02	3.06E-03		1.19E-02			3.22E-02	0.00
Bromodichloromethane	1.76E-02	1.50E-04		2.71E-02			4.48E-02	0.00
roform	4.46E-02	2.86E-03		7.42E-02			1.22E-01	0.00
-butyl phthalate	6.61E-04	1.10E-04		4.58E-04			1.23E-03	0.00
-n-octylphthalate	1.85E-02	7.96E-01		1.24E-02			8.27E-01	0.00
Dibromochloromethane	1.32E-02	1.24E-04		1.89E-02			3.23E-02	0.00
Tetrachloroethene	6.44E-02	3.43E-02		7.20E-02			1.71E-01	0.00
Trichloroethene	1.79E-01	2.74E-02		2.24E-01			4.30E-01	0.00
Vinyl chloride								
cis-1,2-Dichloroethene	9.30E-02	1.34E-03		1.68E-01			2.62E-01	0.00
Actinium-228								
Alpha activity								
Beta activity								
Cesium-137								
Lead-210								
Lead-212								
Lead-214								
Neptunium-237								
Plutonium-239								
Potassium-40								
Technetium-99								
Thorium-228								
Thorium-230								
Thorium-234								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	7.56E+04	7.28E+02		5.10E+04	1.26E-02	1.37E-01	1.27E+05	
Fraction of Total	5.94E-01	5.72E-03		4.00E-01	9.92E-08	1.08E-06		

------------------------------------ SECTOR=Northeast MEDIA=Surface soil ------------------------------------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
ium	5.11E-02	2.38E+00		3.45E+00			5.88E+00	55.37

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Uranium	6.10E-02	6.69E-02		4.13E+00			4.26E+00	40.07
Zinc	3.09E-03	1.44E-02		4.22E-01			4.39E-01	4.13
Acenaphthene	8.82E-06	5.30E-05		6.53E-04			7.15E-04	0.01
Anthracene	3.53E-06	8.66E-06		2.58E-04			2.70E-04	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Chrysene								
Fluoranthene	2.84E-04	1.71E-03		2.00E-02			2.20E-02	0.21
Indeno(1,2,3-cd)pyrene								
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	3.00E-04	1.80E-03		2.11E-02			2.32E-02	0.22
Alpha activity								
Beta activity								
Uranium-235								
Uranium-238								
Pathway Total	1.16E-01	2.47E+00		8.05E+00			1.06E+01	
Fraction of Total	1.09E-02	2.32E-01		7.57E-01				

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	1.32E-02	6.17E-01		9.30E-01			1.56E+00	0.00
Beryllium	8.56E-04	7.98E-02		5.84E-02			1.39E-01	0.00
Cadmium	2.69E-03	5.01E-02	1.10E-06	2.78E-01			3.31E-01	0.00
Chromium	5.36E-02	2.50E+00		3.62E+00			6.18E+00	0.00
Iron	5.38E-01	3.34E+00		3.64E+01			4.03E+01	0.03
Lead	1.72E+03	1.07E+04	1.41E-05	1.17E+05			1.29E+05	99.96
Vanadium	3.12E-02	2.91E+00		2.12E+00			5.06E+00	0.00
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Chrysene								
Fluoranthene	1.32E-04	7.96E-04		9.32E-03			1.02E-02	0.00
Pyrene	1.76E-04	1.06E-03		1.24E-02			1.37E-02	0.00
Alpha activity								
Beta activity								
Uranium-238								
Pathway Total	1.72E+03	1.07E+04	1.52E-05	1.17E+05			1.29E+05	
Fraction of Total	1.33E-02	8.29E-02	1.17E-10	9.04E-01				

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	4.03E+00	5.80E-02		2.72E+00			6.81E+00	0.02
Antimony	2.30E+00	1.66E-01		1.59E+00			4.05E+00	0.01
Arsenic	6.42E+00	2.25E-02		4.44E+00			1.09E+01	0.03
Barium	3.97E-01	8.16E-03		2.69E-01			6.74E-01	0.00
Beryllium	1.34E-01	1.93E-02		9.07E-02			2.44E-01	0.00
Bromide								
Cadmium	1.96E-01	2.82E-02		9.08E-02			3.15E-01	0.00
Chromium	1.49E+00	1.07E-01		1.00E+00			2.60E+00	0.01
Cobalt	1.09E-01	1.96E-04		7.79E-02			1.87E-01	0.00
Copper	3.64E-01	1.75E-03		2.99E-01			6.64E-01	0.00
Iron	8.54E+01	8.20E-01		5.75E+01			1.44E+02	0.39
Lead	2.16E+04	2.08E+02		1.46E+04			3.64E+04	98.71
Manganese	4.40E+00	1.56E-01		1.16E+00			5.71E+00	0.02
Mercury	3.63E-02	7.46E-04		4.46E-02			8.16E-02	0.00
Nickel	6.51E-01	3.47E-03		4.98E-01			1.15E+00	0.00
Nitrate	1.96E+00	5.64E-03					1.96E+00	0.01
Orthophosphate								
Silver	1.68E-01	1.34E-03		1.13E-01			2.82E-01	0.00
Tetraoxo-sulfate(1-)								
Thallium								
Uranium	8.06E-02	1.37E-04		5.43E-02			1.35E-01	0.00
Vanadium	1.45E+00	2.09E-01		9.81E-01			2.64E+00	0.01
Zinc	1.69E-01	1.21E-03		1.96E-01			3.66E-01	0.00
-Dichloroethene	4.88E-02	6.25E-04		9.59E-02			1.45E-01	0.00
(2-ethylhexyl)phthalate	3.31E-03	5.86E-04		2.29E-03			6.19E-03	0.00
Bromodichloromethane	1.32E-02	1.13E-04		2.04E-02			3.37E-02	0.00
Carbon tetrachloride	6.68E+00	3.25E-01		6.76E+00	4.47E+00	4.86E+01	6.68E+01	0.18
Chloroform	1.91E-01	1.22E-02		3.18E-01			5.21E-01	0.00
Di-n-butyl phthalate	6.61E-04	1.10E-04		4.58E-04			1.23E-03	0.00
Di-n-octylphthalate	3.31E-03	1.42E-01		2.22E-03			1.48E-01	0.00
N-Nitroso-di-n-propylamine								
Tetrachloroethene	1.45E-01	7.74E-02		1.62E-01			3.85E-01	0.00
Toluene	1.19E-02	9.64E-04		1.26E-02	1.14E-02	1.24E-01	1.60E-01	0.00
Trichloroethene	9.03E+01	1.39E+01		1.13E+02			2.17E+02	0.59
Vinyl chloride								
cis-1,2-Dichloroethene	2.45E+00	3.52E-02		4.42E+00			6.90E+00	0.02
trans-1,2-Dichloroethene	4.07E-02	6.27E-05		3.34E-01			3.75E-01	0.00
Alpha activity								
Americium-241								
Beta activity								
Cesium-137								
Lead-210								
Lead-214								
Neptunium-237								
Plutonium-239								
Technetium-99								
Thorium-228								
Thorium-230								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	2.19E+04	2.24E+02		1.48E+04	4.48E+00	4.87E+01	3.69E+04	

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=RGA MEDIA=Ground water (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Fraction of Total	5.92E-01	6.06E-03		4.01E-01	1.21E-04	1.32E-03		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	1.88E-01	1.75E+00		1.27E+01			1.47E+01	59.22
Antimony	1.98E-02	9.25E-01		1.39E+00			2.34E+00	9.43
Cadmium	4.63E-03	8.63E-02	1.89E-06	4.78E-01			5.69E-01	2.30
Chromium	6.24E-02	2.91E+00		4.22E+00			7.19E+00	29.02
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Chrysene								
Fluoranthene	4.96E-05	2.98E-04		3.50E-03			3.84E-03	0.02
PCB-1262								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	5.29E-05	3.18E-04		3.73E-03			4.10E-03	0.
Alpha activity								
Beta activity								
Pathway Total	2.75E-01	5.67E+00	1.89E-06	1.88E+01			2.48E+01	
Fraction of Total	1.11E-02	2.29E-01	7.63E-08	7.60E-01				

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Antimony	4.80E-02	2.24E+00		3.37E+00			5.66E+00	6.62
Beryllium	9.98E-04	9.30E-02		6.81E-02			1.62E-01	0.19
Cadmium	4.80E-03	8.94E-02	1.96E-06	4.96E-01			5.90E-01	0.69
Chromium	5.62E-02	2.62E+00		3.80E+00			6.48E+00	7.58
Iron	7.50E-01	4.66E+00		5.08E+01			5.62E+01	65.74
Thallium								
Uranium	2.21E-01	2.42E-01		1.50E+01			1.54E+01	18.06
Zinc	2.22E-03	1.03E-02		3.02E-01			3.15E-01	0.37
Acenaphthene	2.18E-04	1.31E-03		1.61E-02			1.77E-02	0.02
Acenaphthylene								
Anthracene	8.02E-05	1.97E-04		5.87E-03			6.15E-03	0.01
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	5.29E-05	5.19E-04		3.73E-03			4.30E-03	0.01
Chrysene								
Dibenz(a,h)anthracene								
Fluoranthene	3.61E-03	2.17E-02		2.54E-01			2.79E-01	0.3
Fluorene	3.97E-04	1.48E-03		2.91E-02			3.09E-02	0.
Indeno(1,2,3-cd)pyrene								

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Naphthalene	8.89E-07	2.07E-06		8.18E-05			8.48E-05	0.00
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	4.05E-03	2.44E-02		2.86E-01			3.14E-01	0.37
Alpha activity								
Beta activity								
Neptunium-237								
Uranium-235								
Uranium-238								
Pathway Total	1.09E+00	1.00E+01	1.96E-06	7.44E+01			8.55E+01	
Fraction of Total	1.28E-02	1.17E-01	2.29E-08	8.70E-01				

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Aluminum	9.63E-02	8.98E-01		6.53E+00			7.53E+00	6.35
Antimony	3.28E-02	1.53E+00		2.30E+00			3.86E+00	3.26
Arsenic	5.82E-01	1.32E+00		4.08E+01			4.27E+01	36.06
Beryllium	8.32E-04	7.76E-02		5.68E-02			1.35E-01	0.11
Cadmium	1.20E-02	2.23E-01	4.89E-06	1.24E+00			1.47E+00	1.24
Chromium	3.32E-02	1.55E+00		2.25E+00			3.83E+00	3.23
Cobalt	1.05E-03	1.22E-03		7.70E-02			7.92E-02	0.07
Uranium	1.60E-01	1.75E-01		1.08E+01			1.12E+01	9.43
Zinc	1.32E-03	6.17E-03		1.80E-01			1.88E-01	0.16
2-Methylnaphthalene								
Acenaphthene	7.42E-04	4.46E-03		5.49E-02			6.01E-02	0.05
Anthracene	6.43E-04	1.58E-03		4.71E-02			4.93E-02	0.04
Benz(a)anthracene								
Benzo(a)pyrene								
Benzo(b)fluoranthene								
Benzo(ghi)perylene								
Benzo(k)fluoranthene								
Bis(2-ethylhexyl)phthalate	6.61E-05	6.49E-04		4.66E-03			5.38E-03	0.00
Chrysene								
Di-n-butyl phthalate	2.71E-05	5.06E-05		1.91E-03			1.99E-03	0.00
Dibenz(a,h)anthracene								
Fluoranthene	1.49E-02	8.98E-02		1.05E+00			1.16E+00	0.98
Fluorene	1.03E-03	3.86E-03		7.57E-02			8.06E-02	0.07
Indeno(1,2,3-cd)pyrene								
Naphthalene	5.38E-04	1.25E-03		4.95E-02			5.13E-02	0.04
PCB-1254	6.35E-01	7.89E-01		4.33E+01			4.48E+01	37.77
PCB-1260								
Phenanthrene								
Polychlorinated biphenyl								
Pyrene	1.74E-02	1.05E-01		1.23E+00			1.35E+00	1.14
Alpha activity								
Beta activity								
Cesium-137								
Neptunium-237								
Uranium-234								
Uranium-235								
Uranium-238								
Pathway Total	1.59E+00	6.78E+00	4.89E-06	1.10E+02			1.19E+02	

Table 1.69b. Systemic toxicity for the future child residential user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Ingestion of vegetables	Inhalation while showering	Inhalation from household use	Chemical Total	% of Total
Fraction of Total	1.34E-02	5.72E-02	4.13E-08	9.29E-01				

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Table 1.70a. Systemic toxicity for the future adult recreational user

-- SECTOR=WAG 6 MEDIA=Surface soil --

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	3.75E-04	1.51E-04	3.14E-06	5.29E-04	0.02
Antimony	5.76E-06	2.27E-06	6.08E-08	8.09E-06	0.00
Arsenic	1.70E-03	6.73E-04	1.43E-05	2.39E-03	0.09
Beryllium	2.49E-06	9.99E-07	2.51E-08	3.52E-06	0.00
Cadmium	2.25E-05	8.20E-06	3.44E-04	3.75E-04	0.01
Chromium	1.02E-03	4.03E-04	8.36E-06	1.43E-03	0.06
Cobalt	3.37E-07	1.33E-07		4.70E-07	0.00
Iron	3.14E-02	1.26E-02	1.31E-02	5.71E-02	2.22
Lead	1.77E+00	6.89E-01	1.40E-02	2.47E+00	96.44
Thallium					
Uranium	1.19E-04	4.75E-05	3.32E-03	3.49E-03	0.14
Vanadium	2.16E-04	8.68E-05	1.82E-06	3.05E-04	0.01
Zinc	1.66E-03	5.97E-04		2.26E-03	0.09
2-Methylnaphthalene					
Acenaphthene	6.27E-07	2.42E-07		8.69E-07	0.00
Acenaphthylene					
Anthracene	2.94E-07	1.14E-07		4.08E-07	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	4.97E-07	1.95E-07		6.93E-07	0.00
Chrysene					
Di-n-butyl phthalate	7.41E-07	2.91E-07		1.03E-06	0.00
Dibenz(a,h)anthracene					
Fluoranthene	1.89E-05	7.42E-06		2.63E-05	0.00
Fluorene	8.68E-07	3.36E-07		1.20E-06	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.02E-07	3.74E-08		1.39E-07	0.00
PCB-1254	9.23E-03	3.70E-03	1.06E-02	2.35E-02	0.92
PCB-1260					
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.22E-05	8.73E-06		3.09E-05	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	1.82E+00	7.07E-01	4.14E-02	2.57E+00	
Fraction of Total	7.08E-01	2.76E-01	1.61E-02		

Table 1.70a. Systemic toxicity for the future adult recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Di-n-butyl phthalate	3.21E-08	3.51E-07		3.83E-07	100.0
Alpha activity					
Beta activity					
Pathway Total	3.21E-08	3.51E-07		3.83E-07	
Fraction of Total	8.39E-02	9.16E-01			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Cadmium	1.27E-07	1.29E-06	1.26E-05	1.40E-05	5.29
Chromium	7.73E-06	8.49E-05	4.11E-07	9.31E-05	35.09
Thallium					
Uranium	8.15E-07	9.02E-06	1.47E-04	1.57E-04	59.25
Acenaphthene	4.31E-10	4.61E-09		5.05E-09	0.00
Anthracene	1.77E-10	1.90E-09		2.07E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Di-n-butyl phthalate	8.06E-09	8.81E-08		9.62E-08	0.04
Dibenz(a,h)anthracene					
Fluoranthene	3.44E-08	3.76E-07		4.11E-07	0.15
Fluorene	5.42E-10	5.82E-09		6.36E-09	0.00
Indeno(1,2,3-cd)pyrene					
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	3.94E-08	4.30E-07		4.69E-07	0.18
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	8.76E-06	9.62E-05	1.60E-04	2.65E-04	
Fraction of Total	3.30E-02	3.62E-01	6.05E-01		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	5.04E-05	3.52E-04	2.74E-06	4.05E-04	19.26
Antimony	8.23E-07	5.64E-06	5.63E-08	6.52E-06	0.31
Chromium	5.14E-05	3.54E-04	2.74E-06	4.08E-04	19.39
Uranium	6.81E-06	4.71E-05	1.23E-03	1.28E-03	61.03
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.21E-08	8.29E-08		9.51E-08	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	9.20E-09	6.29E-08		7.21E-08	0.00

Table 1.70a. Systemic toxicity for the future adult recreational user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	1.09E-04	7.59E-04	1.24E-03	2.10E-03	
Fraction of Total	5.20E-02	3.61E-01	5.87E-01		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	3.97E-07	2.72E-06	2.72E-08	3.15E-06	0.17
Beryllium	3.42E-07	2.39E-06	2.24E-08	2.75E-06	0.15
Cadmium	8.73E-07	5.55E-06	8.68E-05	9.32E-05	5.05
Chromium	1.35E-04	9.25E-04	7.16E-06	1.07E-03	57.83
Thallium					
Uranium	3.59E-06	2.49E-05	6.49E-04	6.77E-04	36.70
Acenaphthene	1.44E-09	9.68E-09		1.11E-08	0.00
Anthracene	1.12E-09	7.53E-09		8.64E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	2.29E-08	1.56E-07		1.79E-07	0.01
Chrysene					
Di-n-butyl phthalate	2.29E-09	1.56E-08		1.79E-08	0.00
Fluoranthene	1.20E-07	8.21E-07		9.41E-07	0.05
Fluorene	2.62E-09	1.76E-08		2.03E-08	0.00
Indeno(1,2,3-cd)pyrene					
Phenanthrene					
Pyrene	7.46E-08	5.10E-07		5.85E-07	0.03
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	1.40E-04	9.63E-04	7.43E-04	1.85E-03	
Fraction of Total	7.59E-02	5.22E-01	4.03E-01		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	1.84E-05	2.02E-04	9.81E-07	2.22E-04	24.38
Uranium	6.93E-07	7.67E-06	1.25E-04	1.34E-04	14.68
Zinc	5.05E-05	5.04E-04		5.54E-04	60.88
Acenaphthene	2.23E-10	2.39E-09		2.61E-09	0.00
Anthracene	1.08E-10	1.16E-09		1.27E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	2.37E-08	2.59E-07		2.83E-07	0.03
Indeno(1,2,3-cd)pyrene					

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Table 1.70a. Systemic toxicity for the future adult recreational user

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.50E-08	2.73E-07		2.98E-07	0.03
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	6.97E-05	7.14E-04	1.26E-04	9.10E-04	
Fraction of Total	7.66E-02	7.85E-01	1.39E-01		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	2.57E-08	2.81E-07	1.76E-09	3.09E-07	0.00
Beryllium	3.63E-08	4.04E-07	2.37E-09	4.43E-07	0.00
Cadmium	1.34E-07	1.36E-06	1.33E-05	1.48E-05	0.00
Chromium	2.27E-05	2.49E-04	1.21E-06	2.73E-04	0.06
Iron	4.56E-04	5.08E-03	1.24E-03	6.77E-03	1.50
Lead	3.76E-02	4.06E-01	1.93E-03	4.45E-01	98.43
Vanadium	3.26E-06	3.63E-05	1.78E-07	3.98E-05	0.01
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.29E-08	1.41E-07		1.54E-07	0.00
Pyrene	1.72E-08	1.88E-07		2.05E-07	0.00
Alpha activity					
Beta activity					
Uranium-238					
Pathway Total	3.81E-02	4.11E-01	3.18E-03	4.52E-01	
Fraction of Total	8.41E-02	9.09E-01	7.04E-03		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	1.63E-05	1.82E-04	8.86E-07	1.99E-04	29.36
Antimony	5.36E-08	5.86E-07	3.67E-09	6.44E-07	0.09
Cadmium	3.21E-07	3.25E-06	3.19E-05	3.55E-05	5.23
Chromium	3.67E-05	4.04E-04	1.96E-06	4.42E-04	65.29
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	6.75E-09	7.37E-08		8.05E-08	0.01
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	7.20E-09	7.86E-08		8.58E-08	0.01
Alpha activity					
Beta activity					
Pathway Total	5.34E-05	5.89E-04	3.47E-05	6.78E-04	
Fraction of Total	7.88E-02	8.70E-01	5.13E-02		

Table 1.70a. Systemic toxicity for the future adult recreational user

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	1.94E-07	2.12E-06	1.33E-08	2.33E-06	0.01
Beryllium	8.82E-08	9.82E-07	5.76E-09	1.08E-06	0.00
Cadmium	4.97E-07	5.05E-06	4.95E-05	5.50E-05	0.24
Chromium	4.95E-05	5.44E-04	2.64E-06	5.96E-04	2.65
Iron	1.33E-03	1.48E-02	3.60E-03	1.97E-02	87.45
Thallium					
Uranium	6.14E-06	6.79E-05	1.11E-03	1.18E-03	5.25
Zinc	8.83E-05	8.81E-04		9.69E-04	4.30
Acenaphthene	1.35E-08	1.44E-07		1.58E-07	0.00
Acenaphthylene					
Anthracene	5.99E-09	6.44E-08		7.04E-08	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.08E-08	1.18E-07		1.29E-07	0.00
Chrysene					
Dibenz(a,h)anthracene					
Fluoranthene	7.34E-07	8.02E-06		8.76E-06	0.04
Fluorene	2.97E-08	3.19E-07		3.48E-07	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.03E-11	1.05E-10		1.15E-10	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	8.26E-07	9.02E-06		9.85E-06	0.04
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	1.47E-03	1.63E-02	4.76E-03	2.25E-02	
Fraction of Total	6.54E-02	7.23E-01	2.11E-01		

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	4.80E-06	5.35E-05	2.61E-07	5.86E-05	0.49
Antimony	5.09E-08	5.57E-07	3.49E-09	6.11E-07	0.01
Arsenic	4.37E-05	4.80E-04	2.38E-06	5.26E-04	4.39
Beryllium	2.82E-08	3.14E-07	1.84E-09	3.45E-07	0.00
Cadmium	4.76E-07	4.83E-06	4.74E-05	5.27E-05	0.44
Chromium	1.12E-05	1.23E-04	5.98E-07	1.35E-04	1.13
Cobalt	4.11E-09	4.49E-08		4.90E-08	0.00
Uranium	1.70E-06	1.89E-05	3.08E-04	3.29E-04	2.74
Zinc	2.02E-05	2.02E-04		2.22E-04	1.85
2-Methylnaphthalene					
Acenaphthene	1.76E-08	1.88E-07		2.06E-07	0.00
Anthracene	1.84E-08	1.98E-07		2.17E-07	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	5.17E-09	5.65E-08		6.16E-08	0.00
Chrysene					
Di-n-butyl phthalate	2.12E-09	2.32E-08		2.53E-08	0.00
Dibenz(a,h)anthracene					

Table 1.70a. Systemic toxicity for the future adult recreational user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene	1.17E-06	1.27E-05		1.39E-05	0.12
Fluorene	2.96E-08	3.19E-07		3.48E-07	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	2.39E-09	2.44E-08		2.68E-08	0.00
PCB-1254	5.44E-04	6.04E-03	4.05E-03	1.06E-02	88.70
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.36E-06	1.49E-05		1.62E-05	0.14
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	6.28E-04	6.96E-03	4.41E-03	1.20E-02	
Fraction of Total	5.24E-02	5.80E-01	3.68E-01		

Table 1.70b. Systemic toxicity for the future child recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	3.96E-04	1.46E-04	3.03E-06	5.45E-04	0.02
Antimony	6.09E-06	2.19E-06	5.87E-08	8.34E-06	0.00
Arsenic	1.80E-03	6.50E-04	1.38E-05	2.46E-03	0.09
Beryllium	2.63E-06	9.64E-07	2.42E-08	3.62E-06	0.00
Cadmium	2.37E-05	7.92E-06	3.32E-04	3.64E-04	0.01
Chromium	1.08E-03	3.89E-04	8.07E-06	1.47E-03	0.06
Cobalt	3.56E-07	1.28E-07		4.85E-07	0.00
Iron	3.31E-02	1.21E-02	1.27E-02	5.79E-02	2.19
Lead	1.87E+00	6.65E-01	1.35E-02	2.55E+00	96.50
Thallium					
Uranium	1.26E-04	4.59E-05	3.20E-03	3.38E-03	0.13
Vanadium	2.28E-04	8.38E-05	1.75E-06	3.14E-04	0.01
Zinc	1.76E-03	5.76E-04		2.33E-03	0.09
2-Methylnaphthalene					
Acenaphthene	6.63E-07	2.33E-07		8.96E-07	0.00
Acenaphthylene					
Anthracene	3.11E-07	1.10E-07		4.20E-07	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	5.25E-07	1.89E-07		7.14E-07	0.00
Chrysene					
Di-n-butyl phthalate	7.82E-07	2.81E-07		1.06E-06	0.00
Dibenz(a,h)anthracene					
Fluoranthene	1.99E-05	7.16E-06		2.71E-05	0.00
Fluorene	9.16E-07	3.24E-07		1.24E-06	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.07E-07	3.61E-08		1.43E-07	0.00
PCB-1254	9.75E-03	3.57E-03	1.02E-02	2.36E-02	0.89
PCB-1260					
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.34E-05	8.43E-06		3.19E-05	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	1.92E+00	6.83E-01	4.00E-02	2.64E+00	
Fraction of Total	7.26E-01	2.58E-01	1.51E-02		

Table 1.70b. Systemic toxicity for the future child recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Di-n-butyl phthalate	3.39E-08	3.38E-07		3.72E-07	100.0
Alpha activity					
Beta activity					
Pathway Total	3.39E-08	3.38E-07		3.72E-07	
Fraction of Total	9.10E-02	9.09E-01			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Cadmium	1.34E-07	1.24E-06	1.22E-05	1.36E-05	5.28
Chromium	8.16E-06	8.20E-05	3.97E-07	9.06E-05	35.25
Thallium					
Uranium	8.61E-07	8.71E-06	1.42E-04	1.52E-04	59.09
Acenaphthene	4.55E-10	4.45E-09		4.91E-09	0.00
Anthracene	1.86E-10	1.83E-09		2.02E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Di-n-butyl phthalate	8.52E-09	8.51E-08		9.36E-08	0.04
Dibenz(a,h)anthracene					
Fluoranthene	3.64E-08	3.63E-07		4.00E-07	0.16
Fluorene	5.72E-10	5.62E-09		6.19E-09	0.00
Indeno(1,2,3-cd)pyrene					
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	4.16E-08	4.15E-07		4.57E-07	0.18
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	9.25E-06	9.28E-05	1.55E-04	2.57E-04	
Fraction of Total	3.60E-02	3.61E-01	6.03E-01		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	5.32E-05	3.40E-04	2.65E-06	3.96E-04	19.39
Antimony	8.69E-07	5.44E-06	5.44E-08	6.37E-06	0.31
Chromium	5.43E-05	3.41E-04	2.64E-06	3.98E-04	19.52
Uranium	7.19E-06	4.55E-05	1.19E-03	1.24E-03	60.77
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.28E-08	8.01E-08		9.29E-08	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	9.72E-09	6.08E-08		7.05E-08	0.00

Table 1.70b. Systemic toxicity for the future child recreational user

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	1.16E-04	7.32E-04	1.19E-03	2.04E-03	
Fraction of Total	5.66E-02	3.59E-01	5.84E-01		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	4.19E-07	2.63E-06	2.63E-08	3.07E-06	0.17
Beryllium	3.62E-07	2.30E-06	2.16E-08	2.69E-06	0.15
Cadmium	9.22E-07	5.36E-06	8.38E-05	9.01E-05	5.02
Chromium	1.42E-04	8.94E-04	6.91E-06	1.04E-03	58.10
Thallium					
Uranium	3.79E-06	2.40E-05	6.26E-04	6.54E-04	36.46
Acenaphthene	1.53E-09	9.35E-09		1.09E-08	0.00
Anthracene	1.18E-09	7.27E-09		8.45E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	2.41E-08	1.51E-07		1.75E-07	0.01
Chrysene					
Di-n-butyl phthalate	2.41E-09	1.51E-08		1.75E-08	0.00
Fluoranthene	1.27E-07	7.93E-07		9.20E-07	0.05
Fluorene	2.77E-09	1.70E-08		1.98E-08	0.00
Indeno(1,2,3-cd)pyrene					
Phenanthrene					
Pyrene	7.88E-08	4.93E-07		5.72E-07	0.03
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	1.48E-04	9.29E-04	7.17E-04	1.79E-03	
Fraction of Total	8.24E-02	5.18E-01	4.00E-01		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	1.95E-05	1.95E-04	9.47E-07	2.16E-04	24.39
Uranium	7.32E-07	7.40E-06	1.21E-04	1.29E-04	14.58
Zinc	5.33E-05	4.86E-04		5.40E-04	60.96
Acenaphthene	2.36E-10	2.31E-09		2.54E-09	0.00
Anthracene	1.14E-10	1.12E-09		1.23E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	2.51E-08	2.50E-07		2.75E-07	0.03
Indeno(1,2,3-cd)pyrene					

Table 1.70b. Systemic toxicity for the future child recreational user

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.64E-08	2.64E-07		2.90E-07	0.03
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	7.36E-05	6.90E-04	1.22E-04	8.85E-04	
Fraction of Total	8.31E-02	7.79E-01	1.38E-01		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	2.71E-08	2.71E-07	1.70E-09	3.00E-07	0.00
Beryllium	3.83E-08	3.90E-07	2.29E-09	4.31E-07	0.00
Cadmium	1.41E-07	1.31E-06	1.28E-05	1.43E-05	0.00
Chromium	2.39E-05	2.40E-04	1.16E-06	2.65E-04	0.06
Iron	4.82E-04	4.91E-03	1.20E-03	6.58E-03	1.50
Lead	3.97E-02	3.92E-01	1.86E-03	4.33E-01	98.43
Vanadium	3.44E-06	3.51E-05	1.72E-07	3.87E-05	0.01
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.36E-08	1.36E-07		1.50E-07	0.00
Pyrene	1.82E-08	1.82E-07		2.00E-07	0.00
Alpha activity					
Beta activity					
Uranium-238					
Pathway Total	4.02E-02	3.97E-01	3.07E-03	4.40E-01	
Fraction of Total	9.13E-02	9.02E-01	6.98E-03		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	1.72E-05	1.76E-04	8.55E-07	1.94E-04	29.37
Antimony	5.66E-08	5.66E-07	3.54E-09	6.26E-07	0.10
Cadmium	3.39E-07	3.14E-06	3.08E-05	3.43E-05	5.20
Chromium	3.88E-05	3.90E-04	1.89E-06	4.30E-04	65.31
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	7.13E-09	7.12E-08		7.83E-08	0.01
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	7.60E-09	7.59E-08		8.35E-08	0.01
Alpha activity					
Beta activity					
Pathway Total	5.64E-05	5.69E-04	3.35E-05	6.59E-04	
Fraction of Total	8.56E-02	8.64E-01	5.09E-02		

Table 1.70b. Systemic toxicity for the future child recreational user

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	2.05E-07	2.05E-06	1.28E-08	2.27E-06	0.01
Beryllium	9.32E-08	9.48E-07	5.56E-09	1.05E-06	0.00
Cadmium	5.25E-07	4.87E-06	4.77E-05	5.31E-05	0.24
Chromium	5.23E-05	5.25E-04	2.55E-06	5.80E-04	2.65
Iron	1.40E-03	1.43E-02	3.47E-03	1.91E-02	87.47
Thallium					
Uranium	6.48E-06	6.56E-05	1.07E-03	1.14E-03	5.22
Zinc	9.33E-05	8.50E-04		9.44E-04	4.31
Acenaphthene	1.42E-08	1.39E-07		1.53E-07	0.00
Acenaphthylene					
Anthracene	6.33E-09	6.22E-08		6.85E-08	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.14E-08	1.14E-07		1.25E-07	0.00
Chrysene					
Dibenz(a,h)anthracene					
Fluoranthene	7.76E-07	7.75E-06		8.52E-06	0.04
Fluorene	3.13E-08	3.08E-07		3.39E-07	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.09E-11	1.01E-10		1.12E-10	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	8.72E-07	8.71E-06		9.58E-06	0.04
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	1.56E-03	1.57E-02	4.60E-03	2.19E-02	
Fraction of Total	7.11E-02	7.19E-01	2.10E-01		

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	5.06E-06	5.17E-05	2.52E-07	5.70E-05	0.49
Antimony	5.37E-08	5.38E-07	3.37E-09	5.95E-07	0.01
Arsenic	4.62E-05	4.64E-04	2.30E-06	5.12E-04	4.40
Beryllium	2.98E-08	3.04E-07	1.78E-09	3.35E-07	0.00
Cadmium	5.03E-07	4.67E-06	4.57E-05	5.09E-05	0.44
Chromium	1.19E-05	1.19E-04	5.77E-07	1.32E-04	1.13
Cobalt	4.34E-09	4.33E-08		4.77E-08	0.00
Uranium	1.80E-06	1.82E-05	2.97E-04	3.17E-04	2.73
Zinc	2.14E-05	1.95E-04		2.16E-04	1.86
2-Methylnaphthalene					
Acenaphthene	1.86E-08	1.82E-07		2.00E-07	0.00
Anthracene	1.95E-08	1.91E-07		2.11E-07	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	5.46E-09	5.45E-08		6.00E-08	0.00
Chrysene					
Di-n-butyl phthalate	2.24E-09	2.24E-08		2.46E-08	0.00
Dibenz(a,h)anthracene					

Table 1.70b. Systemic toxicity for the future child recreational user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene	1.23E-06	1.23E-05		1.35E-05	0.12
Fluorene	3.13E-08	3.08E-07		3.39E-07	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	2.52E-09	2.35E-08		2.61E-08	0.00
PCB-1254	5.74E-04	5.84E-03	3.91E-03	1.03E-02	88.69
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.44E-06	1.44E-05		1.58E-05	0.14
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	6.64E-04	6.72E-03	4.26E-03	1.16E-02	
Fraction of Total	5.70E-02	5.77E-01	3.66E-01		

Table 1.70c. Systemic toxicity for the future teen recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	6.11E-04	1.22E-04	2.61E-06	7.35E-04	0.02
Antimony	9.38E-06	1.84E-06	5.05E-08	1.13E-05	0.00
Arsenic	2.77E-03	5.44E-04	1.18E-05	3.33E-03	0.09
Beryllium	4.06E-06	8.08E-07	2.08E-08	4.89E-06	0.00
Cadmium	3.66E-05	6.64E-06	2.86E-04	3.29E-04	0.01
Chromium	1.66E-03	3.26E-04	6.95E-06	1.99E-03	0.06
Cobalt	5.49E-07	1.07E-07		6.57E-07	0.00
Iron	5.11E-02	1.02E-02	1.09E-02	7.22E-02	2.02
Lead	2.88E+00	5.57E-01	1.17E-02	3.45E+00	96.86
Thallium					
Uranium	1.94E-04	3.84E-05	2.76E-03	2.99E-03	0.08
Vanadium	3.52E-04	7.02E-05	1.51E-06	4.24E-04	0.01
Zinc	2.71E-03	4.83E-04		3.19E-03	0.09
2-Methylnaphthalene					
Acenaphthene	1.02E-06	1.96E-07		1.22E-06	0.00
Acenaphthylene					
Anthracene	4.79E-07	9.21E-08		5.71E-07	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	8.09E-07	1.58E-07		9.67E-07	0.00
Chrysene					
Di-n-butyl phthalate	1.21E-06	2.36E-07		1.44E-06	0.00
Dibenz(a,h)anthracene					
Fluoranthene	3.07E-05	6.00E-06		3.67E-05	0.00
Fluorene	1.41E-06	2.72E-07		1.68E-06	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.66E-07	3.02E-08		1.96E-07	0.00
PCB-1254	1.50E-02	2.99E-03	8.81E-03	2.68E-02	0.75
PCB-1260					
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	3.61E-05	7.06E-06		4.32E-05	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	2.96E+00	5.72E-01	3.44E-02	3.57E+00	
Fraction of Total	8.30E-01	1.60E-01	9.66E-03		

Table 1.70c. Systemic toxicity for the future teen recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Di-n-butyl phthalate	5.22E-08	2.84E-07		3.36E-07	100.0
Alpha activity					
Beta activity					
Pathway Total	5.22E-08	2.84E-07		3.36E-07	
Fraction of Total	1.56E-01	8.44E-01			

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Cadmium	2.07E-07	1.04E-06	1.05E-05	1.17E-05	5.21
Chromium	1.26E-05	6.87E-05	3.42E-07	8.16E-05	36.23
Thallium					
Uranium	1.33E-06	7.30E-06	1.22E-04	1.31E-04	58.18
Acenaphthene	7.02E-10	3.73E-09		4.43E-09	0.00
Anthracene	2.87E-10	1.53E-09		1.82E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Di-n-butyl phthalate	1.31E-08	7.13E-08		8.44E-08	0.04
Dibenz(a,h)anthracene					
Fluoranthene	5.61E-08	3.04E-07		3.61E-07	0.16
Fluorene	8.82E-10	4.71E-09		5.59E-09	0.00
Indeno(1,2,3-cd)pyrene					
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	6.41E-08	3.48E-07		4.12E-07	0.18
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	1.43E-05	7.78E-05	1.33E-04	2.25E-04	
Fraction of Total	6.33E-02	3.45E-01	5.92E-01		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	8.20E-05	2.85E-04	2.28E-06	3.69E-04	20.29
Antimony	1.34E-06	4.56E-06	4.68E-08	5.95E-06	0.33
Chromium	8.37E-05	2.86E-04	2.27E-06	3.72E-04	20.46
Uranium	1.11E-05	3.81E-05	1.02E-03	1.07E-03	58.91
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.97E-08	6.71E-08		8.68E-08	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.50E-08	5.09E-08		6.59E-08	0.00

Table 1.70c. Systemic toxicity for the future teen recreational user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	1.78E-04	6.14E-04	1.03E-03	1.82E-03	
Fraction of Total	9.79E-02	3.37E-01	5.65E-01		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	6.47E-07	2.20E-06	2.26E-08	2.87E-06	0.18
Beryllium	5.58E-07	1.93E-06	1.86E-08	2.51E-06	0.15
Cadmium	1.42E-06	4.49E-06	7.22E-05	7.81E-05	4.81
Chromium	2.19E-04	7.49E-04	5.95E-06	9.74E-04	59.95
Thallium					
Uranium	5.85E-06	2.01E-05	5.39E-04	5.65E-04	34.81
Acenaphthene	2.35E-09	7.83E-09		1.02E-08	0.00
Anthracene	1.82E-09	6.09E-09		7.91E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	3.72E-08	1.27E-07		1.64E-07	0.01
Chrysene					
Di-n-butyl phthalate	3.72E-09	1.27E-08		1.64E-08	0.00
Fluoranthene	1.95E-07	6.64E-07		8.60E-07	0.05
Fluorene	4.27E-09	1.43E-08		1.85E-08	0.00
Indeno(1,2,3-cd)pyrene					
Phenanthrene					
Pyrene	1.21E-07	4.13E-07		5.34E-07	0.03
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	2.28E-04	7.79E-04	6.18E-04	1.62E-03	
Fraction of Total	1.40E-01	4.79E-01	3.80E-01		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium	3.00E-05	1.64E-04	8.15E-07	1.95E-04	24.44
Uranium	1.13E-06	6.20E-06	1.04E-04	1.11E-04	14.00
Zinc	8.22E-05	4.07E-04		4.90E-04	61.49
Acenaphthene	3.63E-10	1.93E-09		2.29E-09	0.00
Anthracene	1.76E-10	9.39E-10		1.11E-09	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	3.86E-08	2.10E-07		2.48E-07	0.03
Indeno(1,2,3-cd)pyrene					

Table 1.70c. Systemic toxicity for the future teen recreational user

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	4.07E-08	2.21E-07		2.62E-07	0.03
Alpha activity					
Beta activity					
Uranium-235					
Uranium-238					
Pathway Total	1.13E-04	5.78E-04	1.05E-04	7.96E-04	
Fraction of Total	1.42E-01	7.26E-01	1.32E-01		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	4.18E-08	2.27E-07	1.46E-09	2.71E-07	0.00
Beryllium	5.91E-08	3.27E-07	1.97E-09	3.88E-07	0.00
Cadmium	2.18E-07	1.10E-06	1.11E-05	1.24E-05	0.00
Chromium	3.69E-05	2.01E-04	1.00E-06	2.39E-04	0.06
Iron	7.43E-04	4.11E-03	1.03E-03	5.88E-03	1.48
Lead	6.12E-02	3.28E-01	1.60E-03	3.91E-01	98.45
Vanadium	5.30E-06	2.94E-05	1.48E-07	3.48E-05	0.01
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	2.10E-08	1.14E-07		1.35E-07	0.00
Pyrene	2.81E-08	1.52E-07		1.80E-07	0.00
Alpha activity					
Beta activity					
Uranium-238					
Pathway Total	6.19E-02	3.33E-01	2.65E-03	3.97E-01	
Fraction of Total	1.56E-01	8.37E-01	6.66E-03		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	2.65E-05	1.47E-04	7.36E-07	1.74E-04	29.41
Antimony	8.72E-08	4.74E-07	3.05E-09	5.65E-07	0.10
Cadmium	5.22E-07	2.63E-06	2.65E-05	2.97E-05	5.00
Chromium	5.98E-05	3.27E-04	1.63E-06	3.88E-04	65.47
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Chrysene					
Fluoranthene	1.10E-08	5.96E-08		7.06E-08	0.01
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.17E-08	6.36E-08		7.53E-08	0.01
Alpha activity					
Beta activity					
Pathway Total	8.70E-05	4.77E-04	2.89E-05	5.93E-04	
Fraction of Total	1.47E-01	8.05E-01	4.87E-02		

Table 1.70c. Systemic toxicity for the future teen recreational user

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony	3.16E-07	1.72E-06	1.11E-08	2.05E-06	0.01
Beryllium	1.44E-07	7.94E-07	4.79E-09	9.43E-07	0.00
Cadmium	8.10E-07	4.08E-06	4.11E-05	4.60E-05	0.24
Chromium	8.06E-05	4.40E-04	2.19E-06	5.23E-04	2.68
Iron	2.16E-03	1.19E-02	2.99E-03	1.71E-02	87.55
Thallium					
Uranium	9.99E-06	5.49E-05	9.22E-04	9.87E-04	5.05
Zinc	1.44E-04	7.12E-04		8.56E-04	4.38
Acenaphthene	2.19E-08	1.17E-07		1.39E-07	0.00
Acenaphthylene					
Anthracene	9.75E-09	5.21E-08		6.19E-08	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.75E-08	9.52E-08		1.13E-07	0.00
Chrysene					
Dibenz(a,h)anthracene					
Fluoranthene	1.20E-06	6.49E-06		7.69E-06	0.04
Fluorene	4.83E-08	2.58E-07		3.06E-07	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.67E-11	8.49E-11		1.02E-10	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.34E-06	7.30E-06		8.64E-06	0.04
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	2.40E-03	1.32E-02	3.96E-03	1.95E-02	
Fraction of Total	1.23E-01	6.75E-01	2.03E-01		

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum	7.81E-06	4.33E-05	2.17E-07	5.13E-05	0.50
Antimony	8.28E-08	4.51E-07	2.90E-09	5.36E-07	0.01
Arsenic	7.12E-05	3.89E-04	1.98E-06	4.62E-04	4.48
Beryllium	4.60E-08	2.54E-07	1.53E-09	3.02E-07	0.00
Cadmium	7.76E-07	3.91E-06	3.94E-05	4.41E-05	0.43
Chromium	1.83E-05	9.98E-05	4.97E-07	1.19E-04	1.15
Cobalt	6.68E-09	3.63E-08		4.30E-08	0.00
Uranium	2.77E-06	1.53E-05	2.56E-04	2.74E-04	2.66
Zinc	3.29E-05	1.63E-04		1.96E-04	1.90
2-Methylnaphthalene					
Acenaphthene	2.86E-08	1.52E-07		1.81E-07	0.00
Anthracene	3.00E-08	1.60E-07		1.90E-07	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	8.42E-09	4.57E-08		5.41E-08	0.00
Chrysene					
Di-n-butyl phthalate	3.45E-09	1.87E-08		2.22E-08	0.00
Dibenz(a,h)anthracene					

Table 1.70c. Systemic toxicity for the future teen recreational user

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene	1.90E-06	1.03E-05		1.22E-05	0.12
Fluorene	4.83E-08	2.58E-07		3.06E-07	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	3.89E-09	1.97E-08		2.36E-08	0.00
PCB-1254	8.85E-04	4.89E-03	3.37E-03	9.14E-03	88.62
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.22E-06	1.20E-05		1.42E-05	0.14
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	1.02E-03	5.63E-03	3.67E-03	1.03E-02	
Fraction of Total	9.92E-02	5.45E-01	3.55E-01		

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.06E-02	9.24E-02		1.13E-01	0.01
Antimony	4.75E-03	1.06E-01		1.11E-01	0.01
Arsenic	3.82E-02	4.18E-02		8.00E-02	0.01
Barium	2.68E-03	1.71E-02	1.28E-05	1.98E-02	0.00
Beryllium	2.11E-04	9.44E-03		9.65E-03	0.00
Cadmium	3.33E-04	2.98E-03	5.67E-08	3.31E-03	0.00
Chromium	7.25E-03	1.62E-01		1.70E-01	0.02
Cobalt	2.04E-04	1.14E-04		3.18E-04	0.00
Copper	6.17E-03	9.22E-03		1.54E-02	0.00
Iron	1.14E-01	3.39E-01		4.53E-01	0.06
Lead	2.03E+02	6.06E+02	6.91E-07	8.09E+02	99.60
Manganese	1.60E-02	1.77E-01	5.02E-04	1.93E-01	0.02
Mercury	8.03E-04	5.14E-03	2.73E-08	5.94E-03	0.00
Nickel	2.20E-02	3.65E-02		5.85E-02	0.01
Silver	2.19E-04	5.46E-04		7.65E-04	0.00
Thallium					
Uranium	1.94E-02	1.02E-02		2.97E-02	0.00
Vanadium	6.96E-03	3.12E-01		3.19E-01	0.04
Zinc	2.20E-04	4.93E-04		7.13E-04	0.00
1,1,2-Trichloroethane	1.61E-05	4.45E-05		6.05E-05	0.00
1,1-Dichloroethene	1.40E-04	3.14E-04		4.55E-04	0.00
2,4-Dinitrotoluene	7.94E-04	8.37E-04		1.63E-03	0.00
2,6-Dinitrotoluene	1.50E-03	1.58E-03		3.08E-03	0.00
2-Hexanone					
2-Methylnaphthalene					
Acenaphthene	3.33E-05	9.63E-05		1.30E-04	0.00
Acenaphthylene					
Anthracene	1.19E-05	1.40E-05		2.59E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.04E-04	4.89E-04		5.93E-04	0.00
Butyl benzyl phthalate	7.54E-06	1.11E-05		1.86E-05	0.00
Carbon tetrachloride	9.75E-05	3.36E-04	2.62E-04	6.95E-04	0.00
Chrysene					
Di-n-butyl phthalate	2.48E-05	2.22E-05		4.70E-05	0.00
Di-n-octylphthalate	1.05E-04	1.05E-04		2.10E-04	0.00
Dibenz(a,h)anthracene					
Fluoranthene	1.31E-04	3.78E-04		5.09E-04	0.00
Fluorene	4.99E-05	8.94E-05		1.39E-04	0.00
Indeno(1,2,3-cd)pyrene					
Iodomethane					
Methylene chloride	9.13E-07	2.15E-06	2.87E-07	3.35E-06	0.00
N-Nitroso-di-n-propylamine					
N-Nitrosodiphenylamine					
Naphthalene	5.93E-05	6.64E-05		1.26E-04	0.00
PCB-1254	1.49E-02	8.87E-03		2.37E-02	0.00
PCB-1260					
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	1.70E-04	4.90E-04		6.60E-04	0.00
Tetrachloroethene	6.79E-06	1.52E-05		2.20E-05	0.00
Trichloroethene	1.02E-01	1.52E+00		1.63E+00	0.20
Vinyl chloride					
trans-1,2-Dichloroethene	2.46E-03	5.51E-03		7.97E-03	0.00
Alpha activity					
Beta activity					
Cesium-137					

531188

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Neptunium-237					
Plutonium-239					
Technetium-99					
Thorium-230					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	2.03E+02	6.09E+02	7.77E-04	8.12E+02	
Fraction of Total	2.50E-01	7.50E-01	9.57E-07		

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=Central MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Antimony	2.47E-02	5.54E-01		5.79E-01	33.75
Cadmium	6.88E-04	6.17E-03	1.17E-07	6.85E-03	0.40
Chromium	1.55E-02	3.47E-01		3.62E-01	21.12
Iron	1.93E-01	5.75E-01		7.67E-01	44.73
Thallium					
Bis(2-ethylhexyl)phthalate	6.95E-06	3.28E-05		3.97E-05	0.00
Di-n-butyl phthalate	2.87E-05	2.58E-05		5.45E-05	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Pathway Total	2.33E-01	1.48E+00	1.17E-07	1.72E+00	
Fraction of Total	1.36E-01	8.64E-01	6.83E-08		

SECTOR=East MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.59E-02	1.16E-01		1.42E-01	0.02
Antimony	2.83E-03	6.34E-02		6.62E-02	0.01
Arsenic	4.32E-02	4.72E-02		9.05E-02	0.01
Beryllium	2.04E-04	9.14E-03		9.35E-03	0.00
Cadmium	9.36E-04	8.38E-03	1.59E-07	9.32E-03	0.00
Chromium	6.29E-03	1.41E-01		1.47E-01	0.02
Cobalt	2.59E-04	1.45E-04		4.04E-04	0.00
Lead	1.98E+02	5.91E+02	6.74E-07	7.89E+02	99.91
Manganese	2.02E-02	2.23E-01	6.33E-04	2.44E-01	0.03
Thallium					
Uranium	5.97E-03	3.14E-03		9.11E-03	0.00
Acenaphthene	7.53E-06	2.18E-05		2.93E-05	0.00
Anthracene	4.72E-06	5.57E-06		1.03E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.39E-05	6.55E-05		7.94E-05	0.00
Chrysene					
Di-n-butyl phthalate	2.52E-05	2.25E-05		4.77E-05	0.00
Dibenz(a,h)anthracene					
Fluoranthene	4.21E-05	1.22E-04		1.64E-04	0.00
Fluorene	7.82E-06	1.40E-05		2.18E-05	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	3.89E-06	4.36E-06		8.25E-06	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	5.50E-05	1.59E-04		2.14E-04	0.00
Trichloroethene	7.95E-04	1.19E-02		1.27E-02	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					
Uranium-238					
Pathway Total	1.98E+02	5.92E+02	6.34E-04	7.90E+02	
Fraction of Total	2.51E-01	7.49E-01	8.03E-07		

Table 1.71. Systemic toxicity for the future excavation worker

------------------------------- SECTOR=Far East/Northeast MEDIA=Subsurface soil -------------------------------

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.53E-02	1.13E-01		1.38E-01	0.01
Antimony	2.19E-02	4.91E-01		5.13E-01	0.03
Arsenic	7.92E-02	8.66E-02		1.66E-01	0.01
Beryllium	3.15E-04	1.41E-02		1.44E-02	0.00
Cadmium	4.39E-04	3.94E-03	7.48E-08	4.38E-03	0.00
Chromium	7.80E-03	1.75E-01		1.82E-01	0.01
Iron	1.63E-01	4.85E-01		6.48E-01	0.04
Lead	4.16E+02	1.24E+03	1.42E-06	1.66E+03	99.84
Manganese	4.14E-02	4.57E-01	1.30E-03	5.00E-01	0.03
Thallium					
Uranium	2.17E-02	1.14E-02		3.31E-02	0.00
Vanadium	1.16E-02	5.21E-01		5.32E-01	0.03
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.22E-05	5.74E-05		6.95E-05	0.00
Butyl benzyl phthalate	6.95E-07	1.02E-06		1.72E-06	0.00
Chrysene					
Di-n-butyl phthalate	1.62E-05	1.46E-05		3.08E-05	0.00
Fluoranthene	1.91E-05	5.52E-05		7.44E-05	0.00
Indeno(1,2,3-cd)pyrene					
PCB-1254	5.06E-03	3.02E-03		8.07E-03	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	2.55E-05	7.37E-05		9.91E-05	0.00
Alpha activity					
Beta activity					
Cesium-137					
Uranium-235					
Uranium-238					
Pathway Total	4.17E+02	1.25E+03	1.30E-03	1.66E+03	
Fraction of Total	2.51E-01	7.49E-01	7.81E-07		

------------------------------- SECTOR=Far North/Northwest MEDIA=Subsurface soil -------------------------------

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.58E-02	1.15E-01		1.41E-01	0.01
Antimony	1.05E-02	2.34E-01		2.45E-01	0.01
Arsenic	5.19E-02	5.67E-02		1.09E-01	0.01
Beryllium	2.45E-04	1.10E-02		1.12E-02	0.00
Cadmium	1.00E-03	8.99E-03	1.71E-07	1.00E-02	0.00
Chromium	2.22E-02	4.96E-01		5.18E-01	0.03
Cobalt	2.88E-04	1.61E-04		4.49E-04	0.00
Copper	1.35E-01	2.02E-01		3.37E-01	0.02
Iron	1.62E-01	4.84E-01		6.45E-01	0.03
Lead	4.69E+02	1.40E+03	1.59E-06	1.87E+03	99.76
Manganese	2.71E-02	2.99E-01	8.47E-04	3.27E-01	0.02
Mercury	1.04E-03	6.64E-03	3.53E-08	7.68E-03	0.00
Nickel	4.96E-01	8.23E-01		1.32E+00	0.07
Thallium					
Uranium	4.94E-01	2.60E-01		7.54E-01	0.04
Zinc	4.10E-04	9.18E-04		1.33E-03	0.00
2,4-Dinitrotoluene	7.15E-04	7.53E-04		1.47E-03	0.00
Acenaphthene	2.90E-06	8.37E-06		1.13E-05	0.00

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Anthracene	1.85E-06	2.18E-06		4.04E-06	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.60E-05	7.54E-05		9.14E-05	0.00
Chrysene					
Di-n-butyl phthalate	2.22E-05	1.99E-05		4.20E-05	0.00
Fluoranthene	3.56E-05	1.03E-04		1.38E-04	0.00
Fluorene	4.34E-06	7.78E-06		1.21E-05	0.00
Indeno(1,2,3-cd)pyrene					
N-Nitrosodiphenylamine					
PCB-1254	4.09E-03	2.44E-03		6.53E-03	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	4.79E-05	1.39E-04		1.86E-04	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Plutonium-239					
Technetium-99					
Thorium-230					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	4.70E+02	1.40E+03	8.49E-04	1.87E+03	
Fraction of Total	2.51E-01	7.49E-01	4.54E-07		

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.16E-02	9.68E-02		1.18E-01	9.73
Antimony	1.02E-02	2.28E-01		2.38E-01	19.54
Arsenic	2.76E-02	3.01E-02		5.77E-02	4.74
Barium	2.61E-03	1.67E-02	1.24E-05	1.93E-02	1.59
Beryllium	2.00E-04	8.98E-03		9.18E-03	0.75
Cadmium	2.70E-04	2.42E-03	4.60E-08	2.69E-03	0.22
Chromium	7.39E-03	1.65E-01		1.73E-01	14.20
Cobalt	2.31E-04	1.29E-04		3.60E-04	0.03
Manganese	1.62E-02	1.79E-01	5.09E-04	1.96E-01	16.11
Thallium					
Uranium	4.00E-02	2.11E-02		6.11E-02	5.02
Vanadium	7.33E-03	3.28E-01		3.35E-01	27.58
Zinc	2.01E-04	4.49E-04		6.50E-04	0.05
2,6-Dinitrotoluene	1.34E-03	1.41E-03		2.76E-03	0.23
Acenaphthene	2.41E-05	6.97E-05		9.38E-05	0.01
Anthracene	5.17E-06	6.09E-06		1.13E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.04E-05	4.92E-05		5.96E-05	0.00

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Chrysene					
Di-n-butyl phthalate	1.53E-05	1.37E-05		2.90E-05	0.00
Dibenz(a,h)anthracene					
Fluoranthene	6.33E-05	1.83E-04		2.46E-04	0.02
Fluorene	3.50E-05	6.26E-05		9.76E-05	0.01
Indeno(1,2,3-cd)pyrene					
N-Nitroso-di-n-propylamine					
Naphthalene	3.87E-05	4.33E-05		8.20E-05	0.01
PCB-1254	9.04E-04	5.40E-04		1.44E-03	0.12
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	7.79E-05	2.25E-04		3.03E-04	0.02
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	1.36E-01	1.08E+00	5.21E-04	1.22E+00	
Fraction of Total	1.12E-01	8.88E-01	4.28E-04		

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.12E-02	9.48E-02		1.16E-01	0.01
Antimony	8.85E-03	1.98E-01		2.07E-01	0.02
Arsenic	3.16E-02	3.45E-02		6.60E-02	0.01
Beryllium	2.38E-04	1.07E-02		1.09E-02	0.00
Cadmium	3.61E-04	3.24E-03	6.15E-08	3.60E-03	0.00
Chromium	8.21E-03	1.84E-01		1.92E-01	0.02
Cobalt	2.33E-04	1.31E-04		3.64E-04	0.00
Iron	1.24E-01	3.71E-01		4.96E-01	0.06
Lead	2.16E+02	6.45E+02	7.36E-07	8.62E+02	99.80
Manganese	1.74E-02	1.92E-01	5.45E-04	2.10E-01	0.02
Mercury	9.23E-04	5.90E-03	3.14E-08	6.83E-03	0.00
Thallium					
Uranium	1.17E-02	6.15E-03		1.78E-02	0.00
Vanadium	8.29E-03	3.71E-01		3.80E-01	0.04
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.39E-05	6.55E-05		7.94E-05	0.00
Chrysene					
Di-n-butyl phthalate	1.39E-06	1.25E-06		2.64E-06	0.00
Fluoranthene	3.45E-05	9.97E-05		1.34E-04	0.00
N-Nitroso-di-n-propylamine					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	4.60E-05	1.33E-04		1.79E-04	0.00
Alpha activity					
Beta activity					
Neptunium-237					
Uranium-235					
Uranium-238					

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=Northwest MEDIA=Subsurface soil (continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Pathway Total	2.16E+02	6.47E+02	5.45E-04	8.63E+02	
Fraction of Total	2.51E-01	7.49E-01	6.32E-07		

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.09E-02	9.37E-02		1.15E-01	0.01
Antimony	4.32E-03	9.68E-02		1.01E-01	0.01
Arsenic	3.40E-02	3.71E-02		7.10E-02	0.01
Barium	3.03E-03	1.94E-02	1.44E-05	2.24E-02	0.00
Beryllium	2.22E-04	9.93E-03		1.02E-02	0.00
Cadmium	5.04E-04	4.52E-03	8.59E-08	5.02E-03	0.00
Chromium	6.40E-03	1.43E-01		1.50E-01	0.02
Cobalt	1.98E-04	1.11E-04		3.08E-04	0.00
Iron	1.14E-01	3.41E-01		4.55E-01	0.06
Lead	1.92E+02	5.74E+02	6.54E-07	7.66E+02	99.80
Manganese	1.55E-02	1.71E-01	4.85E-04	1.87E-01	0.02
Mercury	3.88E-04	2.49E-03	1.32E-08	2.87E-03	0.00
Thallium					
Uranium	3.97E-03	2.09E-03		6.06E-03	0.00
Vanadium	6.94E-03	3.11E-01		3.18E-01	0.04
Zinc	2.19E-04	4.90E-04		7.09E-04	0.00
1,1,2-Trichloroethane	1.44E-05	3.97E-05		5.41E-05	0.00
1,1-Dichloroethene	1.33E-04	2.99E-04		4.32E-04	0.00
Acenaphthene	1.91E-05	5.52E-05		7.44E-05	0.00
Anthracene	5.99E-06	7.07E-06		1.31E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.33E-05	6.28E-05		7.62E-05	0.00
Carbon tetrachloride	1.04E-04	3.57E-04	2.79E-04	7.40E-04	0.00
Chrysene					
Di-n-butyl phthalate	1.45E-05	1.30E-05		2.75E-05	0.00
Di-n-octylphthalate	1.04E-05	1.04E-05		2.08E-05	0.00
Dibenz(a,h)anthracene					
Fluoranthene	3.67E-05	1.06E-04		1.43E-04	0.00
Fluorene	1.74E-05	3.11E-05		4.85E-05	0.00
Indeno(1,2,3-cd)pyrene					
Naphthalene	1.56E-05	1.74E-05		3.30E-05	0.00
PCB-1254	1.71E-02	1.02E-02		2.73E-02	0.00
PCB-1262					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	5.35E-05	1.55E-04		2.08E-04	0.00
Tetrachloroethene	7.13E-06	1.60E-05		2.31E-05	0.00
Trichloroethene	3.82E-03	5.70E-02		6.08E-02	0.01
Vinyl chloride					
trans-1,2-Dichloroethene	6.93E-03	1.55E-02		2.24E-02	0.00
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					
Uranium-238					

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Pathway Total	1.92E+02	5.75E+02	7.79E-04	7.67E+02	
Fraction of Total	2.51E-01	7.49E-01	1.02E-06		

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	1.93E-02	8.65E-02		1.06E-01	0.01
Antimony	9.87E-03	2.21E-01		2.31E-01	0.03
Arsenic	4.27E-02	4.67E-02		8.94E-02	0.01
Barium	2.95E-03	1.89E-02	1.41E-05	2.18E-02	0.00
Beryllium	2.25E-04	1.01E-02		1.03E-02	0.00
Cadmium	6.02E-04	5.40E-03	1.03E-07	6.00E-03	0.00
Chromium	6.29E-03	1.41E-01		1.47E-01	0.02
Iron	1.18E-01	3.52E-01		4.70E-01	0.06
Lead	1.93E+02	5.75E+02	6.56E-07	7.68E+02	99.79
Manganese	1.57E-02	1.73E-01	4.91E-04	1.89E-01	0.02
Mercury	3.52E-04	2.25E-03	1.20E-08	2.60E-03	0.00
Silver	1.61E-04	4.00E-04		5.61E-04	0.00
Thallium					
Uranium	5.70E-03	3.01E-03		8.71E-03	0.00
Vanadium	6.35E-03	2.84E-01		2.91E-01	0.04
Zinc	2.43E-04	5.43E-04		7.86E-04	0.00
2-Hexanone					
Acenaphthene	2.60E-05	7.52E-05		1.01E-04	0.00
Acenaphthylene					
Anthracene	5.47E-06	6.45E-06		1.19E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	2.80E-05	1.32E-04		1.60E-04	0.00
Butyl benzyl phthalate	7.54E-06	1.11E-05		1.86E-05	0.00
Chrysene					
Di-n-butyl phthalate	3.89E-05	3.48E-05		7.37E-05	0.00
Di-n-octylphthalate	1.05E-04	1.05E-04		2.10E-04	0.00
Dibenz(a,h)anthracene					
Fluoranthene	6.96E-05	2.01E-04		2.71E-04	0.00
Fluorene	2.48E-05	4.44E-05		6.91E-05	0.00
Indeno(1,2,3-cd)pyrene					
Iodomethane					
Methylene chloride	1.15E-06	2.71E-06	3.61E-07	4.22E-06	0.00
N-Nitroso-di-n-propylamine					
N-Nitrosodiphenylamine					
Naphthalene	1.17E-05	1.31E-05		2.48E-05	0.00
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	9.00E-05	2.60E-04		3.50E-04	0.00
Trichloroethene	2.07E-04	3.09E-03		3.29E-03	0.00
Vinyl chloride					
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-235					

Table 1.71. Systemic toxicity for the future excavation worker

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Uranium-238					
Pathway Total	1.93E+02	5.77E+02	5.06E-04	7.70E+02	
Fraction of Total	2.51E-01	7.49E-01	6.58E-07		

SECTOR=West MEDIA=Subsurface soil

Analyte	Ingestion of soil	Dermal contact with soil	Inhalation of volatiles from soil	Chemical Total	% of Total
Aluminum	2.61E-02	1.17E-01		1.43E-01	6.76
Antimony	7.11E-03	1.59E-01		1.66E-01	7.88
Arsenic	5.04E-01	5.50E-01		1.05E+00	49.89
Barium	3.17E-03	2.03E-02	1.51E-05	2.35E-02	1.11
Beryllium	2.23E-04	9.99E-03		1.02E-02	0.48
Cadmium	1.30E-03	1.17E-02	2.22E-07	1.30E-02	0.62
Chromium	7.83E-03	1.75E-01		1.83E-01	8.67
Cobalt	2.32E-04	1.30E-04		3.62E-04	0.02
Uranium	5.56E-02	2.93E-02		8.49E-02	4.02
Vanadium	7.50E-03	3.36E-01		3.44E-01	16.26
Zinc	2.83E-04	6.33E-04		9.15E-04	0.04
2-Methylnaphthalene					
Acenaphthene	1.34E-04	3.88E-04		5.22E-04	0.02
Anthracene	4.51E-05	5.32E-05		9.84E-05	0.00
Benz(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene					
Benzo(ghi)perylene					
Benzo(k)fluoranthene					
Bis(2-ethylhexyl)phthalate	1.74E-05	8.19E-05		9.93E-05	0.00
Chrysene					
Di-n-butyl phthalate	7.12E-06	6.38E-06		1.35E-05	0.00
Dibenz(a,h)anthracene					
Fluoranthene	7.43E-04	2.15E-03		2.89E-03	0.14
Fluorene	1.45E-04	2.60E-04		4.05E-04	0.02
Indeno(1,2,3-cd)pyrene					
Naphthalene	9.21E-05	1.03E-04		1.95E-04	0.01
PCB-1254	4.53E-02	2.70E-02		7.23E-02	3.42
PCB-1260					
Phenanthrene					
Polychlorinated biphenyl					
Pyrene	9.39E-04	2.71E-03		3.65E-03	0.17
Trichloroethene	6.11E-04	9.12E-03		9.73E-03	0.46
Alpha activity					
Beta activity					
Cesium-137					
Neptunium-237					
Uranium-234					
Uranium-235					
Uranium-238					
Pathway Total	6.61E-01	1.45E+00	1.53E-05	2.11E+00	
Fraction of Total	3.13E-01	6.87E-01	7.25E-06		

Table 1.72. Excess lifetime cancer risks for the future industrial worker

---------- SECTOR=McNairy MEDIA=Ground water ----------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Aluminum							
Arsenic	1.4E-03	1.2E-05				1.4E-03	30.99
Barium							
Beryllium	1.3E-04	4.6E-05				1.7E-04	3.82
Bromide							
Cadmium							
Chromium							
Cobalt							
Iron							
Lead							
Manganese							
Nickel							
Nitrate							
Orthophosphate							
Selenium							
Tetraoxo-sulfate(1-)							
Thallium							
Vanadium							
Zinc							
1,1-Dichloroethene	1.5E-05	4.9E-07		1.7E-05		3.2E-05	0.72
1,2-Dichloroethane	3.2E-07	6.1E-09		1.7E-07		5.0E-07	0.01
Bis(2-ethylhexyl)phthalate	2.5E-07	1.1E-07				3.7E-07	0.01
Bromodichloromethane	1.2E-06	2.5E-08				1.2E-06	[illegible]
Chloroform	1.4E-07	2.3E-08		1.0E-06		1.2E-06	
Di-n-butyl phthalate							
Di-n-octylphthalate							
Dibromochloromethane	1.2E-06	2.8E-08				1.2E-06	0.03
Tetrachloroethene	1.8E-06	2.4E-06		3.7E-08		4.2E-06	0.09
Trichloroethene	6.2E-07	2.4E-07		1.9E-07		1.0E-06	0.02
Vinyl chloride	9.3E-05	2.5E-06		8.0E-06		1.0E-04	2.31
cis-1,2-Dichloroethene							
Actinium-228	2.8E-07					2.8E-07	0.01
Alpha activity							
Beta activity							
Cesium-137	2.4E-06					2.4E-06	0.05
Lead-210	2.7E-03					2.7E-03	59.19
Lead-212	2.5E-06					2.5E-06	0.06
Lead-214	2.2E-08					2.2E-08	0.00
Neptunium-237	1.5E-05					1.5E-05	0.34
Plutonium-239	2.6E-06					2.6E-06	0.06
Potassium-40	5.3E-06					5.3E-06	0.12
Technetium-99	2.7E-06					2.7E-06	0.06
Thorium-228	1.8E-06					1.8E-06	0.04
Thorium-230	3.2E-07					3.2E-07	0.01
Thorium-234	8.7E-05					8.7E-05	1.93
Uranium-234	5.2E-07					5.2E-07	0.01
Uranium-235	3.4E-06					3.4E-06	0.08
Uranium-238	4.9E-07					4.9E-07	0.01
Pathway Total	4.4E-03	6.4E-05		2.6E-05		4.5E-03	
Fraction of Total	9.8E-01	1.4E-02		5.8E-03			

---------- SECTOR=RGA MEDIA=Ground water ----------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Aluminum							

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Antimony							
Arsenic	1.5E-04	1.4E-06				1.5E-04	5.74
Barium							
Beryllium	1.5E-04	5.5E-05				2.1E-04	7.73
Bromide							
Cadmium							
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Manganese							
Mercury							
Nickel							
Nitrate							
Orthophosphate							
Silver							
Tetraoxo-sulfate(1-)							
Thallium							
Uranium							
Vanadium							
Zinc							
chloroethene	1.4E-05	4.5E-07		1.5E-05		3.0E-05	1.10
-ethylhexyl)phthalate	4.9E-08	2.2E-08				7.1E-08	0.00
Bromodichloromethane	8.7E-07	1.9E-08				8.9E-07	0.03
Carbon tetrachloride	3.2E-05	3.9E-06		7.1E-06		4.3E-05	1.61
Chloroform	6.2E-07	9.9E-08		4.5E-06		5.2E-06	0.19
Di-n-butyl phthalate							
Di-n-octylphthalate							
N-Nitroso-di-n-propylamine	2.4E-05	9.9E-07				2.5E-05	0.95
Tetrachloroethene	4.0E-06	5.4E-06		8.4E-08		9.4E-06	0.35
Toluene							
Trichloroethene	3.1E-04	1.2E-04		9.4E-05		5.3E-04	19.78
Vinyl chloride	8.8E-04	2.3E-05		7.6E-05		9.8E-04	36.63
cis-1,2-Dichloroethene							
trans-1,2-Dichloroethene							
Alpha activity							
Americium-241	3.4E-06					3.4E-06	0.13
Beta activity							
Cesium-137	2.2E-06					2.2E-06	0.08
Lead-210	6.3E-04					6.3E-04	23.53
Lead-214	1.4E-08					1.4E-08	0.00
Neptunium-237	2.5E-05					2.5E-05	0.95
Plutonium-239	9.0E-08					9.0E-08	0.00
Technetium-99	2.3E-05					2.3E-05	0.87
Thorium-228	1.1E-06					1.1E-06	0.04
Thorium-230	2.6E-07					2.6E-07	0.01
Uranium-234	4.6E-07					4.6E-07	0.02
Uranium-235	3.5E-08					3.5E-08	0.00
Uranium-238	6.4E-06					6.4E-06	0.24
Pathway Total	2.3E-03	2.1E-04		2.0E-04		2.7E-03	
Fraction of Total	8.5E-01	7.9E-02		7.3E-02			

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Aluminum							
Antimony							
Arsenic	1.4E-06	1.5E-05	4.4E-09			1.6E-05	4.81
Beryllium	2.2E-07	9.3E-05	4.0E-11			9.4E-05	27.98
Cadmium			4.4E-11			4.4E-11	0.00
Chromium			7.9E-09			7.9E-09	0.00
Cobalt							
Iron							
Lead							
Thallium							
Uranium							
Vanadium							
Zinc							
2-Methylnaphthalene							
Acenaphthene							
Acenaphthylene							
Anthracene							
Benz(a)anthracene	4.8E-07	1.3E-05	1.9E-11			1.4E-05	4.16
Benzo(a)pyrene	4.7E-06	1.3E-04	1.9E-10			1.4E-04	40.67
Benzo(b)fluoranthene	5.6E-07	1.5E-05	2.2E-11			1.6E-05	4.78
Benzo(ghi)perylene							
Benzo(k)fluoranthene	4.5E-08	1.2E-06	1.8E-12			1.3E-06	0.39
Bis(2-ethylhexyl)phthalate	2.4E-10	1.1E-08				1.1E-08	0.00
Chrysene	5.1E-09	1.4E-07	2.0E-13			1.5E-07	
Di-n-butyl phthalate							
Dibenz(a,h)anthracene	1.4E-06	3.9E-05	5.6E-11			4.0E-05	12.05
Fluoranthene							
Fluorene							
Indeno(1,2,3-cd)pyrene	2.6E-07	7.1E-06	1.0E-11			7.3E-06	2.20
Naphthalene							
PCB-1254	5.9E-08	3.4E-07	5.5E-12			4.0E-07	0.12
PCB-1260	3.3E-08	1.9E-07	3.0E-12			2.2E-07	0.07
PCB-1262	1.3E-08	7.6E-08	1.2E-12			8.9E-08	0.03
Phenanthrene							
Polychlorinated biphenyl	1.0E-07	6.0E-07	9.8E-12			7.0E-07	0.21
Pyrene							
Alpha activity							
Beta activity							
Cesium-137	3.7E-09		2.1E-13		3.6E-06	3.6E-06	1.07
Neptunium-237	6.0E-08		6.4E-10		1.3E-06	1.4E-06	0.42
Uranium-234	9.1E-08		2.7E-09		6.4E-10	9.4E-08	0.03
Uranium-235	5.7E-09		1.5E-10		4.7E-07	4.8E-07	0.14
Uranium-238	1.7E-07		3.2E-09		2.6E-06	2.8E-06	0.84
Pathway Total	9.6E-06	3.2E-04	1.9E-08		8.0E-06	3.3E-04	
Fraction of Total	2.9E-02	9.5E-01	5.8E-05		2.4E-02		

[illegible]

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Di-n-butyl phthalate							
Alpha activity							
Beta activity							
Pathway Total							
Fraction of Total							

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Cadmium			3.8E-11			3.8E-11	0.00
Chromium			9.1E-09			9.1E-09	0.01
Thallium							
Uranium							
Acenaphthene							
Anthracene							
Benz(a)anthracene	9.2E-08	2.6E-06	3.6E-12			2.6E-06	3.11
Benzo(a)pyrene	1.0E-06	2.8E-05	4.0E-11			2.9E-05	34.27
Benzo(b)fluoranthene	1.8E-07	5.0E-06	7.1E-12			5.1E-06	6.04
[illegible]ghi)perylene							
[illegible]k)fluoranthene	1.1E-08	3.1E-07	4.4E-13			3.2E-07	0.38
Chrysene	1.0E-09	2.8E-08	4.0E-14			2.9E-08	0.03
Di-n-butyl phthalate							
Dibenz(a,h)anthracene	2.0E-07	5.7E-06	8.1E-12			5.9E-06	6.90
Fluoranthene							
Fluorene							
Indeno(1,2,3-cd)pyrene	5.4E-08	1.5E-06	2.1E-12			1.5E-06	1.81
PCB-1260	1.2E-06	6.6E-06	1.1E-10			7.8E-06	9.13
Phenanthrene							
Polychlorinated biphenyl	3.5E-06	2.0E-05	3.3E-10			2.4E-05	27.67
Pyrene							
Alpha activity							
Beta activity							
Cesium-137	4.9E-09		2.8E-13		4.8E-06	4.8E-06	5.62
Neptunium-237	3.8E-08		4.0E-10		8.4E-07	8.8E-07	1.04
Uranium-235	5.9E-09		1.5E-10		4.8E-07	4.9E-07	0.58
Uranium-238	1.8E-07		3.3E-09		2.7E-06	2.9E-06	3.42
Pathway Total	6.4E-06	7.0E-05	1.3E-08		8.8E-06	8.5E-05	
Fraction of Total	7.6E-02	8.2E-01	1.6E-04		1.0E-01		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Aluminum							
Antimony							
Chromium			7.0E-09			7.0E-09	0.13
Uranium							
Benz(a)anthracene	5.1E-09	1.4E-07	2.0E-13			1.5E-07	2.82
[illegible](a)pyrene	5.1E-08	1.4E-06	2.0E-12			1.5E-06	28.16
[illegible]) fluoranthene	5.1E-09	1.4E-07	2.0E-13			1.5E-07	2.82
[illegible]k)fluoranthene	6.4E-10	1.8E-08	2.5E-14			1.8E-08	0.35

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Chrysene	5.1E-11	1.4E-09	2.0E-15			1.5E-09	0.03
Fluoranthene							
PCB-1260	2.0E-09	1.1E-08	1.8E-13			1.3E-08	0.25
Phenanthrene							
Polychlorinated biphenyl	2.0E-09	1.1E-08	1.8E-13			1.3E-08	0.25
Pyrene							
Alpha activity							
Beta activity							
Uranium-235	7.3E-09		1.9E-10		6.1E-07	6.1E-07	11.76
Uranium-238	1.7E-07		3.1E-09		2.6E-06	2.8E-06	53.42
Pathway Total	2.4E-07	1.7E-06	1.0E-08		3.2E-06	5.2E-06	
Fraction of Total	4.6E-02	3.3E-01	2.0E-03		6.2E-01		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Antimony							
Beryllium	5.2E-07	2.2E-04	9.5E-11			2.2E-04	9[illegible]
Cadmium			3.0E-11			3.0E-11	[illegible]
Chromium			1.8E-08			1.8E-08	0.01
Thallium							
Uranium							
Acenaphthene							
Anthracene							
Benz(a)anthracene	4.3E-08	1.2E-06	1.7E-12			1.2E-06	0.52
Benzo(a)pyrene	3.6E-07	9.9E-06	1.4E-11			1.0E-05	4.28
Benzo(b)fluoranthene	3.3E-08	9.2E-07	1.3E-12			9.5E-07	0.40
Benzo(ghi)perylene							
Benzo(k)fluoranthene	3.7E-09	1.0E-07	1.5E-13			1.1E-07	0.04
Bis(2-ethylhexyl)phthalate	2.0E-10	8.9E-09				9.1E-09	0.00
Chrysene	4.5E-10	1.2E-08	1.8E-14			1.3E-08	0.01
Di-n-butyl phthalate							
Fluoranthene							
Fluorene							
Indeno(1,2,3-cd)pyrene	1.8E-08	5.0E-07	7.1E-13			5.1E-07	0.21
Phenanthrene							
Pyrene							
Alpha activity							
Beta activity							
Neptunium-237	5.6E-08		6.0E-10		1.3E-06	1.3E-06	0.55
Uranium-235	2.9E-09		7.6E-11		2.4E-07	2.5E-07	0.10
Uranium-238	8.9E-08		1.7E-09		1.4E-06	1.5E-06	0.61
Pathway Total	1.1E-06	2.4E-04	2.1E-08		2.9E-06	2.4E-04	
Fraction of Total	4.7E-03	9.8E-01	8.6E-05		1.2E-02		

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of To[illegible]
Aluminum							

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Arsenic	1.4E-03	1.2E-05				1.4E-03	30.99
Barium							
Beryllium	1.3E-04	4.6E-05				1.7E-04	3.82
Bromide							
Cadmium							
Chromium							
Cobalt							
Iron							
Lead							
Manganese							
Nickel							
Nitrate							
Orthophosphate							
Selenium							
Tetraoxo-sulfate(1-)							
Thallium							
Vanadium							
Zinc							
1,1-Dichloroethene	1.5E-05	4.9E-07		1.7E-05		3.2E-05	0.72
1,2-Dichloroethane	3.2E-07	6.1E-09		1.7E-07		5.0E-07	0.01
Bis(2-ethylhexyl)phthalate	2.5E-07	1.1E-07				3.7E-07	0.01
Bromodichloromethane	1.2E-06	2.5E-08				1.2E-06	0.03
form	1.4E-07	2.3E-08		1.0E-06		1.2E-06	0.03
utyl phthalate							
Di-n-octylphthalate							
Dibromochloromethane	1.2E-06	2.8E-08				1.2E-06	0.03
Tetrachloroethene	1.8E-06	2.4E-06		3.7E-08		4.2E-06	0.09
Trichloroethene	6.2E-07	2.4E-07		1.9E-07		1.0E-06	0.02
Vinyl chloride	9.3E-05	2.5E-06		8.0E-06		1.0E-04	2.31
cis-1,2-Dichloroethene							
Actinium-228	2.8E-07					2.8E-07	0.01
Alpha activity							
Beta activity							
Cesium-137	2.4E-06					2.4E-06	0.05
Lead-210	2.7E-03					2.7E-03	59.19
Lead-212	2.5E-06					2.5E-06	0.06
Lead-214	2.2E-08					2.2E-08	0.00
Neptunium-237	1.5E-05					1.5E-05	0.34
Plutonium-239	2.6E-06					2.6E-06	0.06
Potassium-40	5.3E-06					5.3E-06	0.12
Technetium-99	2.7E-06					2.7E-06	0.06
Thorium-228	1.8E-06					1.8E-06	0.04
Thorium-230	3.2E-07					3.2E-07	0.01
Thorium-234	8.7E-05					8.7E-05	1.93
Uranium-234	5.2E-07					5.2E-07	0.01
Uranium-235	3.4E-06					3.4E-06	0.08
Uranium-238	4.9E-07					4.9E-07	0.01
Pathway Total	4.4E-03	6.4E-05		2.6E-05		4.5E-03	
Fraction of Total	9.8E-01	1.4E-02		5.8E-03			

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
[illegible]um			1.3E-08			1.3E-08	0.08

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Uranium							
Zinc							
Acenaphthene							
Anthracene							
Benz(a)anthracene	4.5E-08	1.2E-06	1.8E-12			1.3E-06	7.75
Benzo(a)pyrene	3.8E-07	1.1E-05	1.5E-11			1.1E-05	66.39
Benzo(b)fluoranthene	5.5E-08	1.5E-06	2.2E-12			1.6E-06	9.52
Benzo(ghi)perylene							
Benzo(k)fluoranthene	3.6E-09	9.9E-08	1.4E-13			1.0E-07	0.62
Chrysene	5.1E-10	1.4E-08	2.0E-14			1.5E-08	0.09
Fluoranthene							
Indeno(1,2,3-cd)pyrene	2.3E-08	6.4E-07	9.1E-13			6.6E-07	3.98
PCB-1260	1.5E-08	8.6E-08	1.4E-12			1.0E-07	0.61
Phenanthrene							
Polychlorinated biphenyl	1.5E-08	8.6E-08	1.4E-12			1.0E-07	0.61
Pyrene							
Alpha activity							
Beta activity							
Uranium-235	2.9E-09		7.6E-11		2.4E-07	2.5E-07	1.48
Uranium-238	8.9E-08		1.7E-09		1.4E-06	1.5E-06	8.88
Pathway Total	6.3E-07	1.4E-05	1.5E-08		1.6E-06	1.7E-05	
Fraction of Total	3.8E-02	8.6E-01	8.9E-04		9.8E-02		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Antimony							
Beryllium	2.4E-07	1.0E-04	4.4E-11			1.0E-04	84.74
Cadmium			2.0E-11			2.0E-11	0.00
Chromium			1.4E-08			1.4E-08	0.01
Iron							
Lead							
Vanadium							
Benz(a)anthracene	3.8E-08	1.1E-06	1.5E-12			1.1E-06	0.89
Benzo(a)pyrene	5.1E-07	1.4E-05	2.0E-11			1.5E-05	11.86
Benzo(b)fluoranthene	6.7E-08	1.9E-06	2.7E-12			1.9E-06	1.57
Benzo(k)fluoranthene	3.8E-09	1.1E-07	1.5E-13			1.1E-07	0.09
Chrysene	3.7E-10	1.0E-08	1.5E-14			1.1E-08	0.01
Fluoranthene							
Pyrene							
Alpha activity							
Beta activity							
Uranium-238	6.2E-08		1.2E-09		9.6E-07	1.0E-06	0.83
Pathway Total	9.3E-07	1.2E-04	1.5E-08		9.6E-07	1.2E-04	
Fraction of Total	7.5E-03	9.8E-01	1.2E-04		7.8E-03		

Table 1.72. Excess lifetime cancer risks for the future industrial worker

-- SECTOR=RGA MEDIA=Ground water --

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Aluminum							
Antimony							
Arsenic	1.5E-04	1.4E-06				1.5E-04	5.74
Barium							
Beryllium	1.5E-04	5.5E-05				2.1E-04	7.73
Bromide							
Cadmium							
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Manganese							
Mercury							
Nickel							
Nitrate							
Orthophosphate							
Silver							
Tetraoxo-sulfate(1-)							
Thallium							
Uranium							
Vanadium							
Zinc							
[illegible]chloroethene	1.4E-05	4.5E-07		1.5E-05		3.0E-05	1.10
[illegible]ethylhexyl)phthalate	4.9E-08	2.2E-08				7.1E-08	0.00
Bromodichloromethane	8.7E-07	1.9E-08				8.9E-07	0.03
Carbon tetrachloride	3.2E-05	3.9E-06		7.1E-06		4.3E-05	1.61
Chloroform	6.2E-07	9.9E-08		4.5E-06		5.2E-06	0.19
Di-n-butyl phthalate							
Di-n-octylphthalate							
N-Nitroso-di-n-propylamine	2.4E-05	9.9E-07				2.5E-05	0.95
Tetrachloroethene	4.0E-06	5.4E-06		8.4E-08		9.4E-06	0.35
Toluene							
Trichloroethene	3.1E-04	1.2E-04		9.4E-05		5.3E-04	19.78
Vinyl chloride	8.8E-04	2.3E-05		7.6E-05		9.8E-04	36.63
cis-1,2-Dichloroethene							
trans-1,2-Dichloroethene							
Alpha activity							
Americium-241	3.4E-06					3.4E-06	0.13
Beta activity							
Cesium-137	2.2E-06					2.2E-06	0.08
Lead-210	6.3E-04					6.3E-04	23.53
Lead-214	1.4E-08					1.4E-08	0.00
Neptunium-237	2.5E-05					2.5E-05	0.95
Plutonium-239	9.0E-08					9.0E-08	0.00
Technetium-99	2.3E-05					2.3E-05	0.87
Thorium-228	1.1E-06					1.1E-06	0.04
Thorium-230	2.6E-07					2.6E-07	0.01
Uranium-234	4.6E-07					4.6E-07	0.02
Uranium-235	3.5E-08					3.5E-08	0.00
Uranium-238	6.4E-06					6.4E-06	0.24
Pathway Total	2.3E-03	2.1E-04		2.0E-04		2.7E-03	

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Fraction of Total	8.5E-01	7.9E-02		7.3E-02			

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Aluminum							
Antimony							
Cadmium			3.5E-11			3.5E-11	0.00
Chromium			1.6E-08			1.6E-08	0.43
Benz(a)anthracene	8.9E-09	2.5E-07	3.5E-13			2.6E-07	7.00
Benzo(a)pyrene	1.0E-07	2.8E-06	4.0E-12			2.9E-06	80.01
Benzo(b)fluoranthene	8.9E-09	2.5E-07	3.5E-13			2.6E-07	7.00
Benzo(k)fluoranthene	7.7E-10	2.1E-08	3.0E-14			2.2E-08	0.60
Chrysene	1.0E-10	2.8E-09	4.0E-15			2.9E-09	0.08
Fluoranthene							
PCB-1262	1.3E-08	7.6E-08	1.2E-12			8.9E-08	2.44
Phenanthrene							
Polychlorinated biphenyl	1.3E-08	7.6E-08	1.2E-12			8.9E-08	
Pyrene							
Alpha activity							
Beta activity							
Pathway Total	1.5E-07	3.5E-06	1.6E-08			3.7E-06	
Fraction of Total	4.0E-02	9.6E-01	4.3E-03				

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Antimony							
Beryllium	2.8E-07	1.2E-04	5.2E-11			1.2E-04	30.60
Cadmium			3.6E-11			3.6E-11	0.00
Chromium			1.4E-08			1.4E-08	0.00
Iron							
Thallium							
Uranium							
Zinc							
Acenaphthene							
Acenaphthylene							
Anthracene							
Benz(a)anthracene	6.4E-07	1.8E-05	2.5E-11			1.8E-05	4.61
Benzo(a)pyrene	6.2E-06	1.7E-04	2.4E-10			1.8E-04	44.41
Benzo(b)fluoranthene	6.5E-07	1.8E-05	2.6E-11			1.9E-05	4.70
Benzo(ghi)perylene							
Benzo(k)fluoranthene	4.3E-08	1.2E-06	1.7E-12			1.2E-06	0.31
Bis(2-ethylhexyl)phthalate	2.0E-10	8.9E-09				9.1E-09	0.00
Chrysene	5.8E-09	1.6E-07	2.3E-13			1.7E-07	0.04
Dibenz(a,h)anthracene	1.7E-06	4.6E-05	6.6E-11			4.8E-05	11.94
Fluoranthene							
Fluorene							
Indeno(1,2,3-cd)pyrene	2.3E-07	6.4E-06	9.1E-12			6.6E-06	

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Naphthalene							
PCB-1260	1.3E-08	7.6E-08	1.2E-12			8.9E-08	0.02
Phenanthrene							
Polychlorinated biphenyl	1.3E-08	7.6E-08	1.2E-12			8.9E-08	0.02
Pyrene							
Alpha activity							
Beta activity							
Neptunium-237	2.8E-08		3.0E-10		6.3E-07	6.6E-07	0.17
Uranium-235	8.8E-09		2.3E-10		7.3E-07	7.4E-07	0.18
Uranium-238	3.2E-07		6.0E-09		5.0E-06	5.3E-06	1.34
Pathway Total	1.0E-05	3.8E-04	2.1E-08		6.4E-06	4.0E-04	
Fraction of Total	2.5E-02	9.6E-01	5.3E-05		1.6E-02		

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Al..inum							
...ny							
...c	3.5E-06	3.6E-05	1.1E-08			4.0E-05	3.48
Beryllium	2.4E-07	1.0E-04	4.3E-11			1.0E-04	8.93
Cadmium			9.0E-11			9.0E-11	0.00
Chromium			8.4E-09			8.4E-09	0.00
Cobalt							
Uranium							
Zinc							
2-Methylnaphthalene							
Acenaphthene							
Anthracene							
Benz(a)anthracene	2.6E-06	7.1E-05	1.0E-10			7.4E-05	6.47
Benzo(a)pyrene	2.3E-05	6.4E-04	9.2E-10			6.6E-04	58.20
Benzo(b)fluoranthene	2.9E-06	8.0E-05	1.1E-10			8.3E-05	7.24
Benzo(ghi)perylene							
Benzo(k)fluoranthene	2.8E-07	7.9E-06	1.1E-11			8.1E-06	0.71
Bis(2-ethylhexyl)phthalate	2.4E-10	1.1E-08				1.1E-08	0.00
Chrysene	2.8E-08	7.7E-07	1.1E-12			8.0E-07	0.07
Di-n-butyl phthalate							
Dibenz(a,h)anthracene	4.8E-06	1.3E-04	1.9E-10			1.4E-04	12.07
Fluoranthene							
Fluorene							
Indeno(1,2,3-cd)pyrene	4.8E-07	1.3E-05	1.9E-11			1.4E-05	1.22
Naphthalene							
PCB-1254	3.4E-07	1.9E-06	3.1E-11			2.3E-06	0.20
PCB-1260	5.6E-09	3.2E-08	5.2E-13			3.8E-08	0.00
Phenanthrene							
Polychlorinated biphenyl	2.0E-07	1.1E-06	1.8E-11			1.3E-06	0.12
Pyrene							
Alpha activity							
Beta activity							
Cesium-137	6.6E-09		3.7E-13		6.4E-06	6.4E-06	0.56
Neptunium-237	1.4E-07		1.5E-09		3.2E-06	3.4E-06	0.29
Uranium-234	1.3E-07		3.9E-09		9.3E-10	1.4E-07	0.01
U...um-235	9.7E-09		2.5E-10		8.0E-07	8.1E-07	0.07
...n-238	2.3E-07		4.4E-09		3.6E-06	3.9E-06	0.34
P... ..y Total	3.9E-05	1.1E-03	3.1E-08		1.4E-05	1.1E-03	

Table 1.72. Excess lifetime cancer risks for the future industrial worker

SECTOR=West MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	External exposure	Chemical Total	% of Total
Fraction of Total	3.4E-02	9.5E-01	2.7E-05		1.2E-02		

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=McNairy MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Aluminum									
Arsenic	7.5E-03	3.1E-05				4.3E-03		1.2E-02	33.17
Barium									
Beryllium	6.8E-04	1.2E-04				3.9E-04		1.2E-03	3.32
Bromide									
Cadmium									
Chromium									
Cobalt									
Iron									
Lead									
Manganese									
Nickel									
Nitrate									
Orthophosphate									
Selenium									
Tetraoxo-sulfate(1-)									
Thallium									
Vanadium									
Zinc									
1,1-Dichloroethene	8.2E-05	1.2E-06		5.8E-05	6.3E-04	1.4E-04		9.1E-04	2.55
1,2-Dichloroethane	1.7E-06	1.6E-08		6.1E-07	6.7E-06	3.8E-06		1.3E-05	0.04
Bis(2-ethylhexyl)phthalate	1.4E-06	2.9E-07				8.0E-07		2.5E-06	0.01
Br[illegible]dichloromethane	6.3E-06	6.3E-08				8.1E-06		1.4E-05	0.04
C[illegible]orm	7.8E-07	5.9E-08		3.7E-06	4.0E-05	1.1E-06		4.6E-05	0.13
L[illegible]tyl phthalate									
Di-n-octylphthalate									
Dibromochloromethane	6.4E-06	7.1E-08				7.6E-06		1.4E-05	0.04
Tetrachloroethene	9.6E-06	6.1E-06		1.3E-07	1.4E-06	9.0E-06		2.6E-05	0.07
Trichloroethene	3.4E-06	6.1E-07		6.5E-07	7.1E-06	3.5E-06		1.5E-05	0.04
Vinyl chloride	5.1E-04	6.3E-06		2.8E-05	3.1E-04	1.2E-03		2.1E-03	5.78
cis-1,2-Dichloroethene									
Actinium-228	1.1E-06					3.2E-09		1.1E-06	0.00
Alpha activity									
Beta activity									
Cesium-137	1.0E-05					4.5E-06		1.5E-05	0.04
Lead-210	1.1E-02					4.5E-03		1.5E-02	43.48
Lead-212	1.0E-05					5.1E-08		1.1E-05	0.03
Lead-214	9.2E-08					1.9E-11		9.2E-08	0.00
Neptunium-237	6.3E-05					3.4E-05		9.6E-05	0.27
Plutonium-239	1.1E-05					5.8E-06		1.7E-05	0.05
Potassium-40	2.2E-05					2.1E-05		4.3E-05	0.12
Technetium-99	1.1E-05					3.4E-03		3.4E-03	9.60
Thorium-228	7.4E-06					1.4E-06		8.7E-06	0.02
Thorium-230	1.3E-06					7.0E-07		2.0E-06	0.01
Thorium-234	3.6E-04					3.6E-05		4.0E-04	1.11
Uranium-234	2.2E-06					1.1E-06		3.3E-06	0.01
Uranium-235	1.4E-05					7.5E-06		2.2E-05	0.06
Uranium-238	2.0E-06					1.1E-06		3.1E-06	0.01
Pathway Total	2.0E-02	1.6E-04		9.2E-05	1.0E-03	1.4E-02		3.5E-02	
Fraction of Total	5.7E-01	4.5E-03		2.6E-03	2.8E-02	4.0E-01			

SECTOR=RGA MEDIA=Ground water

Ar[illegible]	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Al[illegible]									

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Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Antimony									
Arsenic	8.3E-04	3.4E-06				4.8E-04		1.3E-03	1.99
Barium									
Beryllium	8.3E-04	1.4E-04				4.7E-04		1.4E-03	2.18
Bromide									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury									
Nickel									
Nitrate									
Orthophosphate									
Silver									
Tetraoxo-sulfate(1-)									
Thallium									
Uranium									
Vanadium									
Zinc									
1,1-Dichloroethene	7.6E-05	1.1E-06		5.4E-05	5.8E-04	1.2E-04		8.4E-04	
Bis(2-ethylhexyl)phthalate	2.7E-07	5.6E-08				1.5E-07		4.8E-07	[illegible]
Bromodichloromethane	4.7E-06	4.7E-08				6.1E-06		1.1E-05	0.02
Carbon tetrachloride	1.7E-04	1.0E-05		2.5E-05	2.7E-04	1.5E-04		6.3E-04	0.96
Chloroform	3.3E-06	2.5E-07		1.6E-05	1.7E-04	4.7E-06		1.9E-04	0.30
Di-n-butyl phthalate									
Di-n-octylphthalate									
N-Nitroso-di-n-propylamine	1.3E-04	2.5E-06				3.2E-04		4.6E-04	0.69
Tetrachloroethene	2.2E-05	1.4E-05		3.0E-07	3.2E-06	2.0E-05		5.9E-05	0.09
Toluene									
Trichloroethene	1.7E-03	3.1E-04		3.3E-04	3.6E-03	1.8E-03		7.7E-03	11.74
Vinyl chloride	4.8E-03	6.0E-05		2.7E-04	2.9E-03	1.1E-02		1.9E-02	29.74
cis-1,2-Dichloroethene									
trans-1,2-Dichloroethene									
Alpha activity									
Americium-241	1.4E-05					7.4E-06		2.2E-05	0.03
Beta activity									
Cesium-137	8.9E-06					4.0E-06		1.3E-05	0.02
Lead-210	2.6E-03					1.1E-03		3.7E-03	5.60
Lead-214	5.6E-08					1.2E-11		5.6E-08	0.00
Neptunium-237	1.1E-04					5.6E-05		1.6E-04	0.24
Plutonium-239	3.7E-07					2.0E-07		5.7E-07	0.00
Technetium-99	9.7E-05					2.9E-02		2.9E-02	45.04
Thorium-228	4.5E-06					8.6E-07		5.4E-06	0.01
Thorium-230	1.1E-06					5.6E-07		1.6E-06	0.00
Uranium-234	1.9E-06					1.0E-06		2.9E-06	0.00
Uranium-235	1.4E-07					7.6E-08		2.2E-07	0.00
Uranium-238	2.7E-05					1.4E-05		4.1E-05	0.06
Pathway Total	1.1E-02	5.4E-04		6.9E-04	7.5E-03	4.5E-02		6.4E-02	
Fraction of Total	1.7E-01	8.2E-03		1.1E-02	1.1E-01	6.9E-01			

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Aluminum									
Antimony									
Arsenic	1.4E-05	4.3E-05	1.5E-08			1.8E-03		1.8E-03	14.23
Beryllium	2.2E-06	2.8E-04	1.4E-10			2.7E-04		5.5E-04	4.23
Cadmium			1.6E-10					1.6E-10	0.00
Chromium			2.8E-08					2.8E-08	0.00
Cobalt									
Iron									
Lead									
Thallium									
Uranium									
Vanadium									
Zinc									
2-Methylnaphthalene									
Acenaphthene									
Acenaphthylene									
Anthracene									
Benz(a)anthracene	5.0E-06	4.0E-05	6.8E-11			6.0E-04		6.5E-04	5.00
Benzo(a)pyrene	4.9E-05	3.9E-04	6.6E-10			5.9E-03		6.3E-03	48.62
Benzo(b)fluoranthene	5.7E-06	4.6E-05	7.8E-11			6.9E-04		7.4E-04	5.71
Benzo(ghi)perylene									
Benzo(k)fluoranthene	4.6E-07	3.7E-06	6.3E-12			5.5E-05		6.0E-05	0.46
B[illegible]-ethylhexyl)phthalate	2.5E-09	3.3E-08				3.1E-07		3.5E-07	0.00
[illegible]ne	5.3E-08	4.2E-07	7.1E-13			6.3E-06		6.8E-06	0.05
[illegible]utyl phthalate									
Dibenz(a,h)anthracene	1.4E-05	1.1E-04	2.0E-10			1.7E-03		1.9E-03	14.34
Fluoranthene									
Fluorene									
Indeno(1,2,3-cd)pyrene	2.6E-06	2.1E-05	3.6E-11			3.1E-04		3.4E-04	2.62
Naphthalene									
PCB-1254	6.1E-07	1.0E-06	2.0E-11			7.3E-05		7.5E-05	0.58
PCB-1260	3.4E-07	5.5E-07	1.1E-11			4.0E-05		4.1E-05	0.32
PCB-1262	1.4E-07	2.3E-07	4.4E-12			1.6E-05		1.7E-05	0.13
Phenanthrene									
Polychlorinated biphenyl	1.1E-06	1.8E-06	3.4E-11			1.3E-04		1.3E-04	1.02
Pyrene									
Alpha activity									
Beta activity									
Cesium-137	1.9E-08		4.7E-13			3.5E-06	2.4E-05	2.7E-05	0.21
Neptunium-237	3.1E-07		1.4E-09			5.3E-05	9.0E-06	6.2E-05	0.48
Uranium-234	4.7E-07		6.0E-09			8.0E-05	4.3E-09	8.1E-05	0.62
Uranium-235	2.9E-08		3.3E-10			5.0E-06	3.2E-06	8.2E-06	0.06
Uranium-238	8.8E-07		7.1E-09			1.5E-04	1.8E-05	1.7E-04	1.31
Pathway Total	9.7E-05	9.4E-04	6.0E-08			1.2E-02	5.4E-05	1.3E-02	
Fraction of Total	7.5E-03	7.2E-02	4.6E-06			9.2E-01	4.2E-03		

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=Central MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Di-n-butyl phthalate									
Alpha activity									
Beta activity									
Pathway Total									
Fraction of Total									

SECTOR=East MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Cadmium			1.3E-10		1.3E-10			1.3E-10	0.00
Chromium			3.2E-08		3.2E-08			3.2E-08	0.00
Thallium									
Uranium									
Acenaphthene									
Anthracene									
Benz(a)anthracene	9.5E-07	7.6E-06	1.3E-11		1.3E-11	1.1E-04		1.2E-04	1.50
Benzo(a)pyrene	1.0E-05	8.3E-05	1.4E-10		1.4E-10	1.3E-03		1.3E-03	16.44
Benzo(b)fluoranthene	1.8E-06	1.5E-05	2.5E-11		2.5E-11	2.2E-04		2.4E-04	2.[illegible]
Benzo(ghi)perylene									
Benzo(k)fluoranthene	1.1E-07	9.1E-07	1.6E-12		1.6E-12	1.4E-05		1.5E-05	[illegible]
Chrysene	1.0E-08	8.3E-08	1.4E-13		1.4E-13	1.3E-06		1.4E-06	[illegible]
Di-n-butyl phthalate									
Dibenz(a,h)anthracene	2.1E-06	1.7E-05	2.9E-11		2.9E-11	2.5E-04		2.7E-04	3.29
Fluoranthene									
Fluorene									
Indeno(1,2,3-cd)pyrene	5.5E-07	4.4E-06	7.5E-12		7.5E-12	6.6E-05		7.1E-05	0.87
PCB-1260	1.2E-05	2.0E-05	3.8E-10		3.8E-10	1.4E-03		1.4E-03	17.68
Phenanthrene									
Polychlorinated biphenyl	3.6E-05	5.9E-05	1.1E-09		1.1E-09	4.3E-03		4.4E-03	53.96
Pyrene									
Alpha activity									
Beta activity									
Cesium-137	2.5E-08		6.2E-13		6.2E-13	4.6E-06	3.2E-05	3.7E-05	0.45
Neptunium-237	1.9E-07		9.0E-10		9.0E-10	3.3E-05	5.7E-06	3.9E-05	0.48
Uranium-235	3.0E-08		3.4E-10		3.4E-10	5.2E-06	3.3E-06	8.5E-06	0.10
Uranium-238	9.1E-07		7.4E-09		7.4E-09	1.6E-04	1.8E-05	1.8E-04	2.14
Pathway Total	6.5E-05	2.1E-04	4.3E-08		4.3E-08	7.9E-03	5.9E-05	8.2E-03	
Fraction of Total	7.9E-03	2.5E-02	5.2E-06		5.2E-06	9.6E-01	7.2E-03		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Aluminum									
Antimony									
Chromium			2.4E-08		2.4E-08			2.4E-08	0.01
Uranium									
Benz(a)anthracene	5.3E-08	4.2E-07	7.1E-13		7.1E-13	6.4E-06		6.8E-06	2.57
Benzo(a)pyrene	5.3E-07	4.2E-06	7.1E-12		7.1E-12	6.3E-05		6.8E-05	25.[illegible]
Benzo(b)fluoranthene	5.3E-08	4.2E-07	7.1E-13		7.1E-13	6.3E-06		6.8E-06	[illegible]
Benzo(k)fluoranthene	6.6E-09	5.2E-08	8.9E-14		8.9E-14	7.8E-07		8.4E-07	[illegible]

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Chrysene	5.3E-10	4.2E-09	7.1E-15		7.1E-15	6.4E-08		6.8E-08	0.03
Fluoranthene									
PCB-1260	2.0E-08	3.3E-08	6.4E-13		6.4E-13	2.4E-06		2.5E-06	0.93
Phenanthrene									
Polychlorinated biphenyl	2.0E-08	3.3E-08	6.4E-13		6.4E-13	2.4E-06		2.5E-06	0.93
Pyrene									
Alpha activity									
Beta activity									
Uranium-235	3.8E-08		4.2E-10		4.2E-10	6.5E-06	4.1E-06	1.1E-05	3.98
Uranium-238	8.7E-07		7.0E-09		7.0E-09	1.5E-04	1.8E-05	1.7E-04	63.15
Pathway Total	1.6E-06	5.1E-06	3.2E-08		3.2E-08	2.4E-04	2.2E-05	2.7E-04	
Fraction of Total	6.0E-03	1.9E-02	1.2E-04		1.2E-04	8.9E-01	8.1E-02		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
...imony									
...lium	5.3E-06	6.6E-04	3.3E-10		3.3E-10	6.4E-04		1.3E-03	63.28
...um			1.1E-10		1.1E-10			1.1E-10	0.00
Chromium			6.4E-08		6.4E-08			6.4E-08	0.00
Thallium									
Uranium									
Acenaphthene									
Anthracene									
Benz(a)anthracene	4.5E-07	3.6E-06	6.1E-12		6.1E-12	5.4E-05		5.8E-05	2.81
Benzo(a)pyrene	3.7E-06	2.9E-05	5.0E-11		5.0E-11	4.4E-04		4.7E-04	23.00
Benzo(b)fluoranthene	3.4E-07	2.7E-06	4.6E-12		4.6E-12	4.1E-05		4.4E-05	2.14
Benzo(ghi)perylene									
Benzo(k)fluoranthene	3.8E-08	3.0E-07	5.2E-13		5.2E-13	4.6E-06		4.9E-06	0.24
Bis(2-ethylhexyl)phthalate	2.0E-09	2.6E-08				2.5E-07		2.8E-07	0.01
Chrysene	4.6E-09	3.7E-08	6.2E-14		6.2E-14	5.6E-07		6.0E-07	0.03
Di-n-butyl phthalate									
Fluoranthene									
Fluorene									
Indeno(1,2,3-cd)pyrene	1.8E-07	1.5E-06	2.5E-12		2.5E-12	2.2E-05		2.4E-05	1.15
Phenanthrene									
Pyrene									
Alpha activity									
Beta activity									
Neptunium-237	2.9E-07		1.4E-09		1.4E-09	5.0E-05	8.5E-06	5.9E-05	2.85
Uranium-235	1.5E-08		1.7E-10		1.7E-10	2.6E-06	1.6E-06	4.2E-06	0.20
Uranium-238	4.6E-07		3.7E-09		3.7E-09	7.9E-05	9.3E-06	8.9E-05	4.30
Pathway Total	1.1E-05	7.0E-04	7.0E-08		7.0E-08	1.3E-03	1.9E-05	2.1E-03	
Fraction of Total	5.2E-03	3.4E-01	3.4E-05		3.4E-05	6.5E-01	9.4E-03		

SECTOR=McNairy MEDIA=Ground water

...te	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
...num									

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=McNairy MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Arsenic	7.5E-03	3.1E-05				4.3E-03		1.2E-02	33.17
Barium									
Beryllium	6.8E-04	1.2E-04				3.9E-04		1.2E-03	3.32
Bromide									
Cadmium									
Chromium									
Cobalt									
Iron									
Lead									
Manganese									
Nickel									
Nitrate									
Orthophosphate									
Selenium									
Tetraoxo-sulfate(1-)									
Thallium									
Vanadium									
Zinc									
1,1-Dichloroethene	8.2E-05	1.2E-06		5.8E-05		1.4E-04		9.1E-04	2.55
1,2-Dichloroethane	1.7E-06	1.6E-08		6.1E-07		3.8E-06		1.3E-05	0.04
Bis(2-ethylhexyl)phthalate	1.4E-06	2.9E-07				8.0E-07		2.5E-06	0.01
Bromodichloromethane	6.3E-06	6.3E-08				8.1E-06		1.4E-05	[illegible]4
Chloroform	7.8E-07	5.9E-08		3.7E-06		1.1E-06		4.6E-05	[illegible]
Di-n-butyl phthalate									
Di-n-octylphthalate									
Dibromochloromethane	6.4E-06	7.1E-08				7.6E-06		1.4E-05	0.04
Tetrachloroethene	9.6E-06	6.1E-06		1.3E-07		9.0E-06		2.6E-05	0.07
Trichloroethene	3.4E-06	6.1E-07		6.5E-07		3.5E-06		1.5E-05	0.04
Vinyl chloride	5.1E-04	6.3E-06		2.8E-05		1.2E-03		2.1E-03	5.78
cis-1,2-Dichloroethene									
Actinium-228	1.1E-06					3.2E-09		1.1E-06	0.00
Alpha activity									
Beta activity									
Cesium-137	1.0E-05					4.5E-06		1.5E-05	0.04
Lead-210	1.1E-02					4.5E-03		1.5E-02	43.48
Lead-212	1.0E-05					5.1E-08		1.1E-05	0.03
Lead-214	9.2E-08					1.9E-11		9.2E-08	0.00
Neptunium-237	6.3E-05					3.4E-05		9.6E-05	0.27
Plutonium-239	1.1E-05					5.8E-06		1.7E-05	0.05
Potassium-40	2.2E-05					2.1E-05		4.3E-05	0.12
Technetium-99	1.1E-05					3.4E-03		3.4E-03	9.60
Thorium-228	7.4E-06					1.4E-06		8.7E-06	0.02
Thorium-230	1.3E-06					7.0E-07		2.0E-06	0.01
Thorium-234	3.6E-04					3.6E-05		4.0E-04	1.11
Uranium-234	2.2E-06					1.1E-06		3.3E-06	0.01
Uranium-235	1.4E-05					7.5E-06		2.2E-05	0.06
Uranium-238	2.0E-06					1.1E-06		3.1E-06	0.01
Pathway Total	2.0E-02	1.6E-04		9.2E-05		1.4E-02		3.5E-02	
Fraction of Total	5.7E-01	4.5E-03		2.6E-03		4.0E-01			

SECTOR=Northeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of [illegible]
Chromium			4.5E-08		4.5E-08			4.5E-0[illegible]	.01

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=Northeast MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Uranium									
Zinc									
Acenaphthene									
Anthracene									
Benz(a)anthracene	4.6E-07	3.7E-06	6.2E-12		6.2E-12	5.6E-05		6.0E-05	7.39
Benzo(a)pyrene	3.9E-06	3.1E-05	5.3E-11		5.3E-11	4.7E-04		5.1E-04	62.96
Benzo(b)fluoranthene	5.6E-07	4.5E-06	7.7E-12		7.7E-12	6.8E-05		7.3E-05	9.02
Benzo(ghi)perylene									
Benzo(k)fluoranthene	3.7E-08	2.9E-07	5.0E-13		5.0E-13	4.4E-06		4.7E-06	0.58
Chrysene	5.3E-09	4.2E-08	7.1E-14		7.1E-14	6.4E-07		6.8E-07	0.08
Fluoranthene									
Indeno(1,2,3-cd)pyrene	2.4E-07	1.9E-06	3.2E-12		3.2E-12	2.8E-05		3.0E-05	3.76
PCB-1260	1.5E-07	2.5E-07	4.9E-12		4.9E-12	1.8E-05		1.9E-05	2.34
Phenanthrene									
Polychlorinated biphenyl	1.5E-07	2.5E-07	4.9E-12		4.9E-12	1.9E-05		1.9E-05	2.35
Pyrene									
Alpha activity									
Beta activity									
Uranium-235	1.5E-08		1.7E-10		1.7E-10	2.6E-06	1.6E-06	4.2E-06	0.52
Uranium-238	4.6E-07		3.7E-09		3.7E-09	7.9E-05	9.3E-06	8.9E-05	10.97
Pathway Total	6.0E-06	4.2E-05	4.9E-08		4.9E-08	7.5E-04	1.1E-05	8.1E-04	
Fraction of Total	7.5E-03	5.2E-02	6.1E-05		6.1E-05	9.3E-01	1.3E-02		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Antimony									
Beryllium	2.5E-06	3.1E-04	1.6E-10		1.6E-10	3.0E-04		6.1E-04	40.86
Cadmium			7.1E-11		7.1E-11			7.1E-11	0.00
Chromium			4.8E-08		4.8E-08			4.8E-08	0.00
Iron									
Lead									
Vanadium									
Benz(a)anthracene	3.9E-07	3.1E-06	5.3E-12		5.3E-12	4.8E-05		5.1E-05	3.41
Benzo(a)pyrene	5.3E-06	4.2E-05	7.1E-11		7.1E-11	6.3E-04		6.8E-04	45.26
Benzo(b)fluoranthene	6.9E-07	5.5E-06	9.4E-12		9.4E-12	8.3E-05		9.0E-05	5.98
Benzo(k)fluoranthene	3.9E-08	3.1E-07	5.3E-13		5.3E-13	4.7E-06		5.1E-06	0.34
Chrysene	3.8E-09	3.0E-08	5.2E-14		5.2E-14	4.6E-07		4.9E-07	0.03
Fluoranthene									
Pyrene									
Alpha activity									
Beta activity									
Uranium-238	3.2E-07		2.6E-09		2.6E-09	5.5E-05	6.5E-06	6.2E-05	4.12
Pathway Total	9.2E-06	3.6E-04	5.1E-08		5.1E-08	1.1E-03	6.5E-06	1.5E-03	
Fraction of Total	6.1E-03	2.4E-01	3.4E-05		3.4E-05	7.5E-01	4.3E-03		

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=RGA MEDIA=Ground water

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Aluminum									
Antimony									
Arsenic	8.3E-04	3.4E-06				4.8E-04		1.3E-03	1.99
Barium									
Beryllium	8.3E-04	1.4E-04				4.7E-04		1.4E-03	2.18
Bromide									
Cadmium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Manganese									
Mercury									
Nickel									
Nitrate									
Orthophosphate									
Silver									
Tetraoxo-sulfate(1-)									
Thallium									
Uranium									
Vanadium									
Zinc									
1,1-Dichloroethene	7.6E-05	1.1E-06		5.4E-05		1.2E-04		8.4E-04	7
Bis(2-ethylhexyl)phthalate	2.7E-07	5.6E-08				1.5E-07		4.8E-07	0
Bromodichloromethane	4.7E-06	4.7E-08				6.1E-06		1.1E-05	0.02
Carbon tetrachloride	1.7E-04	1.0E-05		2.5E-05		1.5E-04		6.3E-04	0.96
Chloroform	3.3E-06	2.5E-07		1.6E-05		4.7E-06		1.9E-04	0.30
Di-n-butyl phthalate									
Di-n-octylphthalate									
N-Nitroso-di-n-propylamine	1.3E-04	2.5E-06				3.2E-04		4.6E-04	0.69
Tetrachloroethene	2.2E-05	1.4E-05		3.0E-07		2.0E-05		5.9E-05	0.09
Toluene									
Trichloroethene	1.7E-03	3.1E-04		3.3E-04		1.8E-03		7.7E-03	11.74
Vinyl chloride	4.8E-03	6.0E-05		2.7E-04		1.1E-02		1.9E-02	29.74
cis-1,2-Dichloroethene									
trans-1,2-Dichloroethene									
Alpha activity									
Americium-241	1.4E-05					7.4E-06		2.2E-05	0.03
Beta activity									
Cesium-137	8.9E-06					4.0E-06		1.3E-05	0.02
Lead-210	2.6E-03					1.1E-03		3.7E-03	5.60
Lead-214	5.6E-08					1.2E-11		5.6E-08	0.00
Neptunium-237	1.1E-04					5.6E-05		1.6E-04	0.24
Plutonium-239	3.7E-07					2.0E-07		5.7E-07	0.00
Technetium-99	9.7E-05					2.9E-02		2.9E-02	45.04
Thorium-228	4.5E-06					8.6E-07		5.4E-06	0.01
Thorium-230	1.1E-06					5.6E-07		1.6E-06	0.00
Uranium-234	1.9E-06					1.0E-06		2.9E-06	0.00
Uranium-235	1.4E-07					7.6E-08		2.2E-07	0.00
Uranium-238	2.7E-05					1.4E-05		4.1E-05	0.06
Pathway Total	1.1E-02	5.4E-04		6.9E-04		4.5E-02		6.4E-02	

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=RGA MEDIA=Ground water
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Fraction of Total	1.7E-01	8.2E-03		1.1E-02		6.9E-01			

SECTOR=Southeast MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Aluminum									
Antimony									
Cadmium			1.2E-10		1.2E-10			1.2E-10	0.00
Chromium			5.6E-08		5.6E-08			5.6E-08	0.03
Benz(a)anthracene	9.2E-08	7.3E-07	1.2E-12		1.2E-12	1.1E-05		1.2E-05	6.14
Benzo(a)pyrene	1.1E-06	8.4E-06	1.4E-11		1.4E-11	1.3E-04		1.4E-04	69.82
Benzo(b)fluoranthene	9.2E-08	7.3E-07	1.2E-12		1.2E-12	1.1E-05		1.2E-05	6.11
Benzo(k)fluoranthene	7.9E-09	6.3E-08	1.1E-13		1.1E-13	9.4E-07		1.0E-06	0.52
Chrysene	1.1E-09	8.4E-09	1.4E-14		1.4E-14	1.3E-07		1.4E-07	0.07
Fluoranthene									
PCB-1262	1.4E-07	2.3E-07	4.4E-12		4.4E-12	1.6E-05		1.7E-05	8.65
[illegible]nthrene									
[illegible]lorinated biphenyl	1.4E-07	2.3E-07	4.4E-12		4.4E-12	1.6E-05		1.7E-05	8.65
[illegible]e									
Alpha activity									
Beta activity									
Pathway Total	1.5E-06	1.0E-05	5.6E-08		5.6E-08	1.8E-04		1.9E-04	
Fraction of Total	7.8E-03	5.3E-02	2.9E-04		2.9E-04	9.4E-01			

SECTOR=Southwest MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Antimony									
Beryllium	2.9E-06	3.6E-04	1.8E-10		1.8E-10	3.5E-04		7.1E-04	5.25
Cadmium			1.3E-10		1.3E-10			1.3E-10	0.00
Chromium			5.0E-08		5.0E-08			5.0E-08	0.00
Iron									
Thallium									
Uranium									
Zinc									
Acenaphthene									
Acenaphthylene									
Anthracene									
Benz(a)anthracene	6.6E-06	5.2E-05	8.9E-11		8.9E-11	8.0E-04		8.6E-04	6.29
Benzo(a)pyrene	6.3E-05	5.1E-04	8.6E-10		8.6E-10	7.6E-03		8.2E-03	60.30
Benzo(b)fluoranthene	6.7E-06	5.3E-05	9.1E-11		9.1E-11	8.1E-04		8.7E-04	6.38
Benzo(ghi)perylene									
Benzo(k)fluoranthene	4.4E-07	3.5E-06	6.0E-12		6.0E-12	5.3E-05		5.7E-05	0.42
Bis(2-ethylhexyl)phthalate	2.0E-09	2.6E-08				2.5E-07		2.8E-07	0.00
Chrysene	5.9E-08	4.7E-07	8.1E-13		8.1E-13	7.2E-06		7.7E-06	0.06
Dibenz(a,h)anthracene	1.7E-05	1.4E-04	2.3E-10		2.3E-10	2.0E-03		2.2E-03	16.14
[illegible]nthene									
[illegible]ne									
[illegible]o(1,2,3-cd)pyrene	2.4E-06	1.9E-05	3.2E-11		3.2E-11	2.8E-04		3.0E-04	2.24

Table 1.73. Excess lifetime cancer risks for the future residential user

SECTOR=Southwest MEDIA=Surface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Naphthalene									
PCB-1260	1.4E-07	2.3E-07	4.4E-12		4.4E-12	1.6E-05		1.7E-05	0.12
Phenanthrene									
Polychlorinated biphenyl	1.4E-07	2.3E-07	4.4E-12		4.4E-12	1.6E-05		1.7E-05	0.12
Pyrene									
Alpha activity									
Beta activity									
Neptunium-237	1.4E-07		6.8E-10		6.8E-10	2.5E-05	4.3E-06	2.9E-05	0.22
Uranium-235	4.5E-08		5.1E-10		5.1E-10	7.8E-06	4.9E-06	1.3E-05	0.09
Uranium-238	1.7E-06		1.4E-08		1.4E-08	2.9E-04	3.4E-05	3.2E-04	2.37
Pathway Total	1.0E-04	1.1E-03	6.6E-08		6.6E-08	1.2E-02	4.3E-05	1.4E-02	
Fraction of Total	7.5E-03	8.3E-02	4.9E-06		4.9E-06	9.1E-01	3.1E-03		

SECTOR=West MEDIA=Surface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Aluminum									
Antimony									
Arsenic	3.6E-05	1.1E-04	3.8E-08		3.8E-08	4.4E-03		4.5E-03	.9
Beryllium	2.4E-06	3.0E-04	1.5E-10		1.5E-10	2.9E-04		6.0E-04	1.15
Cadmium			3.2E-10		3.2E-10			3.2E-10	0.00
Chromium			3.0E-08		3.0E-08			3.0E-08	0.00
Cobalt									
Uranium									
Zinc									
2-Methylnaphthalene									
Acenaphthene									
Anthracene									
Benz(a)anthracene	2.6E-05	2.1E-04	3.6E-10		3.6E-10	3.2E-03		3.4E-03	6.63
Benzo(a)pyrene	2.4E-04	1.9E-03	3.2E-09		3.2E-09	2.8E-02		3.0E-02	59.35
Benzo(b)fluoranthene	3.0E-05	2.4E-04	4.0E-10		4.0E-10	3.6E-03		3.8E-03	7.39
Benzo(ghi)perylene									
Benzo(k)fluoranthene	2.9E-06	2.3E-05	4.0E-11		4.0E-11	3.5E-04		3.7E-04	0.72
Bis(2-ethylhexyl)phthalate	2.5E-09	3.3E-08				3.1E-07		3.5E-07	0.00
Chrysene	2.8E-07	2.3E-06	3.9E-12		3.9E-12	3.4E-05		3.7E-05	0.07
Di-n-butyl phthalate									
Dibenz(a,h)anthracene	4.9E-05	3.9E-04	6.7E-10		6.7E-10	5.9E-03		6.3E-03	12.25
Fluoranthene									
Fluorene									
Indeno(1,2,3-cd)pyrene	5.0E-06	4.0E-05	6.8E-11		6.8E-11	6.0E-04		6.4E-04	1.24
Naphthalene									
PCB-1254	3.5E-06	5.7E-06	1.1E-10		1.1E-10	4.2E-04		4.2E-04	0.82
PCB-1260	5.8E-08	9.5E-08	1.8E-12		1.8E-12	6.9E-06		7.0E-06	0.01
Phenanthrene									
Polychlorinated biphenyl	2.0E-06	3.3E-06	6.4E-11		6.4E-11	2.4E-04		2.5E-04	0.48
Pyrene									
Alpha activity									
Beta activity									
Cesium-137	3.4E-08		8.4E-13		8.4E-13	6.2E-06	4.3E-05	4.9E-05	0.10
Neptunium-237	7.3E-07		3.4E-09		3.4E-09	1.3E-04	2.2E-05	1.5E-04	0.29
Uranium-234	6.8E-07		8.7E-09		8.7E-09	1.2E-04	6.2E-09	1.2E-04	0.23
Uranium-235	5.0E-08		5.6E-10		5.6E-10	8.6E-06	5.4E-06	1.4E-05	
Uranium-238	1.2E-06		9.8E-09		9.8E-09	2.1E-04	2.4E-05	2.3E-04	
Pathway Total	4.0E-04	3.2E-03	9.5E-08		9.5E-08	4.7E-02	9.4E-05	5.0E-02	

Table 1.73. Excess lifetime cancer risks for the future residential user

-- SECTOR=West MEDIA=Surface soil --
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	Inhalation while showering	Inhalation from household use	Ingestion of vegetables	External exposure	Chemical Total	% of Total
Fraction of Total	7.7E-03	6.2E-02	1.8E-06		1.8E-06	9.3E-01	1.8E-03		

Table 1.74. Excess lifetime cancer risks for the future recreational user

SECTOR=WAG 6 MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum					
Antimony					
Arsenic	5.2E-07	1.6E-07	3.5E-09	6.9E-07	0.64
Beryllium	3.7E-08	1.2E-08	2.9E-10	4.8E-08	0.05
Cadmium					
Chromium					
Cobalt					
Iron					
Lead					
Thallium					
Uranium					
Vanadium					
Zinc					
2-Methylnaphthalene					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz(a)anthracene	1.1E-06	3.3E-07		1.4E-06	1.29
Benzo(a)pyrene	2.5E-05	7.9E-06	9.1E-06	4.2E-05	39.35
Benzo(b)fluoranthene	3.0E-06	9.3E-07		3.9E-06	3.63
Benzo(ghi)perylene					
Benzo(k)fluoranthene	1.2E-06	3.7E-07		1.5E-06	1.44
Bis(2-ethylhexyl)phthalate	9.5E-11	2.9E-11		1.2E-10	0.00
Chrysene	1.1E-08	3.5E-09		1.5E-08	0.01
Di-n-butyl phthalate					
Dibenz(a,h)anthracene	3.7E-05	1.2E-05		4.8E-05	44.79
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene	4.2E-06	1.3E-06		5.6E-06	5.18
Naphthalene					
PCB-1254	2.5E-07	7.9E-08	2.3E-07	5.6E-07	0.52
PCB-1260	1.7E-06	5.3E-07	1.2E-07	2.3E-06	2.18
PCB-1262	5.7E-08	1.8E-08		7.4E-08	0.07
Phenanthrene					
Polychlorinated biphenyl	4.5E-07	1.4E-07		5.9E-07	0.55
Pyrene					
Alpha activity					
Beta activity					
Cesium-137	4.0E-08	1.2E-08		5.2E-08	0.05
Neptunium-237	9.2E-09	3.0E-09	7.8E-11	1.2E-08	0.01
Uranium-234	3.6E-09	1.2E-09	8.2E-08	8.7E-08	0.08
Uranium-235	3.1E-10	1.0E-10	5.3E-09	5.7E-09	0.01
Uranium-238	9.8E-09	3.2E-09	1.6E-07	1.7E-07	0.16
Pathway Total	7.4E-05	2.3E-05	9.7E-06	1.1E-04	
Fraction of Total	6.9E-01	2.2E-01	9.0E-02		

Table 1.74. Excess lifetime cancer risks for the future recreational user

SECTOR=Central MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Di-n-butyl phthalate					
Alpha activity					
Beta activity					
Pathway Total					
Fraction of Total					

SECTOR=East MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Cadmium					
Chromium					
Thallium					
Uranium					
Acenaphthene					
Anthracene					
Benz(a)anthracene	1.3E-09	1.2E-08		1.3E-08	0.22
Benzo(a)pyrene	3.6E-08	3.1E-07	8.4E-08	4.3E-07	7.27
Benzo(b)fluoranthene	6.3E-09	5.5E-08		6.1E-08	1.03
Benzo(ghi)perylene					
Benzo(k)fluoranthene	1.9E-09	1.7E-08		1.9E-08	0.31
Chrysene	1.5E-11	1.3E-10		1.4E-10	0.00
Di-n-butyl phthalate					
Dibenz(a,h)anthracene	3.5E-08	3.1E-07		3.4E-07	5.79
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene	5.9E-09	5.1E-08		5.7E-08	0.96
PCB-1260	3.9E-07	3.5E-06	1.9E-07	4.0E-06	68.10
Phenanthrene					
Polychlorinated biphenyl	9.8E-08	8.6E-07		9.5E-07	16.12
Pyrene					
Alpha activity					
Beta activity					
Cesium-137	3.5E-10	3.0E-09		3.4E-09	0.06
Neptunium-237	3.8E-11	3.4E-10	2.1E-12	3.8E-10	0.01
Uranium-235	2.1E-12	1.9E-11	2.3E-10	2.6E-10	0.00
Uranium-238	6.7E-11	6.1E-10	7.1E-09	7.8E-09	0.13
Pathway Total	5.8E-07	5.1E-06	2.8E-07	5.9E-06	
Fraction of Total	9.8E-02	8.6E-01	4.7E-02		

SECTOR=Far East/Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum					
Antimony					
Chromium					
Uranium					
Benz(a)anthracene	6.4E-10	3.5E-09		4.1E-09	1.54
Benzo(a)pyrene	1.6E-08	8.5E-08	3.7E-08	1.4E-07	51.49
Benzo(b)fluoranthene	1.6E-09	8.5E-09		1.0E-08	3.78
Benzo(k)fluoranthene	9.6E-10	5.2E-09		6.2E-09	2.32
Chrysene	6.4E-12	3.5E-11		4.1E-11	0.02
Fluoranthene					
PCB-1260	5.8E-09	3.2E-08	2.8E-09	4.1E-08	15.15
Phenanthrene					
Polychlorinated biphenyl	4.8E-10	2.6E-09		3.1E-09	1.16
Pyrene					

Table 1.74. Excess lifetime cancer risks for the future recreational user

SECTOR=Far East/Northeast MEDIA=Surface soil
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Alpha activity					
Beta activity					
Uranium-235	2.3E-11	1.3E-10	2.5E-09	2.7E-09	1.01
Uranium-238	5.6E-10	3.2E-09	5.9E-08	6.3E-08	23.54
Pathway Total	2.6E-08	1.4E-07	1.0E-07	2.7E-07	
Fraction of Total	9.6E-02	5.3E-01	3.8E-01		

SECTOR=Far North/Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony					
Beryllium	5.0E-09	2.7E-08	2.6E-10	3.3E-08	2.56
Cadmium					
Chromium					
Thallium					
Uranium					
Acenaphthene					
Anthracene					
Benz(a)anthracene	5.4E-09	3.0E-08		3.5E-08	2.73
Benzo(a)pyrene	1.1E-07	6.0E-07	2.6E-07	9.6E-07	75.23
Benzo(b)fluoranthene	1.0E-08	5.6E-08		6.6E-08	5.12
Benzo(ghi)perylene					
Benzo(k)fluoranthene	5.6E-09	3.0E-08		3.6E-08	2.80
Bis(2-ethylhexyl)phthalate	4.4E-12	2.3E-11		2.8E-11	0.00
Chrysene	5.6E-11	3.0E-10		3.6E-10	0.03
Di-n-butyl phthalate					
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene	1.7E-08	9.3E-08		1.1E-07	8.58
Phenanthrene					
Pyrene					
Alpha activity					
Beta activity					
Neptunium-237	5.0E-10	2.8E-09	2.8E-11	3.3E-09	0.26
Uranium-235	9.1E-12	5.2E-11	1.0E-09	1.1E-09	0.08
Uranium-238	3.0E-10	1.7E-09	3.1E-08	3.3E-08	2.60
Pathway Total	1.5E-07	8.4E-07	2.9E-07	1.3E-06	
Fraction of Total	1.2E-01	6.5E-01	2.3E-01		

SECTOR=Northeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Chromium					
Uranium					
Zinc					
Acenaphthene					
Anthracene					
Benz(a)anthracene	1.1E-09	9.4E-09		1.0E-08	2.23
Benzo(a)pyrene	2.3E-08	2.0E-07	5.3E-08	2.7E-07	58.31
Benzo(b)fluoranthene	3.2E-09	2.8E-08		3.2E-08	6.73
Benzo(ghi)perylene					
Benzo(k)fluoranthene	1.0E-09	9.0E-09		1.0E-08	2.15
Chrysene	1.2E-11	1.1E-10		1.2E-10	0.03
Fluoranthene					
Indeno(1,2,3-cd)pyrene	4.2E-09	3.7E-08		4.1E-08	8.76

Table 1.74. Excess lifetime cancer risks for the future recreational user

SECTOR=Northeast MEDIA=Surface soil (continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
PCB-1260	8.6E-09	7.6E-08	4.1E-09	8.8E-08	18.85
Phenanthrene					
Polychlorinated biphenyl	7.1E-10	6.2E-09		6.9E-09	1.47
Pyrene					
Alpha activity					
Beta activity					
Uranium-235	1.8E-12	1.6E-11	2.0E-10	2.1E-10	0.05
Uranium-238	5.7E-11	5.2E-10	6.0E-09	6.6E-09	1.41
Pathway Total	4.2E-08	3.6E-07	6.3E-08	4.7E-07	
Fraction of Total	8.9E-02	7.8E-01	1.4E-01		

SECTOR=Northwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony					
Beryllium	5.3E-10	4.7E-09	2.7E-11	5.2E-09	1.03
Cadmium					
Chromium					
Iron					
Lead					
Vanadium					
Benz(a)anthracene	1.1E-09	9.4E-09		1.1E-08	2.08
Benzo(a)pyrene	3.5E-08	3.1E-07	8.3E-08	4.3E-07	84.33
Benzo(b)fluoranthene	4.7E-09	4.1E-08		4.5E-08	8.98
Benzo(k)fluoranthene	1.3E-09	1.1E-08		1.3E-08	2.50
Chrysene	1.0E-11	9.1E-11		1.0E-10	0.02
Fluoranthene					
Pyrene					
Alpha activity					
Beta activity					
Uranium-238	4.7E-11	4.2E-10	4.9E-09	5.4E-09	1.07
Pathway Total	4.3E-08	3.8E-07	8.8E-08	5.1E-07	
Fraction of Total	8.5E-02	7.4E-01	1.7E-01		

SECTOR=Southeast MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum					
Antimony					
Cadmium					
Chromium					
Benz(a)anthracene	3.5E-10	3.1E-09		3.4E-09	2.22
Benzo(a)pyrene	9.9E-09	8.6E-08	2.3E-08	1.2E-07	77.13
Benzo(b)fluoranthene	8.6E-10	7.5E-09		8.4E-09	5.44
Benzo(k)fluoranthene	3.6E-10	3.2E-09		3.5E-09	2.29
Chrysene	4.0E-12	3.5E-11		3.9E-11	0.03
Fluoranthene					
PCB-1262	1.0E-09	8.9E-09		9.9E-09	6.45
Phenanthrene					
Polychlorinated biphenyl	1.0E-09	8.9E-09		9.9E-09	6.45
Pyrene					
Alpha activity					
Beta activity					
Pathway Total	1.3E-08	1.2E-07	2.3E-08	1.5E-07	
Fraction of Total	8.8E-02	7.6E-01	1.5E-01		

Table 1.74. Excess lifetime cancer risks for the future recreational user

SECTOR=Southwest MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Antimony					
Beryllium	1.3E-09	1.1E-08	6.7E-11	1.3E-08	0.05
Cadmium					
Chromium					
Iron					
Thallium					
Uranium					
Zinc					
Acenaphthene					
Acenaphthylene					
Anthracene					
Benz(a)anthracene	3.8E-08	3.3E-07		3.7E-07	1.46
Benzo(a)pyrene	8.9E-07	7.8E-06	2.1E-06	1.1E-05	42.92
Benzo(b)fluoranthene	9.4E-08	8.2E-07		9.2E-07	3.66
Benzo(ghi)perylene					
Benzo(k)fluoranthene	3.0E-08	2.7E-07		3.0E-07	1.18
Bis(2-ethylhexyl)phthalate	2.1E-12	1.8E-11		2.0E-11	0.00
Chrysene	3.4E-10	3.0E-09		3.3E-09	0.01
Dibenz(a,h)anthracene	1.2E-06	1.0E-05		1.1E-05	45.63
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene	1.0E-07	9.0E-07		1.0E-06	4.01
Naphthalene					
PCB-1260	1.9E-08	1.6E-07	8.9E-09	1.9E-07	0.76
Phenanthrene					
Polychlorinated biphenyl	1.5E-09	1.3E-08		1.5E-08	0.06
Pyrene					
Alpha activity					
Beta activity					
Neptunium-237	1.2E-10	1.0E-09	6.5E-12	1.2E-09	0.00
Uranium-235	1.3E-11	1.2E-10	1.4E-09	1.6E-09	0.01
Uranium-238	5.1E-10	4.6E-09	5.4E-08	5.9E-08	0.23
Pathway Total	2.4E-06	2.1E-05	2.2E-06	2.5E-05	
Fraction of Total	9.4E-02	8.2E-01	8.6E-02		

SECTOR=West MEDIA=Surface soil

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Aluminum					
Antimony					
Arsenic	1.3E-08	1.2E-07	5.8E-10	1.3E-07	0.40
Beryllium	4.2E-10	3.6E-09	2.1E-11	4.1E-09	0.01
Cadmium					
Chromium					
Cobalt					
Uranium					
Zinc					
2-Methylnaphthalene					
Acenaphthene					
Anthracene					
Benz(a)anthracene	5.8E-08	5.1E-07		5.6E-07	1.75
Benzo(a)pyrene	1.3E-06	1.1E-05	3.0E-06	1.5E-05	47.82
Benzo(b)fluoranthene	1.6E-07	1.4E-06		1.5E-06	4.79
Benzo(ghi)perylene					
Benzo(k)fluoranthene	7.7E-08	6.7E-07		7.5E-07	2.32
Bis(2-ethylhexyl)phthalate	9.9E-13	8.5E-12		9.5E-12	0.00
Chrysene	6.3E-10	5.5E-09		6.1E-09	0.02
Di-n-butyl phthalate					
Dibenz(a,h)anthracene	1.3E-06	1.1E-05		1.3E-05	39.19

Table 1.74. Excess lifetime cancer risks for the future recreational user

------------------------------------- SECTOR=West MEDIA=Surface soil -------------------------------------
(continued)

Analyte	Ingestion of deer	Ingestion of rabbit	Ingestion of quail	Chemical Total	% of Total
Fluoranthene					
Fluorene					
Indeno(1,2,3-cd)pyrene	8.3E-08	7.3E-07		8.1E-07	2.51
Naphthalene					
PCB-1254	1.5E-08	1.3E-07	8.7E-08	2.3E-07	0.72
PCB-1260	3.0E-09	2.6E-08	1.4E-09	3.1E-08	0.10
Phenanthrene					
Polychlorinated biphenyl	8.7E-09	7.6E-08		8.4E-08	0.26
Pyrene					
Alpha activity					
Beta activity					
Cesium-137	7.4E-10	6.4E-09		7.2E-09	0.02
Neptunium-237	2.3E-10	2.0E-09	1.3E-11	2.3E-09	0.01
Uranium-234	5.3E-11	4.9E-10	8.0E-09	8.6E-09	0.03
Uranium-235	5.5E-12	5.0E-11	6.1E-10	6.6E-10	0.00
Uranium-238	1.4E-10	1.3E-09	1.5E-08	1.6E-08	0.05
Pathway Total	3.0E-06	2.6E-05	3.1E-06	3.2E-05	
Fraction of Total	9.3E-02	8.1E-01	9.6E-02		

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	6.1E-06	6.7E-06	2.0E-09		1.3E-05	0.50
Barium						
Beryllium	1.6E-06	7.2E-05	3.1E-11		7.4E-05	2.87
Cadmium			7.0E-12		7.0E-12	0.00
Chromium			5.2E-09		5.2E-09	0.00
Cobalt						
Copper						
Iron						
Lead						
Manganese						
Mercury						
Nickel						
Silver						
Thallium						
Uranium						
Vanadium						
Zinc						
1,1,2-Trichloroethane	1.3E-09	3.6E-09	1.6E-09		6.5E-09	0.00
1,1-Dichloroethene	2.7E-07	6.1E-07	3.6E-06		4.5E-06	0.17
2,4-Dinitrotoluene	3.9E-07	4.1E-07			7.9E-07	0.03
2,6-Dinitrotoluene	3.6E-07	3.8E-07			7.5E-07	0.03
2-Hexanone						
2-Methylnaphthalene						
Acenaphthene						
Acenaphthylene						
Anthracene						
Benz(a)anthracene	7.7E-07	2.2E-06	3.2E-12		3.0E-06	0.12
Benzo(a)pyrene	7.5E-06	2.2E-05	3.1E-11		2.9E-05	1.12
Benzo(b)fluoranthene	9.0E-07	2.6E-06	3.7E-12		3.5E-06	0.14
Benzo(ghi)perylene						
Benzo(k)fluoranthene	1.0E-07	2.9E-07	4.2E-13		4.0E-07	0.02
Bis(2-ethylhexyl)phthalate	1.0E-08	4.9E-08			5.9E-08	0.00
Butyl benzyl phthalate						
Carbon tetrachloride	3.2E-09	1.1E-08	2.8E-09		1.7E-08	0.00
Chrysene	8.0E-09	2.3E-08	3.3E-14		3.1E-08	0.00
Di-n-butyl phthalate						
Di-n-octylphthalate						
Dibenz(a,h)anthracene	5.7E-06	1.7E-05	2.4E-11		2.2E-05	0.86
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	5.5E-07	1.6E-06	2.3E-12		2.1E-06	0.08
Iodomethane						
Methylene chloride	1.5E-10	3.5E-10	1.4E-10		6.4E-10	0.00
N-Nitroso-di-n-propylamine	5.5E-06	2.0E-05			2.5E-05	0.98
N-Nitrosodiphenylamine	4.5E-09	1.6E-08			2.1E-08	0.00
Naphthalene						
PCB-1254	2.1E-07	1.3E-07	2.1E-12		3.4E-07	0.01
PCB-1260	3.4E-07	2.0E-07	3.3E-12		5.4E-07	0.02
PCB-1262	9.4E-08	5.6E-08	9.2E-13		1.5E-07	0.01
Phenanthrene						
Polychlorinated biphenyl	1.3E-06	7.7E-07	1.2E-11		2.0E-06	0.08
Pyrene						
Tetrachloroethene	1.3E-09	2.8E-09	9.2E-11		4.2E-09	0.00
Trichloroethene	2.4E-06	3.6E-05	2.9E-06		4.1E-05	1.60
Vinyl chloride	3.1E-06	6.9E-06	2.3E-03		2.3E-03	91.02
trans-1,2-Dichloroethene						
Alpha activity						
Beta activity						

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=WAG 6 MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Cesium-137	2.8E-08		1.7E-13	2.9E-06	2.9E-06	0.11
Neptunium-237	7.8E-07		8.7E-10	1.8E-06	2.6E-06	0.10
Plutonium-239	2.3E-07		1.9E-10	1.4E-11	2.3E-07	0.01
Technetium-99	2.8E-07		5.6E-12	1.9E-10	2.8E-07	0.01
Thorium-230	1.4E-07		6.3E-10	2.5E-10	1.4E-07	0.01
Uranium-234	4.1E-07		1.2E-09	3.0E-10	4.1E-07	0.02
Uranium-235	2.6E-08		7.1E-11	2.3E-07	2.5E-07	0.01
Uranium-238	7.7E-07		1.5E-09	1.2E-06	2.0E-06	0.08
Pathway Total	4.0E-05	1.9E-04	2.3E-03	6.1E-06	2.6E-03	
Fraction of Total	1.5E-02	7.3E-02	9.1E-01	2.4E-03		

Table 1.75. Excess lifetime cancer risks for the future excavation worker

------------------------------------ SECTOR=Central MEDIA=Subsurface soil ------------------------------------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Antimony						
Cadmium			1.5E-11		1.5E-11	0.00
Chromium			1.1E-08		1.1E-08	0.55
Iron						
Thallium						
Bis(2-ethylhexyl)phthalate	7.0E-10	3.3E-09			4.0E-09	0.20
Di-n-butyl phthalate						
Alpha activity						
Beta activity						
Cesium-137	1.6E-08		9.6E-14	1.7E-06	1.7E-06	82.66
Neptunium-237	1.0E-07		1.1E-10	2.3E-07	3.3E-07	16.59
Pathway Total	1.2E-07	3.3E-09	1.1E-08	1.9E-06	2.0E-06	
Fraction of Total	5.8E-02	1.6E-03	5.5E-03	9.3E-01		

------------------------------------ SECTOR=East MEDIA=Subsurface soil ------------------------------------

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	6.9E-06	7.6E-06	2.3E-09		1.5E-05	12.41
Beryllium	1.6E-06	7.0E-05	3.0E-11		7.2E-05	61.26
Cadmium			2.0E-11		2.0E-11	0.00
Chromium			4.5E-09		4.5E-09	0.00
Cobalt						
Lead						
Manganese						
Thallium						
Uranium						
Acenaphthene						
Anthracene						
Benz(a)anthracene	3.8E-07	1.1E-06	1.6E-12		1.5E-06	1.26
Benzo(a)pyrene	3.8E-06	1.1E-05	1.6E-11		1.5E-05	12.56
Benzo(b)fluoranthene	4.0E-07	1.2E-06	1.6E-12		1.5E-06	1.32
Benzo(ghi)perylene						
Benzo(k)fluoranthene	3.7E-08	1.1E-07	1.5E-13		1.4E-07	0.12
Bis(2-ethylhexyl)phthalate	1.4E-09	6.6E-09			7.9E-09	0.01
Chrysene	3.8E-09	1.1E-08	1.6E-14		1.5E-08	0.01
Di-n-butyl phthalate						
Dibenz(a,h)anthracene	1.4E-06	4.2E-06	6.0E-12		5.6E-06	4.81
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	3.6E-07	1.0E-06	1.5E-12		1.4E-06	1.20
Naphthalene						
PCB-1260	6.0E-07	3.6E-07	5.8E-12		9.6E-07	0.82
Phenanthrene						
Polychlorinated biphenyl	1.2E-06	6.9E-07	1.1E-11		1.9E-06	1.58
Pyrene						
Trichloroethene	1.9E-08	2.8E-07	2.3E-08		3.2E-07	0.27
Alpha activity						
Beta activity						
Cesium-137	1.5E-08		8.9E-14	1.5E-06	1.5E-06	1.32
Neptunium-237	1.3E-07		1.5E-10	3.1E-07	4.4E-07	0.38
Uranium-235	1.6E-08		4.3E-11	1.4E-07	1.5E-07	0.13
Uranium-238	2.4E-07		4.6E-10	3.8E-07	6.2E-07	0.53
Pathway Total	1.7E-05	9.8E-05	3.0E-08	2.4E-06	1.2E-04	

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=East MEDIA=Subsurface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Fraction of Total	1.5E-01	8.3E-01	2.6E-04	2.0E-02		

SECTOR=Far East/Northeast MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	1.3E-05	1.4E-05	4.1E-09		2.7E-05	17.86
Beryllium	2.4E-06	1.1E-04	4.6E-11		1.1E-04	74.30
Cadmium			9.3E-12		9.3E-12	0.00
Chromium			5.6E-09		5.6E-09	0.00
Iron						
Lead						
Manganese						
Thallium						
Uranium						
Vanadium						
Benz(a)anthracene	1.2E-07	3.4E-07	4.9E-13		4.6E-07	0.31
Benzo(a)pyrene	1.4E-06	3.9E-06	5.6E-12		5.3E-06	3.54
Benzo(b)fluoranthene	1.6E-07	4.7E-07	6.7E-13		6.3E-07	0.43
Benzo(ghi)perylene						
Benzo(k)fluoranthene	1.4E-08	3.9E-08	5.6E-14		5.3E-08	0.04
Bis(2-ethylhexyl)phthalate	1.2E-09	5.7E-09			7.0E-09	0.00
Butyl benzyl phthalate						
Chrysene	1.4E-09	3.9E-09	5.6E-15		5.3E-09	0.00
Di-n-butyl phthalate						
Fluoranthene						
Indeno(1,2,3-cd)pyrene	6.1E-08	1.8E-07	2.5E-13		2.4E-07	0.16
PCB-1254	7.2E-08	4.3E-08	7.0E-13		1.2E-07	0.08
PCB-1260	7.3E-08	4.3E-08	7.1E-13		1.2E-07	0.08
Phenanthrene						
Polychlorinated biphenyl	1.9E-07	1.1E-07	1.8E-12		3.0E-07	0.20
Pyrene						
Alpha activity						
Beta activity						
Cesium-137	1.9E-08		1.1E-13	1.9E-06	1.9E-06	1.27
Uranium-235	3.5E-08		9.5E-11	3.0E-07	3.4E-07	0.23
Uranium-238	8.6E-07		1.7E-09	1.4E-06	2.2E-06	1.50
Pathway Total	1.8E-05	1.3E-04	1.2E-08	3.6E-06	1.5E-04	
Fraction of Total	1.2E-01	8.5E-01	7.7E-05	2.4E-02		

SECTOR=Far North/Northwest MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	8.3E-06	9.1E-06	2.7E-09		1.7E-05	7.67
Beryllium	1.9E-06	8.4E-05	3.6E-11		8.6E-05	37.81
Cadmium			2.1E-11		2.1E-11	0.00

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=Far North/Northwest MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Chromium			1.6E-08		1.6E-08	0.01
Cobalt						
Copper						
Iron						
Lead						
Manganese						
Mercury						
Nickel						
Thallium						
Uranium						
Zinc						
2,4-Dinitrotoluene	3.5E-07	3.7E-07			7.1E-07	0.31
Acenaphthene						
Anthracene						
Benz(a)anthracene	3.1E-07	8.9E-07	1.3E-12		1.2E-06	0.53
Benzo(a)pyrene	2.5E-06	7.3E-06	1.0E-11		9.9E-06	4.34
Benzo(b)fluoranthene	2.4E-07	6.8E-07	9.7E-13		9.2E-07	0.40
Benzo(ghi)perylene						
Benzo(k)fluoranthene	2.6E-08	7.6E-08	1.1E-13		1.0E-07	0.04
Bis(2-ethylhexyl)phthalate	1.6E-09	7.5E-09			9.1E-09	0.00
Chrysene	3.2E-09	9.2E-09	1.3E-14		1.2E-08	0.01
Di-n-butyl phthalate						
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	1.3E-07	3.7E-07	5.2E-13		4.9E-07	0.22
N-Nitrosodiphenylamine	2.5E-09	9.1E-09			1.2E-08	0.01
PCB-1254	5.8E-08	3.5E-08	5.7E-13		9.3E-08	0.04
PCB-1260	7.6E-08	4.6E-08	7.4E-13		1.2E-07	0.05
Phenanthrene						
Polychlorinated biphenyl	1.6E-07	9.3E-08	1.5E-12		2.5E-07	0.11
Pyrene						
Alpha activity						
Beta activity						
Cesium-137	2.3E-07		1.4E-12	2.3E-05	2.4E-05	10.41
Neptunium-237	3.3E-06		3.7E-09	7.7E-06	1.1E-05	4.80
Plutonium-239	1.2E-06		1.0E-09	7.2E-11	1.2E-06	0.52
Technetium-99	1.5E-05		3.0E-10	1.0E-08	1.5E-05	6.62
Thorium-230	4.6E-07		2.0E-09	8.2E-10	4.6E-07	0.20
Uranium-234	6.6E-06		2.0E-08	4.8E-09	6.6E-06	2.90
Uranium-235	1.3E-07		3.4E-10	1.1E-06	1.2E-06	0.54
Uranium-238	2.0E-05		3.8E-08	3.2E-05	5.1E-05	22.46
Pathway Total	6.1E-05	1.0E-04	8.4E-08	6.4E-05	2.3E-04	
Fraction of Total	2.7E-01	4.5E-01	3.7E-04	2.8E-01		

SECTOR=Northeast MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	4.4E-06	4.8E-06	1.4E-09		9.3E-06	5.84
Barium						
Beryllium	1.5E-06	6.9E-05	2.9E-11		7.0E-05	44.36
Cadmium			5.7E-12		5.7E-12	0.00
Chromium			5.3E-09		5.3E-09	0.00

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=Northeast MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Cobalt						
Manganese						
Thallium						
Uranium						
Vanadium						
Zinc						
2,6-Dinitrotoluene	3.3E-07	3.4E-07			6.7E-07	0.42
Acenaphthene						
Anthracene						
Benz(a)anthracene	9.2E-07	2.7E-06	3.8E-12		3.6E-06	2.26
Benzo(a)pyrene	8.3E-06	2.4E-05	3.4E-11		3.2E-05	20.35
Benzo(b)fluoranthene	9.3E-07	2.7E-06	3.8E-12		3.6E-06	2.27
Benzo(ghi)perylene						
Benzo(k)fluoranthene	7.0E-08	2.0E-07	2.9E-13		2.7E-07	0.17
Bis(2-ethylhexyl)phthalate	1.0E-09	4.9E-09			6.0E-09	0.00
Chrysene	9.5E-09	2.7E-08	3.9E-14		3.7E-08	0.02
Di-n-butyl phthalate						
Dibenz(a,h)anthracene	3.6E-06	1.0E-05	1.5E-11		1.4E-05	8.84
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	6.3E-07	1.8E-06	2.6E-12		2.4E-06	1.54
N-Nitroso-di-n-propylamine	3.4E-06	1.2E-05			1.6E-05	9.88
Naphthalene						
PCB-1254	1.3E-08	7.7E-09	1.3E-13		2.1E-08	0.01
PCB-1260	5.8E-08	3.5E-08	5.6E-13		9.2E-08	0.06
Phenanthrene						
Polychlorinated biphenyl	1.1E-07	6.4E-08	1.0E-12		1.7E-07	0.11
Pyrene						
Alpha activity						
Beta activity						
Neptunium-237	1.3E-07		1.5E-10	3.1E-07	4.5E-07	0.28
Uranium-234	1.1E-06		3.4E-09	8.1E-10	1.1E-06	0.70
Uranium-235	4.4E-08		1.2E-10	3.8E-07	4.3E-07	0.27
Uranium-238	1.6E-06		3.1E-09	2.6E-06	4.1E-06	2.61
Pathway Total	2.7E-05	1.3E-04	1.4E-08	3.3E-06	1.6E-04	
Fraction of Total	1.7E-01	8.1E-01	8.5E-05	2.0E-02		

SECTOR=Northwest MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	5.1E-06	5.5E-06	1.6E-09		1.1E-05	7.87
Beryllium	1.8E-06	8.2E-05	3.5E-11		8.4E-05	62.14
Cadmium			7.7E-12		7.7E-12	0.00
Chromium			5.8E-09		5.8E-09	0.00
Cobalt						
Iron						
Lead						
Manganese						
Mercury						
Thallium						
Uranium						
Vanadium						

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=Northwest MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Benz(a)anthracene	2.7E-07	7.9E-07	1.1E-12		1.1E-06	0.78
Benzo(a)pyrene	3.6E-06	1.0E-05	1.5E-11		1.4E-05	10.39
Benzo(b)fluoranthene	3.6E-07	1.0E-06	1.5E-12		1.4E-06	1.04
Benzo(k)fluoranthene	2.7E-08	7.9E-08	1.1E-13		1.1E-07	0.08
Bis(2-ethylhexyl)phthalate	1.4E-09	6.6E-09			7.9E-09	0.01
Chrysene	2.6E-09	7.6E-09	1.1E-14		1.0E-08	0.01
Di-n-butyl phthalate						
Fluoranthene						
N-Nitroso-di-n-propylamine	4.3E-06	1.5E-05			2.0E-05	14.49
Phenanthrene						
Polychlorinated biphenyl	1.2E-06	7.4E-07	1.2E-11		2.0E-06	1.47
Pyrene						
Alpha activity						
Beta activity						
Neptunium-237	2.8E-07		3.1E-10	6.5E-07	9.2E-07	0.68
Uranium-235	2.0E-08		5.4E-11	1.7E-07	1.9E-07	0.14
Uranium-238	4.6E-07		9.0E-10	7.4E-07	1.2E-06	0.89
Pathway Total	1.7E-05	1.2E-04	8.8E-09	1.6E-06	1.3E-04	
Fraction of Total	1.3E-01	8.6E-01	6.5E-05	1.2E-02		

SECTOR=Southeast MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	5.5E-06	6.0E-06	1.8E-09		1.1E-05	3.16
Barium						
Beryllium	1.7E-06	7.6E-05	3.2E-11		7.8E-05	21.54
Cadmium			1.1E-11		1.1E-11	0.00
Chromium			4.6E-09		4.6E-09	0.00
Cobalt						
Iron						
Lead						
Manganese						
Mercury						
Thallium						
Uranium						
Vanadium						
Zinc						
1,1,2-Trichloroethane	1.2E-09	3.2E-09	1.4E-09		5.8E-09	0.00
1,1-Dichloroethene	2.6E-07	5.8E-07	3.4E-06		4.2E-06	1.17
Acenaphthene						
Anthracene						
Benz(a)anthracene	4.8E-07	1.4E-06	2.0E-12		1.9E-06	0.52
Benzo(a)pyrene	4.8E-06	1.4E-05	2.0E-11		1.9E-05	5.18
Benzo(b)fluoranthene	4.9E-07	1.4E-06	2.0E-12		1.9E-06	0.53
Benzo(ghi)perylene						
Benzo(k)fluoranthene	4.6E-08	1.3E-07	1.9E-13		1.8E-07	0.05
Bis(2-ethylhexyl)phthalate	1.3E-09	6.3E-09			7.6E-09	0.00
Carbon tetrachloride	3.4E-09	1.2E-08	3.0E-09		1.8E-08	0.00
Chrysene	4.9E-09	1.4E-08	2.0E-14		1.9E-08	0.01
Di-n-butyl phthalate						
Di-n-octylphthalate						
Dibenz(a,h)anthracene	4.2E-06	1.2E-05	1.7E-11		1.6E-05	4.48

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=Southeast MEDIA=Subsurface soil (continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	4.7E-07	1.4E-06	1.9E-12		1.8E-06	0.51
Naphthalene						
PCB-1254	2.4E-07	1.5E-07	2.4E-12		3.9E-07	0.11
PCB-1262	6.1E-08	3.6E-08	5.9E-13		9.7E-08	0.03
Phenanthrene						
Polychlorinated biphenyl	1.3E-06	7.5E-07	1.2E-11		2.0E-06	0.55
Pyrene						
Tetrachloroethene	1.3E-09	3.0E-09	9.6E-11		4.4E-09	0.00
Trichloroethene	9.0E-08	1.3E-06	1.1E-07		1.5E-06	0.43
Vinyl chloride	2.9E-07	6.5E-07	2.2E-04		2.2E-04	61.05
trans-1,2-Dichloroethene						
Alpha activity						
Beta activity						
Cesium-137	1.3E-08		7.8E-14	1.3E-06	1.4E-06	0.37
Neptunium-237	1.9E-07		2.1E-10	4.4E-07	6.3E-07	0.17
Uranium-235	1.1E-08		2.9E-11	9.4E-08	1.1E-07	0.03
Uranium-238	1.6E-07		3.1E-10	2.5E-07	4.1E-07	0.11
Pathway Total	2.0E-05	1.2E-04	2.2E-04	2.1E-06	3.6E-04	
Fraction of Total	5.6E-02	3.2E-01	6.2E-01	5.9E-03		

SECTOR=Southwest MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	6.9E-06	7.5E-06	2.2E-09		1.4E-05	6.21
Barium						
Beryllium	1.7E-06	7.7E-05	3.3E-11		7.9E-05	34.14
Cadmium			1.3E-11		1.3E-11	0.00
Chromium			4.5E-09		4.5E-09	0.00
Iron						
Lead						
Manganese						
Mercury						
Silver						
Thallium						
Uranium						
Vanadium						
Zinc						
2-Hexanone						
Acenaphthene						
Acenaphthylene						
Anthracene						
Benz(a)anthracene	5.7E-07	1.6E-06	2.4E-12		2.2E-06	0.96
Benzo(a)pyrene	5.8E-06	1.7E-05	2.4E-11		2.3E-05	9.80
Benzo(b)fluoranthene	5.8E-07	1.7E-06	2.4E-12		2.3E-06	0.98
Benzo(ghi)perylene						
Benzo(k)fluoranthene	5.2E-08	1.5E-07	2.2E-13		2.0E-07	0.09
Bis(2-ethylhexyl)phthalate	2.8E-09	1.3E-08			1.6E-08	0.01
Butyl benzyl phthalate						
Chrysene	5.9E-09	1.7E-08	2.4E-14		2.3E-08	0.01
Di-n-butyl phthalate						

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Di-n-octylphthalate						
Dibenz(a,h)anthracene	5.0E-06	1.4E-05	2.0E-11		1.9E-05	8.34
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	4.6E-07	1.3E-06	1.9E-12		1.8E-06	0.77
Iodomethane						
Methylene chloride	1.8E-10	4.4E-10	1.8E-10		8.0E-10	0.00
N-Nitroso-di-n-propylamine	5.1E-06	1.8E-05			2.3E-05	10.02
N-Nitrosodiphenylamine	3.5E-09	1.3E-08			1.6E-08	0.01
Naphthalene						
PCB-1260	7.1E-08	4.3E-08	6.9E-13		1.1E-07	0.05
Phenanthrene						
Polychlorinated biphenyl	9.4E-08	5.6E-08	9.2E-13		1.5E-07	0.07
Pyrene						
Trichloroethene	4.9E-09	7.3E-08	5.9E-09		8.4E-08	0.04
Vinyl chloride	8.3E-08	1.8E-07	6.3E-05		6.3E-05	27.31
Alpha activity						
Beta activity						
Cesium-137	1.5E-08		8.6E-14	1.5E-06	1.5E-06	0.65
Neptunium-237	1.4E-07		1.5E-10	3.2E-07	4.5E-07	0.20
Uranium-235	2.9E-08		7.7E-11	2.5E-07	2.8E-07	0.12
Uranium-238	2.3E-07		4.4E-10	3.7E-07	5.9E-07	0.26
Pathway Total	2.7E-05	1.4E-04	6.3E-05	2.4E-06	2.3E-04	
Fraction of Total	1.2E-01	6.0E-01	2.7E-01	1.0E-02		

SECTOR=West MEDIA=Subsurface soil

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Aluminum						
Antimony						
Arsenic	8.1E-05	8.8E-05	2.6E-08		1.7E-04	31.01
Barium						
Beryllium	1.7E-06	7.7E-05	3.3E-11		7.8E-05	14.36
Cadmium			2.8E-11		2.8E-11	0.00
Chromium			5.6E-09		5.6E-09	0.00
Cobalt						
Uranium						
Vanadium						
Zinc						
2-Methylnaphthalene						
Acenaphthene						
Anthracene						
Benz(a)anthracene	4.2E-06	1.2E-05	1.7E-11		1.6E-05	2.99
Benzo(a)pyrene	3.9E-05	1.1E-04	1.6E-10		1.5E-04	27.98
Benzo(b)fluoranthene	4.6E-06	1.3E-05	1.9E-11		1.8E-05	3.29
Benzo(ghi)perylene						
Benzo(k)fluoranthene	4.1E-07	1.2E-06	1.7E-12		1.6E-06	0.29
Bis(2-ethylhexyl)phthalate	1.7E-09	8.2E-09			9.9E-09	0.00
Chrysene	4.5E-08	1.3E-07	1.9E-13		1.7E-07	0.03
Di-n-butyl phthalate						
Dibenz(a,h)anthracene	2.2E-05	6.4E-05	9.1E-11		8.6E-05	15.68
Fluoranthene						
Fluorene						
Indeno(1,2,3-cd)pyrene	2.4E-06	6.9E-06	9.9E-12		9.3E-06	1.71

Table 1.75. Excess lifetime cancer risks for the future excavation worker

SECTOR=West MEDIA=Subsurface soil
(continued)

Analyte	Direct ingestion	Dermal contact	Inhalation of volatiles and particulates	External exposure	Chemical Total	% of Total
Naphthalene						
PCB-1254	6.5E-07	3.9E-07	6.3E-12		1.0E-06	0.19
PCB-1260	4.0E-08	2.4E-08	3.9E-13		6.3E-08	0.01
Phenanthrene						
Polychlorinated biphenyl	5.9E-07	3.5E-07	5.8E-12		9.4E-07	0.17
Pyrene						
Trichloroethene	1.4E-08	2.1E-07	1.7E-08		2.5E-07	0.05
Alpha activity						
Beta activity						
Cesium-137	2.8E-08		1.6E-13	2.8E-06	2.8E-06	0.52
Neptunium-237	5.7E-07		6.4E-10	1.3E-06	1.9E-06	0.35
Uranium-234	1.2E-06		3.7E-09	8.8E-10	1.2E-06	0.22
Uranium-235	5.6E-08		1.5E-10	4.8E-07	5.4E-07	0.10
Uranium-238	2.2E-06		4.3E-09	3.5E-06	5.7E-06	1.05
Pathway Total	1.6E-04	3.8E-04	5.8E-08	8.2E-06	5.5E-04	
Fraction of Total	2.9E-01	6.9E-01	1.1E-04	1.5E-02		

531235

Table 1.76. Summary for risk characterization for WAG 6 without lead as a COPC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations (soil only)	3.3×10^{-4}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-238	5 28 65 <1 1 <1 <1	Ingestion of soil Dermal contact with soil External exposure to soil	3 95 2	1.8	Aluminum Antimony Arsenic Chromium Iron Vanadium	7 17 5 14 29 23	Ingestion of soil Dermal contact with soil	2 98
Future industrial worker at current concentrations (RGA groundwater only)	2.7×10^{-3}	Arsenic Beryllium 1,1-Dichloroethene Carbon tetrachloride Chloroform N-nitroso-di-n-propylamine Tetrachloroethene Trichloroethene Vinyl chloride Americium-241 Cesium-137 Lead-210 Neptunium-237 Technetium-99 Thorium-228 Uranium-238	6 8 1 2 <1 <1 <1 20 37 <1 <1 24 <1 <1 <1 <1	Ingestion of groundwater Dermal contact with groundwater Inhalation while showering	85 8 7	37.7	Aluminum Antimony Arsenic Chromium Iron Manganese Nitrate Vanadium Carbon tetrachloride Trichloroehtene *cis*-1,2-Dichloroethene	1 1 3 <1 34 2 <1 <1 5 49 1	Ingestion of groundwater Dermal contact with groundwater Inhalation while showering	82 16 2

A–646

531236

Table 1.76. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future industrial worker at current concentrations (McNairy Formation groundwater only)	4.5×10^{-3}	Arsenic	31	Ingestion of groundwater	98	20.6	Aluminum	4	Ingestion of groundwater	94
		Beryllium	4	Dermal contact with groundwater	1		Arsenic	42	Dermal contact with groundwater	6
		1,1-Dichloroethene	<1				Chromium	3		
		Bromodichloromethane	<1	Inhalation while showering	<1		Iron	35		
		Chloroform	<1				Manganese	2		
		Dibromochloromethane	<1				Vanadium	9		
		Tetrachloroethene	<1				Zinc	1		
		Trichloroethene	<1				Di-N-octylphthalate	1		
		Vinyl chloride	2							
		Cesium-137	<1							
		Lead -210	59							
		Lead-212	<1							
		Neptunium-237	<1							
		Plutonium-239	<1							
		Potassium-40	<1							
		Technetium-99	<1							
		Thorium-228	<1							
		Thorium-234	2							
		Uranium-235	<1							
Future industrial worker at current concentrations (soil only)	3.3×10^{-4}	Arsenic	5	Ingestion of soil	3	1.8	Aluminum	7	Ingestion of soil	2
		Beryllium	28	Dermal contact with soil	95		Antimony	17	Dermal contact with soil	98
		PAHs	65	External exposure to soil	2		Arsenic	5		
		PCBs	<1				Chromium	14		
		Cesium-137	1				Iron	29		
		Neptunium-237	<1				Vanadium	23		
		Uranium-238	<1							

A-647

531237

Table 1.76. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future child rural resident at current concentrations (McNairy Formation groundwater only)	NA	NA	NA	NA	NA	224	Aluminum	4	Ingestion of groundwater	58
							Arsenic	44	Dermal contact with groundwater	2
							Barium	<1		
							Beryllium	<1	Consumption of vegetables	40
							Cadmium	<1	Inhalation from household use	<1
							Chromium	3		
							Cobalt	<1		
							Iron	36		
							Manganese	1		
							Nickel	<1		
							Selenium	<1		
							Vanadium	8		
							Zinc	2		
							1,1-Dichloroethene	<1		
							1,2-Dchloroethane	<1		
							Chloroform	<1		
							Di-N-octylphthalate	<1		
							Tetrachloroethene	<1		
							Trichloroethene	<1		
							cis-1,2-Dichlroethene	<1		

531238

Table 1.76. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident at current concentrations (McNairy Formation groundwater only)	3.5×10^{-2}	Arsenic	33	Ingestion of groundwater	57	84.4	Aluminum	4	Ingestion of groundwater	64
		Beryllium	3	Dermal contact with groundwater	<1		Arsenic	44	Dermal contact with groundwater	2
		1,1-Dichloroethene	3				Barium	<1		
		1,2-Dichloroethane	<1	Inhalation while showering	<1		Cadmium	<1	Consumption of vegetables	34
		Bis(2-ethylhexyl)phthalate	<1	Consumption of vegetables	40		Chromium	3		
		Bromodichloromethane	<1				Iron	36		
		Chloroform	<1				Manganese	1		
		Dibromochloromethane	<1				Nickel	<1		
		Tetrachloroethene	<1				Selenium	<1		
		Trichloroethene	<1				Vanadium	8		
		Vinyl chloride	6				Zinc	2		
		Actinium-228	<1				Di-N-octylphthalate	<1		
		Cesium-137	<1				Trichloroethene	<1		
		Lead-210	43							
		Lead-212	<1							
		Neptunium-237	<1							
		Plutonium-239	<1							
		Potassium-40	<1							
		Technetium-99	10							
		Thorium-228	<1							
		Thorium-230	<1							
		Thorium-234	1							
		Uranium-234	<1							
		Uranium-235	<1							
		Uranium-238	<1							

531239

Table 1.76. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future child rural resident at current concentrations (RGA groundwater only)	NA	NA	NA	NA	NA	475	Aluminum	1	Ingestion of groundwater	44
							Antimony	<1	Dermal contact with groundwater	3
							Arsenic	2		
							Barium	<1	Consumption of vegetables	41
							Beryllium	<1	Inhalation while showering	<1
							Cadmium	<1	Inhalation from household use	10
							Chromium	<1		
							Cobalt	<1		
							Copper	<1		
							Iron	30		
							Manganese	1		
							Nickel	<1		
							Nitrate	<1		
							Silver	<1		
							Uranium	<1		
							Vanadium	<1		
							Zinc	<1		
							1,1-Dichloroethene	<1		
							Carbon tetrachloride	14		
							Chloroform	<1		
							Di-N-octylphthalate	<1		
							Tetrachloroethene	<1		
							Toluene	<1		
							Trichloroethene	46		
							cis-1,2-Dichloroethene	1		
							trans-1,2-Dichloroethene	<1		

A-650

531240

Table 1.76. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident at current concentrations (RGA groundwater only)	6.4×10^{-2}	Arsenic Beryllium 1,1-Dichloroethene Bromodichloromethane Carbon tetrachloride Chloroform N-nitroso-di-n-propylamine Tetrachloroethene Trichloroethene Vinyl chloride Americium-241 Cesium-137 Lead-210 Neptunium-237 Technetium-99 Thorium-228 Thorium-230 Uranium-234 Uranium-238	2 2 1 <1 <1 <1 <1 <1 12 30 <1 <1 6 <1 45 <1 <1 <1 <1	Ingestion of groundwater Dermal contact with groundwater Inhalation while showering Consumption of vegetables	17 <1 1 69	169	Aluminum Antimony Arsenic Barium Cadmium Chromium Copper Iron Manganese Nickel Nitrate Silver Vanadium Zinc Carbon tetrachloride Chloroform Tetrachloroethene Trichloroethene *cis*-1,2-Dichloroethene *trans*-1,2-Dichloroethene	2 <1 2 <1 <1 <1 <1 32 1 <1 <1 <1 <1 <1 10 <1 <1 48 1 <1	Ingestion of groundwater Dermal contact with groundwater Consumption of vegetables Inhalation while showering Inhalation from household use	52 5 37 <1 6
Future child rural resident at current concentrations (soil only)	NA	NA	NA	NA	NA	89.6	Aluminum Antimony Arsenic Beryllium Cadmium Chromium Iron Uranium Vanadium Zinc PAHs PCBs	7 5 19 <1 <1 4 40 9 5 <1 <1 9	Ingestion of surface soil Dermal contact with soil Consumption of vegetables	1 12 87

531241

Table 1.76. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident at current concentrations (soil only)	1.3×10^{-2}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-234 Uranium-235 Uranium-238	14 4 77 2 <1 <1 <1 <1 1	Ingestion of soil Dermal contact with soil Consumption of vegetables External exposure	<1 7 92 <1	26.9	Aluminum Antimony Arsenic Cadmium Chromium Iron Uranium Vanadium PCBs PAHs	7 5 20 <1 4 41 9 4 9 <1	Ingestion of soil Dermal contact with soil Consumption of vegetables	<1 8 92
Future child recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations (soil only)	NA	NA	NA	NA	NA	0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations (soil only)	1.1×10^{-4}	PAHs PCBs	96 3	Ingestion of deer Ingestion of rabbit Ingestion of quail	69 22 9	<0.1	NE	NE	NE	NE
Future excavation worker at current concentrations (soil only)	2.6×10^{-3}	Arsenic Beryllium 1,1-Dichloroethene PAHs N-nitroso-di-n-propylamine PCBs Trichloroethene Vinyl chloride Cesium-137 Neptunium-237 Uranium-238	<1 3 <1 2 <1 <1 2 91 <1 <1 <1	Ingestion of soil Dermal contact with soil Inhalation of vapors and particulates External exposure to soil	2 7 91 <1	3.25	Aluminum Antimony Chromium Iron Manganese Vanadium Trichloroethene	3 3 5 14 6 10 50	Ingestion of soil Dermal contact with soil	12 88

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included.

531242

Table 1.77. Summary for risk characterization for Sector 1 without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI [a]	COCs	% Total HI [a]	POCs	% Total HI
Current industrial worker at current concentrations	NE	NE	NE	NE	NE	0.0000564	NE	NE	NE	NE
Future industrial worker at current concentrations	NE	NE	NE	NE	NE	0.0000564	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	0.0116	NE	NE	NE	NE
Future adult rural resident at current concentrations	NE	NE	NE	NE	NE	0.00362	NE	NE	NE	NE
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	3.7×10^{-7}	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	3.4×10^{-7}	NE	NE	NE	NE
Future adult recreational user at current concentrations	NE	NE	NE	NE	NE	3.8×10^{-7}	NE	NE	NE	NE
Future excavation worker at current concentrations	2.0×10^{-6}	Cesium-137	83	Ingestion of soil External exposure to soil	6 93	1.7	Antimony Chromium Iron	34 21 45	Ingestion of soil Dermal contact with soil	14 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

A-653

531243

Table 1.78. Summary for risk characterization for Sector 2 without lead as a COPC

Receptor	Total ELCR	COCs	% Total ELCR	POCs	% Total ELCR	Total HI [a]	COCs	% Total HI [a]	POCs	% Total HI
Current industrial worker at current concentrations	1.7×10^{-5}	PAHs Uranium-238	88 9	Dermal contact with soil External exposure	86 10	0.43	NE	NE	NE	NE
Future industrial worker at current concentrations	1.7×10^{-5}	PAHs Uranium-238	88 9	Dermal contact with soil External exposure	86 10	0.43	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	10.6	Chromium Uranium Zinc	55 40 4	Ingestion of soil Dermal contact with soil Consumption of vegetables	1 23 76
Future adult rural resident at current concentrations	8.1×10^{-4}	PAHs PCBs Uranium-235 Uranium-238	84 5 <1 11	Ingestion of soil Dermal contact with soil External exposure	<1 5 93	3.0	Chromium Uranium Zinc	51 44 5	Dermal contact with soil Consumption of vegetables	16 84
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	0.00089	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	0.0008	NE	NE	NE	NE
Future adult recreational user at current concentrations	4.7×10^{-7}	NE	NE	NE	NE	0.00091	NE	NE	NE	NE
Future excavation worker at current concentrations	1.6×10^{-4}	Arsenic Beryllium PAHs N-nitroso-di-n-propylamine Uranium-234 Uranium-238	6 44 35 10 <1 3	Ingestion of soil Dermal contact with soil External exposure	17 81 2	1.2	Aluminum Antimony Chromium Manganese Vanadium	10 20 14 16 28	Ingestion of soil Dermal contact with soil	11 88

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

A-654

531244

Table 1.79. Summary human health risk characterization for Sector 3 without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	8.5×10^{-5}	PAHs PCBs Cesium-137 Uranium-238	52 37 6 3	Ingestion of soil Dermal contact with soil External exposure	8 82 10	0.3	NE	NE	NE	NE
Future industrial worker at current concentrations	8.5×10^{-5}	PAHs PCBs Cesium-137 Uranium-238	52 37 6 3	Ingestion of soil Dermal contact with soil External exposure	8 82 10	0.3	NE	NE	NE	NE
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	5.9×10^{-6}	PAHs PCBs	16 84	Ingestion of rabbit Ingestion of quail Ingestion of deer	86 5 10	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	13.3	Cadmium Chromium Uranium	5 31 63	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 14 84
Future adult rural resident at current concentrations	8.2×10^{-3}	PAHs PCBs Cesium-137 Neptunium-237 Uranium-235 Uranium-238	25 72 <1 <1 <1 2	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 3 96 <1	4.0	Cadmium Chromium Uranium	5 28 66	Dermal contact with soil Ingestion of vegetables	9 90
Future excavation worker at current concentrations	1.2×10^{-4}	Arsenic Beryllium PAHs PCBs Cesium-137	12 61 21 2 1	Ingestion of soil Dermal contact with soil External exposure	15 83 2	0.7	NE	NE	NE	NE

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

531245

Table 1.80. Summary human health risk characterization for Sector 4 (including SWMU 11) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	3.7×10^{-6}	PAHs	95	Dermal contact with soil	96	1.0	None	–	None	--
Future industrial worker at current concentrations	3.7×10^{-6}	PAHs	95	Dermal contact with soil	96	1.0	None	–	None	--
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	1.5×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	24.8	Aluminum Antimony Cadmium Chromium	59 9 2 29	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 23 76
Future adult rural resident at current concentrations	1.9×10^{-4}	PAHs PCBs	83 17	Ingestion of soil Dermal contact with soil Ingestion of vegetables	<1 5 94	7.1	Aluminum Antimony Cadmium Chromium	62 9 2 27	Dermal contact with soil Ingestion of vegetables	16 84
Future excavation worker at current concentrations	3.6×10^{-4}	Arsenic Beryllium 1,1-Dichloroethene PAHs PCBs Trichloroethene Vinyl chloride Cesium-137	3 22 1 11 <1 <1 61 <1	Ingestion of soil Dermal contact with soil Inhalation of vapors and particles External exposure	6 32 62 <1	1.6	Aluminum Antimony Chromium Iron Manganese Vanadium	7 6 10 29 12 20	Ingestion of soil Dermal contact with soil	15 85

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

A-656

531246

Table 1.81. Summary human health risk characterization for Sector 5 without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	4×10^{-4}	Beryllium PAHs Uranium-238	31 68 1	Ingestion of soil Dermal contact with soil External exposure	3 96 2	1.8	Antimony Chromium Iron	22 26 47	Dermal contact with soil	98
Future industrial worker at current concentrations	4×10^{-4}	Beryllium PAHs Uranium-238	31 68 1	Ingestion of soil Dermal contact with soil External exposure	3 96 2	1.8	Antimony Chromium Iron	22 26 47	Dermal contact with soil	98
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	2.5×10^{-5}	PAHs	99	Ingestion of deer Ingestion of rabbit Ingestion of quail	9 82 9	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	85.5	Antimony Beryllium Cadmium Chromium Iron Uranium Zinc PAHs	7 <1 <1 8 66 18 <1 <1	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 12 87
Future adult rural resident at current concentrations	1.4×10^{-2}	Beryllium PAHs PCBs Neptunium-237 Uranium-235 Uranium-238	5 92 <1 <1 <1 2	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 8 91 <1	25.6	Antimony Cadmium Chromium Iron Uranium	6 <1 7 67 19	Ingestion of soil Dermal contact with soil Ingestion of vegetables	<1 8 92
Future excavation worker at current concentrations	2.3×10^{-4}	Arsenic Beryllium PAHs N-nitrosodi-n-propylamine Vinyl chloride Cesium-137	6 34 21 10 27 <1	Ingestion of soil Dermal contact with soil Inhalation of particulates and vapors External exposure	12 60 27 1	1.6	Aluminum Antimony Chromium Iron Manganese Vanadium	7 15 9 30 12 18	Ingestion of soil Dermal contact with soil	15 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

531247

Table 1.82. Summary human health risk characterization for Sector 6 (including SWMU 47) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	1.1×10^{-3}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-238	3 9 86 <1 <1 <1 <1	Ingestion of soil Dermal contact with soil External exposure	3 95 1	1.2	Aluminum Antimony Arsenic Chromium PCBs	13 22 20 22 13	Dermal contact with soil	95
Future industrial worker at current concentrations	1.1×10^{-3}	Arsenic Beryllium PAHs PCBs Cesium-137 Neptunium-237 Uranium-238	3 9 86 <1 <1 <1 <1	Ingestion of soil Dermal contact with soil External exposure	3 95 1	1.2	Aluminum Antimony Arsenic Chromium PCBs	13 22 20 22 13	Dermal contact with soil	95
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	3.2×10^{-5}	PAHs	98	Ingestion of deer Ingestion of rabbit Ingestion of quail	9 81 10	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	119	Aluminum Antimony Arsenic Beryllium Cadmium Chromium Uranium Zinc PAHs PCBs	6 3 36 <1 1 3 9 <1 2 38	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 6 93

531248

Table 1.82. (Continued)

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Future adult rural resident at current concentrations	5.0×10^{-2}	Arsenic	9	Ingestion of soil	<1	36.4	Aluminum	6	Ingestion of soil	<1
		Beryllium	1	Dermal contact with soil	6		Antimony	3	Dermal contact with soil	4
		PAHs	88	Ingestion of vegetables	93		Arsenic	36	Ingestion of vegetables	96
		PCBs	1	External exposure	<1		Cadmium	1		
		Cesium-137	<1				Chromium	3		
		Neptunium-237	<1				Uranium	10		
		Uranium-234	<1				PAHs	2		
		Uranium-235	<1				PCBs	38		
		Uranium-238	<1							
Future excavation worker at current concentrations	5.5×10^{-4}	Arsenic	31	Ingestion of soil	29	2.1	Aluminum	7	Ingestion of soil	31
		Beryllium	14	Dermal contact with soil	69		Antimony	8	Dermal contact with soil	69
		PAHs	52	External exposure	2		Arsenic	50		
		PCBs	<1				Chromium	9		
		Cesium-137	<1				Vanadium	16		
		Neptunium-237	<1							
		Uranium-234	<1							
		Uranium-238	1							

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

531249

Table 1.83. Summary human health risk characterization for Sector 7 (including SWMU 203) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	1.2×10^{-4}	Beryllium PAHs Uranium-238	85 14 <1	Dermal contact with soil	98	1.6	Antimony Chromium Iron Vanadium	6 26 36 30	Dermal contact with soil	99
Future industrial worker at current concentrations	1.2×10^{-4}	Beryllium PAHs Uranium-238	85 14 <1	Dermal contact with soil	98	1.6	Antimony Chromium Iron Vanadium	6 26 36 30	Dermal contact with soil	99
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	5.1×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	53.6	Antimony Beryllium Cadmium Chromium Iron Vanadium	3 <1 <1 12 75 9	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 18 81
Future adult rural resident at current concentrations	1.5×10^{-3}	Beryllium PAHs Uranium-238	41 55 4	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 24 75 <1	15.7	Antimony Chromium Iron Vanadium	3 10 78 8	Dermal contact with soil Ingestion of vegetables	12 88
Future excavation worker at current concentrations	1.3×10^{-4}	Arsenic Beryllium PAHs n-nitroso-di-n-propylamine PCBs Uranium-238	8 62 12 14 1 <1	Ingestion of soil Dermal contact with soil External exposure	13 86 1	1.7	Aluminum Antimony Chromium Iron Manganese Vanadium	7 12 11 29 12 22	Ingestion of soil Dermal contact with soil	14 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

A-660

531250

Table 1.84. Summary human health risk characterization for Sector 8 (including SWMU 26) without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI[a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	2.4×10^{-4}	Beryllium PAHs Neptunium-237 Uranium-238	93 5 <1 <1	Ingestion of soil Dermal contact with soil External exposure	<1 98 1	1.0	NE	NE	NE	NE
Future industrial worker at current concentrations	2.4×10^{-4}	Beryllium PAHs Neptunium-237 Uranium-238	93 5 <1 <1	Ingestion of soil Dermal contact with soil External exposure	<1 98 1	1.0	NE	NE	NE	NE
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	1.3×10^{-6}	None	--	None	--	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	18.8	Antimony Beryllium Cadmium Chromium Uranium	29 2 3 44 23	Ingestion of soil Dermal contact with soil Ingestion of vegetable	<1 31 68
Future adult rural resident at current concentrations	2.1×10^{-3}	Beryllium PAHs Neptunium-237 Uranium-235 Uranium-238	63 29 3 <1 4	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 34 65 <1	5.2	Antimony Cadmium Chromium Uranium	28 3 42 25	Dermal contact with soil Ingestion of vegetables	22 78
Future excavation worker at current concentrations	2.3×10^{-4}	Arsenic Beryllium PAHs Cesium-137 Neptunium-237 Plutonium-239 Technetium-99 Uranium-234 Uranium-235 Uranium-238	8 38 6 10 5 <1 7 3 <1 22	Ingestion of soil Dermal contact with soil External exposure	27 45 28	4.4	Aluminum Antimony Arsenic Chromium Copper Iron Manganese Nickel Uranium	3 6 2 12 8 15 7 30 17	Ingestion of soil Dermal contact with soil	32 68

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.
None = No COCs or POCs selected because all chemical-specific or pathway-specific risk values were below the benchmarks used for selection.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

531251

Table 1.85. Summary human health risk characterization for Sector 9 without lead as a COC

Receptor	Total ELCR[a]	ELCR COCs	% Total ELCR	ELCR POCs	% Total ELCR	Total HI [a]	Systemic Toxicity COCs	% Total HI	Systemic Toxicity POCs	% Total HI
Current industrial worker at current concentrations	5.2×10^{-6}	PAHs Uranium-238	34 53	Dermal contact with soil External exposure	33 62	1.3	Aluminum Antimony Chromium	23 59 17	Dermal contact with soil	99
Future industrial worker at current concentrations	5.2×10^{-6}	PAHs Uranium-238	34 53	Dermal contact with soil External exposure	33 62	1.3	Aluminum Antimony Chromium	23 59 17	Dermal contact with soil	99
Future child recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future teen recreational user at current concentrations	NA	NA	NA	NA	NA	<0.1	NE	NE	NE	NE
Future adult recreational user at current concentrations	2.7×10^{-7}	NE	NE	NE	NE	<0.1	NE	NE	NE	NE
Future child rural resident at current concentrations	NA	NA	NA	NA	NA	36.8	Aluminum Antimony Chromium Uranium	39 31 9 22	Ingestion of soil Dermal contact with soil Ingestion of vegetables	1 21 78
Future adult rural resident at current concentrations	2.7×10^{-4}	PAHs PCBs Uranium-235 Uranium-238	31 2 4 63	Ingestion of soil Dermal contact with soil Ingestion of vegetables External exposure	<1 2 89 8	10.7	Aluminum Antimony Chromium Uranium	40 28 8 24	Dermal contact with soil Ingestion of vegetables	14 86
Future excavation worker at current concentrations	1.5×10^{-4}	Arsenic Beryllium PAHs Cesium-137 Uranium-238	18 74 4 1 2	Ingestion of soil Dermal contact with soil External exposure	12 85 2	2.7	Aluminum Antimony Arsenic Chromium Iron Manganese Vanadium	5 19 6 7 24 18 19	Ingestion of soil Dermal contact with soil	14 86

Note: NA = ELCR not applicable to child and teen cohorts. Values for adult include exposure as child and teen.
NE = Land use scenario not of concern.

[a] Total ELCR and total HI columns reflect values from Tables 1.66 to 1.75 without lead included. Also, the values in this table do not include contributions from water ingestion or use because groundwater was evaluated on an area basis. For risks due to water use, see Table 1.76.

A-662

Table 1.86. Effect of retention of infrequently detected analytes in the COPCs list on risk characterization with lead included as a COPC

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with infrequent detects	without infrequent detects	with infrequent detects	without infrequent detects
	Current Industrial Worker			
WAG 6	3.3×10^{-4}	3.3×10^{-4}	1,160	1,160
Sector 1	NC	NC	<1	<1
Sector 2	1.7×10^{-5}	1.7×10^{-5}	<1	<1
Sector 3	8.5×10^{-5}	8.5×10^{-5}	<1	<1
Sector 4	3.7×10^{-6}	3.7×10^{-6}	<1	<1
Sector 5	4.0×10^{-4}	4.0×10^{-4}	1.8	1.8
Sector 6	1.1×10^{-3}	1.1×10^{-3}	1.2	1.2
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1,890	1,890
Sector 8	2.4×10^{-4}	2.4×10^{-4}	1.0	1.0
Sector 9	5.2×10^{-6}	5.2×10^{-6}	1.3	1.3
	Future Industrial Worker			
WAG 6 McNairy	4.5×10^{-3}	4.5×10^{-3}	11,500	11,500
WAG 6 RGA	2.7×10^{-3}	2.7×10^{-3}	3,320	3,320
WAG 6 soil	3.3×10^{-4}	3.3×10^{-4}	1,160	1,160
Sector 1	NC	NC	<1	<1
Sector 2	1.7×10^{-5}	1.7×10^{-5}	<1	<1
Sector 3	8.5×10^{-5}	8.5×10^{-5}	<1	<1
Sector 4	3.7×10^{-6}	3.7×10^{-6}	<1	<1
Sector 5	4.0×10^{-4}	4.0×10^{-4}	1.8	1.8
Sector 6	1.1×10^{-3}	1.1×10^{-3}	1.2	1.2
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1,890	1,890
Sector 8	2.4×10^{-4}	2.4×10^{-4}	1.0	1.0
Sector 9	5.2×10^{-6}	5.2×10^{-6}	1.3	1.3

Table 1.86. Effect of retention of infrequently detected analytes in the COPCs list on risk characterization with lead included as a COPC, continued

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with infrequent detects	without infrequent detects	with infrequent detects	without infrequent detects
Future Excavation Worker				
WAG 6	2.6×10^{-3}	2.6×10^{-3}	812	812
Sector 1	2.0×10^{-6}	2.0×10^{-6}	1.7	1.7
Sector 2	1.6×10^{-4}	1.6×10^{-4}	1.2	1.2
Sector 3	1.2×10^{-4}	1.2×10^{-4}	790	790
Sector 4	3.6×10^{-4}	3.6×10^{-4}	767	767
Sector 5	2.3×10^{-4}	2.3×10^{-4}	770	770
Sector 6	5.5×10^{-4}	5.5×10^{-4}	2.1	2.1
Sector 7	1.3×10^{-4}	1.3×10^{-4}	863	863
Sector 8	2.3×10^{-4}	2.3×10^{-4}	1,870	1,870
Sector 9	1.5×10^{-4}	1.5×10^{-4}	1,660	1,660
Future Rural Resident (values for HI are for the child)				
WAG 6 McNairy	3.5×10^{-2}	3.6×10^{-2}	127,000	127,000
WAG 6 RGA	6.4×10^{-2}	6.6×10^{-2}	36,900	36,900
WAG 6 soil	1.3×10^{-2}	1.3×10^{-2}	79,300	79,300
Sector 1	NC	NC	<1	<1
Sector 2	8.1×10^{-4}	8.1×10^{-4}	10.6	10.6
Sector 3	8.2×10^{-3}	8.2×10^{-3}	13.3	13.3
Sector 4	1.9×10^{-4}	1.9×10^{-4}	24.8	24.8
Sector 5	1.4×10^{-2}	1.4×10^{-2}	85.5	85.5
Sector 6	5.0×10^{-2}	5.0×10^{-2}	119	119
Sector 7	1.5×10^{-3}	1.5×10^{-3}	129,000	129,000
Sector 8	2.1×10^{-3}	2.1×10^{-3}	18.8	18.8
Sector 9	2.7×10^{-4}	2.7×10^{-4}	36.8	36.8

Table 1.86. Effect of retention of infrequently detected analytes in the COPCs list on risk characterization with lead included as a COPC, continued

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with infrequent detects	without infrequent detects	with infrequent detects	without infrequent detects
Future Recreational User (values for HI are for the child)				
WAG 6	1.1×10^{-4}	1.1×10^{-4}	2.6	2.6
Sector 1	NC	NC	<1	<1
Sector 2	4.7×10^{-7}	4.7×10^{-7}	<1	<1
Sector 3	5.9×10^{-6}	5.9×10^{-6}	<1	<1
Sector 4	1.5×10^{-7}	1.5×10^{-7}	<1	<1
Sector 5	2.5×10^{-5}	2.5×10^{-5}	<1	<1
Sector 6	3.2×10^{-5}	3.2×10^{-5}	<1	<1
Sector 7	5.1×10^{-7}	5.1×10^{-7}	<1	<1
Sector 8	1.3×10^{-6}	1.3×10^{-6}	<1	<1
Sector 9	2.7×10^{-7}	2.7×10^{-7}	<1	<1

NC = No COPCs with toxicity information

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=McNairy MEDIA=Ground water -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Antimony	0/3	2.77E-02	5.64E-04		Yes		mg/L
Cyanide	0/2	6.00E-03	2.84E-02		No		mg/L
Mercury	0/3	2.10E-04	4.44E-04		No		mg/L
Nitrite	0/25	1.00E+00	1.51E-01		Yes		mg/L
Silver	0/3	5.67E-03	7.50E-03		No		mg/L
1,1,1,2-Tetrachloroethane	0/5	1.30E-02	4.35E-02	3.86E-05	No	Yes	mg/L
1,1,1-Trichloroethane	0/5	1.30E-02	4.44E-02		No		mg/L
1,1,2,2-Tetrachloroethane	0/5	1.30E-02		5.04E-06		Yes	mg/L
1,1,2-Trichloroethane	0/5	1.30E-02	5.96E-03	1.77E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/5	1.30E-02	2.73E-02		No		mg/L
1,2,3-Trichloropropane	0/5	1.30E-02	5.05E-03	3.87E-07	Yes	Yes	mg/L
1,2,4-Trichlorobenzene	0/5	1.00E-02	6.63E-03		Yes		mg/L
1,2-Dibromoethane	0/5	1.30E-02	1.33E-05	5.94E-08	Yes	Yes	mg/L
1,2-Dichlorobenzene	0/5	1.00E-02	1.20E-02		No		mg/L
1,2-Dichloropropane	0/5	1.30E-02	2.67E-04	7.58E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/5	1.30E-02	4.59E-02		No		mg/L
1,3-Dichlorobenzene	0/5	1.00E-02	1.16E-01		No		mg/L
1,4-Dichlorobenzene	0/5	1.00E-02	5.34E-02	1.97E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/5	5.00E-02	1.29E-01		No		mg/L
2,4,6-Trichlorophenol	0/5	1.00E-02		3.99E-04		Yes	mg/L
2,4-Dichlorophenol	0/5	1.00E-02	4.10E-03		Yes		mg/L
2,4-Dimethylphenol	0/5	1.00E-02	2.30E-02		No		[illegible]
2,4-Dinitrophenol	0/5	5.00E-02	3.01E-03		Yes		[illegible]
2,4-Dinitrotoluene	0/5	1.00E-02	3.00E-03	7.69E-06	Yes	Yes	[illegible]
2,6-Dinitrotoluene	0/5	1.00E-02	1.51E-03	7.71E-06	Yes	Yes	mg/L
2-Butanone	0/5	2.50E-02	6.21E-02		No		mg/L
2-Chloro-1,3-butadiene	0/5	1.30E-02	4.60E-04		Yes		mg/L
2-Chloroethyl vinyl ether	0/5	2.50E-02	3.78E-02		No		mg/L
2-Chloronaphthalene	0/5	1.00E-02	8.31E-02		No		mg/L
2-Chlorophenol	0/5	1.00E-02	6.90E-03		Yes		mg/L
2-Hexanone	0/5	2.50E-02					mg/L
2-Methyl-4,6-dinitrophenol	0/5	5.00E-02					mg/L
2-Methylnaphthalene	0/5	1.00E-02					mg/L
2-Methylphenol	0/5	1.00E-02	7.23E-02		No		mg/L
2-Nitrobenzenamine	0/5	5.00E-02	1.16E-05		Yes		mg/L
2-Nitrophenol	0/5	1.00E-02					mg/L
2-Propanol	0/4	1.40E-01					mg/L
3,3'-Dichlorobenzidine	0/5	1.00E-02		1.11E-05		Yes	mg/L
3-Nitrobenzenamine	0/5	5.00E-02	4.54E-03		Yes		mg/L
4-Bromophenyl phenyl ether	0/5	1.00E-02	5.18E-02		No		mg/L
4-Chloro-3-methylphenol	0/5	1.00E-02					mg/L
4-Chlorobenzenamine	0/5	1.00E-02	5.55E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/5	1.00E-02					mg/L
4-Methyl-2-pentanone	0/5	2.50E-02	5.11E-03		Yes		mg/L
4-Methylphenol	0/5	1.00E-02	7.27E-03		Yes		mg/L
4-Nitrobenzenamine	0/5	5.00E-02	4.54E-03		Yes		mg/L
4-Nitrophenol	0/5	5.00E-02	9.29E-02		No		mg/L
Acenaphthene	0/5	1.00E-02	4.23E-02		No		mg/L
Acenaphthylene	0/5	1.00E-02					mg/L
Acetone	0/5	2.50E-02	1.51E-01		No		mg/L
Acrolein	0/5	1.30E-01	1.33E-06		Yes		mg/L
Acrylonitrile	0/5	1.30E-01	1.23E-04	3.40E-06	Yes	Yes	mg/L
Anthracene	0/5	1.00E-02	3.18E-01		No		mg/L
Benz(a)anthracene	0/5	1.00E-02		1.32E-06		Yes	mg/L
Benzene	0/5	1.30E-02	3.99E-04	3.47E-05	Yes	Yes	mg/L
Benzenemethanol	0/5	1.00E-02	4.48E-01		No		mg/L
Benzo(a)pyrene	0/5	1.00E-02		9.51E-08		Yes	[illegible]
Benzo(b)fluoranthene	0/5	1.00E-02		9.31E-07		Yes	
Benzo(ghi)perylene	0/5	1.00E-02					[illegible]
Benzo(k)fluoranthene	0/5	1.00E-02		1.68E-05		Yes	mg/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

-- SECTOR=McNairy MEDIA=Ground water --
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bis(2-chloroethoxy)methane	0/5	1.00E-02					mg/L
Bis(2-chloroethyl) ether	0/5	1.00E-02		9.19E-07		Yes	mg/L
Bis(2-chloroisopropyl)ether	0/5	1.00E-02		2.40E-05		Yes	mg/L
Bromoform	0/5	1.30E-02	3.01E-02	2.16E-04	No	Yes	mg/L
Bromomethane	0/5	2.50E-02	2.88E-04		Yes		mg/L
Butyl benzyl phthalate	0/5	1.00E-02	2.59E-01		No		mg/L
Carbazole	0/5	1.00E-02		2.16E-04		Yes	mg/L
Carbon disulfide	0/5	1.30E-02	3.52E-02		No		mg/L
Carbon tetrachloride	0/5	1.30E-02	1.18E-04	1.46E-05	Yes	Yes	mg/L
Chlorobenzene	0/5	1.30E-02	1.27E-03		Yes		mg/L
Chloroethane	0/5	2.50E-02	3.15E-01		No		mg/L
Chloromethane	0/5	2.50E-02		1.33E-04		Yes	mg/L
Chrysene	0/5	1.00E-02		1.32E-04		Yes	mg/L
Dibenz(a,h)anthracene	0/5	1.00E-02		4.56E-08		Yes	mg/L
Dibenzofuran	0/5	1.00E-02	6.05E-03		Yes		mg/L
Dibromomethane	0/5	1.30E-02	1.51E-02		No		mg/L
Dichlorodifluoromethane	0/5	1.30E-02	1.27E-02		Yes		mg/L
Diethyl phthalate	0/5	1.00E-02	1.20E+00		No		mg/L
Dimethyl phthalate	0/5	1.00E-02	1.51E+01		No		mg/L
Dimethylbenzene	0/5	1.30E-02	2.63E+00		No		mg/L
Ethyl cyanide	0/5	2.50E-01					mg/L
[illegible] methacrylate	0/5	1.30E-02	1.34E-01		No		mg/L
[illegible]enzene	0/5	1.30E-02	4.48E-02		No		mg/L
Fluoranthene	0/5	1.00E-02	2.26E-02		No		mg/L
Fluorene	0/5	1.00E-02	3.54E-02		No		mg/L
Hexachlorobenzene	0/5	1.00E-02	7.54E-04	1.92E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/5	1.00E-02	2.25E-04	4.80E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/5	1.00E-02	9.78E-03		Yes		mg/L
Hexachloroethane	0/5	1.00E-02	1.35E-03	3.29E-04	Yes	Yes	mg/L
Indeno(1,2,3-cd)pyrene	0/5	1.00E-02		6.31E-07		Yes	mg/L
Iodomethane	0/5	1.30E-02					mg/L
Isophorone	0/5	1.00E-02	2.99E-01	5.47E-03	No	Yes	mg/L
Methacrylonitrile	0/5	1.30E-02	3.56E-05		Yes		mg/L
Methyl methacrylate	0/5	1.30E-02	1.20E-01		No		mg/L
Methylene chloride	0/5	1.30E-02	6.21E-02	3.64E-04	No	Yes	mg/L
N-Nitroso-di-n-propylamine	0/5	1.00E-02		7.39E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/5	1.00E-02		9.49E-04		Yes	mg/L
Naphthalene	0/5	1.00E-02	4.80E-02		No		mg/L
Nitrobenzene	0/5	1.00E-02	1.13E-04		Yes		mg/L
Pentachlorophenol	0/5	5.00E-02	2.34E-02	2.08E-05	Yes	Yes	mg/L
Phenanthrene	0/5	1.00E-02					mg/L
Pyrene	0/5	1.00E-02	1.81E-02		No		mg/L
Styrene	0/5	1.30E-02	4.49E-02		No		mg/L
Trichlorofluoromethane	0/5	1.30E-02	4.19E-02		No		mg/L
Vinyl acetate	0/5	1.30E-02	1.32E-02		No		mg/L
cis-1,3-Dichloropropene	0/5	1.30E-02					mg/L
trans-1,3-Dichloropropene	0/5	1.30E-02					mg/L
trans-1,4-Dichloro-2-butene	0/5	1.30E-02					mg/L
Bismuth-212	0/1	8.00E+00					pCi/L
Cesium-134	0/1	-2.00E-01					pCi/L
Cobalt-57	0/1	-3.10E-01					pCi/L
Cobalt-60	0/1	5.00E-01					pCi/L
Plutonium-238	0/1	4.00E-03					pCi/L
Plutonium-239/240	0/1	1.30E-02					pCi/L
Radium-226	0/1	0.00E+00					pCi/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=RGA MEDIA=Ground water

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/12	6.00E-03	2.84E-02		No		mg/L
Nitrite	0/30	1.00E+00	1.51E-01		Yes		mg/L
1,1,1,2-Tetrachloroethane	0/23	1.30E+01	4.35E-02	3.86E-05	Yes	Yes	mg/L
1,1,2,2-Tetrachloroethane	0/23	1.30E+01		5.04E-06		Yes	mg/L
1,1,2-Trichloroethane	0/23	1.30E+01	5.96E-03	1.77E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/23	1.30E+01	2.73E-02		Yes		mg/L
1,2,3-Trichloropropane	0/23	1.30E+01	5.05E-03	3.87E-07	Yes	Yes	mg/L
1,2,4-Trichlorobenzene	0/16	1.00E-02	6.63E-03		Yes		mg/L
1,2-Dibromoethane	0/23	1.30E+01	1.33E-05	5.94E-08	Yes	Yes	mg/L
1,2-Dichlorobenzene	0/16	1.00E-02	1.20E-02		No		mg/L
1,2-Dichloroethane	0/23	1.30E+01	6.68E-04	1.11E-05	Yes	Yes	mg/L
1,2-Dichloropropane	0/23	1.30E+01	2.67E-04	7.58E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/23	1.30E+01	4.59E-02		Yes		mg/L
1,3-Dichlorobenzene	0/16	1.00E-02	1.16E-01		No		mg/L
1,4-Dichlorobenzene	0/16	1.00E-02	5.34E-02	1.97E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/16	5.00E-02	1.29E-01		No		mg/L
2,4,6-Trichlorophenol	0/16	1.00E-02		3.99E-04		Yes	mg/L
2,4-Dichlorophenol	0/16	1.00E-02	4.10E-03		Yes		mg/L
2,4-Dimethylphenol	0/16	1.00E-02	2.30E-02		No		mg/L
2,4-Dinitrophenol	0/16	5.00E-02	3.01E-03		Yes		mg/L
2,4-Dinitrotoluene	0/16	1.00E-02	3.00E-03	7.69E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/16	1.00E-02	1.51E-03	7.71E-06	Yes	Yes	mg/[illegible]
2-Butanone	0/23	2.50E+01	6.21E-02		Yes		[illegible]
2-Chloro-1,3-butadiene	0/23	1.30E+01	4.60E-04		Yes		[illegible]
2-Chloroethyl vinyl ether	0/23	2.50E+01	3.78E-02		Yes		mg/[illegible]
2-Chloronaphthalene	0/16	1.00E-02	8.31E-02		No		mg/L
2-Chlorophenol	0/16	1.00E-02	6.90E-03		Yes		mg/L
2-Hexanone	0/23	2.50E+01					mg/L
2-Methyl-4,6-dinitrophenol	0/16	5.00E-02					mg/L
2-Methylnaphthalene	0/16	1.00E-02					mg/L
2-Methylphenol	0/16	1.00E-02	7.23E-02		No		mg/L
2-Nitrobenzenamine	0/16	5.00E-02	1.16E-05		Yes		mg/L
2-Nitrophenol	0/16	1.00E-02					mg/L
2-Propanol	0/16	5.40E+01					mg/L
3,3'-Dichlorobenzidine	0/16	1.00E-02		1.11E-05		Yes	mg/L
3-Nitrobenzenamine	0/16	5.00E-02	4.54E-03		Yes		mg/L
4-Bromophenyl phenyl ether	0/16	1.00E-02	5.18E-02		No		mg/L
4-Chloro-3-methylphenol	0/16	1.00E-02					mg/L
4-Chlorobenzenamine	0/16	1.00E-02	5.55E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/16	1.00E-02					mg/L
4-Methyl-2-pentanone	0/23	2.50E+01	5.11E-03		Yes		mg/L
4-Methylphenol	0/16	1.00E-02	7.27E-03		Yes		mg/L
4-Nitrobenzenamine	0/16	5.00E-02	4.54E-03		Yes		mg/L
4-Nitrophenol	0/16	5.00E-02	9.29E-02		No		mg/L
Acenaphthene	0/16	1.00E-02	4.23E-02		No		mg/L
Acenaphthylene	0/16	1.00E-02					mg/L
Acrolein	0/23	1.30E+02	1.33E-06		Yes		mg/L
Acrylonitrile	0/23	1.30E+02	1.23E-04	3.40E-06	Yes	Yes	mg/L
Anthracene	0/16	1.00E-02	3.18E-01		No		mg/L
Benz(a)anthracene	0/16	1.00E-02		1.32E-06		Yes	mg/L
Benzene	0/23	1.30E+01	3.99E-04	3.47E-05	Yes	Yes	mg/L
Benzenemethanol	0/16	1.00E-02	4.48E-01		No		mg/L
Benzo(a)pyrene	0/16	1.00E-02		9.51E-08		Yes	mg/L
Benzo(b)fluoranthene	0/16	1.00E-02		9.31E-07		Yes	mg/L
Benzo(ghi)perylene	0/16	1.00E-02					mg/L
Benzo(k)fluoranthene	0/16	1.00E-02		1.68E-05		Yes	mg/L
Bis(2-chloroethoxy)methane	0/16	1.00E-02					[illegible]
Bis(2-chloroethyl) ether	0/16	1.00E-02		9.19E-07		Yes	[illegible]
Bis(2-chloroisopropyl)ether	0/16	1.00E-02		2.40E-05		Yes	[illegible]
Bromoform	0/23	1.30E+01	3.01E-02	2.16E-04	Yes	Yes	mg/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

---------- SECTOR=RGA MEDIA=Ground water ----------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bromomethane	0/23	2.50E+01	2.88E-04		Yes		mg/L
Butyl benzyl phthalate	0/16	1.00E-02	2.59E-01		No		mg/L
Carbazole	0/16	1.00E-02		2.16E-04		Yes	mg/L
Carbon disulfide	0/23	1.30E+01	3.52E-02		Yes		mg/L
Chlorobenzene	0/23	1.30E+01	1.27E-03		Yes		mg/L
Chloroethane	0/23	2.50E+01	3.15E-01		Yes		mg/L
Chloromethane	0/23	2.50E+01		1.33E-04		Yes	mg/L
Chrysene	0/16	1.00E-02		1.32E-04		Yes	mg/L
Dibenz(a,h)anthracene	0/16	1.00E-02		4.56E-08		Yes	mg/L
Dibenzofuran	0/16	1.00E-02	6.05E-03		Yes		mg/L
Dibromochloromethane	0/23	1.30E+01	3.00E-02	6.21E-05	Yes	Yes	mg/L
Dibromomethane	0/23	1.30E+01	1.51E-02		Yes		mg/L
Dichlorodifluoromethane	0/23	1.30E+01	1.27E-02		Yes		mg/L
Dimethyl phthalate	0/16	1.00E-02	1.51E+01		No		mg/L
Dimethylbenzene	0/23	1.30E+01	2.63E+00		Yes		mg/L
Ethyl cyanide	0/23	2.50E+02					mg/L
Ethyl methacrylate	0/23	1.30E+01	1.34E-01		Yes		mg/L
Ethylbenzene	0/23	1.30E+01	4.48E-02		Yes		mg/L
Fluoranthene	0/16	1.00E-02	2.26E-02		No		mg/L
Fluorene	0/16	1.00E-02	3.54E-02		No		mg/L
Hexachlorobenzene	0/16	1.00E-02	7.54E-04	1.92E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/16	1.00E-02	2.25E-04	4.80E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/16	1.00E-02	9.78E-03		Yes		mg/L
Hexachloroethane	0/16	1.00E-02	1.35E-03	3.29E-04	Yes	Yes	mg/L
Indeno(1,2,3-cd)pyrene	0/16	1.00E-02		6.31E-07		Yes	mg/L
Iodomethane	0/23	1.30E+01					mg/L
Isophorone	0/16	1.00E-02	2.99E-01	5.47E-03	No	Yes	mg/L
Methacrylonitrile	0/23	1.30E+01	3.56E-05		Yes		mg/L
Methyl methacrylate	0/23	1.30E+01	1.20E-01		Yes		mg/L
Methylene chloride	0/23	1.30E+01	6.21E-02	3.64E-04	Yes	Yes	mg/L
N-Nitrosodiphenylamine	0/16	1.00E-02		9.49E-04		Yes	mg/L
Naphthalene	0/16	1.00E-02	4.80E-02		No		mg/L
Nitrobenzene	0/16	1.00E-02	1.13E-04		Yes		mg/L
Pentachlorophenol	0/16	5.00E-02	2.34E-02	2.08E-05	Yes	Yes	mg/L
Phenanthrene	0/16	1.00E-02					mg/L
Pyrene	0/16	1.00E-02	1.81E-02		No		mg/L
Styrene	0/23	1.30E+01	4.49E-02		Yes		mg/L
Trichlorofluoromethane	0/23	1.30E+01	4.19E-02		Yes		mg/L
Vinyl acetate	0/23	1.30E+01	1.32E-02		Yes		mg/L
cis-1,3-Dichloropropene	0/23	1.30E+01					mg/L
trans-1,3-Dichloropropene	0/23	1.30E+01					mg/L
trans-1,4-Dichloro-2-butene	0/23	1.30E+01					mg/L
Actinium-228	0/1	1.00E+00					pCi/L
Bismuth-214	0/1	5.50E+00					pCi/L
Cesium-134	0/1	1.10E+00					pCi/L
Cobalt-57	0/1	-1.00E-01					pCi/L
Cobalt-60	0/4	3.94E+01					pCi/L
Lead-212	0/1	4.60E+00					pCi/L
Plutonium-238	0/1	2.40E-02					pCi/L
Plutonium-239/240	0/1	1.70E-02					pCi/L
Potassium-40	0/1	1.40E+01					pCi/L
Radium-226	0/1	4.00E+01					pCi/L
Thallium-208	0/1	7.00E-01					pCi/L
Thorium-234	0/1	-1.20E+01					pCi/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=WAG 6 MEDIA=Subsurface soil ------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/204	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/142	8.00E-01	3.32E+01	1.89E-01	No	Yes	mg/kg
1,1,2,2-Tetrachloroethane	0/142	8.00E-01		2.47E-02		Yes	mg/kg
1,1-Dichloroethane	0/142	9.80E-01	1.16E-01		Yes		mg/kg
1,2,3-Trichloropropane	0/142	8.00E-01	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/203	1.65E+01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/142	8.00E-01	5.70E-01	7.49E-05	Yes	Yes	mg/kg
1,2-Dichlorobenzene	0/203	1.65E+01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/142	8.00E-01	4.62E+00	4.49E-02	No	Yes	mg/kg
1,2-Dichloropropane	0/142	8.00E-01	2.09E+00	8.75E-02	No	Yes	mg/kg
1,3-Dichlorobenzene	0/203	1.65E+01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/203	1.65E+01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/203	1.65E+01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/131	1.65E+01					mg/kg
2,4,6-Trichlorophenol	0/203	1.65E+01		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/203	1.65E+01	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/203	1.65E+01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/203	4.00E+01	5.28E+00		Yes		mg/kg
2-Butanone	0/142	2.00E+01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/142	8.00E-01	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/142	2.00E+00	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/203	1.65E+01	1.28E+02		No		mg/
2-Chlorophenol	0/203	1.65E+01	7.99E+00		Yes		m
2-Fluoro-1,1'-biphenyl	0/131	1.65E+01					m
2-Fluorophenol	0/131	1.65E+01					mg/kg
2-Methyl-4,6-dinitrophenol	0/203	4.00E+01					mg/kg
2-Methylphenol	0/203	1.65E+01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/203	4.00E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/203	1.65E+01					mg/kg
2-Propanol	0/142	8.00E+00					mg/kg
3,3'-Dichlorobenzidine	0/203	1.65E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/203	4.00E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/203	1.65E+01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/203	1.65E+01					mg/kg
4-Chlorobenzenamine	0/203	1.65E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/203	1.65E+01					mg/kg
4-Methyl-2-pentanone	0/142	8.00E+00	4.96E+01		No		mg/kg
4-Methylphenol	0/203	1.65E+01	9.77E+00		Yes		mg/kg
4-Nitrobenzenamine	0/203	4.00E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/203	4.00E+01	1.64E+02		No		mg/kg
Acrolein	0/142	2.00E+01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/142	2.00E+01	1.38E-01	4.04E-03	Yes	Yes	mg/kg
Aniline	0/131	1.65E+01	9.26E+04	1.64E+00	No	Yes	mg/kg
Benzenemethanol	0/203	1.65E+01	5.93E+02		No		mg/kg
Benzidine	0/131	1.65E+01	6.81E+00	5.91E-05	Yes	Yes	mg/kg
Benzoic acid	0/203	4.00E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/203	1.65E+01					mg/kg
Bis(2-chloroethyl) ether	0/203	1.65E+01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/203	1.65E+01		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/142	8.00E-01	2.63E+01	1.23E-01	No	Yes	mg/kg
Bromoform	0/142	8.00E-01	1.72E+01	6.23E-01	No	Yes	mg/kg
Bromomethane	0/142	2.00E+00	2.92E-01		Yes		mg/kg
Carbazole	0/131	1.65E+01		6.14E-01		Yes	mg/kg
Chlorobenzene	0/142	8.00E-01	6.54E+00		No		mg/kg
Chloroethane	0/142	2.00E+00	2.11E+02		No		mg/kg
Chloromethane	0/142	2.00E+00		1.47E-01		Yes	mg/kg
Dibromochloromethane	0/142	8.00E-01	1.72E+01	5.86E-02	No	Yes	mg/
Dibromomethane	0/142	8.00E-01	1.11E+01		No		[illegible]
Dichlorodifluoromethane	0/142	8.00E-01	4.48E+00		No		[illegible]
Dimethyl phthalate	0/203	1.65E+01	2.46E+04		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=WAG 6 MEDIA=Subsurface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Dimethylbenzene	0/142	8.00E-01	2.49E+03		No		mg/kg
Diphenyldiazene	0/131	1.65E+01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/142	2.00E+01					mg/kg
Ethyl methacrylate	0/142	8.00E-01	9.97E+01		No		mg/kg
Ethylbenzene	0/142	8.00E-01	1.01E+02		No		mg/kg
Hexachlorobenzene	0/203	1.65E+01	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/203	1.65E+01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/203	1.65E+01	1.12E+01		Yes		mg/kg
Hexachloroethane	0/203	1.65E+01	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Isophorone	0/203	1.65E+01	3.20E+02	9.85E+00	No	Yes	mg/kg
Methacrylonitrile	0/142	3.80E+00	1.04E-01		Yes		mg/kg
Methyl methacrylate	0/142	8.00E-01	8.86E+01		No		mg/kg
N-Nitrosodimethylamine	0/131	1.65E+01		1.84E-04		Yes	mg/kg
Nitrobenzene	0/203	1.65E+01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/131	1.65E+01					mg/kg
PCB-1016	0/78	9.40E-01	2.36E-01	1.05E-02	Yes	Yes	mg/kg
PCB-1221	0/78	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1232	0/78	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1242	0/78	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1248	0/78	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1268	0/78	9.40E-01					mg/kg
[illegible]hloroethane	0/142	8.00E-01					mg/kg
[illegible]hlorophenol	0/203	4.00E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/203	1.65E+01	1.48E+03		No		mg/kg
Phenol-d5	0/131	1.65E+01					mg/kg
Pyridine	0/131	1.65E+01	1.60E+00		Yes		mg/kg
Styrene	0/142	8.00E-01	1.92E+02		No		mg/kg
cis-1,3-Dichloropropene	0/142	8.00E-01					mg/kg
p-Terphenyl-d14	0/131	1.65E+01					mg/kg
trans-1,3-Dichloropropene	0/142	8.00E-01					mg/kg
trans-1,4-Dichloro-2-butene	0/142	8.00E-01					mg/kg

------------------------------------ SECTOR=WAG 6 MEDIA=Surface soil ------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/27	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/3	6.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/3	6.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/3	6.00E-03		2.47E-02		No	mg/kg
1,1,2-Trichloroethane	0/3	6.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/3	6.00E-03	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/3	7.00E-01	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/3	6.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/25	1.65E+01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/3	6.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/25	1.65E+01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/3	6.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/3	6.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/25	1.65E+01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/25	1.65E+01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/25	1.65E+01	1.60E+02		No		mg/kg
[illegible]-Tribromophenol	0/23	1.65E+01					mg/kg
[illegible]Trichlorophenol	0/25	1.65E+01		8.51E-01		Yes	mg/kg
[illegible]chlorophenol	0/25	1.65E+01	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/25	1.65E+01	3.20E+01		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=WAG 6 MEDIA=Surface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
2,4-Dinitrophenol	0/25	4.00E+01	5.28E+00		Yes		mg/kg
2,4-Dinitrotoluene	0/25	1.65E+01	4.73E+00	2.09E-02	Yes	Yes	mg/kg
2,6-Dinitrotoluene	0/25	1.65E+01	2.37E+00	2.09E-02	Yes	Yes	mg/kg
2-Butanone	0/3	1.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/3	6.00E-03	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/3	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/25	1.65E+01	1.28E+02		No		mg/kg
2-Chlorophenol	0/25	1.65E+01	7.99E+00		Yes		mg/kg
2-Fluoro-1,1'-biphenyl	0/23	1.65E+01					mg/kg
2-Fluorophenol	0/23	1.65E+01					mg/kg
2-Hexanone	0/3	6.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/25	4.00E+01					mg/kg
2-Methylphenol	0/25	1.65E+01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/25	4.00E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/25	1.65E+01					mg/kg
2-Propanol	0/3	6.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/25	1.65E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/25	4.00E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/25	1.65E+01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/25	1.65E+01					mg/kg
4-Chlorobenzenamine	0/25	1.65E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/25	1.65E+01					mg/kg
4-Methyl-2-pentanone	0/3	6.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/25	1.65E+01	9.77E+00		Yes		mg/kg
4-Nitrobenzenamine	0/25	4.00E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/25	4.00E+01	1.64E+02		No		mg/kg
Acetone	0/3	1.00E-01	1.14E+02		No		mg/kg
Acrolein	0/3	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/3	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Aniline	0/23	1.65E+01	9.26E+04	1.64E+00	No	Yes	mg/kg
Benzene	0/3	6.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/25	1.65E+01	5.93E+02		No		mg/kg
Benzidine	0/23	1.65E+01	6.81E+00	5.91E-05	Yes	Yes	mg/kg
Benzoic acid	0/25	4.00E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/25	1.65E+01					mg/kg
Bis(2-chloroethyl) ether	0/25	1.65E+01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/25	1.65E+01		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/3	6.00E-03	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/3	6.00E-03	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/3	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/25	1.65E+01	3.73E+02		No		mg/kg
Carbazole	0/23	1.65E+01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/3	6.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/3	6.00E-03	3.62E-01	3.18E-02	No	No	mg/kg
Chlorobenzene	0/3	6.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/3	1.00E-02	2.11E+02		No		mg/kg
Chloroform	0/3	6.00E-03	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/3	1.00E-02		1.47E-01		No	mg/kg
Di-n-octylphthalate	0/25	1.65E+01	4.92E+01		No		mg/kg
Dibromochloromethane	0/3	6.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/3	6.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/3	6.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/25	1.65E+01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/25	1.65E+01	2.46E+04		No		mg/kg
Dimethylbenzene	0/3	6.00E-03	2.49E+03		No		mg/kg
Diphenyldiazene	0/23	1.65E+01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/3	1.00E-01					mg/kg
Ethyl methacrylate	0/3	6.00E-03	9.97E+01		No		mg/kg
Ethylbenzene	0/3	6.00E-03	1.01E+02		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

--------------------------------------- SECTOR=WAG 6 MEDIA=Surface soil ---------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Hexachlorobenzene	0/25	1.65E+01	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/25	1.65E+01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/25	1.65E+01	1.12E+01		Yes		mg/kg
Hexachloroethane	0/25	1.65E+01	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Iodomethane	0/3	6.00E-03					mg/kg
Isophorone	0/25	1.65E+01	3.20E+02	9.85E+00	No	Yes	mg/kg
Methacrylonitrile	0/3	2.90E-02	1.04E-01		No		mg/kg
Methyl methacrylate	0/3	6.00E-03	8.86E+01		No		mg/kg
N-Nitroso-di-n-propylamine	0/25	1.65E+01		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/23	1.65E+01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/25	1.65E+01		1.04E+00		Yes	mg/kg
Nitrobenzene	0/25	1.65E+01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/23	1.65E+01					mg/kg
PCB-1016	0/13	9.40E-01	2.36E-01	1.05E-02	Yes	Yes	mg/kg
PCB-1221	0/13	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1232	0/13	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1242	0/13	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1248	0/13	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1268	0/13	9.40E-01					mg/kg
Pentachloroethane	0/3	6.00E-03					mg/kg
Pentachlorophenol	0/25	4.00E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
[illegible]	0/25	1.65E+01	1.48E+03		No		mg/kg
[illegible]d5	0/23	1.65E+01					mg/kg
Pyr[illegible]ne	0/23	1.65E+01	1.60E+00		Yes		mg/kg
Styrene	0/3	6.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/3	6.00E-03	1.34E+01	1.44E-01	No	No	mg/kg
Trichlorofluoromethane	0/3	6.00E-03	4.83E+01		No		mg/kg
Vinyl acetate	0/3	6.00E-02	5.40E+01		No		mg/kg
Vinyl chloride	0/3	7.00E-01		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/3	7.00E-01	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/3	6.00E-03					mg/kg
p-Terphenyl-d14	0/23	1.65E+01					mg/kg
trans-1,2-Dichloroethene	0/3	7.00E-01	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/3	6.00E-03					mg/kg
trans-1,4-Dichloro-2-butene	0/3	6.00E-03					mg/kg

531262

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Central MEDIA=Subsurface soil ------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/3	1.00E+00	2.33E+01		No		mg/kg
Selenium	0/3	2.00E-01	1.21E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/7	6.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/7	6.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/7	6.00E-03		2.47E-02		No	mg/kg
1,1,2-Trichloroethane	0/7	6.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/7	6.00E-03	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/7	1.20E+00	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/7	6.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/3	7.90E-01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/7	6.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/3	7.90E-01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/7	6.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/7	6.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/3	7.90E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/3	7.90E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/3	7.90E-01	1.60E+02		No		mg/kg
2,4,6-Trichlorophenol	0/3	7.90E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/3	7.90E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/3	7.90E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/3	4.00E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/3	7.90E-01	4.73E+00	2.09E-02	No	Yes	mg/
2,6-Dinitrotoluene	0/3	7.90E-01	2.37E+00	2.09E-02	No	Yes	m
2-Butanone	0/7	1.00E-01	2.97E+02		No		mg
2-Chloro-1,3-butadiene	0/7	6.00E-03	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/7	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/3	7.90E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/3	7.90E-01	7.99E+00		No		mg/kg
2-Hexanone	0/7	6.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/3	4.00E+00					mg/kg
2-Methylnaphthalene	0/3	7.90E-01					mg/kg
2-Methylphenol	0/3	7.90E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/3	4.00E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/3	7.90E-01					mg/kg
2-Propanol	0/7	6.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/3	1.60E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/3	4.00E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/3	7.90E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/3	1.60E+00					mg/kg
4-Chlorobenzenamine	0/3	1.60E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/3	7.90E-01					mg/kg
4-Methyl-2-pentanone	0/7	6.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/3	7.90E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/3	4.00E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/3	4.00E+00	1.64E+02		No		mg/kg
Acenaphthene	0/3	7.90E-01	6.47E+01		No		mg/kg
Acenaphthylene	0/3	7.90E-01					mg/kg
Acetone	0/7	1.00E-01	1.14E+02		No		mg/kg
Acrolein	0/7	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/7	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Anthracene	0/3	7.90E-01	6.57E+02		No		mg/kg
Benz(a)anthracene	0/3	7.90E-01		8.49E-03		Yes	mg/kg
Benzene	0/7	6.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/3	1.60E+00	5.93E+02		No		mg/kg
Benzo(a)pyrene	0/3	7.90E-01		8.49E-04		Yes	mg/kg
Benzo(b)fluoranthene	0/3	7.90E-01		8.49E-03		Yes	mg/kg
Benzo(ghi)perylene	0/3	7.90E-01					mg
Benzo(k)fluoranthene	0/3	7.90E-01		8.49E-02		Yes	m
Benzoic acid	0/3	4.00E+00	1.06E+04		No		mg
Bis(2-chloroethoxy)methane	0/3	7.90E-01					mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Central MEDIA=Subsurface soil -------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bis(2-chloroethyl) ether	0/3	7.90E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/3	7.90E-01		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/7	6.00E-03	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/7	6.00E-03	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/7	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/3	7.90E-01	3.73E+02		No		mg/kg
Carbon disulfide	0/7	6.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/7	6.00E-03	3.62E-01	3.18E-02	No	No	mg/kg
Chlorobenzene	0/7	6.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/7	1.00E-02	2.11E+02		No		mg/kg
Chloromethane	0/7	1.00E-02		1.47E-01		No	mg/kg
Chrysene	0/3	7.90E-01		8.49E-01		No	mg/kg
Di-n-octylphthalate	0/3	7.90E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/3	7.90E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/3	7.90E-01	6.39E+00		No		mg/kg
Dibromochloromethane	0/7	6.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/7	6.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/7	6.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/3	7.90E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/3	7.90E-01	2.46E+04		No		mg/kg
D[illegible]thylbenzene	0/7	6.00E-03	2.49E+03		No		mg/kg
[illegible] cyanide	0/7	1.00E-01					mg/kg
[illegible] methacrylate	0/7	6.00E-03	9.97E+01		No		mg/kg
Ethylbenzene	0/7	6.00E-03	1.01E+02		No		mg/kg
Fluoranthene	0/3	7.90E-01	4.31E+01		No		mg/kg
Fluorene	0/3	7.90E-01	6.39E+01		No		mg/kg
Hexachlorobenzene	0/3	7.90E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/3	7.90E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/3	7.90E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/3	7.90E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Indeno(1,2,3-cd)pyrene	0/3	7.90E-01		8.49E-03		Yes	mg/kg
Iodomethane	0/7	6.00E-03					mg/kg
Isophorone	0/3	7.90E-01	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/7	3.00E-02	1.04E-01		No		mg/kg
Methyl methacrylate	0/7	6.00E-03	8.86E+01		No		mg/kg
N-Nitroso-di-n-propylamine	0/3	7.90E-01		7.30E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/3	7.90E-01		1.04E+00		No	mg/kg
Naphthalene	0/3	7.90E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/3	7.90E-01	1.40E-01		Yes		mg/kg
Pentachloroethane	0/7	6.00E-03					mg/kg
Pentachlorophenol	0/3	4.00E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenanthrene	0/3	7.90E-01					mg/kg
Phenol	0/3	7.90E-01	1.48E+03		No		mg/kg
Polychlorinated biphenyl	0/4	1.00E+00		1.05E-02		Yes	mg/kg
Pyrene	0/3	7.90E-01	3.23E+01		No		mg/kg
Styrene	0/7	6.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/7	6.00E-03	1.34E+01	1.44E-01	No	No	mg/kg
Trichlorofluoromethane	0/7	6.00E-03	4.83E+01		No		mg/kg
Vinyl acetate	0/7	6.00E-02	5.40E+01		No		mg/kg
Vinyl chloride	0/7	1.20E+00		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/7	1.20E+00	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/7	6.00E-03					mg/kg
trans-1,2-Dichloroethene	0/7	1.20E+00	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/7	6.00E-03					mg/kg
trans-1,4-Dichloro-2-butene	0/7	6.00E-03					mg/kg
[illegible]ium-241	0/6	1.00E-01		1.49E+00		No	pCi/g
[illegible]um-239	0/6	1.00E-01		1.96E+00		No	pCi/g
U[illegible]m-235	0/6	1.00E-01		1.22E-01		No	pCi/g

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Central MEDIA=Surface soil -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
1,1,1,2-Tetrachloroethane	0/1	6.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/1	6.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/1	6.00E-03		2.47E-02		No	mg/kg
1,1,2-Trichloroethane	0/1	6.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/1	6.00E-03	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/1	7.00E-01	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/1	6.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/1	7.60E-01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/1	6.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/1	7.60E-01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/1	6.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/1	6.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/1	7.60E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/1	7.60E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/1	7.60E-01	1.60E+02		No		mg/kg
2,4,6-Trichlorophenol	0/1	7.60E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/1	7.60E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/1	7.60E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/1	3.80E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/1	7.60E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/1	7.60E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Butanone	0/1	1.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/1	6.00E-03	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/1	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/1	7.60E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/1	7.60E-01	7.99E+00		No		mg/kg
2-Hexanone	0/1	6.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/1	3.80E+00					mg/kg
2-Methylnaphthalene	0/1	7.60E-01					mg/kg
2-Methylphenol	0/1	7.60E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/1	3.80E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/1	7.60E-01					mg/kg
2-Propanol	0/1	6.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/1	1.50E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/1	3.80E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/1	7.60E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/1	1.50E+00					mg/kg
4-Chlorobenzenamine	0/1	1.50E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/1	7.60E-01					mg/kg
4-Methyl-2-pentanone	0/1	6.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/1	7.60E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/1	3.80E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/1	3.80E+00	1.64E+02		No		mg/kg
Acenaphthene	0/1	7.60E-01	6.47E+01		No		mg/kg
Acenaphthylene	0/1	7.60E-01					mg/kg
Acetone	0/1	1.00E-01	1.14E+02		No		mg/kg
Acrolein	0/1	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/1	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Anthracene	0/1	7.60E-01	6.57E+02		No		mg/kg
Benz(a)anthracene	0/1	7.60E-01		8.49E-03		Yes	mg/kg
Benzene	0/1	6.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/1	1.50E+00	5.93E+02		No		mg/kg
Benzo(a)pyrene	0/1	7.60E-01		8.49E-04		Yes	mg/kg
Benzo(b)fluoranthene	0/1	7.60E-01		8.49E-03		Yes	mg/kg
Benzo(ghi)perylene	0/1	7.60E-01					mg/kg
Benzo(k)fluoranthene	0/1	7.60E-01		8.49E-02		Yes	mg/kg
Benzoic acid	0/1	3.80E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/1	7.60E-01					mg/kg
Bis(2-chloroethyl) ether	0/1	7.60E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/1	7.60E-01		1.23E-01		Yes	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

-------------------------------------- SECTOR=Central MEDIA=Surface soil --------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bis(2-ethylhexyl)phthalate	0/1	7.60E-01	1.40E+01	2.84E-01	No	Yes	mg/kg
Bromodichloromethane	0/1	6.00E-03	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/1	6.00E-03	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/1	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/1	7.60E-01	3.73E+02		No		mg/kg
Carbon disulfide	0/1	6.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/1	6.00E-03	3.62E-01	3.18E-02	No	No	mg/kg
Chlorobenzene	0/1	6.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/1	1.00E-02	2.11E+02		No		mg/kg
Chloroform	0/1	6.00E-03	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/1	1.00E-02		1.47E-01		No	mg/kg
Chrysene	0/1	7.60E-01		8.49E-01		No	mg/kg
Di-n-octylphthalate	0/1	7.60E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/1	7.60E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/1	7.60E-01	6.39E+00		No		mg/kg
Dibromochloromethane	0/1	6.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/1	6.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/1	6.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/1	7.60E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/1	7.60E-01	2.46E+04		No		mg/kg
Dimethylbenzene	0/1	6.00E-03	2.49E+03		No		mg/kg
Et[illegible]yanide	0/1	1.00E-01					mg/kg
E[illegible]thacrylate	0/1	6.00E-03	9.97E+01		No		mg/kg
Et[illegible]nzene	0/1	6.00E-03	1.01E+02		No		mg/kg
Fluoranthene	0/1	7.60E-01	4.31E+01		No		mg/kg
Fluorene	0/1	7.60E-01	6.39E+01		No		mg/kg
Hexachlorobenzene	0/1	7.60E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/1	7.60E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/1	7.60E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/1	7.60E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Indeno(1,2,3-cd)pyrene	0/1	7.60E-01		8.49E-03		Yes	mg/kg
Iodomethane	0/1	6.00E-03					mg/kg
Isophorone	0/1	7.60E-01	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/1	2.90E-02	1.04E-01		No		mg/kg
Methyl methacrylate	0/1	6.00E-03	8.86E+01		No		mg/kg
N-Nitroso-di-n-propylamine	0/1	7.60E-01		7.30E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/1	7.60E-01		1.04E+00		No	mg/kg
Naphthalene	0/1	7.60E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/1	7.60E-01	1.40E-01		Yes		mg/kg
Pentachloroethane	0/1	6.00E-03					mg/kg
Pentachlorophenol	0/1	3.80E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenanthrene	0/1	7.60E-01					mg/kg
Phenol	0/1	7.60E-01	1.48E+03		No		mg/kg
Pyrene	0/1	7.60E-01	3.23E+01		No		mg/kg
Styrene	0/1	6.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/1	6.00E-03	1.34E+01	1.44E-01	No	No	mg/kg
Toluene	0/1	6.00E-03	1.10E+02		No		mg/kg
Trichlorofluoromethane	0/1	6.00E-03	4.83E+01		No		mg/kg
Vinyl acetate	0/1	6.00E-02	5.40E+01		No		mg/kg
Vinyl chloride	0/1	7.00E-01		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/1	7.00E-01	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/1	6.00E-03					mg/kg
rans-1,2-Dichloroethene	0/1	7.00E-01	2.67E+01		No		mg/kg
rans-1,3-Dichloropropene	0/1	6.00E-03					mg/kg
rans-1,4-Dichloro-2-butene	0/1	6.00E-03					mg/kg
mericium-241	0/1	1.00E-01		1.49E+00		No	pCi/g
e[illegible]-237	0/1	1.00E-01		6.82E-02		Yes	pCi/g
l[illegible]-239	0/1	1.00E-01		1.96E+00		No	pCi/g
ranium-235	0/1	1.00E-01		1.22E-01		No	pCi/g

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=East MEDIA=Subsurface soil -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/17	1.00E+00	2.33E+01		No		mg/kg
Silver	0/17	3.00E-01	6.12E+00		No		mg/kg
1,1,1,2-Tetrachloroethane	0/14	4.00E-02	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/14	4.00E-02	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/14	4.00E-02		2.47E-02		Yes	mg/kg
1,1,2-Trichloroethane	0/14	4.00E-02	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/14	4.00E-02	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/15	1.00E+00	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/14	4.00E-02	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/18	3.80E+00	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/14	4.00E-02	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/18	3.80E+00	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/14	4.00E-02	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/14	4.00E-02	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/18	3.80E+00	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/18	3.80E+00	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/18	3.80E+00	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/11	8.63E-01					mg/kg
2,4,6-Trichlorophenol	0/18	3.80E+00		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/18	3.80E+00	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/18	3.80E+00	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/18	1.90E+01	5.28E+00		Yes		mg/
2,4-Dinitrotoluene	0/18	3.80E+00	4.73E+00	2.09E-02	No	Yes	m
2,6-Dinitrotoluene	0/18	3.80E+00	2.37E+00	2.09E-02	Yes	Yes	mg
2-Butanone	0/14	9.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/14	4.00E-02	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/14	9.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/18	3.80E+00	1.28E+02		No		mg/kg
2-Chlorophenol	0/18	3.80E+00	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/11	8.63E-01					mg/kg
2-Fluorophenol	0/11	8.63E-01					mg/kg
2-Hexanone	0/14	4.00E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/18	1.90E+01					mg/kg
2-Methylnaphthalene	0/18	3.80E+00					mg/kg
2-Methylphenol	0/18	3.80E+00	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/18	1.90E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/18	3.80E+00					mg/kg
2-Propanol	0/14	4.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/18	7.50E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/18	1.90E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/18	3.80E+00	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/18	7.50E+00					mg/kg
4-Chlorobenzenamine	0/18	7.50E+00	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/18	3.80E+00					mg/kg
4-Methyl-2-pentanone	0/14	4.00E-01	4.96E+01		No		mg/kg
4-Methylphenol	0/18	3.80E+00	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/18	1.90E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/18	1.90E+01	1.64E+02		No		mg/kg
Acenaphthylene	0/18	3.80E+00					mg/kg
Acrolein	0/14	9.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/14	9.00E-01	1.38E-01	4.04E-03	Yes	Yes	mg/kg
Aniline	0/11	8.63E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzene	0/14	4.00E-02	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/18	7.50E+00	5.93E+02		No		mg/kg
Benzidine	0/11	8.63E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/18	1.90E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/18	3.80E+00					mg
Bis(2-chloroethyl) ether	0/18	3.80E+00		7.54E-03		Yes	m
Bis(2-chloroisopropyl)ether	0/18	3.80E+00		1.23E-01		Yes	mg,
Bromodichloromethane	0/14	4.00E-02	2.63E+01	1.23E-01	No	No	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=East MEDIA=Subsurface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bromoform	0/14	4.00E-02	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/14	9.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/18	3.80E+00	3.73E+02		No		mg/kg
Carbazole	0/11	8.63E-01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/14	4.00E-02	6.90E+01		No		mg/kg
Carbon tetrachloride	0/14	4.00E-02	3.62E-01	3.18E-02	No	Yes	mg/kg
Chlorobenzene	0/14	4.00E-02	6.54E+00		No		mg/kg
Chloroethane	0/14	9.00E-02	2.11E+02		No		mg/kg
Chloroform	0/14	4.00E-02	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/14	9.00E-02		1.47E-01		No	mg/kg
Di-n-octylphthalate	0/18	3.80E+00	4.92E+01		No		mg/kg
Dibromochloromethane	0/14	4.00E-02	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/14	4.00E-02	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/14	4.00E-02	4.48E+00		No		mg/kg
Diethyl phthalate	0/18	3.80E+00	1.97E+03		No		mg/kg
Dimethyl phthalate	0/18	3.80E+00	2.46E+04		No		mg/kg
Dimethylbenzene	0/14	4.00E-02	2.49E+03		No		mg/kg
Diphenyldiazene	0/11	8.63E-01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/14	9.00E-01					mg/kg
Ethyl methacrylate	0/14	4.00E-02	9.97E+01		No		mg/kg
Ethylbenzene	0/14	4.00E-02	1.01E+02		No		mg/kg
[illegible]lorobenzene	0/18	3.80E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
[illegible]lorobutadiene	0/18	3.80E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/18	3.80E+00	1.12E+01		No		mg/kg
Hexachloroethane	0/18	3.80E+00	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Iodomethane	0/14	4.00E-02					mg/kg
Isophorone	0/18	3.80E+00	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/14	2.20E-01	1.04E-01		Yes		mg/kg
Methyl methacrylate	0/14	4.00E-02	8.86E+01		No		mg/kg
N-Nitroso-di-n-propylamine	0/18	3.80E+00		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/11	8.63E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/18	3.80E+00		1.04E+00		Yes	mg/kg
Nitrobenzene	0/18	3.80E+00	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/11	8.63E-01					mg/kg
PCB-1016	0/10	9.40E-01	2.36E-01	1.05E-02	Yes	Yes	mg/kg
PCB-1221	0/10	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1232	0/10	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1242	0/10	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1248	0/10	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1254	0/10	9.40E-01	6.74E-02	1.05E-02	Yes	Yes	mg/kg
PCB-1262	0/10	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1268	0/10	9.40E-01					mg/kg
Pentachloroethane	0/14	4.00E-02					mg/kg
Pentachlorophenol	0/18	1.90E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/18	3.80E+00	1.48E+03		No		mg/kg
Phenol-d5	0/11	8.63E-01					mg/kg
Pyridine	0/11	8.63E-01	1.60E+00		No		mg/kg
Styrene	0/14	4.00E-02	1.92E+02		No		mg/kg
Tetrachloroethene	0/14	4.00E-02	1.34E+01	1.44E-01	No	No	mg/kg
Trichlorofluoromethane	0/14	4.00E-02	4.83E+01		No		mg/kg
Vinyl acetate	0/14	4.00E-01	5.40E+01		No		mg/kg
Vinyl chloride	0/15	1.00E+00		1.16E-05		Yes	mg/kg
cis-1,3-Dichloropropene	0/14	4.00E-02					mg/kg
p-Terphenyl-d14	0/11	8.63E-01					mg/kg
trans-1,2-Dichloroethene	0/15	1.00E+00	2.67E+01		No		mg/kg
t[illegible]-1,3-Dichloropropene	0/14	4.00E-02					mg/kg
[illegible],4-Dichloro-2-butene	0/14	4.00E-02					mg/kg
[illegible]um-239	0/16	1.00E-01		1.96E+00		No	pCi/g

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=East MEDIA=Surface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Antimony	0/2	6.00E-01	6.35E-02		Yes		mg/kg
Cyanide	0/2	1.00E+00	2.33E+01		No		mg/kg
Selenium	0/2	2.00E-01	1.21E+01		No		mg/kg
Silver	0/2	8.00E-02	6.12E+00		No		mg/kg
1,2,4-Trichlorobenzene	0/2	1.50E+00	2.54E+01		No		mg/kg
1,2-Dichlorobenzene	0/2	1.50E+00	8.73E+01		No		mg/kg
1,3-Dichlorobenzene	0/2	1.50E+00	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/2	1.50E+00	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/2	1.50E+00	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/2	7.78E-01					mg/kg
2,4,6-Trichlorophenol	0/2	1.50E+00		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/2	1.50E+00	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/2	1.50E+00	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/2	7.30E+00	5.28E+00		Yes		mg/kg
2,4-Dinitrotoluene	0/2	1.50E+00	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/2	1.50E+00	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/2	1.50E+00	1.28E+02		No		mg/kg
2-Chlorophenol	0/2	1.50E+00	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/2	7.78E-01					mg/kg
2-Fluorophenol	0/2	7.78E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/2	7.30E+00					mg/kg
2-Methylnaphthalene	0/2	1.50E+00					mg/
2-Methylphenol	0/2	1.50E+00	7.99E+01		No		mg
2-Nitrobenzenamine	0/2	7.30E+00	7.29E-02		Yes		mg
2-Nitrophenol	0/2	1.50E+00					mg/kg
3,3'-Dichlorobenzidine	0/2	2.90E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/2	7.30E+00	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/2	1.50E+00	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/2	2.90E+00					mg/kg
4-Chlorobenzenamine	0/2	2.90E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/2	1.50E+00					mg/kg
4-Methylphenol	0/2	1.50E+00	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/2	7.30E+00	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/2	7.30E+00	1.64E+02		No		mg/kg
Acenaphthylene	0/2	1.50E+00					mg/kg
Aniline	0/2	7.78E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzenemethanol	0/2	2.90E+00	5.93E+02		No		mg/kg
Benzidine	0/2	7.78E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/2	7.30E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/2	1.50E+00					mg/kg
Bis(2-chloroethyl) ether	0/2	1.50E+00		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/2	1.50E+00		1.23E-01		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	0/2	1.50E+00	1.40E+01	2.84E-01	No	Yes	mg/kg
Butyl benzyl phthalate	0/2	1.50E+00	3.73E+02		No		mg/kg
Carbazole	0/2	7.78E-01		6.14E-01		Yes	mg/kg
Di-n-octylphthalate	0/2	1.50E+00	4.92E+01		No		mg/kg
Dibenzofuran	0/2	1.50E+00	6.39E+00		No		mg/kg
Diethyl phthalate	0/2	1.50E+00	1.97E+03		No		mg/kg
Dimethyl phthalate	0/2	1.50E+00	2.46E+04		No		mg/kg
Diphenyldiazene	0/2	7.78E-01		8.51E-02		Yes	mg/kg
Hexachlorobenzene	0/2	1.50E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/2	1.50E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/2	1.50E+00	1.12E+01		No		mg/kg
Hexachloroethane	0/2	1.50E+00	1.60E+00	6.68E-01	No	Yes	mg/kg
Isophorone	0/2	1.50E+00	3.20E+02	9.85E+00	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/2	1.50E+00		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/2	7.78E-01		1.84E-04		Yes	mg
N-Nitrosodiphenylamine	0/2	1.50E+00		1.04E+00		Yes	mg
Naphthalene	0/2	1.50E+00	8.10E+01		No		mg,
Nitrobenzene	0/2	1.50E+00	1.40E-01		Yes		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=East MEDIA=Surface soil
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Nitrobenzene-d5	0/2	7.78E-01					mg/kg
PCB-1016	0/1	9.40E-01	2.36E-01	1.05E-02	Yes	Yes	mg/kg
PCB-1221	0/1	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1232	0/1	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1242	0/1	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1248	0/1	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1254	0/1	9.40E-01	6.74E-02	1.05E-02	Yes	Yes	mg/kg
PCB-1262	0/1	9.40E-01		1.05E-02		Yes	mg/kg
PCB-1268	0/1	9.40E-01					mg/kg
Pentachlorophenol	0/2	7.30E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/2	1.50E+00	1.48E+03		No		mg/kg
Phenol-d5	0/2	7.78E-01					mg/kg
Pyridine	0/2	7.78E-01	1.60E+00		No		mg/kg
p-Terphenyl-d14	0/2	7.78E-01					mg/kg
Americium-241	0/1	1.00E-01		1.49E+00		No	pCi/g
Plutonium-239	0/1	1.00E-01		1.96E+00		No	pCi/g

SECTOR=Far East/Northeast MEDIA=Subsurface soil

[illegible]TE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/7	1.00E+00	2.33E+01		No		mg/kg
1,1-Dichloroethene	0/1	2.00E-01	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/7	8.10E-01	2.54E+01		No		mg/kg
1,2-Dichlorobenzene	0/7	8.10E-01	8.73E+01		No		mg/kg
1,3-Dichlorobenzene	0/7	8.10E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/7	8.10E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/7	8.10E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/7	7.98E-01					mg/kg
2,4,6-Trichlorophenol	0/7	8.10E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/7	8.10E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/7	8.10E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/7	4.10E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/7	8.10E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/7	8.10E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/7	8.10E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/7	8.10E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/7	7.98E-01					mg/kg
2-Fluorophenol	0/7	7.98E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/7	4.10E+00					mg/kg
2-Methylnaphthalene	0/7	8.10E-01					mg/kg
2-Methylphenol	0/7	8.10E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/7	4.10E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/7	8.10E-01					mg/kg
3,3'-Dichlorobenzidine	0/7	1.60E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/7	4.10E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/7	8.10E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/7	1.60E+00					mg/kg
4-Chlorobenzenamine	0/7	1.60E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/7	8.10E-01					mg/kg
4-Methylphenol	0/7	8.10E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/7	4.10E+00	4.80E+00		No		mg/kg
[illegible]rophenol	0/7	4.10E+00	1.64E+02		No		mg/kg
[illegible]hthene	0/7	8.10E-01	6.47E+01		No		mg/kg
Ac[illegible]phthylene	0/7	8.10E-01					mg/kg
Aniline	0/7	7.98E-01	9.26E+04	1.64E+00	No	No	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=Far East/Northeast MEDIA=Subsurface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Anthracene	0/7	8.10E-01	6.57E+02		No		mg/kg
Benzenemethanol	0/7	1.60E+00	5.93E+02		No		mg/kg
Benzidine	0/7	7.98E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/7	4.10E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/7	8.10E-01					mg/kg
Bis(2-chloroethyl) ether	0/7	8.10E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/7	8.10E-01		1.23E-01		Yes	mg/kg
Carbazole	0/7	7.98E-01		6.14E-01		Yes	mg/kg
Di-n-octylphthalate	0/7	8.10E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/7	8.10E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/7	8.10E-01	6.39E+00		No		mg/kg
Diethyl phthalate	0/7	8.10E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/7	8.10E-01	2.46E+04		No		mg/kg
Diphenyldiazene	0/7	7.98E-01		8.51E-02		Yes	mg/kg
Fluorene	0/7	8.10E-01	6.39E+01		No		mg/kg
Hexachlorobenzene	0/7	8.10E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/7	8.10E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/7	8.10E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/7	8.10E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Isophorone	0/7	8.10E-01	3.20E+02	9.85E+00	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/7	8.10E-01		7.30E-04		Yes	[illegible]
N-Nitrosodimethylamine	0/7	7.98E-01		1.84E-04		Yes	[illegible]
N-Nitrosodiphenylamine	0/7	8.10E-01		1.04E+00		No	[illegible]
Naphthalene	0/7	8.10E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/7	8.10E-01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/7	7.98E-01					mg/kg
PCB-1016	0/6	2.10E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1262	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/6	2.10E-02					mg/kg
Pentachlorophenol	0/7	4.10E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/7	8.10E-01	1.48E+03		No		mg/kg
Phenol-d5	0/7	7.98E-01					mg/kg
Pyridine	0/7	7.98E-01	1.60E+00		No		mg/kg
Trichloroethene	0/1	2.00E-01	1.41E+00	1.10E-01	No	Yes	mg/kg
Vinyl chloride	0/1	2.00E-01		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/1	2.00E-01	1.34E+01		No		mg/kg
p-Terphenyl-d14	0/7	7.98E-01					mg/kg
trans-1,2-Dichloroethene	0/1	2.00E-01	2.67E+01		No		mg/kg
Neptunium-237	0/6	1.00E-01		6.82E-02		Yes	pCi/g
Plutonium-239	0/6	1.00E-01		1.96E+00		No	pCi/g

SECTOR=Far East/Northeast MEDIA=Surface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cadmium	0/2	2.00E-02	3.85E-01	2.85E+02	No	No	mg/kg
Cyanide	0/2	1.00E+00	2.33E+01		No		mg/kg
Selenium	0/2	2.00E-01	1.21E+01		No		mg/kg
Thallium	0/2	6.00E-01					[illegible]
1,2,4-Trichlorobenzene	0/2	7.46E-01	2.54E+01		No		
1,2-Dichlorobenzene	0/2	7.46E-01	8.73E+01		No		[illegible]
1,3-Dichlorobenzene	0/2	7.46E-01	9.85E+01		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

---------------------------------- SECTOR=Far East/Northeast MEDIA=Surface soil ----------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
1,4-Dichlorobenzene	0/2	7.46E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/2	7.46E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/2	7.46E-01					mg/kg
2,4,6-Trichlorophenol	0/2	7.46E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/2	7.46E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/2	7.46E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/2	3.70E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/2	7.46E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/2	7.46E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/2	7.46E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/2	7.46E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/2	7.46E-01					mg/kg
2-Fluorophenol	0/2	7.46E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/2	3.70E+00					mg/kg
2-Methylnaphthalene	0/2	7.46E-01					mg/kg
2-Methylphenol	0/2	7.46E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/2	3.70E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/2	7.46E-01					mg/kg
3,3'-Dichlorobenzidine	0/2	1.50E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/2	3.70E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/2	7.46E-01	9.27E+01		No		mg/kg
[illegible]oro-3-methylphenol	0/2	1.50E+00					mg/kg
[illegible]orobenzenamine	0/2	1.50E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/2	7.46E-01					mg/kg
4-Methylphenol	0/2	7.46E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/2	3.70E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/2	3.70E+00	1.64E+02		No		mg/kg
Acenaphthene	0/2	7.46E-01	6.47E+01		No		mg/kg
Acenaphthylene	0/2	7.46E-01					mg/kg
Aniline	0/2	7.46E-01	9.26E+04	1.64E+00	No	No	mg/kg
Anthracene	0/2	7.46E-01	6.57E+02		No		mg/kg
Benzenemethanol	0/2	1.50E+00	5.93E+02		No		mg/kg
Benzidine	0/2	7.46E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzo(ghi)perylene	0/2	7.46E-01					mg/kg
Benzoic acid	0/2	3.70E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/2	7.46E-01					mg/kg
Bis(2-chloroethyl) ether	0/2	7.46E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/2	7.46E-01		1.23E-01		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	0/2	7.46E-01	1.40E+01	2.84E-01	No	Yes	mg/kg
Butyl benzyl phthalate	0/2	7.46E-01	3.73E+02		No		mg/kg
Carbazole	0/2	7.46E-01		6.14E-01		Yes	mg/kg
Di-n-butyl phthalate	0/2	7.46E-01	2.64E+02		No		mg/kg
Di-n-octylphthalate	0/2	7.46E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/2	7.46E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/2	7.46E-01	6.39E+00		No		mg/kg
Diethyl phthalate	0/2	7.46E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/2	7.46E-01	2.46E+04		No		mg/kg
Diphenyldiazene	0/2	7.46E-01		8.51E-02		Yes	mg/kg
Fluorene	0/2	7.46E-01	6.39E+01		No		mg/kg
Hexachlorobenzene	0/2	7.46E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/2	7.46E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/2	7.46E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/2	7.46E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Indeno(1,2,3-cd)pyrene	0/2	7.46E-01		8.49E-03		Yes	mg/kg
Isophorone	0/2	7.46E-01	3.20E+02	9.85E+00	No	No	mg/kg
[illegible]roso-di-n-propylamine	0/2	7.46E-01		7.30E-04		Yes	mg/kg
[illegible]osodimethylamine	0/2	7.46E-01		1.84E-04		Yes	mg/kg
[illegible]rosodiphenylamine	0/2	7.46E-01		1.04E+00		No	mg/kg
Naphthalene	0/2	7.46E-01	8.10E+01		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=Far East/Northeast MEDIA=Surface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Nitrobenzene	0/2	7.46E-01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/2	7.46E-01					mg/kg
PCB-1016	0/2	1.90E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/2	1.90E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1262	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/2	1.90E-02					mg/kg
Pentachlorophenol	0/2	3.70E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/2	7.46E-01	1.48E+03		No		mg/kg
Phenol-d5	0/2	7.46E-01					mg/kg
Pyridine	0/2	7.46E-01	1.60E+00		No		mg/kg
p-Terphenyl-d14	0/2	7.46E-01					mg/kg
Neptunium-237	0/2	1.00E-01		6.82E-02		Yes	pCi/g
Plutonium-239	0/2	1.00E-01		1.96E+00		No	pCi/g

SECTOR=Far North/Northwest MEDIA=Subsurface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/11	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/9	4.00E-02	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/9	4.00E-02	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/9	4.00E-02		2.47E-02		Yes	mg/kg
1,1,2-Trichloroethane	0/9	4.00E-02	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/9	4.00E-02	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/12	1.00E+00	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/9	4.00E-02	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/12	9.16E-01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/9	4.00E-02	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/12	9.16E-01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/9	4.00E-02	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/9	4.00E-02	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/12	9.16E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/12	9.16E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/12	9.16E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/9	9.16E-01					mg/kg
2,4,6-Trichlorophenol	0/12	9.16E-01		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/12	9.16E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/12	9.16E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/12	4.40E+00	5.28E+00		No		mg/kg
2,6-Dinitrotoluene	0/12	9.16E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Butanone	0/9	9.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/9	4.00E-02	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/9	9.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/12	9.16E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/12	9.16E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/9	9.16E-01					mg/kg
2-Fluorophenol	0/9	9.16E-01					mg/kg
2-Hexanone	0/9	4.00E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/12	4.40E+00					mg/kg
2-Methylnaphthalene	0/12	9.16E-01					
2-Methylphenol	0/12	9.16E-01	7.99E+01		No		[illegible]
2-Nitrobenzenamine	0/12	4.40E+00	7.29E-02		Yes		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------- SECTOR=Far North/Northwest MEDIA=Subsurface soil -------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
2-Nitrophenol	0/12	9.16E-01					mg/kg
2-Propanol	0/9	4.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/12	1.70E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/12	4.40E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/12	9.16E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/12	1.70E+00					mg/kg
4-Chlorobenzenamine	0/12	1.70E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/12	9.16E-01					mg/kg
4-Methyl-2-pentanone	0/9	4.00E-01	4.96E+01		No		mg/kg
4-Methylphenol	0/12	9.16E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/12	4.40E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/12	4.40E+00	1.64E+02		No		mg/kg
Acenaphthylene	0/12	9.16E-01					mg/kg
Acrolein	0/9	9.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/9	9.00E-01	1.38E-01	4.04E-03	Yes	Yes	mg/kg
Aniline	0/9	9.16E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzene	0/9	4.00E-02	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/12	1.70E+00	5.93E+02		No		mg/kg
Benzidine	0/9	9.16E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/12	4.40E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/12	9.16E-01					mg/kg
chloroethyl) ether	0/12	9.16E-01		7.54E-03		Yes	mg/kg
chloroisopropyl)ether	0/12	9.16E-01		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/9	4.00E-02	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/9	4.00E-02	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/9	9.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/12	9.16E-01	3.73E+02		No		mg/kg
Carbazole	0/9	9.16E-01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/9	4.00E-02	6.90E+01		No		mg/kg
Carbon tetrachloride	0/9	4.00E-02	3.62E-01	3.18E-02	No	Yes	mg/kg
Chlorobenzene	0/9	4.00E-02	6.54E+00		No		mg/kg
Chloroethane	0/9	9.00E-02	2.11E+02		No		mg/kg
Chloroform	0/9	4.00E-02	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/9	9.00E-02		1.47E-01		No	mg/kg
Di-n-octylphthalate	0/12	9.16E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/12	9.16E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/12	9.16E-01	6.39E+00		No		mg/kg
Dibromochloromethane	0/9	4.00E-02	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/9	4.00E-02	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/9	4.00E-02	4.48E+00		No		mg/kg
Diethyl phthalate	0/12	9.16E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/12	9.16E-01	2.46E+04		No		mg/kg
Dimethylbenzene	0/9	4.00E-02	2.49E+03		No		mg/kg
Diphenyldiazene	0/9	9.16E-01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/9	9.00E-01					mg/kg
Ethyl methacrylate	0/9	4.00E-02	9.97E+01		No		mg/kg
Ethylbenzene	0/9	4.00E-02	1.01E+02		No		mg/kg
Hexachlorobenzene	0/12	9.16E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/12	9.16E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/12	9.16E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/12	9.16E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Iodomethane	0/9	4.00E-02					mg/kg
Isophorone	0/12	9.16E-01	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/9	2.10E-01	1.04E-01		Yes		mg/kg
Methyl methacrylate	0/9	4.00E-02	8.86E+01		No		mg/kg
roso-di-n-propylamine	0/12	9.16E-01		7.30E-04		Yes	mg/kg
osodimethylamine	0/9	9.16E-01		1.84E-04		Yes	mg/kg
alene	0/12	9.16E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/12	9.16E-01	1.40E-01		Yes		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------- SECTOR=Far North/Northwest MEDIA=Subsurface soil -------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Nitrobenzene-d5	0/9	9.16E-01					mg/kg
PCB-1016	0/9	2.20E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/9	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/9	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/9	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/9	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1262	0/9	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/9	2.20E-02					mg/kg
Pentachloroethane	0/9	4.00E-02					mg/kg
Pentachlorophenol	0/12	4.40E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/12	9.16E-01	1.48E+03		No		mg/kg
Phenol-d5	0/9	9.16E-01					mg/kg
Pyridine	0/9	9.16E-01	1.60E+00		No		mg/kg
Styrene	0/9	4.00E-02	1.92E+02		No		mg/kg
Tetrachloroethene	0/9	4.00E-02	1.34E+01	1.44E-01	No	No	mg/kg
Trichlorofluoromethane	0/9	4.00E-02	4.83E+01		No		mg/kg
Vinyl acetate	0/9	4.00E-01	5.40E+01		No		mg/kg
Vinyl chloride	0/12	1.00E+00		1.16E-05		Yes	mg/kg
cis-1,3-Dichloropropene	0/9	4.00E-02					mg/kg
p-Terphenyl-d14	0/9	9.16E-01					mg/kg
trans-1,2-Dichloroethene	0/12	1.00E+00	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/9	4.00E-02					
trans-1,4-Dichloro-2-butene	0/9	4.00E-02					mg/kg

--------------------------------- SECTOR=Far North/Northwest MEDIA=Surface soil ---------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/2	1.00E+00	2.33E+01		No		mg/kg
1,2,4-Trichlorobenzene	0/2	7.30E-01	2.54E+01		No		mg/kg
1,2-Dichlorobenzene	0/2	7.30E-01	8.73E+01		No		mg/kg
1,3-Dichlorobenzene	0/2	7.30E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/2	7.30E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/2	7.30E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/2	7.15E-01					mg/kg
2,4,6-Trichlorophenol	0/2	7.30E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/2	7.30E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/2	7.30E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/2	3.60E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/2	7.30E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/2	7.30E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/2	7.30E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/2	7.30E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/2	7.15E-01					mg/kg
2-Fluorophenol	0/2	7.15E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/2	3.60E+00					mg/kg
2-Methylnaphthalene	0/2	7.30E-01					mg/kg
2-Methylphenol	0/2	7.30E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/2	3.60E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/2	7.30E-01					mg/kg
3,3'-Dichlorobenzidine	0/2	1.40E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/2	3.60E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/2	7.30E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/2	1.40E+00					
4-Chlorobenzenamine	0/2	1.40E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/2	7.30E-01					mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

----- SECTOR=Far North/Northwest MEDIA=Surface soil -----
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
4-Methylphenol	0/2	7.30E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/2	3.60E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/2	3.60E+00	1.64E+02		No		mg/kg
Acenaphthylene	0/2	7.30E-01					mg/kg
Aniline	0/2	7.15E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzenemethanol	0/2	1.40E+00	5.93E+02		No		mg/kg
Benzidine	0/2	7.15E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/2	3.60E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/2	7.30E-01					mg/kg
Bis(2-chloroethyl) ether	0/2	7.30E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/2	7.30E-01		1.23E-01		Yes	mg/kg
Butyl benzyl phthalate	0/2	7.30E-01	3.73E+02		No		mg/kg
Carbazole	0/2	7.15E-01		6.14E-01		Yes	mg/kg
Di-n-octylphthalate	0/2	7.30E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/2	7.30E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/2	7.30E-01	6.39E+00		No		mg/kg
Diethyl phthalate	0/2	7.30E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/2	7.30E-01	2.46E+04		No		mg/kg
Diphenyldiazene	0/2	7.15E-01		8.51E-02		Yes	mg/kg
Hexachlorobenzene	0/2	7.30E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/2	7.30E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/2	7.30E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/2	7.30E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Isophorone	0/2	7.30E-01	3.20E+02	9.85E+00	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/2	7.30E-01		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/2	7.15E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/2	7.30E-01		1.04E+00		No	mg/kg
Naphthalene	0/2	7.30E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/2	7.30E-01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/2	7.15E-01					mg/kg
PCB-1016	0/2	1.90E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/2	1.90E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1260	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1262	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/2	1.90E-02					mg/kg
Pentachlorophenol	0/2	3.60E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/2	7.30E-01	1.48E+03		No		mg/kg
Phenol-d5	0/2	7.15E-01					mg/kg
Polychlorinated biphenyl	0/2	1.00E+00		1.05E-02		Yes	mg/kg
Pyridine	0/2	7.15E-01	1.60E+00		No		mg/kg
p-Terphenyl-d14	0/2	7.15E-01					mg/kg
Americium-241	0/2	1.00E-01		1.49E+00		No	pCi/g

----- SECTOR=McNairy MEDIA=Ground water -----

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Antimony	0/3	2.77E-02	5.64E-04		Yes		mg/L
[illegible]de	0/2	6.00E-03	2.84E-02		No		mg/L
[illegible]y	0/3	2.10E-04	4.44E-04		No		mg/L
[illegible]ce	0/25	1.00E+00	1.51E-01		Yes		mg/L
Silver	0/3	5.67E-03	7.50E-03		No		mg/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=McNairy MEDIA=Ground water -------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
1,1,1,2-Tetrachloroethane	0/5	1.30E-02	4.35E-02	3.86E-05	No	Yes	mg/L
1,1,1-Trichloroethane	0/5	1.30E-02	4.44E-02		No		mg/L
1,1,2,2-Tetrachloroethane	0/5	1.30E-02		5.04E-06		Yes	mg/L
1,1,2-Trichloroethane	0/5	1.30E-02	5.96E-03	1.77E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/5	1.30E-02	2.73E-02		No		mg/L
1,2,3-Trichloropropane	0/5	1.30E-02	5.05E-03	3.87E-07	Yes	Yes	mg/L
1,2,4-Trichlorobenzene	0/5	1.00E-02	6.63E-03		Yes		mg/L
1,2-Dibromoethane	0/5	1.30E-02	1.33E-05	5.94E-08	Yes	Yes	mg/L
1,2-Dichlorobenzene	0/5	1.00E-02	1.20E-02		No		mg/L
1,2-Dichloropropane	0/5	1.30E-02	2.67E-04	7.58E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/5	1.30E-02	4.59E-02		No		mg/L
1,3-Dichlorobenzene	0/5	1.00E-02	1.16E-01		No		mg/L
1,4-Dichlorobenzene	0/5	1.00E-02	5.34E-02	1.97E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/5	5.00E-02	1.29E-01		No		mg/L
2,4,6-Trichlorophenol	0/5	1.00E-02		3.99E-04		Yes	mg/L
2,4-Dichlorophenol	0/5	1.00E-02	4.10E-03		Yes		mg/L
2,4-Dimethylphenol	0/5	1.00E-02	2.30E-02		No		mg/L
2,4-Dinitrophenol	0/5	5.00E-02	3.01E-03		Yes		mg/L
2,4-Dinitrotoluene	0/5	1.00E-02	3.00E-03	7.69E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/5	1.00E-02	1.51E-03	7.71E-06	Yes	Yes	mg/L
2-Butanone	0/5	2.50E-02	6.21E-02		No		mg/[illegible]
2-Chloro-1,3-butadiene	0/5	1.30E-02	4.60E-04		Yes		[illegible]
2-Chloroethyl vinyl ether	0/5	2.50E-02	3.78E-02		No		[illegible]
2-Chloronaphthalene	0/5	1.00E-02	8.31E-02		No		mg/[illegible]
2-Chlorophenol	0/5	1.00E-02	6.90E-03		Yes		mg/L
2-Hexanone	0/5	2.50E-02					mg/L
2-Methyl-4,6-dinitrophenol	0/5	5.00E-02					mg/L
2-Methylnaphthalene	0/5	1.00E-02					mg/L
2-Methylphenol	0/5	1.00E-02	7.23E-02		No		mg/L
2-Nitrobenzenamine	0/5	5.00E-02	1.16E-05		Yes		mg/L
2-Nitrophenol	0/5	1.00E-02					mg/L
2-Propanol	0/4	1.40E-01					mg/L
3,3'-Dichlorobenzidine	0/5	1.00E-02		1.11E-05		Yes	mg/L
3-Nitrobenzenamine	0/5	5.00E-02	4.54E-03		Yes		mg/L
4-Bromophenyl phenyl ether	0/5	1.00E-02	5.18E-02		No		mg/L
4-Chloro-3-methylphenol	0/5	1.00E-02					mg/L
4-Chlorobenzenamine	0/5	1.00E-02	5.55E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/5	1.00E-02					mg/L
4-Methyl-2-pentanone	0/5	2.50E-02	5.11E-03		Yes		mg/L
4-Methylphenol	0/5	1.00E-02	7.27E-03		Yes		mg/L
4-Nitrobenzenamine	0/5	5.00E-02	4.54E-03		Yes		mg/L
4-Nitrophenol	0/5	5.00E-02	9.29E-02		No		mg/L
Acenaphthene	0/5	1.00E-02	4.23E-02		No		mg/L
Acenaphthylene	0/5	1.00E-02					mg/L
Acetone	0/5	2.50E-02	1.51E-01		No		mg/L
Acrolein	0/5	1.30E-01	1.33E-06		Yes		mg/L
Acrylonitrile	0/5	1.30E-01	1.23E-04	3.40E-06	Yes	Yes	mg/L
Anthracene	0/5	1.00E-02	3.18E-01		No		mg/L
Benz(a)anthracene	0/5	1.00E-02		1.32E-06		Yes	mg/L
Benzene	0/5	1.30E-02	3.99E-04	3.47E-05	Yes	Yes	mg/L
Benzenemethanol	0/5	1.00E-02	4.48E-01		No		mg/L
Benzo(a)pyrene	0/5	1.00E-02		9.51E-08		Yes	mg/L
Benzo(b)fluoranthene	0/5	1.00E-02		9.31E-07		Yes	mg/L
Benzo(ghi)perylene	0/5	1.00E-02					mg/L
Benzo(k)fluoranthene	0/5	1.00E-02		1.68E-05		Yes	mg/L
Bis(2-chloroethoxy)methane	0/5	1.00E-02					[illegible]
Bis(2-chloroethyl) ether	0/5	1.00E-02		9.19E-07		Yes	[illegible]
Bis(2-chloroisopropyl)ether	0/5	1.00E-02		2.40E-05		Yes	[illegible]
Bromoform	0/5	1.30E-02	3.01E-02	2.16E-04	No	Yes	mg/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=McNairy MEDIA=Ground water
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bromomethane	0/5	2.50E-02	2.88E-04		Yes		mg/L
Butyl benzyl phthalate	0/5	1.00E-02	2.59E-01		No		mg/L
Carbazole	0/5	1.00E-02		2.16E-04		Yes	mg/L
Carbon disulfide	0/5	1.30E-02	3.52E-02		No		mg/L
Carbon tetrachloride	0/5	1.30E-02	1.18E-04	1.46E-05	Yes	Yes	mg/L
Chlorobenzene	0/5	1.30E-02	1.27E-03		Yes		mg/L
Chloroethane	0/5	2.50E-02	3.15E-01		No		mg/L
Chloromethane	0/5	2.50E-02		1.33E-04		Yes	mg/L
Chrysene	0/5	1.00E-02		1.32E-04		Yes	mg/L
Dibenz(a,h)anthracene	0/5	1.00E-02		4.56E-08		Yes	mg/L
Dibenzofuran	0/5	1.00E-02	6.05E-03		Yes		mg/L
Dibromomethane	0/5	1.30E-02	1.51E-02		No		mg/L
Dichlorodifluoromethane	0/5	1.30E-02	1.27E-02		Yes		mg/L
Diethyl phthalate	0/5	1.00E-02	1.20E+00		No		mg/L
Dimethyl phthalate	0/5	1.00E-02	1.51E+01		No		mg/L
Dimethylbenzene	0/5	1.30E-02	2.63E+00		No		mg/L
Ethyl cyanide	0/5	2.50E-01					mg/L
Ethyl methacrylate	0/5	1.30E-02	1.34E-01		No		mg/L
Ethylbenzene	0/5	1.30E-02	4.48E-02		No		mg/L
Fluoranthene	0/5	1.00E-02	2.26E-02		No		mg/L
Fluorene	0/5	1.00E-02	3.54E-02		No		mg/L
Hexachlorobenzene	0/5	1.00E-02	7.54E-04	1.92E-06	Yes	Yes	mg/L
Hexachlorobutadiene	0/5	1.00E-02	2.25E-04	4.80E-05	Yes	Yes	mg/L
Hexachlorocyclopentadiene	0/5	1.00E-02	9.78E-03		Yes		mg/L
Hexachloroethane	0/5	1.00E-02	1.35E-03	3.29E-04	Yes	Yes	mg/L
Indeno(1,2,3-cd)pyrene	0/5	1.00E-02		6.31E-07		Yes	mg/L
Iodomethane	0/5	1.30E-02					mg/L
Isophorone	0/5	1.00E-02	2.99E-01	5.47E-03	No	Yes	mg/L
Methacrylonitrile	0/5	1.30E-02	3.56E-05		Yes		mg/L
Methyl methacrylate	0/5	1.30E-02	1.20E-01		No		mg/L
Methylene chloride	0/5	1.30E-02	6.21E-02	3.64E-04	No	Yes	mg/L
N-Nitroso-di-n-propylamine	0/5	1.00E-02		7.39E-07		Yes	mg/L
N-Nitrosodiphenylamine	0/5	1.00E-02		9.49E-04		Yes	mg/L
Naphthalene	0/5	1.00E-02	4.80E-02		No		mg/L
Nitrobenzene	0/5	1.00E-02	1.13E-04		Yes		mg/L
Pentachlorophenol	0/5	5.00E-02	2.34E-02	2.08E-05	Yes	Yes	mg/L
Phenanthrene	0/5	1.00E-02					mg/L
Pyrene	0/5	1.00E-02	1.81E-02		No		mg/L
Styrene	0/5	1.30E-02	4.49E-02		No		mg/L
Trichlorofluoromethane	0/5	1.30E-02	4.19E-02		No		mg/L
Vinyl acetate	0/5	1.30E-02	1.32E-02		No		mg/L
cis-1,3-Dichloropropene	0/5	1.30E-02					mg/L
trans-1,3-Dichloropropene	0/5	1.30E-02					mg/L
trans-1,4-Dichloro-2-butene	0/5	1.30E-02					mg/L
Bismuth-212	0/1	8.00E+00					pCi/L
Cesium-134	0/1	-2.00E-01					pCi/L
Cobalt-57	0/1	-3.10E-01					pCi/L
Cobalt-60	0/1	5.00E-01					pCi/L
Plutonium-238	0/1	4.00E-03					pCi/L
Plutonium-239/240	0/1	1.30E-02					pCi/L
Radium-226	0/1	0.00E+00					pCi/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Northeast MEDIA=Subsurface soil -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/25	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/12	6.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/12	6.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/12	6.00E-03		2.47E-02		No	mg/kg
1,1,2-Trichloroethane	0/12	6.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/12	6.00E-03	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/20	1.00E+00	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/12	6.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/25	8.40E-01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/12	6.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/25	8.40E-01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/12	6.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/12	6.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/25	8.40E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/25	8.40E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/25	8.40E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/25	8.31E-01					mg/kg
2,4,6-Trichlorophenol	0/25	8.40E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/25	8.40E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/25	8.40E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/25	4.20E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/25	8.40E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2-Butanone	0/12	1.00E-01	2.97E+02		No		[illegible]
2-Chloro-1,3-butadiene	0/12	6.00E-03	5.00E+00		No		[illegible]
2-Chloroethyl vinyl ether	0/12	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/25	8.40E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/25	8.40E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/25	8.31E-01					mg/kg
2-Fluorophenol	0/25	8.31E-01					mg/kg
2-Hexanone	0/12	6.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/25	4.20E+00					mg/kg
2-Methylnaphthalene	0/25	8.40E-01					mg/kg
2-Methylphenol	0/25	8.40E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/25	4.20E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/25	8.40E-01					mg/kg
2-Propanol	0/12	6.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/25	1.70E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/25	4.20E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/25	8.40E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/25	1.70E+00					mg/kg
4-Chlorobenzenamine	0/25	1.70E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/25	8.40E-01					mg/kg
4-Methyl-2-pentanone	0/12	6.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/25	8.40E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/25	4.20E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/25	4.20E+00	1.64E+02		No		mg/kg
Acenaphthylene	0/25	8.40E-01					mg/kg
Acrolein	0/12	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/12	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Aniline	0/25	8.31E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzene	0/12	6.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/25	1.70E+00	5.93E+02		No		mg/kg
Benzidine	0/25	8.31E-01	6.81E+00	5.91E-05	No	Yes	mg/kg

531279

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Northeast MEDIA=Subsurface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Benzoic acid	0/25	4.20E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/25	8.40E-01					mg/kg
Bis(2-chloroethyl) ether	0/25	8.40E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/25	8.40E-01		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/12	6.00E-03	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/12	6.00E-03	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/12	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/25	8.40E-01	3.73E+02		No		mg/kg
Carbazole	0/25	8.31E-01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/12	6.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/12	6.00E-03	3.62E-01	3.18E-02	No	No	mg/kg
Chlorobenzene	0/12	6.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/12	1.00E-02	2.11E+02		No		mg/kg
Chloroform	0/12	6.00E-03	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/12	1.00E-02		1.47E-01		No	mg/kg
Di-n-octylphthalate	0/25	8.40E-01	4.92E+01		No		mg/kg
Dibromochloromethane	0/12	6.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/12	6.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/12	6.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/25	8.40E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/25	8.40E-01	2.46E+04		No		mg/kg
[illegible]ylbenzene	0/12	6.00E-03	2.49E+03		No		mg/kg
[illegible]yldiazene	0/25	8.31E-01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/12	1.00E-01					mg/kg
Ethyl methacrylate	0/12	6.00E-03	9.97E+01		No		mg/kg
Ethylbenzene	0/12	6.00E-03	1.01E+02		No		mg/kg
Hexachlorobenzene	0/25	8.40E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/25	8.40E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/25	8.40E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/25	8.40E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Iodomethane	0/12	6.00E-03					mg/kg
Isophorone	0/25	8.40E-01	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/12	3.20E-02	1.04E-01		No		mg/kg
Methyl methacrylate	0/12	6.00E-03	8.86E+01		No		mg/kg
N-Nitrosodimethylamine	0/25	8.31E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/25	8.40E-01		1.04E+00		No	mg/kg
Nitrobenzene	0/25	8.40E-01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/25	8.31E-01					mg/kg
PCB-1016	0/15	2.20E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/15	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/15	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/15	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/15	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1262	0/15	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/15	2.20E-02					mg/kg
Pentachloroethane	0/12	6.00E-03					mg/kg
Pentachlorophenol	0/25	4.20E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/25	8.40E-01	1.48E+03		No		mg/kg
Phenol-d5	0/25	8.31E-01					mg/kg
Pyridine	0/25	8.31E-01	1.60E+00		No		mg/kg
Styrene	0/12	6.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/12	6.00E-03	1.34E+01	1.44E-01	No	No	mg/kg

531281

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=Northeast MEDIA=Subsurface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Trichlorofluoromethane	0/12	6.00E-03	4.83E+01		No		mg/kg
Vinyl chloride	0/20	1.00E+00		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/20	1.00E+00	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/12	6.00E-03					mg/kg
p-Terphenyl-d14	0/25	8.31E-01					mg/kg
trans-1,2-Dichloroethene	0/20	1.00E+00	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/12	6.00E-03					mg/kg
trans-1,4-Dichloro-2-butene	0/12	6.00E-03					mg/kg
Americium-241	0/6	2.00E-01		1.49E+00		No	pCi/g
Cesium-137	0/6	1.00E-01		1.56E-02		Yes	pCi/g
Plutonium-239	0/6	1.00E-01		1.96E+00		No	pCi/g

SECTOR=Northeast MEDIA=Surface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Antimony	0/1	6.00E-01	6.35E-02		Yes		mg/kg
Cadmium	0/1	2.00E-02	3.85E-01	2.85E+02	No	No	[illegible]
Cyanide	0/1	1.00E+00	2.33E+01		No		[illegible]
Selenium	0/1	2.00E-01	1.21E+01		No		[illegible]
Silver	0/1	8.00E-02	6.12E+00		No		mg/kg
Thallium	0/1	6.00E-01					mg/kg
1,1,1,2-Tetrachloroethane	0/1	6.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/1	6.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/1	6.00E-03		2.47E-02		No	mg/kg
1,1,2-Trichloroethane	0/1	6.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/1	6.00E-03	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/1	6.00E-03	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/1	6.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/1	7.70E-01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/1	6.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/1	7.70E-01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/1	6.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/1	6.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/1	7.70E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/1	7.70E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/1	7.70E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/1	7.60E-01					mg/kg
2,4,6-Trichlorophenol	0/1	7.70E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/1	7.70E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/1	7.70E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/1	3.90E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/1	7.70E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/1	7.70E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Butanone	0/1	1.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/1	6.00E-03	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/1	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/1	7.70E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/1	7.70E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/1	7.60E-01					mg/kg
2-Fluorophenol	0/1	7.60E-01					mg/kg
2-Hexanone	0/1	6.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/1	3.90E+00					[illegible]
2-Methylnaphthalene	0/1	7.70E-01					[illegible]
2-Methylphenol	0/1	7.70E-01	7.99E+01		No		[illegible]
2-Nitrobenzenamine	0/1	3.90E+00	7.29E-02		Yes		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Northeast MEDIA=Surface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
2-Nitrophenol	0/1	7.70E-01					mg/kg
2-Propanol	0/1	6.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/1	1.50E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/1	3.90E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/1	7.70E-01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/1	1.50E+00					mg/kg
4-Chlorobenzenamine	0/1	1.50E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/1	7.70E-01					mg/kg
4-Methyl-2-pentanone	0/1	6.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/1	7.70E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/1	3.90E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/1	3.90E+00	1.64E+02		No		mg/kg
Acenaphthylene	0/1	7.70E-01					mg/kg
Acetone	0/1	1.00E-01	1.14E+02		No		mg/kg
Acrolein	0/1	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/1	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Aniline	0/1	7.60E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzene	0/1	6.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/1	1.50E+00	5.93E+02		No		mg/kg
Benzidine	0/1	7.60E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Ben[illegible]ic acid	0/1	3.90E+00	1.06E+04		No		mg/kg
[illegible]chloroethoxy)methane	0/1	7.70E-01					mg/kg
[illegible]chloroethyl) ether	0/1	7.70E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/1	7.70E-01		1.23E-01		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	0/1	7.70E-01	1.40E+01	2.84E-01	No	Yes	mg/kg
Bromodichloromethane	0/1	6.00E-03	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/1	6.00E-03	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/1	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/1	7.70E-01	3.73E+02		No		mg/kg
Carbazole	0/1	7.60E-01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/1	6.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/1	6.00E-03	3.62E-01	3.18E-02	No	No	mg/kg
Chlorobenzene	0/1	6.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/1	1.00E-02	2.11E+02		No		mg/kg
Chloroform	0/1	6.00E-03	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/1	1.00E-02		1.47E-01		No	mg/kg
Di-n-butyl phthalate	0/1	7.70E-01	2.64E+02		No		mg/kg
Di-n-octylphthalate	0/1	7.70E-01	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/1	7.70E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/1	7.70E-01	6.39E+00		No		mg/kg
Dibromochloromethane	0/1	6.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/1	6.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/1	6.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/1	7.70E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/1	7.70E-01	2.46E+04		No		mg/kg
Dimethylbenzene	0/1	6.00E-03	2.49E+03		No		mg/kg
Diphenyldiazene	0/1	7.60E-01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/1	1.00E-01					mg/kg
Ethyl methacrylate	0/1	6.00E-03	9.97E+01		No		mg/kg
Ethylbenzene	0/1	6.00E-03	1.01E+02		No		mg/kg
Fluorene	0/1	7.70E-01	6.39E+01		No		mg/kg
Hexachlorobenzene	0/1	7.70E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/1	7.70E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/1	7.70E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/1	7.70E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
[illegible]thane	0/1	6.00E-03					mg/kg
[illegible]rone	0/1	7.70E-01	3.20E+02	9.85E+00	No	No	mg/kg
[illegible]rylonitrile	0/1	2.90E-02	1.04E-01		No		mg/kg
Methyl methacrylate	0/1	6.00E-03	8.86E+01		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Northeast MEDIA=Surface soil -------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
N-Nitroso-di-n-propylamine	0/1	7.70E-01		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/1	7.60E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/1	7.70E-01		1.04E+00		No	mg/kg
Naphthalene	0/1	7.70E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/1	7.70E-01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/1	7.60E-01					mg/kg
PCB-1016	0/1	2.00E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/1	2.00E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/1	2.00E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/1	2.00E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/1	2.00E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/1	2.00E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1262	0/1	2.00E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/1	2.00E-02					mg/kg
Pentachloroethane	0/1	6.00E-03					mg/kg
Pentachlorophenol	0/1	3.90E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/1	7.70E-01	1.48E+03		No		mg/kg
Phenol-d5	0/1	7.60E-01					mg/kg
Pyridine	0/1	7.60E-01	1.60E+00		No		mg/kg
Styrene	0/1	6.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/1	6.00E-03	1.34E+01	1.44E-01	No	No	mg/
Toluene	0/1	6.00E-03	1.10E+02		No		mg
Trichloroethene	0/1	6.00E-03	1.41E+00	1.10E-01	No	No	mg.
Trichlorofluoromethane	0/1	6.00E-03	4.83E+01		No		mg/kg
Vinyl acetate	0/1	6.00E-02	5.40E+01		No		mg/kg
Vinyl chloride	0/1	1.00E-02		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/1	6.00E-03	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/1	6.00E-03					mg/kg
p-Terphenyl-d14	0/1	7.60E-01					mg/kg
trans-1,2-Dichloroethene	0/1	6.00E-03	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/1	6.00E-03					mg/kg
trans-1,4-Dichloro-2-butene	0/1	6.00E-03					mg/kg
Americium-241	0/1	1.00E-01		1.49E+00		No	pCi/g
Cesium-137	0/1	1.00E-01		1.56E-02		Yes	pCi/g
Neptunium-237	0/1	1.00E-01		6.82E-02		Yes	pCi/g
Plutonium-239	0/1	1.00E-01		1.96E+00		No	pCi/g

------------------------------------- SECTOR=Northwest MEDIA=Subsurface soil -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/25	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/10	4.00E-02	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/10	4.00E-02	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/10	4.00E-02		2.47E-02		Yes	mg/kg
1,1,2-Trichloroethane	0/10	4.00E-02	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/10	4.00E-02	1.16E-01		No		mg/kg
1,2,3-Trichloropropane	0/10	4.00E-02	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/21	3.40E+00	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/10	4.00E-02	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/21	3.40E+00	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/10	4.00E-02	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/10	4.00E-02	2.09E+00	8.75E-02	No	No	mg/
1,3-Dichlorobenzene	0/21	3.40E+00	9.85E+01		No		mg
1,4-Dichlorobenzene	0/21	3.40E+00	6.96E+02	2.95E-01	No	Yes	mg/
2,4,5-Trichlorophenol	0/21	3.40E+00	1.60E+02		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Northwest MEDIA=Subsurface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
:,4,6-Tribromophenol	0/19	8.16E-01					mg/kg
:,4,6-Trichlorophenol	0/21	3.40E+00		8.51E-01		Yes	mg/kg
,4-Dichlorophenol	0/21	3.40E+00	6.93E+00		No		mg/kg
,4-Dimethylphenol	0/21	3.40E+00	3.20E+01		No		mg/kg
,4-Dinitrophenol	0/21	1.70E+01	5.28E+00		Yes		mg/kg
,4-Dinitrotoluene	0/21	3.40E+00	4.73E+00	2.09E-02	No	Yes	mg/kg
,6-Dinitrotoluene	0/21	3.40E+00	2.37E+00	2.09E-02	Yes	Yes	mg/kg
-Butanone	0/10	8.00E-01	2.97E+02		No		mg/kg
-Chloro-1,3-butadiene	0/10	4.00E-02	5.00E+00		No		mg/kg
-Chloroethyl vinyl ether	0/10	8.00E-02	2.77E+01		No		mg/kg
-Chloronaphthalene	0/21	3.40E+00	1.28E+02		No		mg/kg
-Chlorophenol	0/21	3.40E+00	7.99E+00		No		mg/kg
-Fluoro-1,1'-biphenyl	0/19	8.16E-01					mg/kg
-Fluorophenol	0/19	8.16E-01					mg/kg
-Hexanone	0/10	4.00E-01					mg/kg
-Methyl-4,6-dinitrophenol	0/21	1.70E+01					mg/kg
-Methylnaphthalene	0/21	3.40E+00					mg/kg
-Methylphenol	0/21	3.40E+00	7.99E+01		No		mg/kg
-Nitrobenzenamine	0/21	1.70E+01	7.29E-02		Yes		mg/kg
-Nitrophenol	0/21	3.40E+00					mg/kg
-Propanol	0/10	4.00E-01					mg/kg
3' [illegible]lorobenzidine	0/21	6.80E+00		2.08E-02		Yes	mg/kg
-N[illegible]nzenamine	0/21	1.70E+01	4.80E+00		Yes		mg/kg
-Br[illegible]henyl phenyl ether	0/21	3.40E+00	9.27E+01		No		mg/kg
-Chloro-3-methylphenol	0/21	6.80E+00					mg/kg
Chlorobenzenamine	0/21	6.80E+00	6.39E+00		Yes		mg/kg
Chlorophenyl phenyl ether	0/21	3.40E+00					mg/kg
Methyl-2-pentanone	0/10	4.00E-01	4.96E+01		No		mg/kg
Methylphenol	0/21	3.40E+00	9.77E+00		No		mg/kg
Nitrobenzenamine	0/21	1.70E+01	4.80E+00		Yes		mg/kg
Nitrophenol	0/21	1.70E+01	1.64E+02		No		mg/kg
enaphthene	0/21	3.40E+00	6.47E+01		No		mg/kg
enaphthylene	0/21	3.40E+00					mg/kg
rolein	0/10	8.00E-01	5.79E-03		Yes		mg/kg
rylonitrile	0/10	8.00E-01	1.38E-01	4.04E-03	Yes	Yes	mg/kg
iline	0/19	8.16E-01	9.26E+04	1.64E+00	No	No	mg/kg
thracene	0/21	3.40E+00	6.57E+02		No		mg/kg
nzene	0/10	4.00E-02	2.44E+00	1.31E-01	No	No	mg/kg
nzenemethanol	0/21	6.80E+00	5.93E+02		No		mg/kg
nzidine	0/19	8.16E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
nzo(ghi)perylene	0/21	3.40E+00					mg/kg
nzoic acid	0/21	1.70E+01	1.06E+04		No		mg/kg
s(2-chloroethoxy)methane	0/21	3.40E+00					mg/kg
s(2-chloroethyl) ether	0/21	3.40E+00		7.54E-03		Yes	mg/kg
s(2-chloroisopropyl)ether	0/21	3.40E+00		1.23E-01		Yes	mg/kg
omodichloromethane	0/10	4.00E-02	2.63E+01	1.23E-01	No	No	mg/kg
omoform	0/10	4.00E-02	1.72E+01	6.23E-01	No	No	mg/kg
omomethane	0/10	8.00E-02	2.92E-01		No		mg/kg
:yl benzyl phthalate	0/21	3.40E+00	3.73E+02		No		mg/kg
bazole	0/19	8.16E-01		6.14E-01		Yes	mg/kg
bon disulfide	0/10	4.00E-02	6.90E+01		No		mg/kg
bon tetrachloride	0/10	4.00E-02	3.62E-01	3.18E-02	No	Yes	mg/kg
orobenzene	0/10	4.00E-02	6.54E+00		No		mg/kg
oroethane	0/10	8.00E-02	2.11E+02		No		mg/kg
oroform	0/10	4.00E-02	3.11E+00	6.81E-02	No	No	mg/kg
oromethane	0/10	8.00E-02		1.47E-01		No	mg/kg
n[illegible]hthalate	0/21	3.40E+00	4.92E+01		No		mg/kg
e[illegible]anthracene	0/21	3.40E+00		8.49E-04		Yes	mg/kg
enzo[illegible]an	0/21	3.40E+00	6.39E+00		No		mg/kg

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Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Northwest MEDIA=Subsurface soil -------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Dibromochloromethane	0/10	4.00E-02	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/10	4.00E-02	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/10	4.00E-02	4.48E+00		No		mg/kg
Diethyl phthalate	0/21	3.40E+00	1.97E+03		No		mg/kg
Dimethyl phthalate	0/21	3.40E+00	2.46E+04		No		mg/kg
Dimethylbenzene	0/10	4.00E-02	2.49E+03		No		mg/kg
Diphenyldiazene	0/19	8.16E-01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/10	8.00E-01					mg/kg
Ethyl methacrylate	0/10	4.00E-02	9.97E+01		No		mg/kg
Ethylbenzene	0/10	4.00E-02	1.01E+02		No		mg/kg
Fluorene	0/21	3.40E+00	6.39E+01		No		mg/kg
Hexachlorobenzene	0/21	3.40E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/21	3.40E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/21	3.40E+00	1.12E+01		No		mg/kg
Hexachloroethane	0/21	3.40E+00	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Indeno(1,2,3-cd)pyrene	0/21	8.30E-01		8.49E-03		Yes	mg/kg
Iodomethane	0/10	4.00E-02					mg/kg
Isophorone	0/21	3.40E+00	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/10	2.10E-01	1.04E-01		Yes		mg/kg
Methyl methacrylate	0/10	4.00E-02	8.86E+01		No		mg/kg
N-Nitrosodimethylamine	0/19	8.16E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/21	3.40E+00		1.04E+00		Yes	mg/kg
Naphthalene	0/21	3.40E+00	8.10E+01		No		mg/kg
Nitrobenzene	0/21	3.40E+00	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/19	8.16E-01					mg/kg
PCB-1016	0/12	2.10E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/12	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/12	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/12	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/12	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/12	2.10E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1260	0/12	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1262	0/12	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/12	2.10E-02					mg/kg
Pentachloroethane	0/10	4.00E-02					mg/kg
Pentachlorophenol	0/21	1.70E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/21	3.40E+00	1.48E+03		No		mg/kg
Phenol-d5	0/19	8.16E-01					mg/kg
Pyridine	0/19	8.16E-01	1.60E+00		No		mg/kg
Styrene	0/10	4.00E-02	1.92E+02		No		mg/kg
Tetrachloroethene	0/10	4.00E-02	1.34E+01	1.44E-01	No	No	mg/kg
Trichlorofluoromethane	0/10	4.00E-02	4.83E+01		No		mg/kg
Vinyl acetate	0/10	4.00E-01	5.40E+01		No		mg/kg
Vinyl chloride	0/16	1.00E+00		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/16	1.00E+00	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/10	4.00E-02					mg/kg
p-Terphenyl-d14	0/19	8.16E-01					mg/kg
trans-1,2-Dichloroethene	0/16	1.00E+00	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/10	4.00E-02					mg/kg
trans-1,4-Dichloro-2-butene	0/10	4.00E-02					mg/kg

------------------------------------- SECTOR=Northwest MEDIA=Surface soil -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	
Cyanide	0/6	1.00E+00	2.33E+01		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Northwest MEDIA=Surface soil -------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Thallium	0/6	1.00E+00					mg/kg
1,2,4-Trichlorobenzene	0/2	3.40E+00	2.54E+01		No		mg/kg
1,2-Dichlorobenzene	0/2	3.40E+00	8.73E+01		No		mg/kg
1,3-Dichlorobenzene	0/2	3.40E+00	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/2	3.40E+00	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/2	3.40E+00	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/2	7.25E-01					mg/kg
2,4,6-Trichlorophenol	0/2	3.40E+00		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/2	3.40E+00	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/2	3.40E+00	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/2	1.70E+01	5.28E+00		Yes		mg/kg
2,4-Dinitrotoluene	0/2	3.40E+00	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/2	3.40E+00	2.37E+00	2.09E-02	Yes	Yes	mg/kg
2-Chloronaphthalene	0/2	3.40E+00	1.28E+02		No		mg/kg
2-Chlorophenol	0/2	3.40E+00	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/2	7.25E-01					mg/kg
2-Fluorophenol	0/2	7.25E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/2	1.70E+01					mg/kg
2-Methylnaphthalene	0/2	3.40E+00					mg/kg
2-Methylphenol	0/2	3.40E+00	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/2	1.70E+01	7.29E-02		Yes		mg/kg
ophenol	0/2	3.40E+00					mg/kg
ichlorobenzidine	0/2	6.80E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/2	1.70E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/2	3.40E+00	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/2	6.80E+00					mg/kg
4-Chlorobenzenamine	0/2	6.80E+00	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/2	3.40E+00					mg/kg
4-Methylphenol	0/2	3.40E+00	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/2	1.70E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/2	1.70E+01	1.64E+02		No		mg/kg
Acenaphthene	0/2	3.40E+00	6.47E+01		No		mg/kg
Acenaphthylene	0/2	3.40E+00					mg/kg
Aniline	0/2	7.25E-01	9.26E+04	1.64E+00	No	No	mg/kg
Anthracene	0/2	3.40E+00	6.57E+02		No		mg/kg
Benzenemethanol	0/2	6.80E+00	5.93E+02		No		mg/kg
Benzidine	0/2	7.25E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzo(ghi)perylene	0/2	3.40E+00					mg/kg
Benzoic acid	0/2	1.70E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/2	3.40E+00					mg/kg
Bis(2-chloroethyl) ether	0/2	3.40E+00		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/2	3.40E+00		1.23E-01		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	0/2	3.40E+00	1.40E+01	2.84E-01	No	Yes	mg/kg
Butyl benzyl phthalate	0/2	3.40E+00	3.73E+02		No		mg/kg
Carbazole	0/2	7.25E-01		6.14E-01		Yes	mg/kg
Di-n-butyl phthalate	0/2	3.40E+00	2.64E+02		No		mg/kg
Di-n-octylphthalate	0/2	3.40E+00	4.92E+01		No		mg/kg
Dibenz(a,h)anthracene	0/2	3.40E+00		8.49E-04		Yes	mg/kg
Dibenzofuran	0/2	3.40E+00	6.39E+00		No		mg/kg
Diethyl phthalate	0/2	3.40E+00	1.97E+03		No		mg/kg
Dimethyl phthalate	0/2	3.40E+00	2.46E+04		No		mg/kg
Diphenyldiazene	0/2	7.25E-01		8.51E-02		Yes	mg/kg
Fluorene	0/2	3.40E+00	6.39E+01		No		mg/kg
Hexachlorobenzene	0/2	3.40E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/2	3.40E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
[illegible]chlorocyclopentadiene	0/2	3.40E+00	1.12E+01		No		mg/kg
[illegible]oroethane	0/2	3.40E+00	1.60E+00	6.68E-01	Yes	Yes	mg/kg
[illegible](1,2,3-cd)pyrene	0/2	7.25E-01		8.49E-03		Yes	mg/kg
Isophorone	0/2	3.40E+00	3.20E+02	9.85E+00	No	No	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Northwest MEDIA=Surface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
N-Nitroso-di-n-propylamine	0/2	3.40E+00		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/2	7.25E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/2	3.40E+00		1.04E+00		Yes	mg/kg
Naphthalene	0/2	3.40E+00	8.10E+01		No		mg/kg
Nitrobenzene	0/2	3.40E+00	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/2	7.25E-01					mg/kg
PCB-1016	0/1	1.80E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/1	1.80E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/1	1.80E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/1	1.80E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/1	1.80E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/1	1.80E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1260	0/1	1.80E-02		1.05E-02		Yes	mg/kg
PCB-1262	0/1	1.80E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/1	1.80E-02					mg/kg
Pentachlorophenol	0/2	1.70E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenanthrene	0/2	3.40E+00					mg/kg
Phenol	0/2	3.40E+00	1.48E+03		No		mg/kg
Phenol-d5	0/2	7.25E-01					mg/kg
Polychlorinated biphenyl	0/2	1.00E+00		1.05E-02		Yes	mg/kg
Pyridine	0/2	7.25E-01	1.60E+00		No		mg/k
p-Terphenyl-d14	0/2	7.25E-01					mg
Americium-241	0/1	1.00E-01		1.49E+00		No	pC
Neptunium-237	0/1	1.00E-01		6.82E-02		Yes	pCi/g
Plutonium-239	0/1	1.00E-01		1.96E+00		No	pCi/g
Uranium-235	0/1	1.00E-01		1.22E-01		No	pCi/g

------------------------------------ SECTOR=RGA MEDIA=Ground water ------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/12	6.00E-03	2.84E-02		No		mg/L
Nitrite	0/30	1.00E+00	1.51E-01		Yes		mg/L
1,1,1,2-Tetrachloroethane	0/23	1.30E+01	4.35E-02	3.86E-05	Yes	Yes	mg/L
1,1,2,2-Tetrachloroethane	0/23	1.30E+01		5.04E-06		Yes	mg/L
1,1,2-Trichloroethane	0/23	1.30E+01	5.96E-03	1.77E-05	Yes	Yes	mg/L
1,1-Dichloroethane	0/23	1.30E+01	2.73E-02		Yes		mg/L
1,2,3-Trichloropropane	0/23	1.30E+01	5.05E-03	3.87E-07	Yes	Yes	mg/L
1,2,4-Trichlorobenzene	0/16	1.00E-02	6.63E-03		Yes		mg/L
1,2-Dibromoethane	0/23	1.30E+01	1.33E-05	5.94E-08	Yes	Yes	mg/L
1,2-Dichlorobenzene	0/16	1.00E-02	1.20E-02		No		mg/L
1,2-Dichloroethane	0/23	1.30E+01	6.68E-04	1.11E-05	Yes	Yes	mg/L
1,2-Dichloropropane	0/23	1.30E+01	2.67E-04	7.58E-05	Yes	Yes	mg/L
1,2-Dimethylbenzene	0/23	1.30E+01	4.59E-02		Yes		mg/L
1,3-Dichlorobenzene	0/16	1.00E-02	1.16E-01		No		mg/L
1,4-Dichlorobenzene	0/16	1.00E-02	5.34E-02	1.97E-04	No	Yes	mg/L
2,4,5-Trichlorophenol	0/16	5.00E-02	1.29E-01		No		mg/L
2,4,6-Trichlorophenol	0/16	1.00E-02		3.99E-04		Yes	mg/L
2,4-Dichlorophenol	0/16	1.00E-02	4.10E-03		Yes		mg/L
2,4-Dimethylphenol	0/16	1.00E-02	2.30E-02		No		mg/L
2,4-Dinitrophenol	0/16	5.00E-02	3.01E-03		Yes		mg/L
2,4-Dinitrotoluene	0/16	1.00E-02	3.00E-03	7.69E-06	Yes	Yes	mg/L
2,6-Dinitrotoluene	0/16	1.00E-02	1.51E-03	7.71E-06	Yes	Yes	mg/L
2-Butanone	0/23	2.50E+01	6.21E-02		Yes		mg
2-Chloro-1,3-butadiene	0/23	1.30E+01	4.60E-04		Yes		mg
2-Chloroethyl vinyl ether	0/23	2.50E+01	3.78E-02		Yes		mg/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

---------- SECTOR=RGA MEDIA=Ground water ----------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
2-Chloronaphthalene	0/16	1.00E-02	8.31E-02		No		mg/L
2-Chlorophenol	0/16	1.00E-02	6.90E-03		Yes		mg/L
2-Hexanone	0/23	2.50E+01					mg/L
2-Methyl-4,6-dinitrophenol	0/16	5.00E-02					mg/L
2-Methylnaphthalene	0/16	1.00E-02					mg/L
2-Methylphenol	0/16	1.00E-02	7.23E-02		No		mg/L
2-Nitrobenzenamine	0/16	5.00E-02	1.16E-05		Yes		mg/L
2-Nitrophenol	0/16	1.00E-02					mg/L
2-Propanol	0/16	5.40E+01					mg/L
3,3'-Dichlorobenzidine	0/16	1.00E-02		1.11E-05		Yes	mg/L
3-Nitrobenzenamine	0/16	5.00E-02	4.54E-03		Yes		mg/L
4-Bromophenyl phenyl ether	0/16	1.00E-02	5.18E-02		No		mg/L
4-Chloro-3-methylphenol	0/16	1.00E-02					mg/L
4-Chlorobenzenamine	0/16	1.00E-02	5.55E-03		Yes		mg/L
4-Chlorophenyl phenyl ether	0/16	1.00E-02					mg/L
4-Methyl-2-pentanone	0/23	2.50E+01	5.11E-03		Yes		mg/L
4-Methylphenol	0/16	1.00E-02	7.27E-03		Yes		mg/L
4-Nitrobenzenamine	0/16	5.00E-02	4.54E-03		Yes		mg/L
4-Nitrophenol	0/16	5.00E-02	9.29E-02		No		mg/L
Acenaphthene	0/16	1.00E-02	4.23E-02		No		mg/L
Acenaphthylene	0/16	1.00E-02					mg/L
[illegible]in	0/23	1.30E+02	1.33E-06		Yes		mg/L
[illegible]nitrile	0/23	1.30E+02	1.23E-04	3.40E-06	Yes	Yes	mg/L
Anthracene	0/16	1.00E-02	3.18E-01		No		mg/L
Benz(a)anthracene	0/16	1.00E-02		1.32E-06		Yes	mg/L
Benzene	0/23	1.30E+01	3.99E-04	3.47E-05	Yes	Yes	mg/L
Benzenemethanol	0/16	1.00E-02	4.48E-01		No		mg/L
Benzo(a)pyrene	0/16	1.00E-02		9.51E-08		Yes	mg/L
Benzo(b)fluoranthene	0/16	1.00E-02		9.31E-07		Yes	mg/L
Benzo(ghi)perylene	0/16	1.00E-02					mg/L
Benzo(k)fluoranthene	0/16	1.00E-02		1.68E-05		Yes	mg/L
Bis(2-chloroethoxy)methane	0/16	1.00E-02					mg/L
Bis(2-chloroethyl) ether	0/16	1.00E-02		9.19E-07		Yes	mg/L
Bis(2-chloroisopropyl)ether	0/16	1.00E-02		2.40E-05		Yes	mg/L
Bromoform	0/23	1.30E+01	3.01E-02	2.16E-04	Yes	Yes	mg/L
Bromomethane	0/23	2.50E+01	2.88E-04		Yes		mg/L
Butyl benzyl phthalate	0/16	1.00E-02	2.59E-01		No		mg/L
Carbazole	0/16	1.00E-02		2.16E-04		Yes	mg/L
Carbon disulfide	0/23	1.30E+01	3.52E-02		Yes		mg/L
Chlorobenzene	0/23	1.30E+01	1.27E-03		Yes		mg/L
Chloroethane	0/23	2.50E+01	3.15E-01		Yes		mg/L
Chloromethane	0/23	2.50E+01		1.33E-04		Yes	mg/L
Chrysene	0/16	1.00E-02		1.32E-04		Yes	mg/L
Dibenz(a,h)anthracene	0/16	1.00E-02		4.56E-08		Yes	mg/L
Dibenzofuran	0/16	1.00E-02	6.05E-03		Yes		mg/L
Dibromochloromethane	0/23	1.30E+01	3.00E-02	6.21E-05	Yes	Yes	mg/L
Dibromomethane	0/23	1.30E+01	1.51E-02		Yes		mg/L
Dichlorodifluoromethane	0/23	1.30E+01	1.27E-02		Yes		mg/L
Dimethyl phthalate	0/16	1.00E-02	1.51E+01		No		mg/L
Dimethylbenzene	0/23	1.30E+01	2.63E+00		Yes		mg/L
Ethyl cyanide	0/23	2.50E+02					mg/L
Ethyl methacrylate	0/23	1.30E+01	1.34E-01		Yes		mg/L
Ethylbenzene	0/23	1.30E+01	4.48E-02		Yes		mg/L
Fluoranthene	0/16	1.00E-02	2.26E-02		No		mg/L
Fluorene	0/16	1.00E-02	3.54E-02		No		mg/L
[illegible]lorobenzene	0/16	1.00E-02	7.54E-04	1.92E-06	Yes	Yes	mg/L
[illegible]orobutadiene	0/16	1.00E-02	2.25E-04	4.80E-05	Yes	Yes	mg/L
[illegible]lorocyclopentadiene	0/16	1.00E-02	9.78E-03		Yes		mg/L
Hexachloroethane	0/16	1.00E-02	1.35E-03	3.29E-04	Yes	Yes	mg/L

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=RGA MEDIA=Ground water
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Indeno(1,2,3-cd)pyrene	0/16	1.00E-02		6.31E-07		Yes	mg/L
Iodomethane	0/23	1.30E+01					mg/L
Isophorone	0/16	1.00E-02	2.99E-01	5.47E-03	No	Yes	mg/L
Methacrylonitrile	0/23	1.30E+01	3.56E-05		Yes		mg/L
Methyl methacrylate	0/23	1.30E+01	1.20E-01		Yes		mg/L
Methylene chloride	0/23	1.30E+01	6.21E-02	3.64E-04	Yes	Yes	mg/L
N-Nitrosodiphenylamine	0/16	1.00E-02		9.49E-04		Yes	mg/L
Naphthalene	0/16	1.00E-02	4.80E-02		No		mg/L
Nitrobenzene	0/16	1.00E-02	1.13E-04		Yes		mg/L
Pentachlorophenol	0/16	5.00E-02	2.34E-02	2.08E-05	Yes	Yes	mg/L
Phenanthrene	0/16	1.00E-02					mg/L
Pyrene	0/16	1.00E-02	1.81E-02		No		mg/L
Styrene	0/23	1.30E+01	4.49E-02		Yes		mg/L
Trichlorofluoromethane	0/23	1.30E+01	4.19E-02		Yes		mg/L
Vinyl acetate	0/23	1.30E+01	1.32E-02		Yes		mg/L
cis-1,3-Dichloropropene	0/23	1.30E+01					mg/L
trans-1,3-Dichloropropene	0/23	1.30E+01					mg/L
trans-1,4-Dichloro-2-butene	0/23	1.30E+01					mg/L
Actinium-228	0/1	1.00E+00					pCi/L
Bismuth-214	0/1	5.50E+00					pCi/L
Cesium-134	0/1	1.10E+00					pCi'
Cobalt-57	0/1	-1.00E-01					pC
Cobalt-60	0/4	3.94E+01					pC
Lead-212	0/1	4.60E+00					pCi/L
Plutonium-238	0/1	2.40E-02					pCi/L
Plutonium-239/240	0/1	1.70E-02					pCi/L
Potassium-40	0/1	1.40E+01					pCi/L
Radium-226	0/1	4.00E+01					pCi/L
Thallium-208	0/1	7.00E-01					pCi/L
Thorium-234	0/1	-1.20E+01					pCi/L

SECTOR=Southeast MEDIA=Subsurface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/59	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/54	3.00E-02	3.32E+01	1.89E-01	No	No	mg/kg
1,1,2,2-Tetrachloroethane	0/54	3.00E-02		2.47E-02		Yes	mg/kg
1,1-Dichloroethane	0/54	9.80E-01	1.16E-01		Yes		mg/kg
1,2,3-Trichloropropane	0/54	3.00E-02	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/60	8.00E+00	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/54	3.00E-02	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/60	8.00E+00	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/54	3.00E-02	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/54	3.00E-02	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/60	8.00E+00	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/60	8.00E+00	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/60	8.00E+00	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/22	8.34E-01					mg/kg
2,4,6-Trichlorophenol	0/60	8.00E+00		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/60	8.00E+00	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/60	8.00E+00	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/60	4.00E+01	5.28E+00		Yes		mg/'
2,4-Dinitrotoluene	0/60	8.00E+00	4.73E+00	2.09E-02	Yes	Yes	mg
2,6-Dinitrotoluene	0/60	8.00E+00	2.37E+00	2.09E-02	Yes	Yes	mg,
2-Butanone	0/54	6.00E-01	2.97E+02		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
2-Chloro-1,3-butadiene	0/54	3.00E-02	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/54	6.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/60	8.00E+00	1.28E+02		No		mg/kg
2-Chlorophenol	0/60	8.00E+00	7.99E+00		Yes		mg/kg
2-Fluoro-1,1'-biphenyl	0/22	8.34E-01					mg/kg
2-FIuorophenol	0/22	8.34E-01					mg/kg
2-Hexanone	0/54	3.00E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/60	4.00E+01					mg/kg
2-Methylnaphthalene	0/60	8.00E+00					mg/kg
2-Methylphenol	0/60	8.00E+00	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/60	4.00E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/60	8.00E+00					mg/kg
2-Propanol	0/54	3.00E-01					mg/kg
3,3'-Dichlorobenzidine	0/60	1.60E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/60	4.00E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/60	8.00E+00	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/60	1.60E+01					mg/kg
4-Chlorobenzenamine	0/60	1.60E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/60	8.00E+00					mg/kg
4-Methyl-2-pentanone	0/54	3.00E-01	4.96E+01		No		mg/kg
4-Methylphenol	0/60	8.00E+00	9.77E+00		No		mg/kg
4-[illegible]benzenamine	0/60	4.00E+01	4.80E+00		Yes		mg/kg
4[illegible]henol	0/60	4.00E+01	1.64E+02		No		mg/kg
Ac[illegible]thylene	0/60	8.00E+00					mg/kg
Acrolein	0/54	6.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/54	6.00E-01	1.38E-01	4.04E-03	Yes	Yes	mg/kg
Aniline	0/22	8.34E-01	9.26E+04	1.64E+00	No	No	mg/kg
Benzenemethanol	0/60	1.60E+01	5.93E+02		No		mg/kg
Benzidine	0/22	8.34E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/60	4.00E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/60	8.00E+00					mg/kg
Bis(2-chloroethyl) ether	0/60	8.00E+00		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/60	8.00E+00		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/54	3.00E-02	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/54	3.00E-02	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/54	6.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/60	8.00E+00	3.73E+02		No		mg/kg
Carbazole	0/22	8.34E-01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/54	3.00E-02	6.90E+01		No		mg/kg
Chlorobenzene	0/54	3.00E-02	6.54E+00		No		mg/kg
Chloroethane	0/54	6.00E-02	2.11E+02		No		mg/kg
Chloromethane	0/54	6.00E-02		1.47E-01		No	mg/kg
Dibromochloromethane	0/54	3.00E-02	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/54	3.00E-02	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/54	3.00E-02	4.48E+00		No		mg/kg
Dimethyl phthalate	0/60	8.00E+00	2.46E+04		No		mg/kg
Dimethylbenzene	0/54	3.00E-02	2.49E+03		No		mg/kg
Diphenyldiazene	0/22	8.34E-01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/54	6.00E-01					mg/kg
Ethyl methacrylate	0/54	3.00E-02	9.97E+01		No		mg/kg
Ethylbenzene	0/54	3.00E-02	1.01E+02		No		mg/kg
Hexachlorobenzene	0/60	8.00E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/60	8.00E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/60	8.00E+00	1.12E+01		No		mg/kg
Hexachloroethane	0/60	8.00E+00	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Iodomethane	0/54	3.00E-02					mg/kg
S[illegible]ne	0/60	8.00E+00	3.20E+02	9.85E+00	No	No	mg/kg
e[illegible]onitrile	0/54	1.50E-01	1.04E-01		Yes		mg/kg
ethyl methacrylate	0/54	3.00E-02	8.86E+01		No		mg/kg

531290

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=Southeast MEDIA=Subsurface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
N-Nitroso-di-n-propylamine	0/60	8.00E+00		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/22	8.34E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/60	8.00E+00		1.04E+00		Yes	mg/kg
Nitrobenzene	0/60	8.00E+00	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/22	8.34E-01					mg/kg
PCB-1016	0/11	2.20E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/11	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/11	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/11	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/11	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1260	0/11	2.20E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/11	2.20E-02					mg/kg
Pentachloroethane	0/54	3.00E-02					mg/kg
Pentachlorophenol	0/60	4.00E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/60	8.00E+00	1.48E+03		No		mg/kg
Phenol-d5	0/22	8.34E-01					mg/kg
Pyridine	0/22	8.34E-01	1.60E+00		No		mg/kg
Styrene	0/54	3.00E-02	1.92E+02		No		mg/kg
cis-1,3-Dichloropropene	0/54	3.00E-02					mg/kg
p-Terphenyl-d14	0/22	8.34E-01					mg/kg
trans-1,3-Dichloropropene	0/54	3.00E-02					mg/kg
trans-1,4-Dichloro-2-butene	0/54	3.00E-02					mg/kg

SECTOR=Southeast MEDIA=Surface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/1	1.00E+00	2.33E+01		No		mg/kg
Mercury	0/1	8.70E-03	1.58E-01		No		mg/kg
Selenium	0/1	2.00E-01	1.21E+01		No		mg/kg
Silver	0/1	8.00E-02	6.12E+00		No		mg/kg
Thallium	0/1	6.00E-01					mg/kg
1,2,4-Trichlorobenzene	0/1	7.52E-01	2.54E+01		No		mg/kg
1,2-Dichlorobenzene	0/1	7.52E-01	8.73E+01		No		mg/kg
1,3-Dichlorobenzene	0/1	7.52E-01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/1	7.52E-01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/1	7.52E-01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/1	7.52E-01					mg/kg
2,4,6-Trichlorophenol	0/1	7.52E-01		8.51E-01		No	mg/kg
2,4-Dichlorophenol	0/1	7.52E-01	6.93E+00		No		mg/kg
2,4-Dimethylphenol	0/1	7.52E-01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/1	3.70E+00	5.28E+00		No		mg/kg
2,4-Dinitrotoluene	0/1	7.52E-01	4.73E+00	2.09E-02	No	Yes	mg/kg
2,6-Dinitrotoluene	0/1	7.52E-01	2.37E+00	2.09E-02	No	Yes	mg/kg
2-Chloronaphthalene	0/1	7.52E-01	1.28E+02		No		mg/kg
2-Chlorophenol	0/1	7.52E-01	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/1	7.52E-01					mg/kg
2-Fluorophenol	0/1	7.52E-01					mg/kg
2-Methyl-4,6-dinitrophenol	0/1	3.70E+00					mg/kg
2-Methylnaphthalene	0/1	7.52E-01					mg/kg
2-Methylphenol	0/1	7.52E-01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/1	3.70E+00	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/1	7.52E-01					mg/kg
3,3'-Dichlorobenzidine	0/1	1.50E+00		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/1	3.70E+00	4.80E+00		No		mg/kg
4-Bromophenyl phenyl ether	0/1	7.52E-01	9.27E+01		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Southeast MEDIA=Surface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
4-Chloro-3-methylphenol	0/1	1.50E+00					mg/kg
4-Chlorobenzenamine	0/1	1.50E+00	6.39E+00		No		mg/kg
4-Chlorophenyl phenyl ether	0/1	7.52E-01					mg/kg
4-Methylphenol	0/1	7.52E-01	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/1	3.70E+00	4.80E+00		No		mg/kg
4-Nitrophenol	0/1	3.70E+00	1.64E+02		No		mg/kg
Acenaphthene	0/1	7.52E-01	6.47E+01		No		mg/kg
Acenaphthylene	0/1	7.52E-01					mg/kg
Aniline	0/1	7.52E-01	9.26E+04	1.64E+00	No	No	mg/kg
Anthracene	0/1	7.52E-01	6.57E+02		No		mg/kg
Benzenemethanol	0/1	1.50E+00	5.93E+02		No		mg/kg
Benzidine	0/1	7.52E-01	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzo(ghi)perylene	0/1	7.52E-01					mg/kg
Benzoic acid	0/1	3.70E+00	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/1	7.52E-01					mg/kg
Bis(2-chloroethyl) ether	0/1	7.52E-01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/1	7.52E-01		1.23E-01		Yes	mg/kg
Bis(2-ethylhexyl)phthalate	0/1	7.52E-01	1.40E+01	2.84E-01	No	Yes	mg/kg
Butyl benzyl phthalate	0/1	7.52E-01	3.73E+02		No		mg/kg
Carbazole	0/1	7.52E-01		6.14E-01		Yes	mg/kg
Di-n-butyl phthalate	0/1	7.52E-01	2.64E+02		No		mg/kg
ctylphthalate	0/1	7.52E-01	4.92E+01		No		mg/kg
(a,h)anthracene	0/1	7.52E-01		8.49E-04		Yes	mg/kg
Dibenzofuran	0/1	7.52E-01	6.39E+00		No		mg/kg
Diethyl phthalate	0/1	7.52E-01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/1	7.52E-01	2.46E+04		No		mg/kg
Diphenyldiazene	0/1	7.52E-01		8.51E-02		Yes	mg/kg
Fluorene	0/1	7.52E-01	6.39E+01		No		mg/kg
Hexachlorobenzene	0/1	7.52E-01	1.28E+00	5.85E-03	No	Yes	mg/kg
Hexachlorobutadiene	0/1	7.52E-01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/1	7.52E-01	1.12E+01		No		mg/kg
Hexachloroethane	0/1	7.52E-01	1.60E+00	6.68E-01	No	Yes	mg/kg
Indeno(1,2,3-cd)pyrene	0/1	7.52E-01		8.49E-03		Yes	mg/kg
Isophorone	0/1	7.52E-01	3.20E+02	9.85E+00	No	No	mg/kg
N-Nitroso-di-n-propylamine	0/1	7.52E-01		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/1	7.52E-01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/1	7.52E-01		1.04E+00		No	mg/kg
Naphthalene	0/1	7.52E-01	8.10E+01		No		mg/kg
Nitrobenzene	0/1	7.52E-01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/1	7.52E-01					mg/kg
PCB-1016	0/1	1.90E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/1	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/1	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/1	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/1	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/1	1.90E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1260	0/1	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/1	1.90E-02					mg/kg
Pentachlorophenol	0/1	3.70E+00	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/1	7.52E-01	1.48E+03		No		mg/kg
Phenol-d5	0/1	7.52E-01					mg/kg
Pyridine	0/1	7.52E-01	1.60E+00		No		mg/kg
p-Terphenyl-d14	0/1	7.52E-01					mg/kg
Americium-241	0/1	1.00E-01		1.49E+00		No	pCi/g
Cesium-137	0/1	1.00E-01		1.56E-02		Yes	pCi/g
[illegible]nium-237	0/1	1.00E-01		6.82E-02		Yes	pCi/g
[illegible]ium-239	0/1	1.00E-01		1.96E+00		No	pCi/g
[illegible]m-235	0/1	1.00E-01		1.22E-01		No	pCi/g

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Southwest MEDIA=Subsurface soil ------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/40	1.00E+00	2.33E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/30	8.00E-01	3.32E+01	1.89E-01	No	Yes	mg/kg
1,1,1-Trichloroethane	0/30	8.00E-01	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/30	8.00E-01		2.47E-02		Yes	mg/kg
1,1-Dichloroethane	0/30	8.00E-01	1.16E-01		Yes		mg/kg
1,1-Dichloroethene	0/41	1.10E+00	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/30	8.00E-01	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/40	7.30E+00	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/30	8.00E-01	5.70E-01	7.49E-05	Yes	Yes	mg/kg
1,2-Dichlorobenzene	0/40	7.30E+00	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/30	8.00E-01	4.62E+00	4.49E-02	No	Yes	mg/kg
1,2-Dichloropropane	0/30	8.00E-01	2.09E+00	8.75E-02	No	Yes	mg/kg
1,3-Dichlorobenzene	0/40	7.30E+00	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/40	7.30E+00	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/40	7.30E+00	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/23	3.45E+00					mg/kg
2,4,6-Trichlorophenol	0/40	7.30E+00		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/40	7.30E+00	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/40	7.30E+00	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/40	3.70E+01	5.28E+00		Yes		mg/kg
2,4-Dinitrotoluene	0/40	7.30E+00	4.73E+00	2.09E-02	Yes	Yes	mg/kg
2,6-Dinitrotoluene	0/40	7.30E+00	2.37E+00	2.09E-02	Yes	Yes	mg/kg
2-Butanone	0/30	2.00E+01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/30	8.00E-01	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/30	2.00E+00	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/40	7.30E+00	1.28E+02		No		mg/kg
2-Chlorophenol	0/40	7.30E+00	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/23	3.45E+00					mg/kg
2-Fluorophenol	0/23	3.45E+00					mg/kg
2-Methyl-4,6-dinitrophenol	0/40	3.70E+01					mg/kg
2-Methylnaphthalene	0/40	7.30E+00					mg/kg
2-Methylphenol	0/40	7.30E+00	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/40	3.70E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/40	7.30E+00					mg/kg
2-Propanol	0/30	8.00E+00					mg/kg
3,3'-Dichlorobenzidine	0/40	1.40E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/40	3.70E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/40	7.30E+00	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/40	1.40E+01					mg/kg
4-Chlorobenzenamine	0/40	1.40E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/40	7.30E+00					mg/kg
4-Methyl-2-pentanone	0/30	8.00E+00	4.96E+01		No		mg/kg
4-Methylphenol	0/40	7.30E+00	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/40	3.70E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/40	3.70E+01	1.64E+02		No		mg/kg
Acrolein	0/30	2.00E+01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/30	2.00E+01	1.38E-01	4.04E-03	Yes	Yes	mg/kg
Aniline	0/23	3.45E+00	9.26E+04	1.64E+00	No	Yes	mg/kg
Benzene	0/30	8.00E-01	2.44E+00	1.31E-01	No	Yes	mg/kg
Benzenemethanol	0/40	1.40E+01	5.93E+02		No		mg/kg
Benzidine	0/23	3.45E+00	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/40	3.70E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/40	7.30E+00					mg/kg
Bis(2-chloroethyl) ether	0/40	7.30E+00		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/40	7.30E+00		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/30	8.00E-01	2.63E+01	1.23E-01	No	Yes	mg/kg
Bromoform	0/30	8.00E-01	1.72E+01	6.23E-01	No	Yes	mg/kg
Bromomethane	0/30	2.00E+00	2.92E-01		Yes		mg/kg
Carbazole	0/23	3.45E+00		6.14E-01		Yes	mg/kg
Carbon tetrachloride	0/30	8.00E-01	3.62E-01	3.18E-02	Yes	Yes	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=Southwest MEDIA=Subsurface soil
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Chlorobenzene	0/30	8.00E-01	6.54E+00		No		mg/kg
Chloroethane	0/30	2.00E+00	2.11E+02		No		mg/kg
Chloromethane	0/30	2.00E+00		1.47E-01		Yes	mg/kg
Dibromochloromethane	0/30	8.00E-01	1.72E+01	5.86E-02	No	Yes	mg/kg
Dibromomethane	0/30	8.00E-01	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/30	8.00E-01	4.48E+00		No		mg/kg
Dimethyl phthalate	0/40	7.30E+00	2.46E+04		No		mg/kg
Dimethylbenzene	0/30	8.00E-01	2.49E+03		No		mg/kg
Diphenyldiazene	0/23	3.45E+00		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/30	2.00E+01					mg/kg
Ethyl methacrylate	0/30	8.00E-01	9.97E+01		No		mg/kg
Ethylbenzene	0/30	8.00E-01	1.01E+02		No		mg/kg
Hexachlorobenzene	0/40	7.30E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/40	7.30E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/40	7.30E+00	1.12E+01		No		mg/kg
Hexachloroethane	0/40	7.30E+00	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Isophorone	0/40	7.30E+00	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/30	3.80E+00	1.04E-01		Yes		mg/kg
Methyl methacrylate	0/30	8.00E-01	8.86E+01		No		mg/kg
N-Nitrosodimethylamine	0/23	3.45E+00		1.84E-04		Yes	mg/kg
Nitrobenzene	0/40	7.30E+00	1.40E-01		Yes		mg/kg
[illegible]enzene-d5	0/23	3.45E+00					mg/kg
[illegible]16	0/6	2.10E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-[illegible]221	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/6	2.10E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1262	0/6	2.10E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/6	2.10E-02					mg/kg
Pentachloroethane	0/30	8.00E-01					mg/kg
Pentachlorophenol	0/40	3.70E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/40	7.30E+00	1.48E+03		No		mg/kg
Phenol-d5	0/23	3.45E+00					mg/kg
Pyridine	0/23	3.45E+00	1.60E+00		Yes		mg/kg
Styrene	0/30	8.00E-01	1.92E+02		No		mg/kg
Tetrachloroethene	0/30	8.00E-01	1.34E+01	1.44E-01	No	Yes	mg/kg
Trichlorofluoromethane	0/30	8.00E-01	4.83E+01		No		mg/kg
cis-1,3-Dichloropropene	0/30	8.00E-01					mg/kg
p-Terphenyl-d14	0/23	3.45E+00					mg/kg
trans-1,3-Dichloropropene	0/30	8.00E-01					mg/kg
trans-1,4-Dichloro-2-butene	0/30	8.00E-01					mg/kg

SECTOR=Southwest MEDIA=Surface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/4	1.00E+00	2.33E+01		No		mg/kg
Selenium	0/4	1.00E+00	1.21E+01		No		mg/kg
1,1,1,2-Tetrachloroethane	0/1	5.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/1	5.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/1	5.00E-03		2.47E-02		No	mg/kg
1[illegible]-Trichloroethane	0/1	5.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
[illegible]hloroethane	0/1	5.00E-03	1.16E-01		No		mg/kg
1[illegible]hloroethene	0/1	6.00E-01	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/1	5.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------ SECTOR=Southwest MEDIA=Surface soil ------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
1,2,4-Trichlorobenzene	0/5	7.30E+00	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/1	5.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/5	7.30E+00	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/1	5.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/1	5.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/5	7.30E+00	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/5	7.30E+00	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/5	7.30E+00	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/4	3.45E+00					mg/kg
2,4,6-Trichlorophenol	0/5	7.30E+00		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/5	7.30E+00	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/5	7.30E+00	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/5	3.70E+01	5.28E+00		Yes		mg/kg
2,4-Dinitrotoluene	0/5	7.30E+00	4.73E+00	2.09E-02	Yes	Yes	mg/kg
2,6-Dinitrotoluene	0/5	7.30E+00	2.37E+00	2.09E-02	Yes	Yes	mg/kg
2-Butanone	0/1	1.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/1	5.00E-03	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/1	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/5	7.30E+00	1.28E+02		No		mg/kg
2-Chlorophenol	0/5	7.30E+00	7.99E+00		No		mg/kg
2-Fluoro-1,1'-biphenyl	0/4	3.45E+00					mg/kg
2-Fluorophenol	0/4	3.45E+00					mg/kg
2-Hexanone	0/1	5.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/5	3.70E+01					mg/kg
2-Methylnaphthalene	0/5	7.30E+00					mg/kg
2-Methylphenol	0/5	7.30E+00	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/5	3.70E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/5	7.30E+00					mg/kg
2-Propanol	0/1	5.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/5	1.40E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/5	3.70E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/5	7.30E+00	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/5	1.40E+01					mg/kg
4-Chlorobenzenamine	0/5	1.40E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/5	7.30E+00					mg/kg
4-Methyl-2-pentanone	0/1	5.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/5	7.30E+00	9.77E+00		No		mg/kg
4-Nitrobenzenamine	0/5	3.70E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/5	3.70E+01	1.64E+02		No		mg/kg
Acetone	0/1	1.00E-01	1.14E+02		No		mg/kg
Acrolein	0/1	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/1	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Aniline	0/4	3.45E+00	9.26E+04	1.64E+00	No	Yes	mg/kg
Benzene	0/1	5.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/5	1.40E+01	5.93E+02		No		mg/kg
Benzidine	0/4	3.45E+00	6.81E+00	5.91E-05	No	Yes	mg/kg
Benzoic acid	0/5	3.70E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/5	7.30E+00					mg/kg
Bis(2-chloroethyl) ether	0/5	7.30E+00		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/5	7.30E+00		1.23E-01		Yes	mg/kg
Bromodichloromethane	0/1	5.00E-03	2.63E+01	1.23E-01	No	No	mg/kg
Bromoform	0/1	5.00E-03	1.72E+01	6.23E-01	No	No	mg/kg
Bromomethane	0/1	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/5	7.30E+00	3.73E+02		No		mg/kg
Carbazole	0/4	3.45E+00		6.14E-01		Yes	mg/kg
Carbon disulfide	0/1	5.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/1	5.00E-03	3.62E-01	3.18E-02	No	No	
Chlorobenzene	0/1	5.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/1	1.00E-02	2.11E+02		No		mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=Southwest MEDIA=Surface soil -------------------------------------
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Chloroform	0/1	5.00E-03	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/1	1.00E-02		1.47E-01		No	mg/kg
Di-n-butyl phthalate	0/5	7.30E+00	2.64E+02		No		mg/kg
Di-n-octylphthalate	0/5	7.30E+00	4.92E+01		No		mg/kg
Dibromochloromethane	0/1	5.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/1	5.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/1	5.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/5	7.30E+00	1.97E+03		No		mg/kg
Dimethyl phthalate	0/5	7.30E+00	2.46E+04		No		mg/kg
Dimethylbenzene	0/1	5.00E-03	2.49E+03		No		mg/kg
Diphenyldiazene	0/4	3.45E+00		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/1	1.00E-01					mg/kg
Ethyl methacrylate	0/1	5.00E-03	9.97E+01		No		mg/kg
Ethylbenzene	0/1	5.00E-03	1.01E+02		No		mg/kg
Hexachlorobenzene	0/5	7.30E+00	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/5	7.30E+00	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/5	7.30E+00	1.12E+01		No		mg/kg
Hexachloroethane	0/5	7.30E+00	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Iodomethane	0/1	5.00E-03					mg/kg
Isophorone	0/5	7.30E+00	3.20E+02	9.85E+00	No	No	mg/kg
Methacrylonitrile	0/1	2.70E-02	1.04E-01		No		mg/kg
M[illegible] methacrylate	0/1	5.00E-03	8.86E+01		No		mg/kg
M[illegible]ene chloride	0/1	5.00E-03	6.81E+01	6.90E-01	No	No	mg/kg
N-N[illegible]roso-di-n-propylamine	0/5	7.30E+00		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/4	3.45E+00		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/5	7.30E+00		1.04E+00		Yes	mg/kg
Nitrobenzene	0/5	7.30E+00	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/4	3.45E+00					mg/kg
PCB-1016	0/2	1.90E-02	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1232	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1242	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1248	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1254	0/2	1.90E-02	6.74E-02	1.05E-02	No	Yes	mg/kg
PCB-1262	0/2	1.90E-02		1.05E-02		Yes	mg/kg
PCB-1268	0/2	1.90E-02					mg/kg
Pentachloroethane	0/1	5.00E-03					mg/kg
Pentachlorophenol	0/5	3.70E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/5	7.30E+00	1.48E+03		No		mg/kg
Phenol-d5	0/4	3.45E+00					mg/kg
Pyridine	0/4	3.45E+00	1.60E+00		Yes		mg/kg
Styrene	0/1	5.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/1	5.00E-03	1.34E+01	1.44E-01	No	No	mg/kg
Trichloroethene	0/1	6.00E-01	1.41E+00	1.10E-01	No	Yes	mg/kg
Trichlorofluoromethane	0/1	5.00E-03	4.83E+01		No		mg/kg
Vinyl acetate	0/1	5.00E-02	5.40E+01		No		mg/kg
Vinyl chloride	0/1	6.00E-01		1.16E-05		Yes	mg/kg
cis-1,2-Dichloroethene	0/1	6.00E-01	1.34E+01		No		mg/kg
cis-1,3-Dichloropropene	0/1	5.00E-03					mg/kg
p-Terphenyl-d14	0/4	3.45E+00					mg/kg
trans-1,2-Dichloroethene	0/1	6.00E-01	2.67E+01		No		mg/kg
trans-1,3-Dichloropropene	0/1	5.00E-03					mg/kg
trans-1,4-Dichloro-2-butene	0/1	5.00E-03					mg/kg
Americium-241	0/3	1.00E-01		1.49E+00		No	pCi/g

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

------------------------------------- SECTOR=West MEDIA=Subsurface soil -------------------------------------

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/17	1.00E+00	2.33E+01		No		mg/kg
Thallium	0/17	6.00E-01					mg/kg
1,1,1,2-Tetrachloroethane	0/6	6.00E-03	3.32E+01	1.89E-01	No	No	mg/kg
1,1,1-Trichloroethane	0/6	6.00E-03	8.44E+01		No		mg/kg
1,1,2,2-Tetrachloroethane	0/6	6.00E-03		2.47E-02		No	mg/kg
1,1,2-Trichloroethane	0/6	6.00E-03	4.48E+00	7.79E-02	No	No	mg/kg
1,1-Dichloroethane	0/6	6.00E-03	1.16E-01		No		mg/kg
1,1-Dichloroethene	0/8	1.00E+00	1.20E+01	1.83E-03	No	Yes	mg/kg
1,2,3-Trichloropropane	0/6	6.00E-03	6.64E+00	9.11E-04	No	Yes	mg/kg
1,2,4-Trichlorobenzene	0/17	1.65E+01	2.54E+01		No		mg/kg
1,2-Dibromoethane	0/6	6.00E-03	5.70E-01	7.49E-05	No	Yes	mg/kg
1,2-Dichlorobenzene	0/17	1.65E+01	8.73E+01		No		mg/kg
1,2-Dichloroethane	0/6	6.00E-03	4.62E+00	4.49E-02	No	No	mg/kg
1,2-Dichloropropane	0/6	6.00E-03	2.09E+00	8.75E-02	No	No	mg/kg
1,3-Dichlorobenzene	0/17	1.65E+01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/17	1.65E+01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/17	1.65E+01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/15	1.65E+01					mg/kg
2,4,6-Trichlorophenol	0/17	1.65E+01		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/17	1.65E+01	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/17	1.65E+01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/17	4.00E+01	5.28E+00		Yes		mg
2,4-Dinitrotoluene	0/17	1.65E+01	4.73E+00	2.09E-02	Yes	Yes	m
2,6-Dinitrotoluene	0/17	1.65E+01	2.37E+00	2.09E-02	Yes	Yes	m
2-Butanone	0/6	1.00E-01	2.97E+02		No		mg/kg
2-Chloro-1,3-butadiene	0/6	6.00E-03	5.00E+00		No		mg/kg
2-Chloroethyl vinyl ether	0/6	1.00E-02	2.77E+01		No		mg/kg
2-Chloronaphthalene	0/17	1.65E+01	1.28E+02		No		mg/kg
2-Chlorophenol	0/17	1.65E+01	7.99E+00		Yes		mg/kg
2-Fluoro-1,1'-biphenyl	0/15	1.65E+01					mg/kg
2-Fluorophenol	0/15	1.65E+01					mg/kg
2-Hexanone	0/6	6.00E-02					mg/kg
2-Methyl-4,6-dinitrophenol	0/17	4.00E+01					mg/kg
2-Methylphenol	0/17	1.65E+01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/17	4.00E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/17	1.65E+01					mg/kg
2-Propanol	0/6	6.00E-02					mg/kg
3,3'-Dichlorobenzidine	0/17	1.65E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/17	4.00E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/17	1.65E+01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/17	1.65E+01					mg/kg
4-Chlorobenzenamine	0/17	1.65E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/17	1.65E+01					mg/kg
4-Methyl-2-pentanone	0/6	6.00E-02	4.96E+01		No		mg/kg
4-Methylphenol	0/17	1.65E+01	9.77E+00		Yes		mg/kg
4-Nitrobenzenamine	0/17	4.00E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/17	4.00E+01	1.64E+02		No		mg/kg
Acenaphthylene	0/17	1.65E+01					mg/kg
Acrolein	0/6	1.00E-01	5.79E-03		Yes		mg/kg
Acrylonitrile	0/6	1.00E-01	1.38E-01	4.04E-03	No	Yes	mg/kg
Aniline	0/15	1.65E+01	9.26E+04	1.64E+00	No	Yes	mg/kg
Benzene	0/6	6.00E-03	2.44E+00	1.31E-01	No	No	mg/kg
Benzenemethanol	0/17	1.65E+01	5.93E+02		No		mg/kg
Benzidine	0/15	1.65E+01	6.81E+00	5.91E-05	Yes	Yes	mg/kg
Benzoic acid	0/17	4.00E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/17	1.65E+01					mg/kg
Bis(2-chloroethyl) ether	0/17	1.65E+01		7.54E-03		Yes	m
Bis(2-chloroisopropyl)ether	0/17	1.65E+01		1.23E-01		Yes	m
Bromodichloromethane	0/6	6.00E-03	2.63E+01	1.23E-01	No	No	mg
Bromoform	0/6	6.00E-03	1.72E+01	6.23E-01	No	No	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=West MEDIA=Subsurface soil (continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Bromomethane	0/6	1.00E-02	2.92E-01		No		mg/kg
Butyl benzyl phthalate	0/17	1.65E+01	3.73E+02		No		mg/kg
Carbazole	0/15	1.65E+01		6.14E-01		Yes	mg/kg
Carbon disulfide	0/6	6.00E-03	6.90E+01		No		mg/kg
Carbon tetrachloride	0/6	6.00E-03	3.62E-01	3.18E-02	No	No	mg/kg
Chlorobenzene	0/6	6.00E-03	6.54E+00		No		mg/kg
Chloroethane	0/6	1.00E-02	2.11E+02		No		mg/kg
Chloroform	0/6	6.00E-03	3.11E+00	6.81E-02	No	No	mg/kg
Chloromethane	0/6	1.00E-02		1.47E-01		No	mg/kg
Di-n-octylphthalate	0/17	1.65E+01	4.92E+01		No		mg/kg
Dibromochloromethane	0/6	6.00E-03	1.72E+01	5.86E-02	No	No	mg/kg
Dibromomethane	0/6	6.00E-03	1.11E+01		No		mg/kg
Dichlorodifluoromethane	0/6	6.00E-03	4.48E+00		No		mg/kg
Diethyl phthalate	0/17	1.65E+01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/17	1.65E+01	2.46E+04		No		mg/kg
Dimethylbenzene	0/6	6.00E-03	2.49E+03		No		mg/kg
Diphenyldiazene	0/15	1.65E+01		8.51E-02		Yes	mg/kg
Ethyl cyanide	0/6	1.00E-01					mg/kg
Ethyl methacrylate	0/6	6.00E-03	9.97E+01		No		mg/kg
Ethylbenzene	0/6	6.00E-03	1.01E+02		No		mg/kg
Hexachlorobenzene	0/17	1.65E+01	1.28E+00	5.85E-03	Yes	Yes	mg/kg
[illegible]lorobutadiene	0/17	1.65E+01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
[illegible]lorocyclopentadiene	0/17	1.65E+01	1.12E+01		Yes		mg/kg
Hexachloroethane	0/17	1.65E+01	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Iodomethane	0/6	6.00E-03					mg/kg
Isophorone	0/17	1.65E+01	3.20E+02	9.85E+00	No	Yes	mg/kg
Methacrylonitrile	0/6	3.10E-02	1.04E-01		No		mg/kg
Methyl methacrylate	0/6	6.00E-03	8.86E+01		No		mg/kg
N-Nitroso-di-n-propylamine	0/17	1.65E+01		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/15	1.65E+01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/17	1.65E+01		1.04E+00		Yes	mg/kg
Nitrobenzene	0/17	1.65E+01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/15	1.65E+01					mg/kg
PCB-1016	0/9	2.10E-01	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/9	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1232	0/9	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1242	0/9	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1248	0/9	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1262	0/9	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1268	0/9	2.10E-01					mg/kg
Pentachloroethane	0/6	6.00E-03					mg/kg
Pentachlorophenol	0/17	4.00E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/17	1.65E+01	1.48E+03		No		mg/kg
Phenol-d5	0/15	1.65E+01					mg/kg
Pyridine	0/15	1.65E+01	1.60E+00		Yes		mg/kg
Styrene	0/6	6.00E-03	1.92E+02		No		mg/kg
Tetrachloroethene	0/6	6.00E-03	1.34E+01	1.44E-01	No	No	mg/kg
Trichlorofluoromethane	0/6	6.00E-03	4.83E+01		No		mg/kg
Vinyl acetate	0/6	6.00E-02	5.40E+01		No		mg/kg
Vinyl chloride	0/8	1.00E+00		1.16E-05		Yes	mg/kg
cis-1,3-Dichloropropene	0/6	6.00E-03					mg/kg
p-Terphenyl-d14	0/15	1.65E+01					mg/kg
trans-1,3-Dichloropropene	0/6	6.00E-03					mg/kg
trans-1,4-Dichloro-2-butene	0/6	6.00E-03					mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

SECTOR=West MEDIA=Surface soil

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
Cyanide	0/9	1.00E+00	2.33E+01		No		mg/kg
Thallium	0/9	6.00E-01					mg/kg
1,2,4-Trichlorobenzene	0/9	1.65E+01	2.54E+01		No		mg/kg
1,2-Dichlorobenzene	0/9	1.65E+01	8.73E+01		No		mg/kg
1,3-Dichlorobenzene	0/9	1.65E+01	9.85E+01		No		mg/kg
1,4-Dichlorobenzene	0/9	1.65E+01	6.96E+02	2.95E-01	No	Yes	mg/kg
2,4,5-Trichlorophenol	0/9	1.65E+01	1.60E+02		No		mg/kg
2,4,6-Tribromophenol	0/9	1.65E+01					mg/kg
2,4,6-Trichlorophenol	0/9	1.65E+01		8.51E-01		Yes	mg/kg
2,4-Dichlorophenol	0/9	1.65E+01	6.93E+00		Yes		mg/kg
2,4-Dimethylphenol	0/9	1.65E+01	3.20E+01		No		mg/kg
2,4-Dinitrophenol	0/9	4.00E+01	5.28E+00		Yes		mg/kg
2,4-Dinitrotoluene	0/9	1.65E+01	4.73E+00	2.09E-02	Yes	Yes	mg/kg
2,6-Dinitrotoluene	0/9	1.65E+01	2.37E+00	2.09E-02	Yes	Yes	mg/kg
2-Chloronaphthalene	0/9	1.65E+01	1.28E+02		No		mg/kg
2-Chlorophenol	0/9	1.65E+01	7.99E+00		Yes		mg/kg
2-Fluoro-1,1'-biphenyl	0/9	1.65E+01					mg/kg
2-Fluorophenol	0/9	1.65E+01					mg/kg
2-Methyl-4,6-dinitrophenol	0/9	4.00E+01					mg/kg
2-Methylphenol	0/9	1.65E+01	7.99E+01		No		mg/kg
2-Nitrobenzenamine	0/9	4.00E+01	7.29E-02		Yes		mg/kg
2-Nitrophenol	0/9	1.65E+01					mg/kg
3,3'-Dichlorobenzidine	0/9	1.65E+01		2.08E-02		Yes	mg/kg
3-Nitrobenzenamine	0/9	4.00E+01	4.80E+00		Yes		mg/kg
4-Bromophenyl phenyl ether	0/9	1.65E+01	9.27E+01		No		mg/kg
4-Chloro-3-methylphenol	0/9	1.65E+01					mg/kg
4-Chlorobenzenamine	0/9	1.65E+01	6.39E+00		Yes		mg/kg
4-Chlorophenyl phenyl ether	0/9	1.65E+01					mg/kg
4-Methylphenol	0/9	1.65E+01	9.77E+00		Yes		mg/kg
4-Nitrobenzenamine	0/9	4.00E+01	4.80E+00		Yes		mg/kg
4-Nitrophenol	0/9	4.00E+01	1.64E+02		No		mg/kg
Acenaphthylene	0/9	1.65E+01					mg/kg
Aniline	0/9	1.65E+01	9.26E+04	1.64E+00	No	Yes	mg/kg
Benzenemethanol	0/9	1.65E+01	5.93E+02		No		mg/kg
Benzidine	0/9	1.65E+01	6.81E+00	5.91E-05	Yes	Yes	mg/kg
Benzoic acid	0/9	4.00E+01	1.06E+04		No		mg/kg
Bis(2-chloroethoxy)methane	0/9	1.65E+01					mg/kg
Bis(2-chloroethyl) ether	0/9	1.65E+01		7.54E-03		Yes	mg/kg
Bis(2-chloroisopropyl)ether	0/9	1.65E+01		1.23E-01		Yes	mg/kg
Butyl benzyl phthalate	0/9	1.65E+01	3.73E+02		No		mg/kg
Carbazole	0/9	1.65E+01		6.14E-01		Yes	mg/kg
Di-n-octylphthalate	0/9	1.65E+01	4.92E+01		No		mg/kg
Diethyl phthalate	0/9	1.65E+01	1.97E+03		No		mg/kg
Dimethyl phthalate	0/9	1.65E+01	2.46E+04		No		mg/kg
Diphenyldiazene	0/9	1.65E+01		8.51E-02		Yes	mg/kg
Hexachlorobenzene	0/9	1.65E+01	1.28E+00	5.85E-03	Yes	Yes	mg/kg
Hexachlorobutadiene	0/9	1.65E+01	3.20E-01	1.20E-01	Yes	Yes	mg/kg
Hexachlorocyclopentadiene	0/9	1.65E+01	1.12E+01		Yes		mg/kg
Hexachloroethane	0/9	1.65E+01	1.60E+00	6.68E-01	Yes	Yes	mg/kg
Isophorone	0/9	1.65E+01	3.20E+02	9.85E+00	No	Yes	mg/kg
N-Nitroso-di-n-propylamine	0/9	1.65E+01		7.30E-04		Yes	mg/kg
N-Nitrosodimethylamine	0/9	1.65E+01		1.84E-04		Yes	mg/kg
N-Nitrosodiphenylamine	0/9	1.65E+01		1.04E+00		Yes	mg/kg
Nitrobenzene	0/9	1.65E+01	1.40E-01		Yes		mg/kg
Nitrobenzene-d5	0/9	1.65E+01					mg/kg
PCB-1016	0/3	2.10E-01	2.36E-01	1.05E-02	No	Yes	mg/kg
PCB-1221	0/3	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1232	0/3	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1242	0/3	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1248	0/3	2.10E-01		1.05E-02		Yes	mg/kg

Table 1.87. Comparison of maximum quantitation limits to human health risk-based screening criteria by sector and medium

-- SECTOR=West MEDIA=Surface soil --
(continued)

ANALYTE	Freq. of Detection	Max. Nondetected Conc.	HI	ECR	EXCEEDHI	EXCEEDCR	UNITS
PCB-1262	0/3	2.10E-01		1.05E-02		Yes	mg/kg
PCB-1268	0/3	2.10E-01					mg/kg
Pentachlorophenol	0/9	4.00E+01	7.92E+01	1.34E-01	No	Yes	mg/kg
Phenol	0/9	1.65E+01	1.48E+03		No		mg/kg
Phenol-d5	0/9	1.65E+01					mg/kg
Pyridine	0/9	1.65E+01	1.60E+00		Yes		mg/kg
p-Terphenyl-d14	0/9	1.65E+01					mg/kg

Table 1.88. Effect of retention of common laboratory contaminants in the COPCs list on risk characterization with lead included as a COPC

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with lab contaminants	without lab contaminants	with lab contaminants	without lab contaminants
		Current Industrial Worker		
WAG 6	3.3×10^{-4}	3.3×10^{-4}	1,160	1,160
Sector 1	NC	NC	<1	<1
Sector 2	1.7×10^{-5}	1.7×10^{-5}	<1	<1
Sector 3	8.5×10^{-5}	8.5×10^{-5}	<1	<1
Sector 4	3.7×10^{-6}	3.7×10^{-6}	<1	<1
Sector 5	4.0×10^{-4}	4.0×10^{-4}	1.8	1.8
Sector 6	1.1×10^{-3}	1.1×10^{-3}	1.2	1.2
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1,890	1,890
Sector 8	2.4×10^{-4}	2.4×10^{-4}	1.0	1.0
Sector 9	5.2×10^{-6}	5.2×10^{-6}	1.3	1.3
		Future Industrial Worker		
WAG 6 McNairy	4.5×10^{-3}	4.5×10^{-3}	11,500	11,500
WAG 6 RGA	2.7×10^{-3}	2.7×10^{-3}	3,320	3,320
WAG 6 soil	3.3×10^{-4}	3.3×10^{-4}	1,160	1,160
Sector 1	NC	NC	<1	<1
Sector 2	1.7×10^{-5}	1.7×10^{-5}	<1	<1
Sector 3	8.5×10^{-5}	8.5×10^{-5}	<1	<1
Sector 4	3.7×10^{-6}	3.7×10^{-6}	<1	<1
Sector 5	4.0×10^{-4}	4.0×10^{-4}	1.8	1.8
Sector 6	1.1×10^{-3}	1.1×10^{-3}	1.2	1.2
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1,890	1,890
Sector 8	2.4×10^{-4}	2.4×10^{-4}	1.0	1.0
Sector 9	5.2×10^{-6}	5.2×10^{-6}	1.3	1.3

Table 1.88. Effect of retention of common laboratory contaminants in the COPCs list on risk characterization with lead included as a COPC, continued

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with lab contaminants	without lab contaminants	with lab contaminants	without lab contaminants
Future Excavation Worker				
WAG 6	2.6×10^{-3}	2.6×10^{-3}	812	812
Sector 1	2.0×10^{-6}	2.0×10^{-6}	1.7	1.7
Sector 2	1.6×10^{-4}	1.6×10^{-4}	1.2	1.2
Sector 3	1.2×10^{-4}	1.2×10^{-4}	790	790
Sector 4	3.6×10^{-4}	3.6×10^{-4}	767	767
Sector 5	2.3×10^{-4}	2.3×10^{-4}	770	770
Sector 6	5.5×10^{-4}	5.5×10^{-4}	2.1	2.1
Sector 7	1.4×10^{-4}	1.3×10^{-4}	863	863
Sector 8	2.3×10^{-4}	2.3×10^{-4}	1,870	1,870
Sector 9	1.5×10^{-4}	1.5×10^{-4}	1,660	1,660
Future Rural Resident (values for HI are for the child)				
WAG 6 McNairy	3.5×10^{-2}	3.6×10^{-2}	127,000	127,000
WAG 6 RGA	6.4×10^{-2}	6.6×10^{-2}	36,900	36,900
WAG 6 soil	1.3×10^{-2}	1.3×10^{-2}	79,300	79,300
Sector 1	NC	NC	<1	<1
Sector 2	8.1×10^{-4}	8.1×10^{-4}	10.6	10.6
Sector 3	8.2×10^{-3}	8.2×10^{-3}	13.3	13.3
Sector 4	1.9×10^{-4}	1.9×10^{-4}	24.8	24.8
Sector 5	1.4×10^{-2}	1.4×10^{-2}	85.5	85.5
Sector 6	5.2×10^{-2}	5.0×10^{-2}	119	119
Sector 7	1.5×10^{-3}	1.5×10^{-3}	129,000	129,000
Sector 8	2.1×10^{-3}	2.1×10^{-3}	18.8	18.8
Sector 9	2.7×10^{-4}	2.7×10^{-4}	36.8	36.8

Table 1.88. Effect of retention of common laboratory contaminants in the COPCs list on risk characterization with lead included as a COPC, continued

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with lab contaminants	without lab contaminants	with lab contaminants	without lab contaminants
Future Recreational User (values for HI are for the child)				
WAG 6	1.1×10^{-4}	1.1×10^{-4}	2.6	2.6
Sector 1	NC	NC	<1	<1
Sector 2	4.7×10^{-7}	4.7×10^{-7}	<1	<1
Sector 3	5.9×10^{-6}	5.9×10^{-6}	<1	<1
Sector 4	1.5×10^{-7}	1.5×10^{-7}	<1	<1
Sector 5	2.5×10^{-5}	2.5×10^{-5}	<1	<1
Sector 6	3.2×10^{-5}	3.2×10^{-5}	<1	<1
Sector 7	5.1×10^{-7}	5.1×10^{-7}	<1	<1
Sector 8	1.3×10^{-6}	1.3×10^{-6}	<1	<1
Sector 9	2.7×10^{-7}	2.7×10^{-7}	<1	<1

NC = No COPCs with toxicity information

Table 1.89. Comparison of background concentrations to human health risk-based screening criteria

Media=Subsurface soil

Analyte	Media	Background concentration	HI	ELCR	Exceed HI	Exceed ELCR	Units
Aluminum	Subsurface soil	12000.00	7.32E+02		Yes		mg/kg
Antimony	Subsurface soil	0.21	6.35E-02		Yes		mg/kg
Arsenic	Subsurface soil	7.90	6.93E-01	9.23E-03	Yes	Yes	mg/kg
Barium	Subsurface soil	170.00	3.69E+01		Yes		mg/kg
Beryllium	Subsurface soil	0.69	4.01E-01	1.04E-04	Yes	Yes	mg/kg
Cadmium	Subsurface soil	0.21	3.85E-01	2.85E+02	No	No	mg/kg
Calcium	Subsurface soil	6100.00					mg/kg
Cesium-137	Subsurface soil	0.28		1.56E-02		Yes	pCi/g
Chromium (III)	Subsurface soil	43.00	3.31E+01		Yes		mg/kg
Cobalt	Subsurface soil	13.00	2.09E+02		No		mg/kg
Copper	Subsurface soil	25.00	7.36E+01		No		mg/kg
Iron	Subsurface soil	28000.00	3.14E+02		Yes		mg/kg
Lead	Subsurface soil	23.00	1.05E-04		Yes		mg/kg
Magnesium	Subsurface soil	2100.00					mg/kg
Manganese	Subsurface soil	820.00	1.45E+01		Yes		mg/kg
Mercury	Subsurface soil	0.13	1.58E-01		No		mg/kg
Nickel	Subsurface soil	22.00	3.40E+01		No		mg/kg
Potassium	Subsurface soil	950.00					mg/kg
Potassium-40	Subsurface soil	16.00		5.33E-02		Yes	pCi/g
Radium-226	Subsurface soil	1.50		2.12E-03		Yes	pCi/g
Selenium	Subsurface soil	0.70	1.21E+01		No		mg/kg
Silver	Subsurface soil	2.70	6.12E+00		No		mg/kg
Sodium	Subsurface soil	340.00					mg/kg
Technetium-99	Subsurface soil	2.80		4.40E+02		No	pCi/g
Thallium	Subsurface soil	0.34					mg/kg
Thorium-228	Subsurface soil	1.60		5.25E-03		Yes	pCi/g
Thorium-230	Subsurface soil	1.40		1.59E+01		No	pCi/g
Thorium-232	Subsurface soil	1.50		1.83E+01		No	pCi/g
Uranium	Subsurface soil	4.60	1.08E+01		No		mg/kg
Uranium-234	Subsurface soil	2.40		1.37E+01		No	pCi/g
Uranium-235	Subsurface soil	0.14		1.22E-01		Yes	pCi/g
Uranium-238	Subsurface soil	1.20		4.72E-01		Yes	pCi/g
Vanadium	Subsurface soil	37.00	5.62E-01		Yes		mg/kg
Zinc	Subsurface soil	60.00	4.01E+02		No		mg/kg

Media=Surface soil

Analyte	Media	Background concentration	HI	ELCR	Exceed HI	Exceed ELCR	Units
Aluminum	Surface soil	13000.00	7.32E+02		Yes		mg/kg
Antimony	Surface soil	0.21	6.35E-02		Yes		mg/kg
Arsenic	Surface soil	12.00	6.93E-01	9.23E-03	Yes	Yes	mg/kg
Barium	Surface soil	200.00	3.69E+01		Yes		mg/kg
Beryllium	Surface soil	0.67	4.01E-01	1.04E-04	Yes	Yes	mg/kg
Cadmium	Surface soil	0.21	3.85E-01	2.85E+02	No	No	mg/kg
Calcium	Surface soil	200000.00					mg/kg
Cesium-137	Surface soil	0.49		1.56E-02		Yes	pCi/g
Chromium (III)	Surface soil	16.00	3.31E+01		No		mg/kg
Cobalt	Surface soil	14.00	2.09E+02		No		mg/kg
Copper	Surface soil	19.00	7.36E+01		No		mg/kg
Iron	Surface soil	28000.00	3.14E+02		Yes		mg/kg
Lead	Surface soil	36.00	1.05E-04		Yes		mg/kg
Magnesium	Surface soil	7700.00					mg/kg
Manganese	Surface soil	1500.00	1.45E+01		Yes		mg/kg
Mercury	Surface soil	0.20	1.58E-01		Yes		mg/kg
Neptunium-237	Surface soil	0.10		6.82E-02		Yes	pCi/g
Nickel	Surface soil	21.00	3.40E+01		No		mg/kg
Plutonium-238	Surface soil	0.07		1.67E-02		Yes	pCi/g
Plutonium-239	Surface soil	0.03		1.35E-01		No	pCi/g
Potassium	Surface soil	1300.00					mg/kg
Potassium-40	Surface soil	16.00		5.33E-02		Yes	pCi/g

Table 1.89. Comparison of background concentrations to human health risk-based screening criteria

Media=Surface soil
(continued)

Analyte	Media	Background concentration	HI	ELCR	Exceed HI	Exceed ELCR	Units
Radium-226	Surface soil	1.50		2.12E-03		Yes	pCi/g
Selenium	Surface soil	0.80	1.21E+01		No		mg/kg
Silver	Surface soil	2.30	6.12E+00		No		mg/kg
Sodium	Surface soil	320.00					mg/kg
Strontium-90	Surface soil	4.70		1.11E+01		No	pCi/g
Technetium-99	Surface soil	2.50		4.40E+02		No	pCi/g
Thallium	Surface soil	0.21					mg/kg
Thorium-228	Surface soil	1.60		5.25E-03		Yes	pCi/g
Thorium-230	Surface soil	1.50		1.59E+01		No	pCi/g
Thorium-232	Surface soil	1.50		1.83E+01		No	pCi/g
Uranium	Surface soil	4.90	1.08E+01		No		mg/kg
Uranium-234	Surface soil	2.50		1.37E+01		No	pCi/g
Uranium-235	Surface soil	0.14		1.22E-01		Yes	pCi/g
Uranium-238	Surface soil	1.20		4.72E-01		Yes	pCi/g
Vanadium	Surface soil	38.00	5.62E-01		Yes		mg/kg
Zinc	Surface soil	65.00	4.01E+02		No		mg/kg

Table 1.90. Effect of using provisional and withdrawn toxicity values on risk characterization with lead included as a COPC

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with provisional and withdrawn toxicity values	without provisional and withdrawn toxicity values	with provisional and withdrawn toxicity values	without provisional and withdrawn toxicity values
Current Industrial Worker				
WAG 6	3.3×10^{-4}	2.6×10^{-4}	1160	1.2
Sector 1	NC	NC	<1	<1
Sector 2	1.7×10^{-5}	1.3×10^{-5}	<1	<1
Sector 3	8.5×10^{-5}	7.0×10^{-5}	<1	<1
Sector 4	3.7×10^{-6}	3.1×10^{-6}	<1	<1
Sector 5	4.0×10^{-4}	3.1×10^{-4}	1.8	<1
Sector 6	1.1×10^{-3}	8.2×10^{-4}	1.2	1.1
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1890	1.1
Sector 8	2.4×10^{-4}	2.4×10^{-4}	1.0	1.0
Sector 9	5.2×10^{-6}	4.9×10^{-6}	1.3	1.0
Future Industrial Worker				
WAG 6 McNairy	4.5×10^{-3}	4.5×10^{-3}	11500	12.4
WAG 6 RGA	2.7×10^{-3}	2.1×10^{-3}	3320	4.8
WAG 6 soil	3.3×10^{-4}	2.6×10^{-4}	1160	1.2
Sector 1	NC	NC	<1	<1
Sector 2	1.7×10^{-5}	1.3×10^{-5}	<1	<1
Sector 3	8.5×10^{-5}	7.0×10^{-5}	<1	<1
Sector 4	3.7×10^{-6}	3.1×10^{-6}	<1	<1
Sector 5	4.0×10^{-4}	3.1×10^{-4}	1.8	<1
Sector 6	1.1×10^{-3}	8.2×10^{-4}	1.2	1.1
Sector 7	1.2×10^{-4}	1.2×10^{-4}	1890	1.1
Sector 8	2.4×10^{-4}	2.4×10^{-4}	1.0	1.0
Sector 9	5.2×10^{-6}	4.9×10^{-6}	1.3	1.0

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Table 1.90. Effect of using provisional and withdrawn toxicity values on risk characterization with lead included as a COPC, continued

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with provisional and withdrawn toxicity values	without provisional and withdrawn toxicity values	with provisional and withdrawn toxicity values	without provisional and withdrawn toxicity values
Future Excavation Worker				
WAG 6	2.6×10^{-3}	2.5×10^{-3}	812	1.0
Sector 1	2.0×10^{-6}	2.0×10^{-6}	1.7	<1
Sector 2	1.6×10^{-4}	1.4×10^{-4}	1.2	1.1
Sector 3	1.2×10^{-4}	1.1×10^{-4}	790	<1
Sector 4	3.6×10^{-4}	3.4×10^{-4}	767	<1
Sector 5	2.3×10^{-4}	2.1×10^{-4}	770	<1
Sector 6	5.5×10^{-4}	4.2×10^{-4}	2.1	2.0
Sector 7	1.4×10^{-4}	1.3×10^{-4}	863	1.1
Sector 8	2.3×10^{-4}	2.3×10^{-4}	1870	3.3
Sector 9	1.5×10^{-4}	1.5×10^{-4}	1660	2.0
Future Rural Resident (values for HI are for the child)				
WAG 6 McNairy	3.6×10^{-2}	3.6×10^{-2}	127000	132
WAG 6 RGA	6.6×10^{-2}	5.8×10^{-2}	36900	53.5
WAG 6 soil	1.3×10^{-2}	9.3×10^{-3}	79300	47.4
Sector 1	NC	NC	<1	<1
Sector 2	8.1×10^{-4}	6.4×10^{-4}	10.6	10.6
Sector 3	8.2×10^{-3}	7.5×10^{-3}	13.3	13.3
Sector 4	1.9×10^{-4}	1.7×10^{-4}	24.8	10.1
Sector 5	1.4×10^{-2}	9.3×10^{-3}	85.5	29.3
Sector 6	5.2×10^{-2}	3.7×10^{-2}	119	111
Sector 7	1.5×10^{-3}	1.4×10^{-3}	129000	13.3
Sector 8	2.1×10^{-3}	1.9×10^{-3}	18.8	18.8
Sector 9	2.7×10^{-4}	2.5×10^{-4}	36.8	22.5

Table 1.90. Effect of using provisional and withdrawn toxicity values on risk characterization with lead included as a COPC, continued

SWMU	Total Excess Lifetime Cancer Risk		Total Hazard Index	
	with provisional and withdrawn toxicity values	without provisional and withdrawn toxicity values	with provisional and withdrawn toxicity values	without provisional and withdrawn toxicity values
Future Recreational User (values for HI are for the child)				
WAG 6	1.1×10^{-4}	4.7×10^{-5}	2.6	<1
Sector 1	NC	NC	<1	<1
Sector 2	4.7×10^{-7}	3.8×10^{-7}	<1	<1
Sector 3	5.9×10^{-6}	5.4×10^{-6}	<1	<1
Sector 4	1.5×10^{-7}	1.4×10^{-7}	<1	<1
Sector 5	2.5×10^{-5}	1.1×10^{-5}	<1	<1
Sector 6	3.2×10^{-5}	1.6×10^{-5}	<1	<1
Sector 7	5.1×10^{-7}	4.4×10^{-7}	<1	<1
Sector 8	1.3×10^{-6}	1.0×10^{-6}	<1	<1
Sector 9	2.7×10^{-7}	2.5×10^{-7}	<1	<1

NC = No COPCs with toxicity information

531309

Table 1.91. Summary of uncertainties affecting risk assessment

Description of Uncertainty	Estimated Effect[a]		
	Small	Moderate	Large
Uncertainties Related to Data and Data Evaluation			
Inclusion of infrequently detected analytes	✔		
Inclusion of infrequently analyzed for analytes	✔		
Lack of consideration of temporal patterns in detection of analytes	✔		
Quantitation Limits for some analytes exceeding their respective human health risk-based screening criteria	✔		
Lack of historical data with current data collected as part of the RI	✔		
Inclusion of common laboratory contaminants in the data	✔		
Lack of analyte comparison to concentrations of these analytes in associated blanks	✔		
Removal of analytes from the COPC list on the basis of a toxicity screen	✔		
Removal of inorganic analytes in soil from the COPC list on the basis of a comparison to background concentrations	✔		
Characterization of exposure point concentrations for environmental media under current conditions	✔		
Characterization of exposure point concentrations for environmental media under future conditions	✔		
Migration of groundwater to off-site receptors underestimating risk		✔	
Use of total water samples versus filtered	✔		
Uncertainties Related to Exposure Assessment			
Incorporation of biota fate and transport modeling into risk estimates	✔		

531310

Table 1.91. Summary of uncertainties affecting risk assessment, continued

Description of Uncertainty	Estimated Effect[a]		
	Small	Moderate	Large
Use of reasonable maximum exposure parameters versus average exposure parameters for all exposure routes and pathways	✔		
Evaluation of groundwater separately from soil in future land use scenarios	✔		
Lack of consideration of livestock scenarios	✔		
Lack of consideration of an intruder/infrequent recreator land use scenario	✔		
Summation of risk across areas and across scenarios	✔		
Use of KyDEP default values instead of EPA default values when estimating dermal absorbed dose for total ELCR	✔		
Use of site-specific exposure values on systemic toxicity for the excavation worker	✔		
Use of site-specific exposure values on systemic toxicity and ELCR for the current industrial worker	✔		
Use of site-specific exposure values on ELCR for the excavation worker		✔	
Use of chronic toxicity values for the excavation worker use scenario	✔		
Uncertainties Related to Toxicity Assessment			
Use of provisional or withdrawn toxicity values for systemic toxicity			✔
Use of provisional or withdrawn toxicity values for ELCR	✔		
Extrapolation of administered toxicity values to inhalation toxicity values	✔		
Derivation of toxicity values			
Chemicals		✔	
Radionuclides	✔		

531311

Table 1.91. Summary of uncertainties affecting risk assessment, continued

Description of Uncertainty	Estimated Effect[a]		
	Small	Moderate	Large
Selection of toxicity values for polychlorinated biphenyls	✔		
Calculation of absorbed dose toxicity values from administered dose toxicity values	✔		
Uncertainties Related to Risk Characterization			
Combination of chemical-specific risk values and pathway risk values	✔		
Combination of risk from chemical exposure to those from radionuclide exposure		✔	

[a] Definitions of effects are:

Small	Uncertainty should not cause the risk estimate to vary by more than one order of magnitude
Moderate	Uncertainty should cause risk estimate to vary between one and two orders of magnitude
Large	Uncertainty may cause the risk estimate to vary by more than two orders of magnitude

531312

Table 1.92 Remedial goal options for WAG 6

-- SECTOR=McNairy LANDUSE=Future Industrial MEDIA=Ground water --

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		8.98E+01		9.10E-01	9.9E+00	9.9E+01	3.0E+02				mg/L
rsenic	5.0E-02	2.63E-01	1.39E-03	8.66E+00	3.0E-03	3.0E-02	9.1E-02	1.9E-04	1.9E-03	1.9E-02	mg/L
eryllium	4.0E-03	8.37E-03	1.71E-04	2.23E-02				4.9E-05	4.9E-04	4.9E-03	mg/L
hromium		2.45E-01		5.66E-01	4.3E-02	4.3E-01	1.3E+00				mg/L
ron		2.17E+02		7.26E+00	3.0E+00	3.0E+01	9.0E+01				mg/L
ead	0.0E+00	1.14E-01		1.14E+04	1.0E-06	1.0E-05	3.0E-05				mg/L
anganese		1.58E+00		3.65E-01	4.3E-01	4.3E+00	1.3E+01				mg/L
anadium		1.02E+00		1.94E+00	5.2E-02	5.2E-01	1.6E+00				mg/L
inc		7.86E+00		2.61E-01	3.0E+00	3.0E+01	9.0E+01				mg/L
,1-Dichloroethene	7.0E-03	7.23E-03	3.22E-05	8.11E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
romodichloromethane	1.0E-01	5.32E-03	1.18E-06	2.66E-03				4.5E-03	4.5E-02	4.5E-01	mg/L
hloroform	1.0E-01	6.75E-03	1.21E-06	7.67E-03				5.6E-03	5.6E-02	5.6E-01	mg/L
i-n-octylphthalate		5.59E-03		3.00E-01	1.9E-03	1.9E-02	5.6E-02				mg/L
ibromochloromethane	1.0E-01	4.00E-03	1.20E-06	2.00E-03				3.3E-03	3.3E-02	3.3E-01	mg/L
etrachloroethene	5.0E-03	9.74E-03	4.19E-06	2.23E-02				2.3E-03	2.3E-02	2.3E-01	mg/L
richloroethene	5.0E-03	1.62E-02	1.05E-06	3.67E-02				1.5E-02	1.5E-01	1.5E+00	mg/L
inyl chloride	2.0E-03	1.40E-02	1.04E-04					1.4E-04	1.4E-03	1.4E-02	mg/L
esium-137		1.23E+01	2.43E-06					5.1E+00	5.1E+01	5.1E+02	pCi/L
ead-210		4.21E+02	2.66E-03					1.6E-01	1.6E+00	1.6E+01	pCi/L
ead-212		2.25E+01	2.53E-06					8.9E+00	8.9E+01	8.9E+02	pCi/L
eptunium-237		8.08E+00	1.51E-05					5.3E-01	5.3E+00	5.3E+01	pCi/L
lutonium-239		1.33E+00	2.63E-06					5.1E-01	5.1E+00	5.1E+01	pCi/L
otassium-40		6.80E+01	5.31E-06					1.3E+01	1.3E+02	1.3E+03	pCi/L
echnetium-99		3.10E+02	2.71E-06					1.1E+02	1.1E+03	1.1E+04	pCi/L
horium-228		1.23E+00	1.78E-06					6.9E-01	6.9E+00	6.9E+01	pCi/L
horium-234		7.19E+02	8.67E-05					8.3E+00	8.3E+01	8.3E+02	pCi/L
ranium-235		1.16E+01	3.40E-06					3.4E+00	3.4E+01	3.4E+02	pCi/L

-- SECTOR=McNairy LANDUSE=Residential MEDIA=Ground water --

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		8.98E+01		1.00E+01	9.0E-01	9.0E+00	2.7E+01				mg/L
rsenic	5.0E-02	2.63E-01	1.19E-02	9.83E+01	2.7E-04	2.7E-03	8.0E-03	2.2E-05	2.2E-04	2.2E-03	mg/L
arium	2.0E+00	3.52E-01		5.65E-01	6.2E-02	6.2E-01	1.9E+00				mg/L
eryllium	4.0E-03	8.37E-03	1.19E-03	2.02E-01	4.2E-03	4.2E-02	1.2E-01	7.1E-06	7.1E-05	7.1E-04	mg/L
admium	5.0E-03	1.90E-03		4.03E-01	4.7E-04	4.7E-03	1.4E-02				mg/L
hromium		2.45E-01		5.65E+00	4.3E-03	4.3E-02	1.3E-01				mg/L

531813

Table 1.92 Remedial goal options for WAG 6

-- SECTOR=McNairy LANDUSE=Residential MEDIA=Ground water --
(continued)

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
obalt		7.07E-02		1.34E-01	5.3E-02	5.3E-01	1.6E+00				mg/L
ron		2.17E+02		8.07E+01	2.7E-01	2.7E+00	8.1E+00				mg/L
ead	0.0E+00	1.14E-01		1.27E+05	9.0E-08	9.0E-07	2.7E-06				mg/L
anganese		1.58E+00		2.94E+00	5.4E-02	5.4E-01	1.6E+00				mg/L
ickel	1.0E-01	1.11E-01		6.52E-01	1.7E-02	1.7E-01	5.1E-01				mg/L
elenium	5.0E-02	2.94E-02		7.24E-01	4.1E-03	4.1E-02	1.2E-01				mg/L
anadium		1.02E+00		1.75E+01	5.8E-03	5.8E-02	1.7E-01				mg/L
inc		7.86E+00		3.76E+00	2.1E-01	2.1E+00	6.3E+00				mg/L
,1-Dichloroethene	7.0E-03	7.23E-03	9.11E-04	1.58E-01	4.6E-03	4.6E-02	1.4E-01	7.9E-06	7.9E-05	7.9E-04	mg/L
,2-Dichloroethane	5.0E-03	1.00E-03	1.28E-05	1.50E-01	6.7E-04	6.7E-03	2.0E-02	7.8E-05	7.8E-04	7.8E-03	mg/L
is(2-ethylhexyl)phthalate	6.0E-03	5.21E-03	2.48E-06	3.22E-02				2.1E-03	2.1E-02	2.1E-01	mg/L
romodichloromethane	1.0E-01	5.32E-03	1.44E-05	4.48E-02				3.7E-04	3.7E-03	3.7E-02	mg/L
hloroform	1.0E-01	6.75E-03	4.55E-05	1.22E-01	5.5E-03	5.5E-02	1.7E-01	1.5E-04	1.5E-03	1.5E-02	mg/L
i-n-octylphthalate		5.59E-03		8.27E-01	6.8E-04	6.8E-03	2.0E-02				mg/L
ibromochloromethane	1.0E-01	4.00E-03	1.41E-05	3.23E-02				2.8E-04	2.8E-03	2.8E-02	mg/L
etrachloroethene	5.0E-03	9.74E-03	2.62E-05	1.71E-01	5.7E-03	5.7E-02	1.7E-01	3.7E-04	3.7E-03	3.7E-02	mg/L
richloroethene	5.0E-03	1.62E-02	1.53E-05	4.30E-01	3.8E-03	3.8E-02	1.1E-01	1.1E-03	1.1E-02	1.1E-01	mg/L
inyl chloride	2.0E-03	1.40E-02	2.07E-03					6.8E-06	6.8E-05	6.8E-04	mg/L
is-1,2-Dichloroethene	7.0E-02	1.41E-02		2.62E-01	5.4E-03	5.4E-02	1.6E-01				mg/L
ctinium-228		2.72E+01	1.14E-06					2.4E+01	2.4E+02	2.4E+03	pCi/L
esium-137		1.23E+01	1.46E-05					8.5E-01	8.5E+00	8.5E+01	pCi/L
ead-210		4.21E+02	1.55E-02					2.7E-02	2.7E-01	2.7E+00	pCi/L
ead-212		2.25E+01	1.05E-05					2.1E+00	2.1E+01	2.1E+02	pCi/L
eptunium-237		8.08E+00	9.63E-05					8.4E-02	8.4E-01	8.4E+00	pCi/L
lutonium-239		1.33E+00	1.67E-05					8.0E-02	8.0E-01	8.0E+00	pCi/L
otassium-40		6.80E+01	4.33E-05					1.6E+00	1.6E+01	1.6E+02	pCi/L
echnetium-99		3.10E+02	3.43E-03					9.0E-02	9.0E-01	9.0E+00	pCi/L
horium-228		1.23E+00	8.75E-06					1.4E-01	1.4E+00	1.4E+01	pCi/L
horium-230		1.36E+00	2.02E-06					6.7E-01	6.7E+00	6.7E+01	pCi/L
horium-234		7.19E+02	3.95E-04					1.8E+00	1.8E+01	1.8E+02	pCi/L
ranium-234		1.88E+00	3.31E-06					5.7E-01	5.7E+00	5.7E+01	pCi/L
ranium-235		1.16E+01	2.16E-05					5.4E-01	5.4E+00	5.4E+01	pCi/L
ranium-238		1.26E+00	3.09E-06					4.1E-01	4.1E+00	4.1E+01	pCi/L

531314

Table 1.92 Remedial goal options for WAG 6

SECTOR=RGA LANDUSE=Future Industrial MEDIA=Ground water

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		6.09E+01		6.18E-01	9.9E+00	9.9E+01	3.0E+02				mg/L
ntimony	6.0E-03	1.39E-02		4.02E-01	3.5E-03	3.5E-02	1.0E-01				mg/L
rsenic	5.0E-02	2.91E-02	1.54E-04	9.58E-01	3.0E-03	3.0E-02	9.1E-02	1.9E-04	1.9E-03	1.9E-02	mg/L
eryllium	4.0E-03	1.01E-02	2.07E-04	2.70E-02				4.9E-05	4.9E-04	4.9E-03	mg/L
hromium		1.13E-01		2.61E-01	4.3E-02	4.3E-01	1.3E+00				mg/L
ron		3.88E+02		1.29E+01	3.0E+00	3.0E+01	9.0E+01				mg/L
ead	0.0E+00	3.27E-02		3.28E+03	1.0E-06	1.0E-05	3.0E-05				mg/L
anganese		3.06E+00		7.09E-01	4.3E-01	4.3E+00	1.3E+01				mg/L
itrate	1.0E+01	4.74E+01		2.92E-01	1.6E+01	1.6E+02	4.9E+02				mg/L
anadium		1.54E-01		2.93E-01	5.2E-02	5.2E-01	1.6E+00				mg/L
,1-Dichloroethene	7.0E-03	6.63E-03	2.96E-05	7.45E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
arbon tetrachloride	5.0E-03	7.07E-02	4.32E-05	1.77E+00	4.0E-03	4.0E-02	1.2E-01	1.6E-03	1.6E-02	1.6E-01	mg/L
hloroform	1.0E-01	2.89E-02	5.18E-06	3.28E-02				5.6E-03	5.6E-02	5.6E-01	mg/L
-Nitroso-di-n-propylamine		1.00E-03	2.55E-05					3.9E-05	3.9E-04	3.9E-03	mg/L
etrachloroethene	5.0E-03	2.20E-02	9.43E-06	5.04E-02				2.3E-03	2.3E-02	2.3E-01	mg/L
richloroethene	5.0E-03	8.19E+00	5.31E-04	1.85E+01	4.4E-02	4.4E-01	1.3E+00	1.5E-02	1.5E-01	1.5E+00	mg/L
inyl chloride	2.0E-03	1.33E-01	9.83E-04					1.4E-04	1.4E-03	1.4E-02	mg/L
is-1,2-Dichloroethene	7.0E-02	3.70E-01		3.75E-01	9.9E-02	9.9E-01	3.0E+00				mg/L
mericium-241		1.68E+00	3.44E-06					4.9E-01	4.9E+00	4.9E+01	pCi/L
esium-137		1.09E+01	2.15E-06					5.1E+00	5.1E+01	5.1E+02	pCi/L
ead-210		1.00E+02	6.31E-04					1.6E-01	1.6E+00	1.6E+01	pCi/L
eptunium-237		1.35E+01	2.54E-05					5.3E-01	5.3E+00	5.3E+01	pCi/L
echnetium-99		2.68E+03	2.34E-05					1.1E+02	1.1E+03	1.1E+04	pCi/L
horium-228		7.60E-01	1.10E-06					6.9E-01	6.9E+00	6.9E+01	pCi/L
ranium-238		1.66E+01	6.43E-06					2.6E+00	2.6E+01	2.6E+02	pCi/L

SECTOR=RGA LANDUSE=Residential MEDIA=Ground water

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		6.09E+01		6.81E+00	9.0E-01	9.0E+00	2.7E+01				mg/L
ntimony	6.0E-03	1.39E-02		4.05E+00	3.4E-04	3.4E-03	1.0E-02				mg/L
rsenic	5.0E-02	2.91E-02	1.31E-03	1.09E+01	2.7E-04	2.7E-03	8.0E-03	2.2E-05	2.2E-04	2.2E-03	mg/L
arium	2.0E+00	4.20E-01		6.74E-01	6.2E-02	6.2E-01	1.9E+00				mg/L
eryllium	4.0E-03	1.01E-02	1.44E-03	2.44E-01	4.2E-03	4.2E-02	1.2E-01	7.1E-06	7.1E-05	7.1E-04	mg/L
admium	5.0E-03	1.48E-03		3.15E-01	4.7E-04	4.7E-03	1.4E-02				mg/L
hromium		1.13E-01		2.60E+00	4.3E-03	4.3E-02	1.3E-01				mg/L
obalt		9.87E-02		1.87E-01	5.3E-02	5.3E-01	1.6E+00				mg/L

531315

Table 1.92 Remedial goal options for WAG 6

SECTOR=RGA LANDUSE=Residential MEDIA=Ground water
(continued)

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
opper	1.3E+00	2.20E-01		6.64E-01	3.3E-02	3.3E-01	9.9E-01				mg/L
ron		3.88E+02		1.44E+02	2.7E-01	2.7E+00	8.1E+00				mg/L
ead	0.0E+00	3.27E-02		3.64E+04	9.0E-08	9.0E-07	2.7E-06				mg/L
anganese		3.06E+00		5.71E+00	5.4E-02	5.4E-01	1.6E+00				mg/L
ickel	1.0E-01	1.97E-01		1.15E+00	1.7E-02	1.7E-01	5.1E-01				mg/L
itrate	1.0E+01	4.74E+01		1.96E+00	2.4E+00	2.4E+01	7.2E+01				mg/L
ilver		1.27E-02		2.82E-01	4.5E-03	4.5E-02	1.3E-01				mg/L
ranium		3.66E-03		1.35E-01	2.7E-03	2.7E-02	8.1E-02				mg/L
anadium		1.54E-01		2.64E+00	5.8E-03	5.8E-02	1.7E-01				mg/L
inc		7.65E-01		3.66E-01	2.1E-01	2.1E+00	6.3E+00				mg/L
,1-Dichloroethene	7.0E-03	6.63E-03	8.36E-04	1.45E-01	4.6E-03	4.6E-02	1.4E-01	7.9E-06	7.9E-05	7.9E-04	mg/L
romodichloromethane	1.0E-01	4.00E-03	1.08E-05	3.37E-02				3.7E-04	3.7E-03	3.7E-02	mg/L
arbon tetrachloride	5.0E-03	7.07E-02	6.31E-04	6.68E+01	1.1E-04	1.1E-03	3.2E-03	1.1E-04	1.1E-03	1.1E-02	mg/L
hloroform	1.0E-01	2.89E-02	1.95E-04	5.21E-01	5.5E-03	5.5E-02	1.7E-01	1.5E-04	1.5E-03	1.5E-02	mg/L
i-n-octylphthalate		1.00E-03		1.48E-01	6.8E-04	6.8E-03	2.0E-02				mg/L
-Nitroso-di-n-propylamine		1.00E-03	4.55E-04					2.2E-06	2.2E-05	2.2E-04	mg/L
etrachloroethene	5.0E-03	2.20E-02	5.91E-05	3.85E-01	5.7E-03	5.7E-02	1.7E-01	3.7E-04	3.7E-03	3.7E-02	mg/L
oluene	1.0E+00	3.60E-02		1.60E-01	2.2E-02	2.2E-01	6.7E-01				mg/L
richloroethene	5.0E-03	8.19E+00	7.74E-03	2.17E+02	3.8E-03	3.8E-02	1.1E-01	1.1E-03	1.1E-02	1.1E-01	mg/L
inyl chloride	2.0E-03	1.33E-01	1.96E-02					6.8E-06	6.8E-05	6.8E-04	mg/L
is-1,2-Dichloroethene	7.0E-02	3.70E-01		6.90E+00	5.4E-03	5.4E-02	1.6E-01				mg/L
rans-1,2-Dichloroethene	1.0E-01	1.23E-02		3.75E-01	3.3E-03	3.3E-02	9.8E-02				mg/L
nericium-241		1.68E+00	2.17E-05					7.7E-02	7.7E-01	7.7E+00	pCi/L
esium-137		1.09E+01	1.29E-05					8.5E-01	8.5E+00	8.5E+01	pCi/L
ead-210		1.00E+02	3.69E-03					2.7E-02	2.7E-01	2.7E+00	pCi/L
eptunium-237		1.35E+01	1.61E-04					8.4E-02	8.4E-01	8.4E+00	pCi/L
echnetium-99		2.68E+03	2.97E-02					9.0E-02	9.0E-01	9.0E+00	pCi/L
norium-228		7.60E-01	5.41E-06					1.4E-01	1.4E+00	1.4E+01	pCi/L
norium-230		1.09E+00	1.62E-06					6.7E-01	6.7E+00	6.7E+01	pCi/L
ranium-234		1.66E+00	2.92E-06					5.7E-01	5.7E+00	5.7E+01	pCi/L
ranium-238		1.66E+01	4.08E-05					4.1E-01	4.1E+00	4.1E+01	pCi/L

531316

Table 1.92 Remedial goal options for WAG 6

SECTOR=WAG 6 LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	5.92E+03		1.27E-01	4.6E+03	4.6E+04	1.4E+05				mg/kg
Antimony	1.17E+00		3.09E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Arsenic	5.34E+00	1.61E-05	1.00E-01	5.3E+00	5.3E+01	1.6E+02	3.3E-01	3.3E+00	3.3E+01	mg/kg
Beryllium	2.89E-01	9.35E-05	1.22E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	1.18E+01	7.93E-09	2.50E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Iron	1.09E+04		5.28E-01	2.1E+03	2.1E+04	6.2E+04				mg/kg
Lead	7.98E+00		1.16E+03	6.9E-04	6.9E-03	2.1E-02				mg/kg
Vanadium	1.43E+01		4.29E-01	3.3E+00	3.3E+01	1.0E+02				mg/kg
Benz(a)anthracene	3.79E+00	1.39E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	3.71E+00	1.36E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	4.36E+00	1.60E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(k)fluoranthene	3.53E+00	1.29E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Dibenz(a,h)anthracene	1.10E+00	4.03E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	2.00E+00	7.35E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Cesium-137	3.74E-01	3.57E-06					1.0E-01	1.0E+00	1.0E+01	pCi/g
Neptunium-237	6.36E-01	1.40E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	8.78E+00	2.81E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

A-727

SECTOR=WAG 6 LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	5.92E+03		1.27E-01	4.6E+03	4.6E+04	1.4E+05				mg/kg
Antimony	1.17E+00		3.09E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Arsenic	5.34E+00	1.61E-05	1.00E-01	5.3E+00	5.3E+01	1.6E+02	3.3E-01	3.3E+00	3.3E+01	mg/kg
Beryllium	2.89E-01	9.35E-05	1.22E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	1.18E+01	7.93E-09	2.50E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Iron	1.09E+04		5.28E-01	2.1E+03	2.1E+04	6.2E+04				mg/kg
Lead	7.98E+00		1.16E+03	6.9E-04	6.9E-03	2.1E-02				mg/kg
Vanadium	1.43E+01		4.29E-01	3.3E+00	3.3E+01	1.0E+02				mg/kg
Benz(a)anthracene	3.79E+00	1.39E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	3.71E+00	1.36E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	4.36E+00	1.60E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(k)fluoranthene	3.53E+00	1.29E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Dibenz(a,h)anthracene	1.10E+00	4.03E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	2.00E+00	7.35E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Cesium-137	3.74E-01	3.57E-06					1.0E-01	1.0E+00	1.0E+01	pCi/g
Neptunium-237	6.36E-01	1.40E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g

531317

Table 1.92 Remedial goal options for WAG 6

SECTOR=WAG 6 LANDUSE=Future Industrial MEDIA=Surface soil (continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Uranium-238	8.78E+00	2.81E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=WAG 6 LANDUSE=Recreational MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Lead	7.98E+00		2.55E+00	3.1E-01	3.1E+00	9.4E+00				mg/kg
Benz(a)anthracene	3.79E+00	1.38E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Benzo(a)pyrene	3.71E+00	4.23E-05					8.8E-02	8.8E-01	8.8E+00	mg/kg
Benzo(b)fluoranthene	4.36E+00	3.90E-06					1.1E+00	1.1E+01	1.1E+02	mg/kg
Benzo(k)fluoranthene	3.53E+00	1.55E-06					2.3E+00	2.3E+01	2.3E+02	mg/kg
Dibenz(a,h)anthracene	1.10E+00	4.81E-05					2.3E-02	2.3E-01	2.3E+00	mg/kg
Indeno(1,2,3-cd)pyrene	2.00E+00	5.56E-06					3.6E-01	3.6E+00	3.6E+01	mg/kg
PCB-1260	9.32E-02	2.34E-06					4.0E-02	4.0E-01	4.0E+00	mg/kg

SECTOR=WAG 6 LANDUSE=Residential MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	5.92E+03		6.12E+00	9.7E+01	9.7E+02	2.9E+03				mg/kg
Antimony	1.17E+00		4.55E+00	2.6E-02	2.6E-01	7.7E-01				mg/kg
Arsenic	5.34E+00	1.84E-03	1.73E+01	3.1E-02	3.1E-01	9.3E-01	2.9E-03	2.9E-02	2.9E-01	mg/kg
Beryllium	2.89E-01	5.47E-04	1.24E-01	2.3E-01	2.3E+00	7.0E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Cadmium	4.44E-01	1.56E-10	7.22E-01	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	1.18E+01	2.79E-08	3.61E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Iron	1.09E+04		3.60E+01	3.0E+01	3.0E+02	9.1E+02				mg/kg
Lead	7.98E+00		7.92E+04	1.0E-05	1.0E-04	3.0E-04				mg/kg
Uranium	2.64E+01		8.13E+00	3.2E-01	3.2E+00	9.7E+00				mg/kg
Vanadium	1.43E+01		4.37E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Zinc	2.56E+01		1.60E-01	1.6E+01	1.6E+02	4.8E+02				mg/kg
Benz(a)anthracene	3.79E+00	6.46E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	3.71E+00	6.29E-03					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	4.36E+00	7.39E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	3.53E+00	5.96E-05					5.9E-02	5.9E-01	5.9E+00	mg/kg

531318

Table 1.92 Remedial goal options for WAG 6

SECTOR=WAG 6 LANDUSE=Residential MEDIA=Surface soil
(continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chrysene	4.00E+00	6.82E-06					5.9E-01	5.9E+00	5.9E+01	mg/kg
Dibenz(a,h)anthracene	1.10E+00	1.85E-03					5.9E-04	5.9E-03	5.9E-02	mg/kg
Fluoranthene	7.59E+00		1.94E-01	3.9E+00	3.9E+01	1.2E+02				mg/kg
Indeno(1,2,3-cd)pyrene	2.00E+00	3.39E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1254	1.70E-01	7.50E-05	7.91E+00	2.1E-03	2.1E-02	6.4E-02	2.3E-03	2.3E-02	2.3E-01	mg/kg
PCB-1260	9.32E-02	4.09E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
PCB-1262	3.80E-02	1.68E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	3.00E-01	1.33E-04					2.3E-03	2.3E-02	2.3E-01	mg/kg
Pyrene	6.70E+00		2.29E-01	2.9E+00	2.9E+01	8.8E+01				mg/kg
Cesium-137	3.74E-01	2.75E-05					1.4E-02	1.4E-01	1.4E+00	pCi/g
Neptunium-237	6.36E-01	6.24E-05					1.0E-02	1.0E-01	1.0E+00	pCi/g
Uranium-234	6.56E+00	8.07E-05					8.1E-02	8.1E-01	8.1E+00	pCi/g
Uranium-235	3.88E-01	8.20E-06					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	8.78E+00	1.69E-04					5.2E-02	5.2E-01	5.2E+00	pCi/g

531318

531319

Table 1.92 Remedial goal options for WAG 6

SECTOR=WAG 6 LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	5.94E+03		1.13E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	5.47E-01		1.11E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	3.30E+00	1.29E-05	8.00E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.03E-01	7.41E-05	9.65E-03				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	1.04E+01	5.16E-09	1.70E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Iron	9.81E+03		4.53E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	5.84E+00		8.09E+02	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	2.12E+02		1.93E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Vanadium	1.40E+01		3.19E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
1,1-Dichloroethene	3.63E-01	4.45E-06	4.55E-04				8.2E-02	8.2E-01	8.2E+00	mg/kg
Benz(a)anthracene	8.47E-01	2.99E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	8.23E-01	2.90E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	9.91E-01	3.49E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Dibenz(a,h)anthracene	6.31E-01	2.22E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Indeno(1,2,3-cd)pyrene	6.02E-01	2.12E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
N-Nitroso-di-n-propylamine	6.34E-01	2.52E-05					2.5E-02	2.5E-01	2.5E+00	mg/kg
Polychlorinated biphenyl	5.17E-01	2.05E-06					2.5E-01	2.5E+00	2.5E+01	mg/kg
Trichloroethene	1.76E+02	4.12E-05	1.63E+00	1.1E+01	1.1E+02	3.3E+02	4.3E+00	4.3E+01	4.3E+02	mg/kg
Vinyl chloride	1.30E+00	2.35E-03					5.5E-04	5.5E-03	5.5E-02	mg/kg
Cesium-137	4.04E-01	2.88E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g
Neptunium-237	1.17E+00	2.61E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	5.59E+00	2.01E-06					2.8E+00	2.8E+01	2.8E+02	pCi/g

531320

Table 1.92 Remedial goal options for WAG 6

------------------------------------- SECTOR=McNairy LANDUSE=Future Industrial MEDIA=Ground water -------------------------------------

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		8.98E+01		9.10E-01	9.9E+00	9.9E+01	3.0E+02				mg/L
rsenic	5.0E-02	2.63E-01	1.39E-03	8.66E+00	3.0E-03	3.0E-02	9.1E-02	1.9E-04	1.9E-03	1.9E-02	mg/L
eryllium	4.0E-03	8.37E-03	1.71E-04	2.23E-02				4.9E-05	4.9E-04	4.9E-03	mg/L
hromium		2.45E-01		5.66E-01	4.3E-02	4.3E-01	1.3E+00				mg/L
ron		2.17E+02		7.26E+00	3.0E+00	3.0E+01	9.0E+01				mg/L
ead	0.0E+00	1.14E-01		1.14E+04	1.0E-06	1.0E-05	3.0E-05				mg/L
anganese		1.58E+00		3.65E-01	4.3E-01	4.3E+00	1.3E+01				mg/L
anadium		1.02E+00		1.94E+00	5.2E-02	5.2E-01	1.6E+00				mg/L
inc		7.86E+00		2.61E-01	3.0E+00	3.0E+01	9.0E+01				mg/L
,1-Dichloroethene	7.0E-03	7.23E-03	3.22E-05	8.11E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
romodichloromethane	1.0E-01	5.32E-03	1.18E-06	2.66E-03				4.5E-03	4.5E-02	4.5E-01	mg/L
hloroform	1.0E-01	6.75E-03	1.21E-06	7.67E-03				5.6E-03	5.6E-02	5.6E-01	mg/L
i-n-octylphthalate		5.59E-03		3.00E-01	1.9E-03	1.9E-02	5.6E-02				mg/L
ibromochloromethane	1.0E-01	4.00E-03	1.20E-06	2.00E-03				3.3E-03	3.3E-02	3.3E-01	mg/L
etrachloroethene	5.0E-03	9.74E-03	4.19E-06	2.23E-02				2.3E-03	2.3E-02	2.3E-01	mg/L
richloroethene	5.0E-03	1.62E-02	1.05E-06	3.67E-02				1.5E-02	1.5E-01	1.5E+00	mg/L
inyl chloride	2.0E-03	1.40E-02	1.04E-04					1.4E-04	1.4E-03	1.4E-02	mg/L
esium-137		1.23E+01	2.43E-06					5.1E+00	5.1E+01	5.1E+02	pCi/L
ead-210		4.21E+02	2.66E-03					1.6E-01	1.6E+00	1.6E+01	pCi/L
ead-212		2.25E+01	2.53E-06					8.9E+00	8.9E+01	8.9E+02	pCi/L
eptunium-237		8.08E+00	1.51E-05					5.3E-01	5.3E+00	5.3E+01	pCi/L
lutonium-239		1.33E+00	2.63E-06					5.1E-01	5.1E+00	5.1E+01	pCi/L
otassium-40		6.80E+01	5.31E-06					1.3E+01	1.3E+02	1.3E+03	pCi/L
echnetium-99		3.10E+02	2.71E-06					1.1E+02	1.1E+03	1.1E+04	pCi/L
horium-228		1.23E+00	1.78E-06					6.9E-01	6.9E+00	6.9E+01	pCi/L
horium-234		7.19E+02	8.67E-05					8.3E+00	8.3E+01	8.3E+02	pCi/L
ranium-235		1.16E+01	3.40E-06					3.4E+00	3.4E+01	3.4E+02	pCi/L

------------------------------------- SECTOR=McNairy LANDUSE=Residential MEDIA=Ground water -------------------------------------

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		8.98E+01		1.00E+01	9.0E-01	9.0E+00	2.7E+01				mg/L
rsenic	5.0E-02	2.63E-01	1.19E-02	9.83E+01	2.7E-04	2.7E-03	8.0E-03	2.2E-05	2.2E-04	2.2E-03	mg/L
arium	2.0E+00	3.52E-01		5.65E-01	6.2E-02	6.2E-01	1.9E+00				mg/L
eryllium	4.0E-03	8.37E-03	1.19E-03	2.02E-01	4.2E-03	4.2E-02	1.2E-01	7.1E-06	7.1E-05	7.1E-04	mg/L
admium	5.0E-03	1.90E-03		4.03E-01	4.7E-04	4.7E-03	1.4E-02				mg/L
hromium		2.45E-01		5.65E+00	4.3E-03	4.3E-02	1.3E-01				mg/L

531321

Table 1.92 Remedial goal options for WAG 6

SECTOR=McNairy LANDUSE=Residential MEDIA=Ground water
(continued)

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
obalt		7.07E-02		1.34E-01	5.3E-02	5.3E-01	1.6E+00				mg/L
ron		2.17E+02		8.07E+01	2.7E-01	2.7E+00	8.1E+00				mg/L
ead	0.0E+00	1.14E-01		1.27E+05	9.0E-08	9.0E-07	2.7E-06				mg/L
anganese		1.58E+00		2.94E+00	5.4E-02	5.4E-01	1.6E+00				mg/L
ickel	1.0E-01	1.11E-01		6.52E-01	1.7E-02	1.7E-01	5.1E-01				mg/L
elenium	5.0E-02	2.94E-02		7.24E-01	4.1E-03	4.1E-02	1.2E-01				mg/L
anadium		1.02E+00		1.75E+01	5.8E-03	5.8E-02	1.7E-01				mg/L
inc		7.86E+00		3.76E+00	2.1E-01	2.1E+00	6.3E+00				mg/L
,1-Dichloroethene	7.0E-03	7.23E-03	9.11E-04	1.58E-01	4.6E-03	4.6E-02	1.4E-01	7.9E-06	7.9E-05	7.9E-04	mg/L
,2-Dichloroethane	5.0E-03	1.00E-03	1.28E-05	1.50E-01	6.7E-04	6.7E-03	2.0E-02	7.8E-05	7.8E-04	7.8E-03	mg/L
is(2-ethylhexyl)phthalate	6.0E-03	5.21E-03	2.48E-06	3.22E-02				2.1E-03	2.1E-02	2.1E-01	mg/L
romodichloromethane	1.0E-01	5.32E-03	1.44E-05	4.48E-02				3.7E-04	3.7E-03	3.7E-02	mg/L
hloroform	1.0E-01	6.75E-03	4.55E-05	1.22E-01	5.5E-03	5.5E-02	1.7E-01	1.5E-04	1.5E-03	1.5E-02	mg/L
i-n-octylphthalate		5.59E-03		8.27E-01	6.8E-04	6.8E-03	2.0E-02				mg/L
ibromochloromethane	1.0E-01	4.00E-03	1.41E-05	3.23E-02				2.8E-04	2.8E-03	2.8E-02	mg/L
etrachloroethene	5.0E-03	9.74E-03	2.62E-05	1.71E-01	5.7E-03	5.7E-02	1.7E-01	3.7E-04	3.7E-03	3.7E-02	mg/L
richloroethene	5.0E-03	1.62E-02	1.53E-05	4.30E-01	3.8E-03	3.8E-02	1.1E-01	1.1E-03	1.1E-02	1.1E-01	mg/L
inyl chloride	2.0E-03	1.40E-02	2.07E-03					6.8E-06	6.8E-05	6.8E-04	mg/L
is-1,2-Dichloroethene	7.0E-02	1.41E-02		2.62E-01	5.4E-03	5.4E-02	1.6E-01				mg/L
ctinium-228		2.72E+01	1.14E-06					2.4E+01	2.4E+02	2.4E+03	pCi/L
esium-137		1.23E+01	1.46E-05					8.5E-01	8.5E+00	8.5E+01	pCi/L
ead-210		4.21E+02	1.55E-02					2.7E-02	2.7E-01	2.7E+00	pCi/L
ead-212		2.25E+01	1.05E-05					2.1E+00	2.1E+01	2.1E+02	pCi/L
eptunium-237		8.08E+00	9.63E-05					8.4E-02	8.4E-01	8.4E+00	pCi/L
lutonium-239		1.33E+00	1.67E-05					8.0E-02	8.0E-01	8.0E+00	pCi/L
otassium-40		6.80E+01	4.33E-05					1.6E+00	1.6E+01	1.6E+02	pCi/L
echnetium-99		3.10E+02	3.43E-03					9.0E-02	9.0E-01	9.0E+00	pCi/L
horium-228		1.23E+00	8.75E-06					1.4E-01	1.4E+00	1.4E+01	pCi/L
horium-230		1.36E+00	2.02E-06					6.7E-01	6.7E+00	6.7E+01	pCi/L
horium-234		7.19E+02	3.95E-04					1.8E+00	1.8E+01	1.8E+02	pCi/L
ranium-234		1.88E+00	3.31E-06					5.7E-01	5.7E+00	5.7E+01	pCi/L
ranium-235		1.16E+01	2.16E-05					5.4E-01	5.4E+00	5.4E+01	pCi/L
ranium-238		1.26E+00	3.09E-06					4.1E-01	4.1E+00	4.1E+01	pCi/L

531322

Table 1.92 Remedial goal options for WAG 6

SECTOR=RGA LANDUSE=Future Industrial MEDIA=Ground water

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		6.09E+01		6.18E-01	9.9E+00	9.9E+01	3.0E+02				mg/L
ntimony	6.0E-03	1.39E-02		4.02E-01	3.5E-03	3.5E-02	1.0E-01				mg/L
rsenic	5.0E-02	2.91E-02	1.54E-04	9.58E-01	3.0E-03	3.0E-02	9.1E-02	1.9E-04	1.9E-03	1.9E-02	mg/L
eryllium	4.0E-03	1.01E-02	2.07E-04	2.70E-02				4.9E-05	4.9E-04	4.9E-03	mg/L
nromium		1.13E-01		2.61E-01	4.3E-02	4.3E-01	1.3E+00				mg/L
ron		3.88E+02		1.29E+01	3.0E+00	3.0E+01	9.0E+01				mg/L
ead	0.0E+00	3.27E-02		3.28E+03	1.0E-06	1.0E-05	3.0E-05				mg/L
anganese		3.06E+00		7.09E-01	4.3E-01	4.3E+00	1.3E+01				mg/L
itrate	1.0E+01	4.74E+01		2.92E-01	1.6E+01	1.6E+02	4.9E+02				mg/L
anadium		1.54E-01		2.93E-01	5.2E-02	5.2E-01	1.6E+00				mg/L
,1-Dichloroethene	7.0E-03	6.63E-03	2.96E-05	7.45E-03				2.2E-04	2.2E-03	2.2E-02	mg/L
arbon tetrachloride	5.0E-03	7.07E-02	4.32E-05	1.77E+00	4.0E-03	4.0E-02	1.2E-01	1.6E-03	1.6E-02	1.6E-01	mg/L
nloroform	1.0E-01	2.89E-02	5.18E-06	3.28E-02				5.6E-03	5.6E-02	5.6E-01	mg/L
-Nitroso-di-n-propylamine		1.00E-03	2.55E-05					3.9E-05	3.9E-04	3.9E-03	mg/L
etrachloroethene	5.0E-03	2.20E-02	9.43E-06	5.04E-02				2.3E-03	2.3E-02	2.3E-01	mg/L
richloroethene	5.0E-03	8.19E+00	5.31E-04	1.85E+01	4.4E-02	4.4E-01	1.3E+00	1.5E-02	1.5E-01	1.5E+00	mg/L
inyl chloride	2.0E-03	1.33E-01	9.83E-04					1.4E-04	1.4E-03	1.4E-02	mg/L
is-1,2-Dichloroethene	7.0E-02	3.70E-01		3.75E-01	9.9E-02	9.9E-01	3.0E+00				mg/L
mericium-241		1.68E+00	3.44E-06					4.9E-01	4.9E+00	4.9E+01	pCi/L
esium-137		1.09E+01	2.15E-06					5.1E+00	5.1E+01	5.1E+02	pCi/L
ead-210		1.00E+02	6.31E-04					1.6E-01	1.6E+00	1.6E+01	pCi/L
eptunium-237		1.35E+01	2.54E-05					5.3E-01	5.3E+00	5.3E+01	pCi/L
echnetium-99		2.68E+03	2.34E-05					1.1E+02	1.1E+03	1.1E+04	pCi/L
norium-228		7.60E-01	1.10E-06					6.9E-01	6.9E+00	6.9E+01	pCi/L
ranium-238		1.66E+01	6.43E-06					2.6E+00	2.6E+01	2.6E+02	pCi/L

SECTOR=RGA LANDUSE=Residential MEDIA=Ground water

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
luminum		6.09E+01		6.81E+00	9.0E-01	9.0E+00	2.7E+01				mg/L
ntimony	6.0E-03	1.39E-02		4.05E+00	3.4E-04	3.4E-03	1.0E-02				mg/L
rsenic	5.0E-02	2.91E-02	1.31E-03	1.09E+01	2.7E-04	2.7E-03	8.0E-03	2.2E-05	2.2E-04	2.2E-03	mg/L
arium	2.0E+00	4.20E-01		6.74E-01	6.2E-02	6.2E-01	1.9E+00				mg/L
eryllium	4.0E-03	1.01E-02	1.44E-03	2.44E-01	4.2E-03	4.2E-02	1.2E-01	7.1E-06	7.1E-05	7.1E-04	mg/L
admium	5.0E-03	1.48E-03		3.15E-01	4.7E-04	4.7E-03	1.4E-02				mg/L
nromium		1.13E-01		2.60E+00	4.3E-03	4.3E-02	1.3E-01				mg/L
obalt		9.87E-02		1.87E-01	5.3E-02	5.3E-01	1.6E+00				mg/L

531323

Table 1.92 Remedial goal options for WAG 6

SECTOR=RGA LANDUSE=Residential MEDIA=Ground water
(continued)

nalyte	Groundwater MCLs	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
opper	1.3E+00	2.20E-01		6.64E-01	3.3E-02	3.3E-01	9.9E-01				mg/L
ron		3.88E+02		1.44E+02	2.7E-01	2.7E+00	8.1E+00				mg/L
ead	0.0E+00	3.27E-02		3.64E+04	9.0E-08	9.0E-07	2.7E-06				mg/L
anganese		3.06E+00		5.71E+00	5.4E-02	5.4E-01	1.6E+00				mg/L
ickel	1.0E-01	1.97E-01		1.15E+00	1.7E-02	1.7E-01	5.1E-01				mg/L
itrate	1.0E+01	4.74E+01		1.96E+00	2.4E+00	2.4E+01	7.2E+01				mg/L
ilver		1.27E-02		2.82E-01	4.5E-03	4.5E-02	1.3E-01				mg/L
ranium		3.66E-03		1.35E-01	2.7E-03	2.7E-02	8.1E-02				mg/L
anadium		1.54E-01		2.64E+00	5.8E-03	5.8E-02	1.7E-01				mg/L
inc		7.65E-01		3.66E-01	2.1E-01	2.1E+00	6.3E+00				mg/L
,1-Dichloroethene	7.0E-03	6.63E-03	8.36E-04	1.45E-01	4.6E-03	4.6E-02	1.4E-01	7.9E-06	7.9E-05	7.9E-04	mg/L
romodichloromethane	1.0E-01	4.00E-03	1.08E-05	3.37E-02				3.7E-04	3.7E-03	3.7E-02	mg/L
arbon tetrachloride	5.0E-03	7.07E-02	6.31E-04	6.68E+01	1.1E-04	1.1E-03	3.2E-03	1.1E-04	1.1E-03	1.1E-02	mg/L
hloroform	1.0E-01	2.89E-02	1.95E-04	5.21E-01	5.5E-03	5.5E-02	1.7E-01	1.5E-04	1.5E-03	1.5E-02	mg/L
i-n-octylphthalate		1.00E-03		1.48E-01	6.8E-04	6.8E-03	2.0E-02				mg/L
-Nitroso-di-n-propylamine		1.00E-03	4.55E-04					2.2E-06	2.2E-05	2.2E-04	mg/L
etrachloroethene	5.0E-03	2.20E-02	5.91E-05	3.85E-01	5.7E-03	5.7E-02	1.7E-01	3.7E-04	3.7E-03	3.7E-02	mg/L
oluene	1.0E+00	3.60E-02		1.60E-01	2.2E-02	2.2E-01	6.7E-01				mg/L
richloroethene	5.0E-03	8.19E+00	7.74E-03	2.17E+02	3.8E-03	3.8E-02	1.1E-01	1.1E-03	1.1E-02	1.1E-01	mg/L
inyl chloride	2.0E-03	1.33E-01	1.96E-02					6.8E-06	6.8E-05	6.8E-04	mg/L
is-1,2-Dichloroethene	7.0E-02	3.70E-01		6.90E+00	5.4E-03	5.4E-02	1.6E-01				mg/L
rans-1,2-Dichloroethene	1.0E-01	1.23E-02		3.75E-01	3.3E-03	3.3E-02	9.8E-02				mg/L
mericium-241		1.68E+00	2.17E-05					7.7E-02	7.7E-01	7.7E+00	pCi/L
esium-137		1.09E+01	1.29E-05					8.5E-01	8.5E+00	8.5E+01	pCi/L
ead-210		1.00E+02	3.69E-03					2.7E-02	2.7E-01	2.7E+00	pCi/L
eptunium-237		1.35E+01	1.61E-04					8.4E-02	8.4E-01	8.4E+00	pCi/L
echnetium-99		2.68E+03	2.97E-02					9.0E-02	9.0E-01	9.0E+00	pCi/L
horium-228		7.60E-01	5.41E-06					1.4E-01	1.4E+00	1.4E+01	pCi/L
horium-230		1.09E+00	1.62E-06					6.7E-01	6.7E+00	6.7E+01	pCi/L
ranium-234		1.66E+00	2.92E-06					5.7E-01	5.7E+00	5.7E+01	pCi/L
ranium-238		1.66E+01	4.08E-05					4.1E-01	4.1E+00	4.1E+01	pCi/L

531324

Table 1.92 Remedial goal options for WAG 6

SECTOR=East LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benz(a)anthracene	7.22E-01	2.65E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	7.95E-01	2.91E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	1.40E+00	5.13E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Dibenz(a,h)anthracene	1.60E-01	5.87E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	4.20E-01	1.54E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
PCB-1260	3.30E+00	7.76E-06					4.2E-01	4.2E+00	4.2E+01	mg/kg
Polychlorinated biphenyl	1.00E+01	2.35E-05					4.2E-01	4.2E+00	4.2E+01	mg/kg
Cesium-137	5.00E-01	4.78E-06					1.0E-01	1.0E+00	1.0E+01	pCi/g
Uranium-238	9.10E+00	2.91E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=East LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benz(a)anthracene	7.22E-01	2.65E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	7.95E-01	2.91E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	1.40E+00	5.13E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Dibenz(a,h)anthracene	1.60E-01	5.87E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	4.20E-01	1.54E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
PCB-1260	3.30E+00	7.76E-06					4.2E-01	4.2E+00	4.2E+01	mg/kg
Polychlorinated biphenyl	1.00E+01	2.35E-05					4.2E-01	4.2E+00	4.2E+01	mg/kg
Cesium-137	5.00E-01	4.78E-06					1.0E-01	1.0E+00	1.0E+01	pCi/g
Uranium-238	9.10E+00	2.91E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=East LANDUSE=Recreational MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
PCB-1260	3.30E+00	4.03E-06					8.2E-01	8.2E+00	8.2E+01	mg/kg

531325

Table 1.92 Remedial goal options for WAG 6

SECTOR=East LANDUSE=Residential MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Cadmium	3.80E-01	1.33E-10	6.18E-01	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	1.36E+01	3.21E-08	4.15E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Uranium	2.74E+01		8.42E+00	3.2E-01	3.2E+00	9.7E+00				mg/kg
Benz(a)anthracene	7.22E-01	1.23E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	7.95E-01	1.35E-03					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	1.40E+00	2.37E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	8.70E-01	1.47E-05					5.9E-02	5.9E-01	5.9E+00	mg/kg
Chrysene	7.95E-01	1.36E-06					5.9E-01	5.9E+00	5.9E+01	mg/kg
Dibenz(a,h)anthracene	1.60E-01	2.70E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Indeno(1,2,3-cd)pyrene	4.20E-01	7.10E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1260	3.30E+00	1.45E-03					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	1.00E+01	4.42E-03					2.3E-03	2.3E-02	2.3E-01	mg/kg
Cesium-137	5.00E-01	3.67E-05					1.4E-02	1.4E-01	1.4E+00	pCi/g
Neptunium-237	4.00E-01	3.93E-05					1.0E-02	1.0E-01	1.0E+00	pCi/g
Uranium-235	4.00E-01	8.46E-06					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	9.10E+00	1.75E-04					5.2E-02	5.2E-01	5.2E+00	pCi/g

A-736

SECTOR=Far East/Northeast LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	1.38E+04		2.98E-01	4.6E+03	4.6E+04	1.4E+05				mg/kg
Antimony	2.90E+00		7.66E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Chromium	1.04E+01	6.95E-09	2.20E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Benzo(a)pyrene	4.00E-02	1.47E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg
Uranium-238	8.70E+00	2.78E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=Far East/Northeast LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	1.38E+04		2.98E-01	4.6E+03	4.6E+04	1.4E+05				mg/kg
Antimony	2.90E+00		7.66E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Chromium	1.04E+01	6.95E-09	2.20E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Benzo(a)pyrene	4.00E-02	1.47E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg

531326

Table 1.92 Remedial goal options for WAG 6

--- SECTOR=Far East/Northeast LANDUSE=Future Industrial MEDIA=Surface soil ---
(continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Uranium-238	8.70E+00	2.78E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

--- SECTOR=Far East/Northeast LANDUSE=Residential MEDIA=Surface soil ---

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	1.38E+04		1.43E+01	9.7E+01	9.7E+02	2.9E+03				mg/kg
Antimony	2.90E+00		1.13E+01	2.6E-02	2.6E-01	7.7E-01				mg/kg
Chromium	1.04E+01	2.45E-08	3.17E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Uranium	2.62E+01		8.07E+00	3.2E-01	3.2E+00	9.7E+00				mg/kg
Benz(a)anthracene	4.00E-02	6.82E-06					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	4.00E-02	6.78E-05					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	4.00E-02	6.78E-06					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1260	5.60E-03	2.46E-06					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	5.60E-03	2.48E-06					2.3E-03	2.3E-02	2.3E-01	mg/kg
Uranium-235	5.00E-01	1.06E-05					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	8.70E+00	1.68E-04					5.2E-02	5.2E-01	5.2E+00	pCi/g

--- SECTOR=Far North/Northwest LANDUSE=Current Industrial MEDIA=Surface soil ---

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	1.40E+00		3.70E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Beryllium	6.90E-01	2.23E-04	2.91E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	2.72E+01	1.82E-08	5.75E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Benz(a)anthracene	3.40E-01	1.25E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	2.80E-01	1.03E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Neptunium-237	6.00E-01	1.32E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	4.60E+00	1.47E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

531327

Table 1.92 Remedial goal options for WAG 6

SECTOR=Far North/Northwest LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	1.40E+00		3.70E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Beryllium	6.90E-01	2.23E-04	2.91E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	2.72E+01	1.82E-08	5.75E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Benz(a)anthracene	3.40E-01	1.25E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	2.80E-01	1.03E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Neptunium-237	6.00E-01	1.32E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	4.60E+00	1.47E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=Far North/Northwest LANDUSE=Residential MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	1.40E+00		5.45E+00	2.6E-02	2.6E-01	7.7E-01				mg/kg
Beryllium	6.90E-01	1.31E-03	2.97E-01	2.3E-01	2.3E+00	7.0E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Cadmium	3.00E-01	1.05E-10	4.88E-01	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	2.72E+01	6.41E-08	8.29E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Uranium	1.38E+01		4.26E+00	3.2E-01	3.2E+00	9.7E+00				mg/kg
Benz(a)anthracene	3.40E-01	5.80E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	2.80E-01	4.75E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	2.60E-01	4.41E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	2.90E-01	4.89E-06					5.9E-02	5.9E-01	5.9E+00	mg/kg
Indeno(1,2,3-cd)pyrene	1.40E-01	2.37E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Neptunium-237	6.00E-01	5.89E-05					1.0E-02	1.0E-01	1.0E+00	pCi/g
Uranium-235	2.00E-01	4.23E-06					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	4.60E+00	8.87E-05					5.2E-02	5.2E-01	5.2E+00	pCi/g

SECTOR=Northeast LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benz(a)anthracene	3.50E-01	1.28E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	3.00E-01	1.10E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	4.30E-01	1.58E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Uranium-238	4.60E+00	1.47E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

531328

Table 1.92 Remedial goal options for WAG 6

SECTOR=Northeast LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benz(a)anthracene	3.50E-01	1.28E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	3.00E-01	1.10E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	4.30E-01	1.58E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Uranium-238	4.60E+00	1.47E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=Northeast LANDUSE=Residential MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Chromium	1.93E+01	4.55E-08	5.88E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Uranium	1.38E+01		4.26E+00	3.2E-01	3.2E+00	9.7E+00				mg/kg
Zinc	7.02E+01		4.39E-01	1.6E+01	1.6E+02	4.8E+02				mg/kg
Benz(a)anthracene	3.50E-01	5.97E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	3.00E-01	5.09E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	4.30E-01	7.29E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	2.80E-01	4.73E-06					5.9E-02	5.9E-01	5.9E+00	mg/kg
Indeno(1,2,3-cd)pyrene	1.80E-01	3.04E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1260	4.30E-02	1.89E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	4.30E-02	1.90E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Uranium-235	2.00E-01	4.23E-06					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	4.60E+00	8.87E-05					5.2E-02	5.2E-01	5.2E+00	pCi/g

SECTOR=Northwest LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	4.01E-01		1.06E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Beryllium	3.23E-01	1.05E-04	1.36E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	2.03E+01	1.35E-08	4.28E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Iron	1.22E+04		5.90E-01	2.1E+03	2.1E+04	6.2E+04				mg/kg
Lead	1.30E+01		1.89E+03	6.9E-04	6.9E-03	2.1E-02				mg/kg
Vanadium	1.65E+01		4.97E-01	3.3E+00	3.3E+01	1.0E+02				mg/kg
Benz(a)anthracene	3.00E-01	1.10E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	4.00E-01	1.47E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	5.29E-01	1.94E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg

531929

Table 1.92 Remedial goal options for WAG 6

-- SECTOR=Northwest LANDUSE=Current Industrial MEDIA=Surface soil --
(continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Uranium-238	3.20E+00	1.02E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

-- SECTOR=Northwest LANDUSE=Future Industrial MEDIA=Surface soil --

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	4.01E-01		1.06E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Beryllium	3.23E-01	1.05E-04	1.36E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	2.03E+01	1.35E-08	4.28E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Iron	1.22E+04		5.90E-01	2.1E+03	2.1E+04	6.2E+04				mg/kg
Lead	1.30E+01		1.89E+03	6.9E-04	6.9E-03	2.1E-02				mg/kg
Vanadium	1.65E+01		4.97E-01	3.3E+00	3.3E+01	1.0E+02				mg/kg
Benz(a)anthracene	3.00E-01	1.10E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	4.00E-01	1.47E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	5.29E-01	1.94E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Uranium-238	3.20E+00	1.02E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

-- SECTOR=Northwest LANDUSE=Residential MEDIA=Surface soil --

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	4.01E-01		1.56E+00	2.6E-02	2.6E-01	7.7E-01				mg/kg
Beryllium	3.23E-01	6.12E-04	1.39E-01	2.3E-01	2.3E+00	7.0E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Cadmium	2.03E-01	7.13E-11	3.31E-01	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	2.03E+01	4.78E-08	6.18E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Iron	1.22E+04		4.03E+01	3.0E+01	3.0E+02	9.1E+02				mg/kg
Lead	1.30E+01		1.29E+05	1.0E-05	1.0E-04	3.0E-04				mg/kg
Vanadium	1.65E+01		5.06E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Benz(a)anthracene	3.00E-01	5.12E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	4.00E-01	6.78E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	5.29E-01	8.96E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	3.00E-01	5.06E-06					5.9E-02	5.9E-01	5.9E+00	mg/kg
Uranium-238	3.20E+00	6.17E-05					5.2E-02	5.2E-01	5.2E+00	pCi/g

531330

Table 1.92 Remedial goal options for WAG 6

SECTOR=Southeast LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	8.00E-02	2.93E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg

SECTOR=Southeast LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	8.00E-02	2.93E-06					2.7E-02	2.7E-01	2.7E+00	mg/kg

SECTOR=Southeast LANDUSE=Residential MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	1.42E+04		1.47E+01	9.7E+01	9.7E+02	2.9E+03				mg/kg
Antimony	6.00E-01		2.34E+00	2.6E-02	2.6E-01	7.7E-01				mg/kg
Cadmium	3.50E-01	1.23E-10	5.69E-01	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	2.36E+01	5.56E-08	7.19E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Benz(a)anthracene	7.00E-02	1.19E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	8.00E-02	1.36E-04					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	7.00E-02	1.19E-05					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	6.00E-02	1.01E-06					5.9E-02	5.9E-01	5.9E+00	mg/kg
PCB-1262	3.80E-02	1.68E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	3.80E-02	1.68E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg

A-741

SECTOR=Southwest LANDUSE=Current Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	1.45E+00		3.84E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Beryllium	3.77E-01	1.22E-04	1.59E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	2.12E+01	1.42E-08	4.49E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Iron	1.70E+04		8.23E-01	2.1E+03	2.1E+04	6.2E+04				mg/kg
Benz(a)anthracene	5.02E+00	1.84E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg

531331

Table 1.92 Remedial goal options for WAG 6

SECTOR=Southwest LANDUSE=Current Industrial MEDIA=Surface soil
(continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	4.83E+00	1.77E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	5.11E+00	1.87E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(k)fluoranthene	3.38E+00	1.24E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Dibenz(a,h)anthracene	1.30E+00	4.77E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	1.80E+00	6.61E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Uranium-238	1.67E+01	5.34E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=Southwest LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	1.45E+00		3.84E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Beryllium	3.77E-01	1.22E-04	1.59E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	2.12E+01	1.42E-08	4.49E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Iron	1.70E+04		8.23E-01	2.1E+03	2.1E+04	6.2E+04				mg/kg
Benz(a)anthracene	5.02E+00	1.84E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	4.83E+00	1.77E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	5.11E+00	1.87E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(k)fluoranthene	3.38E+00	1.24E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Dibenz(a,h)anthracene	1.30E+00	4.77E-05					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	1.80E+00	6.61E-06					2.7E-01	2.7E+00	2.7E+01	mg/kg
Uranium-238	1.67E+01	5.34E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=Southwest LANDUSE=Recreational MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	4.83E+00	1.08E-05					4.5E-01	4.5E+00	4.5E+01	mg/kg
Dibenz(a,h)anthracene	1.30E+00	1.14E-05					1.1E-01	1.1E+00	1.1E+01	mg/kg
Indeno(1,2,3-cd)pyrene	1.80E+00	1.00E-06					1.8E+00	1.8E+01	1.8E+02	mg/kg

531332

Table 1.92 Remedial goal options for WAG 6

-- SECTOR=Southwest LANDUSE=Residential MEDIA=Surface soil --

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	1.45E+00		5.66E+00	2.6E-02	2.6E-01	7.7E-01				mg/kg
Beryllium	3.77E-01	7.14E-04	1.62E-01	2.3E-01	2.3E+00	7.0E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Cadmium	3.63E-01	1.27E-10	5.90E-01	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	2.12E+01	5.01E-08	6.48E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Iron	1.70E+04		5.62E+01	3.0E+01	3.0E+02	9.1E+02				mg/kg
Uranium	5.01E+01		1.54E+01	3.2E-01	3.2E+00	9.7E+00				mg/kg
Zinc	5.03E+01		3.15E-01	1.6E+01	1.6E+02	4.8E+02				mg/kg
Benz(a)anthracene	5.02E+00	8.56E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	4.83E+00	8.20E-03					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	5.11E+00	8.67E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	3.38E+00	5.70E-05					5.9E-02	5.9E-01	5.9E+00	mg/kg
Chrysene	4.52E+00	7.70E-06					5.9E-01	5.9E+00	5.9E+01	mg/kg
Dibenz(a,h)anthracene	1.30E+00	2.19E-03					5.9E-04	5.9E-03	5.9E-02	mg/kg
Fluoranthene	1.09E+01		2.79E-01	3.9E+00	3.9E+01	1.2E+02				mg/kg
Indeno(1,2,3-cd)pyrene	1.80E+00	3.05E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1260	3.80E-02	1.67E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	3.80E-02	1.68E-05					2.3E-03	2.3E-02	2.3E-01	mg/kg
Pyrene	9.20E+00		3.14E-01	2.9E+00	2.9E+01	8.8E+01				mg/kg
Neptunium-237	3.00E-01	2.95E-05					1.0E-02	1.0E-01	1.0E+00	pCi/g
Uranium-235	6.00E-01	1.27E-05					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	1.67E+01	3.22E-04					5.2E-02	5.2E-01	5.2E+00	pCi/g

-- SECTOR=West LANDUSE=Current Industrial MEDIA=Surface soil --

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.28E+03		1.57E-01	4.6E+03	4.6E+04	1.4E+05				mg/kg
Antimony	9.92E-01		2.62E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Arsenic	1.32E+01	3.97E-05	2.47E-01	5.3E+00	5.3E+01	1.6E+02	3.3E-01	3.3E+00	3.3E+01	mg/kg
Beryllium	3.15E-01	1.02E-04	1.33E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	1.26E+01	8.40E-09	2.65E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Benz(a)anthracene	2.01E+01	7.38E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	1.81E+01	6.64E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	2.25E+01	8.26E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(k)fluoranthene	2.22E+01	8.14E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Dibenz(a,h)anthracene	3.75E+00	1.38E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	3.80E+00	1.39E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
PCB-1254	9.60E-01	2.26E-06	1.58E-01	6.1E-01	6.1E+00	1.8E+01	4.2E-01	4.2E+00	4.2E+01	mg/kg

531333

Table 1.92 Remedial goal options for WAG 6

SECTOR=West LANDUSE=Current Industrial MEDIA=Surface soil
(continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Polychlorinated biphenyl	5.61E-01	1.32E-06					4.2E-01	4.2E+00	4.2E+01	mg/kg
Cesium-137	6.72E-01	6.42E-06					1.0E-01	1.0E+00	1.0E+01	pCi/g
Neptunium-237	1.52E+00	3.35E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	1.21E+01	3.86E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=West LANDUSE=Future Industrial MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.28E+03		1.57E-01	4.6E+03	4.6E+04	1.4E+05				mg/kg
Antimony	9.92E-01		2.62E-01	3.8E-01	3.8E+00	1.1E+01				mg/kg
Arsenic	1.32E+01	3.97E-05	2.47E-01	5.3E+00	5.3E+01	1.6E+02	3.3E-01	3.3E+00	3.3E+01	mg/kg
Beryllium	3.15E-01	1.02E-04	1.33E-02				3.1E-03	3.1E-02	3.1E-01	mg/kg
Chromium	1.26E+01	8.40E-09	2.65E-01	4.7E+00	4.7E+01	1.4E+02				mg/kg
Benz(a)anthracene	2.01E+01	7.38E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(a)pyrene	1.81E+01	6.64E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Benzo(b)fluoranthene	2.25E+01	8.26E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
Benzo(k)fluoranthene	2.22E+01	8.14E-06					2.7E+00	2.7E+01	2.7E+02	mg/kg
Dibenz(a,h)anthracene	3.75E+00	1.38E-04					2.7E-02	2.7E-01	2.7E+00	mg/kg
Indeno(1,2,3-cd)pyrene	3.80E+00	1.39E-05					2.7E-01	2.7E+00	2.7E+01	mg/kg
PCB-1254	9.60E-01	2.26E-06	1.58E-01	6.1E-01	6.1E+00	1.8E+01	4.2E-01	4.2E+00	4.2E+01	mg/kg
Polychlorinated biphenyl	5.61E-01	1.32E-06					4.2E-01	4.2E+00	4.2E+01	mg/kg
Cesium-137	6.72E-01	6.42E-06					1.0E-01	1.0E+00	1.0E+01	pCi/g
Neptunium-237	1.52E+00	3.35E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-238	1.21E+01	3.86E-06					3.1E+00	3.1E+01	3.1E+02	pCi/g

SECTOR=West LANDUSE=Recreational MEDIA=Surface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Benzo(a)pyrene	1.81E+01	1.55E-05					1.2E+00	1.2E+01	1.2E+02	mg/kg
Benzo(b)fluoranthene	2.25E+01	1.55E-06					1.5E+01	1.5E+02	1.5E+03	mg/kg
Dibenz(a,h)anthracene	3.75E+00	1.27E-05					3.0E-01	3.0E+00	3.0E+01	mg/kg

531334

Table 1.92 Remedial goal options for WAG 6

-- SECTOR=West LANDUSE=Residential MEDIA=Surface soil --

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.28E+03		7.53E+00	9.7E+01	9.7E+02	2.9E+03				mg/kg
Antimony	9.92E-01		3.86E+00	2.6E-02	2.6E-01	7.7E-01				mg/kg
Arsenic	1.32E+01	4.55E-03	4.27E+01	3.1E-02	3.1E-01	9.3E-01	2.9E-03	2.9E-02	2.9E-01	mg/kg
Beryllium	3.15E-01	5.96E-04	1.35E-01	2.3E-01	2.3E+00	7.0E+00	5.3E-04	5.3E-03	5.3E-02	mg/kg
Cadmium	9.05E-01	3.17E-10	1.47E+00	6.1E-02	6.1E-01	1.8E+00				mg/kg
Chromium	1.26E+01	2.96E-08	3.83E+00	3.3E-01	3.3E+00	9.8E+00				mg/kg
Uranium	3.63E+01		1.12E+01	3.2E-01	3.2E+00	9.7E+00				mg/kg
Zinc	3.00E+01		1.88E-01	1.6E+01	1.6E+02	4.8E+02				mg/kg
Benz(a)anthracene	2.01E+01	3.43E-03					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(a)pyrene	1.81E+01	3.07E-02					5.9E-04	5.9E-03	5.9E-02	mg/kg
Benzo(b)fluoranthene	2.25E+01	3.82E-03					5.9E-03	5.9E-02	5.9E-01	mg/kg
Benzo(k)fluoranthene	2.22E+01	3.75E-04					5.9E-02	5.9E-01	5.9E+00	mg/kg
Chrysene	2.17E+01	3.70E-05					5.9E-01	5.9E+00	5.9E+01	mg/kg
Dibenz(a,h)anthracene	3.75E+00	6.34E-03					5.9E-04	5.9E-03	5.9E-02	mg/kg
Fluoranthene	4.51E+01		1.16E+00	3.9E+00	3.9E+01	1.2E+02				mg/kg
Indeno(1,2,3-cd)pyrene	3.80E+00	6.42E-04					5.9E-03	5.9E-02	5.9E-01	mg/kg
PCB-1254	9.60E-01	4.25E-04	4.48E+01	2.1E-03	2.1E-02	6.4E-02	2.3E-03	2.3E-02	2.3E-01	mg/kg
PCB-1260	1.60E-02	7.03E-06					2.3E-03	2.3E-02	2.3E-01	mg/kg
Polychlorinated biphenyl	5.61E-01	2.48E-04					2.3E-03	2.3E-02	2.3E-01	mg/kg
Pyrene	3.95E+01		1.35E+00	2.9E+00	2.9E+01	8.8E+01				mg/kg
Cesium-137	6.72E-01	4.93E-05					1.4E-02	1.4E-01	1.4E+00	pCi/g
Neptunium-237	1.52E+00	1.49E-04					1.0E-02	1.0E-01	1.0E+00	pCi/g
Uranium-234	9.48E+00	1.17E-04					8.1E-02	8.1E-01	8.1E+00	pCi/g
Uranium-235	6.60E-01	1.40E-05					4.7E-02	4.7E-01	4.7E+00	pCi/g
Uranium-238	1.21E+01	2.32E-04					5.2E-02	5.2E-01	5.2E+00	pCi/g

531335

Table 1.92 Remedial goal options for WAG 6

SECTOR=Central LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Antimony	2.85E+00		5.79E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Chromium	2.23E+01	1.10E-08	3.62E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Iron	1.66E+04		7.67E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Cesium-137	2.34E-01	1.67E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g

SECTOR=East LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.46E+03		1.42E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Arsenic	3.73E+00	1.45E-05	9.05E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	2.94E-01	7.18E-05	9.35E-03				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	9.06E+00	4.48E-09	1.47E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Lead	5.70E+00		7.89E+02	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	2.68E+02		2.44E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Benz(a)anthracene	4.19E-01	1.48E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	4.18E-01	1.47E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	4.39E-01	1.55E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Dibenz(a,h)anthracene	1.60E-01	5.64E-06					2.8E-02	2.8E-01	2.8E+00	mg/kg
Indeno(1,2,3-cd)pyrene	3.99E-01	1.41E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Polychlorinated biphenyl	4.67E-01	1.85E-06					2.5E-01	2.5E+00	2.5E+01	mg/kg
Cesium-137	2.17E-01	1.55E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g

SECTOR=Far East/Northeast LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.27E+03		1.38E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	2.53E+00		5.13E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	6.84E+00	2.67E-05	1.66E-01	4.1E+00	4.1E+01	1.2E+02	2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	4.54E-01	1.11E-04	1.44E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	1.12E+01	5.55E-09	1.82E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Iron	1.40E+04		6.48E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	1.20E+01		1.66E+03	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	5.48E+02		5.00E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg

531336

Table 1.92 Remedial goal options for WAG 6

SECTOR=Far East/Northeast LANDUSE=Excavation MEDIA=Subsurface soil (continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Vanadium	2.34E+01		5.32E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
Benzo(a)pyrene	1.50E-01	5.29E-06					2.8E-02	2.8E-01	2.8E+00	mg/kg
Cesium-137	2.66E-01	1.90E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g
Uranium-238	6.22E+00	2.24E-06					2.8E+00	2.8E+01	2.8E+02	pCi/g

SECTOR=Far North/Northwest LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.41E+03		1.41E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	1.20E+00		2.45E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	4.48E+00	1.74E-05	1.09E-01	4.1E+00	4.1E+01	1.2E+02	2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.52E-01	8.60E-05	1.12E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	3.19E+01	1.58E-08	5.18E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Copper	1.56E+03		3.37E-01	4.6E+02	4.6E+03	1.4E+04				mg/kg
Iron	1.40E+04		6.45E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	1.35E+01		1.87E+03	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	3.58E+02		3.27E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Nickel	2.86E+03		1.32E+00	2.2E+02	2.2E+03	6.5E+03				mg/kg
Uranium	4.26E+02		7.54E-01	5.7E+01	5.7E+02	1.7E+03				mg/kg
Benz(a)anthracene	3.40E-01	1.20E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	2.80E-01	9.87E-06					2.8E-02	2.8E-01	2.8E+00	mg/kg
Cesium-137	3.32E+00	2.37E-05					1.4E-01	1.4E+00	1.4E+01	pCi/g
Neptunium-237	4.90E+00	1.09E-05					4.5E-01	4.5E+00	4.5E+01	pCi/g
Plutonium-239	1.70E+00	1.19E-06					1.4E+00	1.4E+01	1.4E+02	pCi/g
Technetium-99	4.84E+03	1.51E-05					3.2E+02	3.2E+03	3.2E+04	pCi/g
Uranium-234	6.67E+01	6.60E-06					1.0E+01	1.0E+02	1.0E+03	pCi/g
Uranium-235	1.23E+00	1.23E-06					1.0E+00	1.0E+01	1.0E+02	pCi/g
Uranium-238	1.42E+02	5.11E-05					2.8E+00	2.8E+01	2.8E+02	pCi/g

531837

Table 1.92 Remedial goal options for WAG 6

SECTOR=Northeast LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	6.22E+03		1.18E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	1.17E+00		2.38E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	2.38E+00	9.27E-06	5.77E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	2.88E-01	7.05E-05	9.18E-03				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	1.06E+01	5.26E-09	1.73E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Manganese	2.15E+02		1.96E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Vanadium	1.48E+01		3.35E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
Benz(a)anthracene	1.02E+00	3.59E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	9.17E-01	3.23E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	1.02E+00	3.61E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Dibenz(a,h)anthracene	3.98E-01	1.40E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Indeno(1,2,3-cd)pyrene	6.95E-01	2.45E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
N-Nitroso-di-n-propylamine	3.94E-01	1.57E-05					2.5E-02	2.5E-01	2.5E+00	mg/kg
Uranium-234	1.12E+01	1.11E-06					1.0E+01	1.0E+02	1.0E+03	pCi/g
Uranium-238	1.15E+01	4.14E-06					2.8E+00	2.8E+01	2.8E+02	pCi/g

SECTOR=Northwest LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	6.09E+03		1.16E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	1.02E+00		2.07E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	2.72E+00	1.06E-05	6.60E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.43E-01	8.38E-05	1.09E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	1.18E+01	5.85E-09	1.92E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Iron	1.07E+04		4.96E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	6.22E+00		8.62E+02	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	2.30E+02		2.10E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Vanadium	1.67E+01		3.80E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
Benz(a)anthracene	3.00E-01	1.06E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	3.98E-01	1.40E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	3.99E-01	1.41E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
N-Nitroso-di-n-propylamine	4.91E-01	1.95E-05					2.5E-02	2.5E-01	2.5E+00	mg/kg
Polychlorinated biphenyl	5.00E-01	1.98E-06					2.5E-01	2.5E+00	2.5E+01	mg/kg
Uranium-238	3.35E+00	1.21E-06					2.8E+00	2.8E+01	2.8E+02	pCi/g

531338

Table 1.92 Remedial goal options for WAG 6

SECTOR=Southeast LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	6.02E+03		1.15E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	4.97E-01		1.01E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	2.93E+00	1.14E-05	7.10E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.19E-01	7.80E-05	1.02E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	9.21E+00	4.56E-09	1.50E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Iron	9.86E+03		4.55E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	5.53E+00		7.66E+02	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	2.05E+02		1.87E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Vanadium	1.40E+01		3.18E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
1,1-Dichloroethene	3.45E-01	4.23E-06	4.32E-04				8.2E-02	8.2E-01	8.2E+00	mg/kg
Benz(a)anthracene	5.34E-01	1.88E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	5.32E-01	1.88E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	5.44E-01	1.92E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Dibenz(a,h)anthracene	4.60E-01	1.62E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Indeno(1,2,3-cd)pyrene	5.19E-01	1.83E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Polychlorinated biphenyl	5.04E-01	2.00E-06					2.5E-01	2.5E+00	2.5E+01	mg/kg
Trichloroethene	6.59E+00	1.54E-06	6.08E-02				4.3E+00	4.3E+01	4.3E+02	mg/kg
Vinyl chloride	1.22E-01	2.21E-04					5.5E-04	5.5E-03	5.5E-02	mg/kg
Cesium-137	1.90E-01	1.36E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g

SECTOR=Southwest LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	5.56E+03		1.06E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	1.14E+00		2.31E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	3.69E+00	1.44E-05	8.94E-02				2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.23E-01	7.90E-05	1.03E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	9.05E+00	4.48E-09	1.47E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Iron	1.02E+04		4.70E-01	2.2E+03	2.2E+04	6.5E+04				mg/kg
Lead	5.54E+00		7.68E+02	7.2E-04	7.2E-03	2.2E-02				mg/kg
Manganese	2.08E+02		1.89E-01	1.1E+02	1.1E+03	3.3E+03				mg/kg
Vanadium	1.28E+01		2.91E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
Benz(a)anthracene	6.29E-01	2.22E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	6.43E-01	2.27E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	6.41E-01	2.26E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
Dibenz(a,h)anthracene	5.47E-01	1.93E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Indeno(1,2,3-cd)pyrene	5.05E-01	1.78E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg

531339

Table 1.92 Remedial goal options for WAG 6

SECTOR=Southwest LANDUSE=Excavation MEDIA=Subsurface soil
(continued)

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
N-Nitroso-di-n-propylamine	5.82E-01	2.32E-05					2.5E-02	2.5E-01	2.5E+00	mg/kg
Vinyl chloride	3.50E-02	6.32E-05					5.5E-04	5.5E-03	5.5E-02	mg/kg
Cesium-137	2.10E-01	1.49E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g

SECTOR=West LANDUSE=Excavation MEDIA=Subsurface soil

Analyte	Representative concentration	Risk at medium	Hazard Index at medium	RGO at HI=0.1	RGO at HI=1	RGO at HI=3	RGO at ELCR=1E-06	RGO at ELCR=1E-05	RGO at ELCR=1E-04	Units
Aluminum	7.50E+03		1.43E-01	5.3E+03	5.3E+04	1.6E+05				mg/kg
Antimony	8.19E-01		1.66E-01	4.9E-01	4.9E+00	1.5E+01				mg/kg
Arsenic	4.35E+01	1.69E-04	1.05E+00	4.1E+00	4.1E+01	1.2E+02	2.6E-01	2.6E+00	2.6E+01	mg/kg
Beryllium	3.21E-01	7.84E-05	1.02E-02				4.1E-03	4.1E-02	4.1E-01	mg/kg
Chromium	1.13E+01	5.57E-09	1.83E-01	6.1E+00	6.1E+01	1.8E+02				mg/kg
Vanadium	1.51E+01		3.44E-01	4.4E+00	4.4E+01	1.3E+02				mg/kg
Benz(a)anthracene	4.63E+00	1.63E-05					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(a)pyrene	4.34E+00	1.53E-04					2.8E-02	2.8E-01	2.8E+00	mg/kg
Benzo(b)fluoranthene	5.10E+00	1.80E-05					2.8E-01	2.8E+00	2.8E+01	mg/kg
Benzo(k)fluoranthene	4.53E+00	1.60E-06					2.8E+00	2.8E+01	2.8E+02	mg/kg
Dibenz(a,h)anthracene	2.43E+00	8.57E-05					2.8E-02	2.8E-01	2.8E+00	mg/kg
Indeno(1,2,3-cd)pyrene	2.65E+00	9.35E-06					2.8E-01	2.8E+00	2.8E+01	mg/kg
PCB-1254	2.60E-01	1.03E-06	7.23E-02				2.5E-01	2.5E+00	2.5E+01	mg/kg
Cesium-137	3.98E-01	2.84E-06					1.4E-01	1.4E+00	1.4E+01	pCi/g
Neptunium-237	8.59E-01	1.91E-06					4.5E-01	4.5E+00	4.5E+01	pCi/g
Uranium-234	1.21E+01	1.20E-06					1.0E+01	1.0E+02	1.0E+03	pCi/g
Uranium-238	1.59E+01	5.73E-06					2.8E+00	2.8E+01	2.8E+02	pCi/g

531340

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg) [b]			Hazard quotients [c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient [a]	Microbes	Plants	Worms	Microbes	Plants	Worms
Central	Uranium	1/1	1.49E+00	1.49E+00	3.05E-01		5.00E+00			2.99E-01	
Central	Di-n-butyl phthalate	1/1	6.00E-01	1.20E+00			2.00E+02			6.00E-03	
Central	Methylene chloride	1/1	7.00E-03	1.40E-02							
Central	Trichloroethene	1/1	1.60E-03	1.60E-03							
East	Aluminum	2/2	6.03E+03	1.21E+04	9.31E-01	6.00E+02	5.00E+01		2.02E+01	2.42E+02	
East	Arsenic	2/2	3.33E+00	8.10E+00	6.75E-01	1.00E+02	1.00E+01	6.00E+01	8.10E-02	8.10E-01	1.35E-01
East	Barium	2/2	5.58E+01	1.32E+02	6.60E-01	3.00E+03	5.00E+02		4.40E-02	2.64E-01	
East	Beryllium	2/2	2.50E-01	5.20E-01	7.76E-01		1.00E+01			5.20E-02	
East	Cadmium	2/2	1.35E-01	3.80E-01	1.81E+00	2.00E+01	3.00E+00	2.00E+01	1.90E-02	1.27E-01	1.90E-02
East	Calcium	2/2	6.06E+03	2.03E+04	1.02E-01						
East	Chromium	2/2	8.25E+00	1.82E+01		1.00E+01	1.00E+00	4.00E-01	1.82E+00	1.82E+01	4.55E+01
East	Cobalt	2/2	4.17E+00	8.70E+00	6.21E-01	1.00E+03	2.00E+01		8.70E-03	4.35E-01	
East	Copper	2/2	1.32E+01	3.46E+01	1.82E+00	1.00E+02	1.00E+02	5.00E+01	3.46E-01	3.46E-01	6.92E-01
East	Iron	2/2	9.05E+03	2.05E+04	7.32E-01	2.00E+02			1.03E+02		
East	Lead	2/2	8.78E+00	2.45E+01	6.81E-01	9.00E+02	5.00E+01	5.00E+02	2.72E-02	4.90E-01	4.90E-02
East	Magnesium	2/2	1.11E+03	2.43E+03	3.16E-01						
East	Manganese	2/2	2.50E+02	5.55E+02	3.70E-01	1.00E+02	5.00E+02		5.55E+00	1.11E+00	
East	Mercury	2/2	2.33E-02	6.28E-02	3.14E-01	3.00E+01	3.00E-01	1.00E-01	2.09E-03	2.09E-01	6.28E-01
East	Nickel	2/2	1.03E+01	2.28E+01	1.09E+00	9.00E+01	3.00E+01	2.00E+02	2.53E-01	7.60E-01	1.14E-01
East	Potassium	2/2	3.40E+02	7.51E+02	5.78E-01						
East	Sodium	2/2	2.98E+02	6.20E+02	1.94E+00						
East	Thallium	1/2	4.50E-01	1.20E+00	5.71E+00		1.00E+00			1.20E+00	
East	Uranium	1/1	2.74E+01	2.74E+01	5.58E+00		5.00E+00			5.47E+00	
East	Vanadium	2/2	1.28E+01	2.65E+01	6.97E-01	2.00E+01	2.00E+00		1.33E+00	1.33E+01	
East	Zinc	2/2	2.37E+01	5.39E+01	8.29E-01	1.00E+02	5.00E+01	2.00E+02	5.39E-01	1.08E+00	2.70E-01
East	Acenaphthene	1/2	2.27E-01	1.30E-01			2.00E+01			6.50E-03	
East	Anthracene	1/2	2.50E-01	2.20E-01							
East	Benz(a)anthracene	1/2	4.35E-01	9.60E-01							
East	Benzo(a)pyrene	1/2	4.45E-01	1.00E+00							
East	Benzo(b)fluoranthene	1/2	5.45E-01	1.40E+00							
East	Benzo(ghi)perylene	1/2	2.87E-01	3.70E-01							
East	Benzo(k)fluoranthene	2/2	2.81E-01	8.70E-01							
East	Chrysene	1/2	4.45E-01	1.00E+00							
East	Di-n-butyl phthalate	2/2	4.62E-01	1.23E+00			2.00E+02			6.15E-03	
East	Dibenz(a,h)anthracene	1/2	2.35E-01	1.60E-01							

531341

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg) [b]			Hazard quotients [c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient [a]	Microbes	Plants	Worms	Microbes	Plants	Worms
East	Fluoranthene	2/2	5.81E-01	2.10E+00							
East	Fluorene	1/2	2.17E-01	9.00E-02				3.00E+01			3.00E-03
East	Indeno(1,2,3-cd)pyrene	1/2	3.00E-01	4.20E-01							
East	PCB-1260	1/1	3.30E+00	3.30E+00							
East	Phenanthrene	1/2	4.95E-01	1.20E+00							
East	Polychlorinated bipheny	1/2	2.75E+00	1.00E+01			4.00E+01			2.50E-01	
East	Pyrene	2/2	5.07E-01	1.80E+00							
Far East/Northeast	Aluminum	2/2	6.73E+03	1.57E+04	1.21E+00	6.00E+02	5.00E+01		2.62E+01	3.14E+02	
Far East/Northeast	Antimony	2/2	8.75E-01	2.90E+00	1.38E+01		5.00E+00			5.80E-01	
Far East/Northeast	Arsenic	2/2	3.68E+00	7.60E+00	6.33E-01	1.00E+02	1.00E+01	6.00E+01	7.60E-02	7.60E-01	1.27E-01
Far East/Northeast	Barium	2/2	6.03E+01	1.47E+02	7.35E-01	3.00E+03	5.00E+02		4.90E-02	2.94E-01	
Far East/Northeast	Beryllium	2/2	2.93E-01	6.10E-01	9.10E-01		1.00E+01			6.10E-02	
Far East/Northeast	Calcium	2/2	4.80E+03	1.49E+04	7.45E-02						
Far East/Northeast	Chromium	2/2	8.03E+00	1.68E+01		1.00E+01	1.00E+00	4.00E-01	1.68E+00	1.68E+01	4.20E+01
Far East/Northeast	Cobalt	2/2	3.89E+00	9.38E+00	6.70E-01	1.00E+03	2.00E+01		9.38E-03	4.69E-01	
Far East/Northeast	Copper	2/2	5.75E+00	1.26E+01	6.63E-01	1.00E+02	1.00E+02	5.00E+01	1.26E-01	1.26E-01	2.52E-01
Far East/Northeast	Iron	2/2	8.98E+03	1.97E+04	7.04E-01	2.00E+02			9.85E+01		
Far East/Northeast	Lead	2/2	5.98E+00	1.25E+01	3.47E-01	9.00E+02	5.00E+01	5.00E+02	1.39E-02	2.50E-01	2.50E-02
Far East/Northeast	Magnesium	2/2	9.30E+02	2.25E+03	2.92E-01						
Far East/Northeast	Manganese	2/2	3.22E+02	6.88E+02	4.59E-01	1.00E+02	5.00E+02		6.88E+00	1.38E+00	
Far East/Northeast	Mercury	1/2	6.70E-03	1.82E-02	9.10E-02	3.00E+01	3.00E-01	1.00E-01	6.07E-04	6.07E-02	1.82E-01
Far East/Northeast	Nickel	2/2	6.53E+00	1.62E+01	7.71E-01	9.00E+01	3.00E+01	2.00E+02	1.80E-01	5.40E-01	8.10E-02
Far East/Northeast	Potassium	2/2	3.13E+02	9.10E+02	7.00E-01						
Far East/Northeast	Silver	1/2	5.50E-02	1.40E-01	6.09E-02	5.00E+01	2.00E+00		2.80E-03	7.00E-02	
Far East/Northeast	Sodium	2/2	1.29E+02	2.58E+02	8.06E-01						
Far East/Northeast	Uranium	2/2	1.61E+01	2.62E+01	5.35E+00		5.00E+00			5.24E+00	
Far East/Northeast	Vanadium	2/2	1.44E+01	2.91E+01	7.66E-01	2.00E+01	2.00E+00		1.46E+00	1.46E+01	
Far East/Northeast	Zinc	2/2	1.97E+01	4.55E+01	7.00E-01	1.00E+02	5.00E+01	2.00E+02	4.55E-01	9.10E-01	2.28E-01
Far East/Northeast	Benz(a)anthracene	1/2	1.97E-01	4.00E-02							
Far East/Northeast	Benzo(a)pyrene	1/2	1.97E-01	4.00E-02							
Far East/Northeast	Benzo(b)fluoranthene	1/2	1.97E-01	4.00E-02							
Far East/Northeast	Benzo(k)fluoranthene	1/2	1.99E-01	5.00E-02							
Far East/Northeast	Chrysene	1/2	1.97E-01	4.00E-02							
Far East/Northeast	Fluoranthene	2/2	3.75E-02	9.00E-02							
Far East/Northeast	PCB-1260	1/2	1.23E-02	5.60E-03							

531342

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg) [b]			Hazard quotients [c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient [a]	Microbes	Plants	Worms	Microbes	Plants	Worms
Far East/Northeast	Phenanthrene	1/2	1.97E-01	4.00E-02							
Far East/Northeast	Polychlorinated bipheny	1/2	2.51E-01	5.60E-03			4.00E+01			1.40E-04	
Far East/Northeast	Pyrene	2/2	3.25E-02	7.00E-02							
Far North/Northwest	Aluminum	2/2	5.03E+03	1.29E+04	9.92E-01	6.00E+02	5.00E+01		2.15E+01	2.58E+02	
Far North/Northwest	Antimony	2/2	5.00E-01	1.40E+00	6.67E+00		5.00E+00			2.80E-01	
Far North/Northwest	Arsenic	2/2	3.69E+00	1.01E+01	8.42E-01	1.00E+02	1.00E+01	6.00E+01	1.01E-01	1.01E+00	1.68E-01
Far North/Northwest	Barlum	2/2	4.18E+01	1.01E+02	5.05E-01	3.00E+03	5.00E+02		3.37E-02	2.02E-01	
Far North/Northwest	Beryllium	2/2	2.78E-01	6.90E-01	1.03E+00		1.00E+01			6.90E-02	
Far North/Northwest	Cadmium	2/2	8.75E-02	3.00E-01	1.43E+00	2.00E+01	3.00E+00	2.00E+01	1.50E-02	1.00E-01	1.50E-02
Far North/Northwest	Calcium	2/2	1.27E+04	4.16E+04	2.08E-01						
Far North/Northwest	Chromium	2/2	9.98E+00	2.72E+01		1.00E+01	1.00E+00	4.00E-01	2.72E+00	2.72E+01	6.80E+01
Far North/Northwest	Cobalt	2/2	3.92E+00	8.86E+00	6.33E-01	1.00E+03	2.00E+01		8.86E-03	4.43E-01	
Far North/Northwest	Copper	2/2	5.70E+00	1.40E+01	7.37E-01	1.00E+02	1.00E+02	5.00E+01	1.40E-01	1.40E-01	2.80E-01
Far North/Northwest	Iron	2/2	8.33E+03	2.13E+04	7.61E-01	2.00E+02			1.07E+02		
Far North/Northwest	Lead	2/2	6.35E+00	1.60E+01	4.44E-01	9.00E+02	5.00E+01	5.00E+02	1.78E-02	3.20E-01	3.20E-02
Far North/Northwest	Magneslum	2/2	1.24E+03	3.66E+03	4.75E-01						
Far North/Northwest	Manganese	2/2	2.90E+02	7.36E+02	4.91E-01	1.00E+02	5.00E+02		7.36E+00	1.47E+00	
Far North/Northwest	Mercury	2/2	1.75E-02	4.93E-02	2.47E-01	3.00E+01	3.00E-01	1.00E-01	1.64E-03	1.64E-01	4.93E-01
Far North/Northwest	Nickel	2/2	5.83E+00	1.43E+01	6.81E-01	9.00E+01	3.00E+01	2.00E+02	1.59E-01	4.77E-01	7.15E-02
Far North/Northwest	Potassium	2/2	1.90E+02	4.77E+02	3.67E-01						
Far North/Northwest	Selenium	1/2	1.25E-01	3.00E-01	3.75E-01	1.00E+02	1.00E+00	7.00E+01	3.00E-03	3.00E-01	4.29E-03
Far North/Northwest	Silver	2/2	1.00E-01	3.00E-01	1.30E-01	5.00E+01	2.00E+00		6.00E-03	1.50E-01	
Far North/Northwest	Sodium	2/2	1.26E+02	2.54E+02	7.94E-01						
Far North/Northwest	Thallium	1/2	3.00E-01	6.00E-01	2.86E+00		1.00E+00			6.00E-01	
Far North/Northwest	Uranium	2/2	1.09E+01	1.38E+01	2.82E+00		5.00E+00			2.76E+00	
Far North/Northwest	Vanadium	2/2	1.39E+01	3.61E+01	9.50E-01	2.00E+01	2.00E+00		1.81E+00	1.81E+01	
Far North/Northwest	Zinc	2/2	1.80E+01	3.78E+01	5.82E-01	1.00E+02	5.00E+01	2.00E+02	3.78E-01	7.56E-01	1.89E-01
Far North/Northwest	Acenaphthene	1/2	1.95E-01	5.00E-02			2.00E+01			2.50E-03	
Far North/Northwest	Anthracene	1/2	2.23E-01	1.60E-01							
Far North/Northwest	Benz(a)anthracene	1/2	2.68E-01	3.40E-01							
Far North/Northwest	Benzo(a)pyrene	1/2	2.53E-01	2.80E-01							
Far North/Northwest	Benzo(b)fluoranthene	1/2	2.48E-01	2.60E-01							
Far North/Northwest	Benzo(ghi)perylene	1/2	2.15E-01	1.30E-01							
Far North/Northwest	Benzo(k)fluoranthene	1/2	2.55E-01	2.90E-01							
Far North/Northwest	Bis(2-ethylhexyl)phthal	1/2	1.98E-01	8.00E-02							

531343

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg) [b]			Hazard quotients [c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient [a]	Microbes	Plants	Worms	Microbes	Plants	Worms
Far North/Northwest	Chrysene	1/2	2.70E-01	3.50E-01							
Far North/Northwest	Di-n-butyl phthalate	1/2	1.88E-01	4.00E-02			2.00E+02			2.00E-04	
Far North/Northwest	Fluoranthene	2/2	2.20E-01	8.40E-01							
Far North/Northwest	Fluorene	1/2	1.95E-01	5.00E-02				3.00E+01			1.67E-03
Far North/Northwest	Indeno(1,2,3-cd)pyrene	1/2	2.18E-01	1.40E-01							
Far North/Northwest	Phenanthrene	1/2	3.58E-01	7.00E-01							
Far North/Northwest	Pyrene	1/2	3.60E-01	7.10E-01							
Northeast	Aluminum	1/1	6.30E+03	1.26E+04	9.69E-01	6.00E+02	5.00E+01		2.10E+01	2.52E+02	
Northeast	Arsenic	1/1	2.68E+00	5.35E+00	4.46E-01	1.00E+02	1.00E+01	6.00E+01	5.35E-02	5.35E-01	8.92E-02
Northeast	Barium	1/1	5.10E+01	1.02E+02	5.10E-01	3.00E+03	5.00E+02		3.40E-02	2.04E-01	
Northeast	Beryllium	1/1	2.90E-01	5.80E-01	8.66E-01		1.00E+01			5.80E-02	
Northeast	Calcium	1/1	5.10E+03	1.02E+04	5.10E-02						
Northeast	Chromium	1/1	9.65E+00	1.93E+01		1.00E+01	1.00E+00	4.00E-01	1.93E+00	1.93E+01	4.83E+01
Northeast	Cobalt	1/1	4.88E+00	9.76E+00	6.97E-01	1.00E+03	2.00E+01		9.76E-03	4.88E-01	
Northeast	Copper	1/1	9.45E+00	1.89E+01	9.95E-01	1.00E+02	1.00E+02	5.00E+01	1.89E-01	1.89E-01	3.78E-01
Northeast	Iron	1/1	1.30E+04	2.60E+04	9.29E-01	2.00E+02			1.30E+02		
Northeast	Lead	1/1	7.05E+00	1.41E+01	3.92E-01	9.00E+02	5.00E+01	5.00E+02	1.57E-02	2.82E-01	2.82E-02
Northeast	Magnesium	1/1	1.26E+03	2.51E+03	3.26E-01						
Northeast	Manganese	1/1	2.60E+02	5.20E+02	3.47E-01	1.00E+02	5.00E+02		5.20E+00	1.04E+00	
Northeast	Mercury	1/1	1.32E-02	2.63E-02	1.32E-01	3.00E+01	3.00E-01	1.00E-01	8.77E-04	8.77E-02	2.63E-01
Northeast	Nickel	1/1	9.50E+00	1.90E+01	9.05E-01	9.00E+01	3.00E+01	2.00E+02	2.11E-01	6.33E-01	9.50E-02
Northeast	Potassium	1/1	1.77E+02	3.54E+02	2.72E-01						
Northeast	Sodium	1/1	1.38E+02	2.76E+02	8.63E-01						
Northeast	Uranium	1/1	1.38E+01	1.38E+01	2.82E+00		5.00E+00			2.76E+00	
Northeast	Vanadium	1/1	1.52E+01	3.04E+01	8.00E-01	2.00E+01	2.00E+00		1.52E+00	1.52E+01	
Northeast	Zinc	1/1	3.51E+01	7.02E+01	1.08E+00	1.00E+02	5.00E+01	2.00E+02	7.02E-01	1.40E+00	3.51E-01
Northeast	Acenaphthene	1/1	2.00E-02	4.00E-02			2.00E+01			2.00E-03	
Northeast	Anthracene	1/1	4.00E-02	8.00E-02							
Northeast	Benz(a)anthracene	1/1	1.75E-01	3.50E-01							
Northeast	Benzo(a)pyrene	1/1	1.50E-01	3.00E-01							
Northeast	Benzo(b)fluoranthene	1/1	2.15E-01	4.30E-01							
Northeast	Benzo(ghi)perylene	1/1	8.50E-02	1.70E-01							
Northeast	Benzo(k)fluoranthene	1/1	1.40E-01	2.80E-01							
Northeast	Chrysene	1/1	2.00E-01	4.00E-01							

531344

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg)[b]			Hazard quotients[c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient[a]	Microbes	Plants	Worms	Microbes	Plants	Worms
Northeast	Fluoranthene	1/1	4.30E-01	8.60E-01							
Northeast	Indeno(1,2,3-cd)pyrene	1/1	9.00E-02	1.80E-01							
Northeast	Methylene chloride	1/1	1.00E-03	2.00E-03							
Northeast	PCB-1260	1/1	4.30E-02	4.30E-02							
Northeast	Phenanthrene	1/1	2.35E-01	4.70E-01							
Northeast	Polychlorinated bipheny	1/1	2.15E-02	4.30E-02			4.00E+01			1.08E-03	
Northeast	Pyrene	1/1	3.40E-01	6.80E-01							
Northwest	Aluminum	6/6	3.94E+03	1.10E+04	8.46E-01	6.00E+02	5.00E+01		1.83E+01	2.20E+02	
Northwest	Antimony	2/6	3.33E-01	1.00E+00	4.76E+00		5.00E+00			2.00E-01	
Northwest	Arsenic	6/6	2.55E+00	7.07E+00	5.89E-01	1.00E+02	1.00E+01	6.00E+01	7.07E-02	7.07E-01	1.18E-01
Northwest	Barium	6/6	3.60E+01	8.67E+01	4.34E-01	3.00E+03	5.00E+02		2.89E-02	1.73E-01	
Northwest	Beryllium	6/6	2.61E-01	7.10E-01	1.06E+00		1.00E+01			7.10E-02	
Northwest	Cadmium	3/6	8.42E-02	7.50E-01	3.57E+00	2.00E+01	3.00E+00	2.00E+01	3.75E-02	2.50E-01	3.75E-02
Northwest	Calcium	6/6	1.59E+04	1.10E+05	5.50E-01						
Northwest	Chromium	6/6	1.12E+01	6.60E+01		1.00E+01	1.00E+00	4.00E-01	6.60E+00	6.60E+01	1.65E+02
Northwest	Cobalt	6/6	2.96E+00	8.50E+00	6.07E-01	1.00E+03	2.00E+01		8.50E-03	4.25E-01	
Northwest	Copper	6/6	4.68E+00	1.32E+01	6.95E-01	1.00E+02	1.00E+02	5.00E+01	1.32E-01	1.32E-01	2.64E-01
Northwest	Iron	6/6	8.94E+03	3.05E+04	1.09E+00	2.00E+02			1.53E+02		
Northwest	Lead	6/6	7.60E+00	4.20E+01	1.17E+00	9.00E+02	5.00E+01	5.00E+02	4.67E-02	8.40E-01	8.40E-02
Northwest	Magnesium	6/6	7.18E+02	2.42E+03	3.14E-01						
Northwest	Manganese	6/6	1.90E+02	5.72E+02	3.81E-01	1.00E+02	5.00E+02		5.72E+00	1.14E+00	
Northwest	Mercury	5/6	2.19E-02	8.88E-02	4.44E-01	3.00E+01	3.00E-01	1.00E-01	2.96E-03	2.96E-01	8.88E-01
Northwest	Nickel	6/6	4.40E+00	1.41E+01	6.71E-01	9.00E+01	3.00E+01	2.00E+02	1.57E-01	4.70E-01	7.05E-02
Northwest	Potassium	6/6	9.60E+01	2.48E+02	1.91E-01						
Northwest	Selenium	3/6	1.17E-01	3.00E-01	3.75E-01	1.00E+02	1.00E+00	7.00E+01	3.00E-03	3.00E-01	4.29E-03
Northwest	Silver	1/6	6.67E-02	3.80E-01	1.65E-01	5.00E+01	2.00E+00		7.60E-03	1.90E-01	
Northwest	Sodium	6/6	1.89E+02	4.91E+02	1.53E+00						
Northwest	Uranium	1/1	9.55E+00	9.55E+00	1.95E+00		5.00E+00			1.91E+00	
Northwest	Vanadium	6/6	1.24E+01	4.24E+01	1.12E+00	2.00E+01	2.00E+00		2.12E+00	2.12E+01	
Northwest	Zinc	6/6	1.41E+01	3.74E+01	5.75E-01	1.00E+02	5.00E+01	2.00E+02	3.74E-01	7.48E-01	1.87E-01
Northwest	Benz(a)anthracene	1/2	2.56E-01	3.00E-01							
Northwest	Benzo(a)pyrene	1/2	2.81E-01	4.00E-01							
Northwest	Benzo(b)fluoranthene	1/2	3.31E-01	6.00E-01							
Northwest	Benzo(k)fluoranthene	1/2	2.56E-01	3.00E-01							
Northwest	Chrysene	1/2	2.54E-01	2.90E-01							

A-755

531345

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg) [b]			Hazard quotients [c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient [a]	Microbes	Plants	Worms	Microbes	Plants	Worms
Northwest	Fluoranthene	1/2	2.81E-01	4.00E-01							
Northwest	Pyrene	1/2	2.81E-01	4.00E-01							
Southeast	Aluminum	1/1	7.10E+03	1.42E+04	1.09E+00	6.00E+02	5.00E+01		2.37E+01	2.84E+02	
Southeast	Antimony	1/1	3.00E-01	6.00E-01	2.86E+00		5.00E+00			1.20E-01	
Southeast	Arsenic	1/1	5.00E+00	1.00E+01	8.33E-01	1.00E+02	1.00E+01	6.00E+01	1.00E-01	1.00E+00	1.67E-01
Southeast	Barium	1/1	4.38E+01	8.75E+01	4.38E-01	3.00E+03	5.00E+02		2.92E-02	1.75E-01	
Southeast	Beryllium	1/1	3.15E-01	6.30E-01	9.40E-01		1.00E+01			6.30E-02	
Southeast	Cadmium	1/1	1.75E-01	3.50E-01	1.67E+00	2.00E+01	3.00E+00	2.00E+01	1.75E-02	1.17E-01	1.75E-02
Southeast	Calclum	1/1	9.20E+03	1.84E+04	9.20E-02						
Southeast	Chromium	1/1	1.18E+01	2.36E+01		1.00E+01	1.00E+00	4.00E-01	2.36E+00	2.36E+01	5.90E+01
Southeast	Cobalt	1/1	4.03E+00	8.06E+00	5.76E-01	1.00E+03	2.00E+01		8.06E-03	4.03E-01	
Southeast	Copper	1/1	7.65E+00	1.53E+01	8.05E-01	1.00E+02	1.00E+02	5.00E+01	1.53E-01	1.53E-01	3.06E-01
Southeast	Iron	1/1	1.39E+04	2.78E+04	9.93E-01	2.00E+02			1.39E+02		
Southeast	Lead	1/1	7.05E+00	1.41E+01	3.92E-01	9.00E+02	5.00E+01	5.00E+02	1.57E-02	2.82E-01	2.82E-02
Southeast	Magnesium	1/1	1.27E+03	2.54E+03	3.30E-01						
Southeast	Manganese	1/1	2.20E+02	4.39E+02	2.93E-01	1.00E+02	5.00E+02		4.39E+00	8.78E-01	
Southeast	Nickel	1/1	6.65E+00	1.33E+01	6.33E-01	9.00E+01	3.00E+01	2.00E+02	1.48E-01	4.43E-01	6.65E-02
Southeast	Potasslum	1/1	3.85E+02	7.69E+02	5.92E-01						
Southeast	Sodium	1/1	2.00E+02	4.00E+02	1.25E+00						
Southeast	Uranium	1/1	3.28E+00	3.28E+00	6.70E-01		5.00E+00			6.57E-01	
Southeast	Vanadium	1/1	1.81E+01	3.61E+01	9.50E-01	2.00E+01	2.00E+00		1.81E+00	1.81E+01	
Southeast	Zinc	1/1	2.44E+01	4.88E+01	7.51E-01	1.00E+02	5.00E+01	2.00E+02	4.88E-01	9.76E-01	2.44E-01
Southeast	Benz(a)anthracene	1/1	3.50E-02	7.00E-02							
Southeast	Benzo(a)pyrene	1/1	4.00E-02	8.00E-02							
Southeast	Benzo(b)fluoranthene	1/1	3.50E-02	7.00E-02							
Southeast	Benzo(k)fluoranthene	1/1	3.00E-02	6.00E-02							
Southeast	Chrysene	1/1	4.00E-02	8.00E-02							
Southeast	Fluoranthene	1/1	7.50E-02	1.50E-01							
Southeast	PCB-1262	1/1	3.80E-02	3.80E-02			4.00E+01			9.50E-04	
Southeast	Phenanthrene	1/1	3.50E-02	7.00E-02							
Southeast	Polychlorinated bipheny	1/1	1.90E-02	3.80E-02			4.00E+01			9.50E-04	
Southeast	Pyrene	1/1	6.00E-02	1.20E-01							
Southwest	Aluminum	4/4	3.88E+03	1.09E+04	8.38E-01	6.00E+02	5.00E+01		1.82E+01	2.18E+02	
Southwest	Antimony	3/4	8.50E-01	2.80E+00	1.33E+01		5.00E+00			5.60E-01	

531346

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

			Concentration (mg/kg)			Benchmarks (mg/kg) [b]			Hazard quotients [c]		
Sector	Analyte Name	Freq. of Detect.	Mean	Maximum	Backgrd. quotient [a]	Microbes	Plants	Worms	Microbes	Plants	Worms
Southwest	Arsenic	4/4	2.24E+00	4.70E+00	3.92E-01	1.00E+02	1.00E+01	6.00E+01	4.70E-02	4.70E-01	7.83E-02
Southwest	Barium	4/4	3.01E+01	8.18E+01	4.09E-01	3.00E+03	5.00E+02		2.73E-02	1.64E-01	
Southwest	Beryllium	4/4	2.38E-01	7.90E-01	1.18E+00		1.00E+01			7.90E-02	
Southwest	Cadmium	4/4	2.20E-01	7.80E-01	3.71E+00	2.00E+01	3.00E+00	2.00E+01	3.90E-02	2.60E-01	3.90E-02
Southwest	Calcium	4/4	6.90E+04	2.77E+05	1.39E+00						
Southwest	Chromium	4/4	1.11E+01	4.80E+01		1.00E+01	1.00E+00	4.00E-01	4.80E+00	4.80E+01	1.20E+02
Southwest	Cobalt	4/4	3.73E+00	1.06E+01	7.57E-01	1.00E+03	2.00E+01		1.06E-02	5.30E-01	
Southwest	Copper	4/4	5.53E+00	2.07E+01	1.09E+00	1.00E+02	1.00E+02	5.00E+01	2.07E-01	2.07E-01	4.14E-01
Southwest	Iron	4/4	1.07E+04	3.70E+04	1.32E+00	2.00E+02			1.85E+02		
Southwest	Lead	4/4	8.76E+00	2.88E+01	8.00E-01	9.00E+02	5.00E+01	5.00E+02	3.20E-02	5.76E-01	5.76E-02
Southwest	Magnesium	4/4	2.39E+03	1.08E+04	1.40E+00						
Southwest	Manganese	4/4	1.62E+02	4.73E+02	3.15E-01	1.00E+02	5.00E+02		4.73E+00	9.46E-01	
Southwest	Mercury	4/4	2.61E-02	1.36E-01	6.80E-01	3.00E+01	3.00E-01	1.00E-01	4.53E-03	4.53E-01	1.36E+00
Southwest	Nickel	4/4	6.94E+00	2.35E+01	1.12E+00	9.00E+01	3.00E+01	2.00E+02	2.61E-01	7.83E-01	1.18E-01
Southwest	Potassium	4/4	2.27E+02	6.00E+02	4.62E-01						
Southwest	Silver	3/4	2.66E-01	1.10E+00	4.78E-01	5.00E+01	2.00E+00		2.20E-02	5.50E-01	
Southwest	Sodium	4/4	2.11E+02	8.15E+02	2.55E+00						
Southwest	Thallium	2/4	4.38E-01	1.50E+00	7.14E+00		1.00E+00			1.50E+00	
Southwest	Uranium	3/3	2.10E+01	5.01E+01	1.02E+01		5.00E+00			1.00E+01	
Southwest	Vanadium	4/4	8.96E+00	3.35E+01	8.82E-01	2.00E+01	2.00E+00		1.68E+00	1.68E+01	
Southwest	Zinc	4/4	2.74E+01	1.11E+02	1.71E+00	1.00E+02	5.00E+01	2.00E+02	1.11E+00	2.22E+00	5.55E-01
Southwest	Acenaphthene	4/5	4.78E-01	2.80E+00			2.00E+01			1.40E-01	
Southwest	Acenaphthylene	1/5	2.27E+00	2.20E-01							
Southwest	Anthracene	5/5	7.93E-01	5.32E+00							
Southwest	Benz(a)anthracene	5/5	2.33E+00	1.40E+01							
Southwest	Benzo(a)pyrene	5/5	2.34E+00	1.30E+01							
Southwest	Benzo(b)fluoranthene	5/5	2.46E+00	1.40E+01							
Southwest	Benzo(ghi)perylene	5/5	1.18E+00	6.10E+00							
Southwest	Benzo(k)fluoranthene	5/5	1.72E+00	8.75E+00							
Southwest	Bis(2-ethylhexyl)phthal	1/5	2.26E+00	8.00E-02							
Southwest	Chrysene	5/5	2.22E+00	1.20E+01							
Southwest	Dibenz(a,h)anthracene	3/5	1.04E+00	1.30E+00							
Southwest	Dibenzofuran	3/5	1.51E+00	7.00E-01							
Southwest	Fluoranthene	5/5	5.11E+00	3.00E+01							
Southwest	Fluorene	3/5	9.57E-01	1.20E+00				3.00E+01			4.00E-02
Southwest	Indeno(1,2,3-cd)pyrene	5/5	9.63E-01	3.90E+00							

A-757

531347

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

Sector	Analyte Name	Freq. of Detect.	Concentration (mg/kg)		Backgrd. quotient [a]	Benchmarks (mg/kg) [b]			Hazard quotients [c]		
			Mean	Maximum		Microbes	Plants	Worms	Microbes	Plants	Worms
Southwest	Naphthalene	1/5	2.24E+00	2.40E-03							
Southwest	PCB-1260	2/2	2.05E-02	3.80E-02							
Southwest	Phenanthrene	5/5	2.60E+00	1.60E+01							
Southwest	Polychlorinated bipheny	2/5	3.04E-01	3.80E-02			4.00E+01			9.50E-04	
Southwest	Pyrene	5/5	4.19E+00	2.60E+01							
Southwest	Toluene	1/1	1.55E-03	3.10E-03			2.00E+02			1.55E-05	
West	Aluminum	9/9	6.23E+03	1.77E+04	1.36E+00	6.00E+02	5.00E+01		2.95E+01	3.54E+02	
West	Antimony	4/9	7.18E-01	1.30E+00	6.19E+00		5.00E+00			2.60E-01	
West	Arsenic	9/9	7.96E+00	4.52E+01	3.77E+00	1.00E+02	1.00E+01	6.00E+01	4.52E-01	4.52E+00	7.53E-01
West	Barium	9/9	4.81E+01	1.27E+02	6.35E-01	3.00E+03	5.00E+02		4.23E-02	2.54E-01	
West	Beryllium	9/9	2.65E-01	8.00E-01	1.19E+00		1.00E+01			8.00E-02	
West	Cadmium	8/9	3.53E-01	4.25E+00	2.02E+01	2.00E+01	3.00E+00	2.00E+01	2.13E-01	1.42E+00	2.13E-01
West	Calcium	9/9	9.03E+03	7.15E+04	3.58E-01						
West	Chromium	9/9	1.02E+01	4.58E+01		1.00E+01	1.00E+00	4.00E-01	4.58E+00	4.58E+01	1.15E+02
West	Cobalt	9/9	3.72E+00	1.43E+01	1.02E+00	1.00E+03	2.00E+01		1.43E-02	7.15E-01	
West	Copper	9/9	8.68E+00	2.79E+01	1.47E+00	1.00E+02	1.00E+02	5.00E+01	2.79E-01	2.79E-01	5.58E-01
West	Iron	9/9	1.01E+04	2.49E+04	8.89E-01	2.00E+02			1.25E+02		
West	Lead	9/9	6.18E+00	1.52E+01	4.22E-01	9.00E+02	5.00E+01	5.00E+02	1.69E-02	3.04E-01	3.04E-02
West	Magnesium	9/9	1.19E+03	4.17E+03	5.42E-01						
West	Manganese	9/9	1.81E+02	5.38E+02	3.59E-01	1.00E+02	5.00E+02		5.38E+00	1.08E+00	
West	Mercury	9/9	1.66E-02	6.76E-02	3.38E-01	3.00E+01	3.00E-01	1.00E-01	2.25E-03	2.25E-01	6.76E-01
West	Nickel	9/9	8.15E+00	2.55E+01	1.21E+00	9.00E+01	3.00E+01	2.00E+02	2.83E-01	8.50E-01	1.28E-01
West	Potassium	9/9	3.10E+02	1.00E+03	7.69E-01						
West	Selenium	3/9	1.57E-01	3.00E-01	3.75E-01	1.00E+02	1.00E+00	7.00E+01	3.00E-03	3.00E-01	4.29E-03
West	Silver	1/9	6.27E-02	6.00E-01	2.61E-01	5.00E+01	2.00E+00		1.20E-02	3.00E-01	
West	Sodium	9/9	2.39E+02	6.81E+02	2.13E+00						
West	Uranium	9/9	2.14E+01	1.19E+02	2.42E+01		5.00E+00			2.38E+01	
West	Vanadium	9/9	1.38E+01	3.58E+01	9.42E-01	2.00E+01	2.00E+00		1.79E+00	1.79E+01	
West	Zinc	9/9	2.56E+01	7.57E+01	1.16E+00	1.00E+02	5.00E+01	2.00E+02	7.57E-01	1.51E+00	3.79E-01
West	2-Methylnaphthalene	2/9	2.95E+00	9.00E-01							
West	Acenaphthene	4/9	2.47E+00	7.07E+00			2.00E+01			3.54E-01	
West	Anthracene	6/9	4.81E+00	8.43E+01							
West	Benz(a)anthracene	7/9	5.98E+00	3.92E+01							
West	Benzo(a)pyrene	7/9	5.56E+00	3.77E+01							
West	Benzo(b)fluoranthene	7/9	6.72E+00	6.24E+01							

531348

Table 2.1. Hazard quotients for estimating potential risks to plants, soil microbes, and invertebrates experiencing exposure to chemicals in future WAG 6 soils

Sector	Analyte Name	Freq. of Detect.	Concentration (mg/kg) Mean	Concentration (mg/kg) Maximum	Backgrd. quotient [a]	Benchmarks (mg/kg) [b] Microbes	Benchmarks (mg/kg) [b] Plants	Benchmarks (mg/kg) [b] Worms	Hazard quotients [c] Microbes	Hazard quotients [c] Plants	Hazard quotients [c] Worms
West	Benzo(ghi)perylene	5/9	2.82E+00	8.84E+00							
West	Benzo(k)fluoranthene	7/9	5.70E+00	9.41E+01							
West	Bis(2-ethylhexyl)phthal	1/9	3.42E+00	1.00E-01							
West	Chrysene	7/9	6.50E+00	4.37E+01							
West	Di-*n*-butyl phthalate	1/9	3.50E+00	2.05E-01			2.00E+02			1.03E-03	
West	Dibenz(a,h)anthracene	2/9	2.96E+00	4.27E+00							
West	Dibenzofuran	4/9	1.78E+00	3.60E+00							
West	Fluoranthene	8/9	1.28E+01	9.68E+01							
West	Fluorene	4/9	2.18E+00	4.54E+00				3.00E+01			1.51E-01
West	Indeno(1,2,3-cd)pyrene	5/9	2.88E+00	9.69E+00							
West	Naphthalene	4/9	9.65E-01	1.90E+00							
West	PCB-1254	2/3	3.52E-01	9.60E-01							
West	PCB-1260	1/3	8.13E-02	1.60E-02							
West	Phenanthrene	8/9	9.49E+00	7.75E+01							
West	Polychlorinated bipheny	3/9	1.67E-01	9.60E-01			4.00E+01			2.40E-02	
West	Pyrene	8/9	1.13E+01	1.11E+02							

a The background quotient is the maximum detected concentration divided by the background value. Values less than 1.0 indicate the chemical was detected within background levels. A blank indicates no background value was available.

b Toxicological benchmarks are from the ORNL benchmark database, 1996.

c Hazard quotients are calculated by dividing the maximum soil concentration by the benchmark value. Values greater than 1.0 suggest risks are possible.

A-759

531349

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
Central	Uranium	1/1	1.49E+00	1.49E+00	0.3	7.17E+00	6.51E+00	9.15E-01	1.73E-01	9.80E-03	5.51E-04	2.41E-02	1.51E-03	6.02E-04
Central	Di-n-butyl phthalate	1/1	6.00E-01	1.20E+00		2.18E+03	1.98E+03	2.78E+02	1.30E-01	7.81E-03	8.95E-04	5.95E-05	3.94E-06	3.21E-06
Central	Methylene chloride	1/1	7.00E-03	1.40E-02		1.10E+02	9.99E+01	1.40E+01	1.51E-03	1.93E-03	7.43E-04	1.38E-05	1.93E-05	5.30E-05
Central	Trichloroethene	1/1	1.60E-03	1.60E-03		8.32E+00	7.56E+00	1.06E+00	1.73E-04	5.77E-05	2.00E-05	2.08E-05	7.63E-06	1.88E-05
East	Aluminum	2/2	6.03E+03	6.18E+03	0.9	2.30E+01	2.09E+01	2.93E+00	9.20E+02	8.03E+01	7.60E+00	4.01E+01	3.85E+00	2.60E+00
East	Arsenic	2/2	3.33E+00	7.89E+00	0.7	1.50E+00	1.36E+00	1.91E-01	4.45E+00	5.26E-01	1.02E-02	2.97E+00	3.86E-01	5.33E-02
East	Barium	2/2	5.58E+01	1.20E+02	0.7	4.35E+01	3.95E+01	5.55E+00	2.09E+01	3.88E+00	9.14E-01	4.81E-01	9.81E-02	1.64E-01
East	Beryllium	2/2	2.50E-01	3.13E-01	0.8	1.45E+00	1.32E+00	1.85E-01	2.47E-01	3.01E-02	4.81E-04	1.70E-01	2.28E-02	2.60E-03
East	Cadmium	2/2	1.35E-01	3.80E-01	1.8	2.12E+01	1.93E+01	2.71E+00	1.49E+00	2.22E-01	1.31E-02	7.03E-02	1.15E-02	4.86E-03
East	Calcium	2/2	6.06E+03	2.03E+04	0.1				2.47E+04	9.07E+03	2.42E+03			
East	Chromium (as Cr+3) [e]	2/2	8.25E+00	1.36E+01		6.02E+03	5.47E+03	7.68E+02	6.91E+01	8.86E+00	3.22E-02	1.15E-02	1.62E-03	4.19E-05
East	Chromium (as Cr+6)	2/2	8.25E+00	1.36E+01		2.89E+01	2.62E+01	3.69E+00	6.91E+01	8.86E+00	3.22E-02	2.39E+00	3.38E-01	8.74E-03
East	Cobalt	2/2	4.17E+00	5.31E+00	0.6				1.34E+00	1.32E-01	3.59E-03			
East	Copper	2/2	1.32E+01	3.46E+01	1.8	4.40E+01	4.00E+01	5.62E+00	1.98E+01	3.28E+00	4.16E-01	4.51E-01	8.20E-02	7.40E-02
East	Iron	2/2	9.05E+03	1.66E+04	0.7				2.07E+03	1.44E+02	1.23E+01			
East	Lead	2/2	8.78E+00	2.45E+01	0.7	1.76E+02	1.60E+02	2.24E+01	4.32E+00	4.47E-01	4.67E-02	2.46E-02	2.80E-03	2.08E-03
East	Magnesium	2/2	1.11E+03	1.79E+03	0.3				5.95E+02	2.96E+02	9.40E+01			
East	Manganese	2/2	2.50E+02	4.22E+02	0.4	6.24E+02	5.67E+02	7.97E+01	6.26E+01	1.63E+01	4.83E+00	1.00E-01	2.87E-02	6.06E-02
East	Mercury (as inorganic)	2/2	2.33E-02	6.28E-02	0.3	2.86E+00	2.60E+00	3.65E-01	1.72E-01	2.21E-02	2.03E-04	6.01E-02	8.50E-03	5.56E-04
East	Mercury (as methyl)	2/2	2.33E-02	6.28E-02	0.3	3.52E-01	3.20E-01	4.49E-02	1.72E-01	2.21E-02	2.03E-04	4.90E-01	6.92E-02	4.52E-03
East	Nickel	2/2	1.03E+01	1.75E+01	1.1	1.76E+02	1.60E+02	2.24E+01	6.21E+01	8.06E+00	8.94E-02	3.53E-01	5.05E-02	3.98E-03
East	Potassium	2/2	3.40E+02	5.64E+02	0.6				2.06E+03	6.63E+02	1.60E+02			
East	Sodium	2/2	2.98E+02	3.72E+02	1.9				1.44E+04	1.87E+03	7.19E+00			
East	Thallium	1/2	4.50E-01	1.20E+00	5.7	1.64E-01	1.49E-01	2.10E-02	9.36E-02	3.99E-03	1.22E-03	5.69E-01	2.67E-02	5.80E-02
East	Uranium	1/1	2.74E+01	2.74E+01	5.6	7.17E+00	6.51E+00	9.15E-01	3.17E+00	1.80E-01	1.01E-02	4.42E-01	2.76E-02	1.10E-02
East	Vanadium	2/2	1.28E+01	1.58E+01	0.7	4.28E+00	3.89E+00	5.47E-01	2.06E+00	2.34E-01	4.56E-02	4.82E-01	6.01E-02	8.33E-02
East	Zinc	2/2	2.37E+01	4.45E+01	0.8	7.03E+02	6.39E+02	8.98E+01	1.76E+02	2.48E+01	9.93E-01	2.51E-01	3.88E-02	1.11E-02
East	Acenaphthene	1/2	2.27E-01	1.30E-01					1.40E-02	1.01E-03	1.62E-04			
East	Anthracene	1/2	2.50E-01	2.20E-01					2.38E-02	1.66E-03	2.55E-04			
East	Benz(a)anthracene	1/2	4.35E-01	7.22E-01					7.50E-02	3.80E-03	3.31E-04			
East	Benzo(a)pyrene	1/2	4.45E-01	7.95E-01		1.19E+01	1.08E+01	1.52E+00	8.79E-02	5.43E-03	5.88E-04	7.40E-03	5.03E-04	3.87E-04
East	Benzo(b)fluoranthene	1/2	5.45E-01	1.40E+00					1.37E-01	7.15E-03	9.67E-04			
East	Benzo(ghi)perylene	1/2	2.87E-01	3.70E-01					4.00E-02	2.04E-03	1.31E-04			
East	Benzo(k)fluoranthene	2/2	2.81E-01	8.70E-01					8.54E-02	4.44E-03	6.01E-04			
East	Chrysene	1/2	4.45E-01	7.95E-01					8.59E-02	4.60E-03	3.64E-04			
East	Di-n-butyl phthalate	2/2	4.62E-01	1.23E+00		2.18E+03	1.98E+03	2.78E+02	1.33E-01	8.00E-03	9.16E-04	6.09E-05	4.04E-06	3.29E-06
East	Dibenz(a,h)anthracene	1/2	2.35E-01	1.60E-01					1.73E-02	8.80E-04	5.48E-05			
East	Fluoranthene	2/2	5.81E-01	2.10E+00					2.27E-01	1.37E-02	1.57E-03			

531350

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
East	Fluorene	1/2	2.17E-01	9.00E-02					9.72E-03	6.80E-04	1.04E-04			
East	Indeno(1,2,3-cd)pyrene	1/2	3.00E-01	4.20E-01					4.54E-02	2.32E-03	1.48E-04			
East	PCB-1260	1/1	3.30E+00	3.30E+00		6.68E-01	6.07E-01	8.53E-02	2.48E+01	3.16E+00	1.09E-03	3.71E+01	5.21E+00	1.28E-02
East	Phenanthrene	1/2	4.95E-01	1.16E+00					1.25E-01	8.18E-03	1.11E-03			
East	Polychlorinated biphen	1/2	2.75E+00	1.00E+01					1.08E+00	5.66E-02	4.09E-03			
East	Pyrene	2/2	5.07E-01	1.80E+00					1.94E-01	1.17E-02	1.34E-03			
Far E/NE	Aluminum	2/2	6.73E+03	1.38E+04	1.2	2.30E+01	2.09E+01	2.93E+00	2.06E+03	1.80E+02	1.70E+01	8.96E+01	8.61E+00	5.80E+00
Far E/NE	Antimony	2/2	8.75E-01	2.90E+00	13.8	1.49E+00	1.35E+00	1.90E-01	2.26E-01	6.72E-03	1.78E-03	1.52E-01	4.98E-03	9.40E-03
Far E/NE	Arsenic	2/2	3.68E+00	4.45E+00	0.6	1.50E+00	1.36E+00	1.91E-01	2.51E+00	2.97E-01	5.75E-03	1.68E+00	2.18E-01	3.00E-02
Far E/NE	Barium	2/2	6.03E+01	1.44E+02	0.7	4.35E+01	3.95E+01	5.55E+00	2.50E+01	4.64E+00	1.09E+00	5.75E-01	1.17E-01	1.97E-01
Far E/NE	Beryllium	2/2	2.93E-01	3.71E-01	0.9	1.45E+00	1.32E+00	1.85E-01	2.92E-01	3.56E-02	5.71E-04	2.01E-01	2.70E-02	3.09E-03
Far E/NE	Calcium	2/2	4.80E+03	1.49E+04	0.1				1.81E+04	6.66E+03	1.78E+03			
Far E/NE	Chromium (as Cr+3)	2/2	8.03E+00	1.04E+01		6.02E+03	5.47E+03	7.68E+02	5.28E+01	6.76E+00	2.46E-02	8.77E-03	1.24E-03	3.20E-05
Far E/NE	Chromium (as Cr+6)	2/2	8.03E+00	1.04E+01		2.89E+01	2.62E+01	3.69E+00	5.28E+01	6.76E+00	2.46E-02	1.83E+00	2.58E-01	6.67E-03
Far E/NE	Cobalt	2/2	3.89E+00	8.97E+00	0.7				2.27E+00	2.24E-01	6.06E-03			
Far E/NE	Copper	2/2	5.75E+00	9.22E+00	0.7	4.40E+01	4.00E+01	5.62E+00	5.29E+00	8.74E-01	1.11E-01	1.20E-01	2.19E-02	1.97E-02
Far E/NE	Iron	2/2	8.98E+03	1.45E+04	0.7				1.81E+03	1.25E+02	1.07E+01			
Far E/NE	Lead	2/2	5.98E+00	7.71E+00	0.3	1.76E+02	1.60E+02	2.24E+01	1.36E+00	1.41E-01	1.47E-02	7.74E-03	8.80E-04	6.55E-04
Far E/NE	Magnesium	2/2	9.30E+02	2.16E+03	0.3				7.20E+02	3.58E+02	1.14E+02			
Far E/NE	Manganese	2/2	3.22E+02	4.61E+02	0.5	6.24E+02	5.67E+02	7.97E+01	6.83E+01	1.78E+01	5.27E+00	1.09E-01	3.13E-02	6.62E-02
Far E/NE	Mercury (as inorganic)	1/2	6.70E-03	1.82E-02	0.1	2.86E+00	2.60E+00	3.65E-01	4.99E-02	6.41E-03	5.87E-05	1.74E-02	2.47E-03	1.61E-04
Far E/NE	Mercury (as methyl)	1/2	6.70E-03	1.82E-02	0.1	3.52E-01	3.20E-01	4.49E-02	4.99E-02	6.41E-03	5.87E-05	1.42E-01	2.01E-02	1.31E-03
Far E/NE	Nickel	2/2	6.53E+00	1.62E+01	0.8	1.76E+02	1.60E+02	2.24E+01	5.75E+01	7.46E+00	8.27E-02	3.27E-01	4.67E-02	3.68E-03
Far E/NE	Potassium	2/2	3.13E+02	9.10E+02	0.7				3.33E+03	1.07E+03	2.59E+02			
Far E/NE	Silver	1/2	5.50E-02	1.40E-01	0.1				1.30E+00	1.67E-01	2.54E-04			
Far E/NE	Sodium	2/2	1.29E+02	1.29E+02	0.8				5.00E+03	6.49E+02	2.49E+00			
Far E/NE	Uranium	2/2	1.61E+01	2.62E+01	5.4	7.17E+00	6.51E+00	9.15E-01	3.03E+00	1.72E-01	9.67E-03	4.23E-01	2.64E-02	1.06E-02
Far E/NE	Vanadium	2/2	1.44E+01	1.56E+01	0.8	4.28E+00	3.89E+00	5.47E-01	2.04E+00	2.32E-01	4.51E-02	4.77E-01	5.95E-02	8.25E-02
Far E/NE	Zinc	2/2	1.97E+01	3.91E+01	0.7	7.03E+02	6.39E+02	8.98E+01	1.55E+02	2.18E+01	8.72E-01	2.20E-01	3.41E-02	9.72E-03
Far E/NE	Benz(a)anthracene	1/2	1.97E-01	4.00E-02					4.16E-03	2.11E-04	1.83E-05			
Far E/NE	Benzo(a)pyrene	1/2	1.97E-01	4.00E-02		1.19E+01	1.08E+01	1.52E+00	4.43E-03	2.73E-04	2.96E-05	3.72E-04	2.53E-05	1.95E-05
Far E/NE	Benzo(b)fluoranthene	1/2	1.97E-01	4.00E-02					3.93E-03	2.04E-04	2.76E-05			
Far E/NE	Benzo(k)fluoranthene	1/2	1.99E-01	5.00E-02					4.91E-03	2.55E-04	3.45E-05			
Far E/NE	Chrysene	1/2	1.97E-01	4.00E-02					4.32E-03	2.32E-04	1.83E-05			
Far E/NE	Fluoranthene	2/2	3.75E-02	8.49E-02					9.16E-03	5.52E-04	6.33E-05			
Far E/NE	PCB-1260	1/2	1.23E-02	5.60E-03		6.68E-01	6.07E-01	8.53E-02	4.20E-02	5.37E-03	1.85E-06	6.29E-02	8.85E-03	2.17E-05
Far E/NE	Phenanthrene	1/2	1.97E-01	4.00E-02					4.32E-03	2.82E-04	3.84E-05			
Far E/NE	Polychlorinated biphen	1/2	2.51E-01	5.60E-03					6.05E-04	3.17E-05	2.29E-06			

A-761

531351

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

Sector	Chemical	Freq. of detect.	Concentration (mg/kg) mean	exposure [a]	BQ [b]	LOAEL (mg/kg/d) [c] shrew	mouse	deer	Dose (mg/kg/d) shrew	mouse	deer	Hazard quotient [d] shrew	mouse	deer
Far E/NE	Pyrene	2/2	3.25E-02	4.83E-02					5.21E-03	3.14E-04	3.60E-05			
Far N/NW	Aluminum	2/2	5.03E+03	1.29E+04	1.0	2.30E+01	2.09E+01	2.93E+00	1.92E+03	1.67E+02	1.59E+01	8.36E+01	8.03E+00	5.41E+00
Far N/NW	Antimony	2/2	5.00E-01	1.40E+00	6.7	1.49E+00	1.35E+00	1.90E-01	1.09E-01	3.25E-03	8.61E-04	7.35E-02	2.40E-03	4.54E-03
Far N/NW	Arsenic	2/2	3.69E+00	1.01E+01	0.8	1.50E+00	1.36E+00	1.91E-01	5.70E+00	6.74E-01	1.30E-02	3.81E+00	4.95E-01	6.82E-02
Far N/NW	Barium	2/2	4.18E+01	9.66E+01	0.5	4.35E+01	3.95E+01	5.55E+00	1.68E+01	3.11E+00	7.33E-01	3.86E-01	7.87E-02	1.32E-01
Far N/NW	Beryllium	2/2	2.78E-01	6.90E-01	1.0	1.45E+00	1.32E+00	1.85E-01	5.43E-01	6.62E-02	1.06E-03	3.74E-01	5.02E-02	5.73E-03
Far N/NW	Cadmium	2/2	8.75E-02	3.00E-01	1.4	2.12E+01	1.93E+01	2.71E+00	1.18E+00	1.75E-01	1.04E-02	5.55E-02	9.08E-03	3.83E-03
Far N/NW	Calcium	2/2	1.27E+04	4.16E+04	0.2				5.06E+04	1.86E+04	4.96E+03			
Far N/NW	Chromium (as Cr+3)	2/2	9.98E+00	2.72E+01		6.02E+03	5.47E+03	7.68E+02	1.38E+02	1.77E+01	6.44E-02	2.29E-02	3.24E-03	8.39E-05
Far N/NW	Chromium (as Cr+6)	2/2	9.98E+00	2.72E+01		2.89E+01	2.62E+01	3.69E+00	1.38E+02	1.77E+01	6.44E-02	4.78E+00	6.74E-01	1.75E-02
Far N/NW	Cobalt	2/2	3.92E+00	7.15E+00	0.6				1.81E+00	1.79E-01	4.84E-03			
Far N/NW	Copper	2/2	5.70E+00	1.39E+01	0.7	4.40E+01	4.00E+01	5.62E+00	7.98E+00	1.32E+00	1.67E-01	1.81E-01	3.30E-02	2.98E-02
Far N/NW	Iron	2/2	8.33E+03	2.13E+04	0.8				2.66E+03	1.84E+02	1.57E+01			
Far N/NW	Lead	2/2	6.35E+00	1.60E+01	0.4	1.76E+02	1.60E+02	2.24E+01	2.82E+00	2.92E-01	3.05E-02	1.61E-02	1.83E-03	1.36E-03
Far N/NW	Magnesium	2/2	1.24E+03	3.66E+03	0.5				1.22E+03	6.07E+02	1.93E+02			
Far N/NW	Manganese	2/2	2.90E+02	7.36E+02	0.5	6.24E+02	5.67E+02	7.97E+01	1.09E+02	2.84E+01	8.42E+00	1.75E-01	5.00E-02	1.06E-01
Far N/NW	Mercury (as inorganic)	2/2	1.75E-02	4.93E-02	0.2	2.86E+00	2.60E+00	3.65E-01	1.35E-01	1.74E-02	1.59E-04	4.72E-02	6.69E-03	4.36E-04
Far N/NW	Mercury (as methyl)	2/2	1.75E-02	4.93E-02	0.2	3.52E-01	3.20E-01	4.49E-02	1.35E-01	1.74E-02	1.59E-04	3.85E-01	5.44E-02	3.55E-03
Far N/NW	Nickel	2/2	5.83E+00	1.42E+01	0.7	1.76E+02	1.60E+02	2.24E+01	5.03E+01	6.53E+00	7.24E-02	2.86E-01	4.09E-02	3.23E-03
Far N/NW	Potassium	2/2	1.90E+02	4.77E+02	0.4				1.74E+03	5.61E+02	1.36E+02			
Far N/NW	Selenium	1/2	1.25E-01	2.83E-01	0.4	7.25E-01	6.59E-01	9.26E-02	2.59E-01	3.22E-02	6.09E-04	3.57E-01	4.89E-02	6.57E-03
Far N/NW	Silver	2/2	1.00E-01	3.00E-01	0.1				2.78E+00	3.57E-01	5.44E-04			
Far N/NW	Sodium	2/2	1.26E+02	1.31E+02	0.8				5.08E+03	6.59E+02	2.53E+00			
Far N/NW	Thallium	1/2	3.00E-01	3.00E-01	2.9	1.64E-01	1.49E-01	2.10E-02	2.34E-02	9.97E-04	3.04E-04	1.42E-01	6.67E-03	1.45E-02
Far N/NW	Uranium	2/2	1.09E+01	1.38E+01	2.8	7.17E+00	6.51E+00	9.15E-01	1.60E+00	9.08E-02	5.10E-03	2.23E-01	1.39E-02	5.58E-03
Far N/NW	Vanadium	2/2	1.39E+01	3.61E+01	1.0	4.28E+00	3.89E+00	5.47E-01	4.72E+00	5.36E-01	1.04E-01	1.10E+00	1.38E-01	1.91E-01
Far N/NW	Zinc	2/2	1.80E+01	2.37E+01	0.6	7.03E+02	6.39E+02	8.98E+01	9.39E+01	1.32E+01	5.29E-01	1.34E-01	2.07E-02	5.89E-03
Far N/NW	Acenaphthene	1/2	1.95E-01	5.00E-02					5.40E-03	3.88E-04	6.21E-05			
Far N/NW	Anthracene	1/2	2.23E-01	1.60E-01					1.73E-02	1.21E-03	1.86E-04			
Far N/NW	Benz(a)anthracene	1/2	2.68E-01	3.40E-01					3.53E-02	1.79E-03	1.56E-04			
Far N/NW	Benzo(a)pyrene	1/2	2.53E-01	2.80E-01		1.19E+01	1.08E+01	1.52E+00	3.10E-02	1.91E-03	2.07E-04	2.61E-03	1.77E-04	1.36E-04
Far N/NW	Benzo(b)fluoranthene	1/2	2.48E-01	2.60E-01					2.55E-02	1.33E-03	1.80E-04			
Far N/NW	Benzo(ghi)perylene	1/2	2.15E-01	1.30E-01					1.40E-02	7.18E-04	4.59E-05			
Far N/NW	Benzo(k)fluoranthene	1/2	2.55E-01	2.90E-01					2.85E-02	1.48E-03	2.00E-04			
Far N/NW	Bis(2-ethylhexyl)phthal	1/2	1.98E-01	8.00E-02		2.18E+02	1.98E+02	2.78E+01	8.64E-03	5.00E-04	5.14E-05	3.97E-05	2.53E-06	1.85E-06
Far N/NW	Chrysene	1/2	2.70E-01	3.50E-01					3.78E-02	2.03E-03	1.60E-04			
Far N/NW	Di-n-butyl phthalate	1/2	1.88E-01	4.00E-02		2.18E+03	1.98E+03	2.78E+02	4.32E-03	2.60E-04	2.98E-05	1.98E-06	1.31E-07	1.07E-07
Far N/NW	Fluoranthene	2/2	2.20E-01	8.40E-01					9.07E-02	5.47E-03	6.26E-04			

A-762

531352

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
Far N/NW	Fluorene	1/2	1.95E-01	5.00E-02					5.40E-03	3.78E-04	5.80E-05			
Far N/NW	Indeno(1,2,3-cd)pyrene	1/2	2.18E-01	1.40E-01					1.51E-02	7.73E-04	4.94E-05			
Far N/NW	Phenanthrene	1/2	3.58E-01	4.05E-01					4.37E-02	2.85E-03	3.89E-04			
Far N/NW	Pyrene	1/2	3.60E-01	3.92E-01					4.23E-02	2.55E-03	2.92E-04			
Northeast	Aluminum	1/1	6.30E+03	1.26E+04	1.0	2.30E+01	2.09E+01	2.93E+00	1.87E+03	1.64E+02	1.55E+01	8.17E+01	7.84E+00	5.29E+00
Northeast	Arsenic	1/1	2.68E+00	5.35E+00	0.4	1.50E+00	1.36E+00	1.91E-01	3.02E+00	3.57E-01	6.91E-03	2.02E+00	2.62E-01	3.61E-02
Northeast	Barium	1/1	5.10E+01	1.02E+02	0.5	4.35E+01	3.95E+01	5.55E+00	1.77E+01	3.29E+00	7.75E-01	4.08E-01	8.31E-02	1.39E-01
Northeast	Beryllium	1/1	2.90E-01	5.80E-01	0.9	1.45E+00	1.32E+00	1.85E-01	4.57E-01	5.57E-02	8.92E-04	3.15E-01	4.22E-02	4.82E-03
Northeast	Calcium	1/1	5.10E+03	1.02E+04	0.1				1.24E+04	4.56E+03	1.22E+03			
Northeast	Chromium (as Cr+3)	1/1	9.65E+00	1.93E+01		6.02E+03	5.47E+03	7.68E+02	9.80E+01	1.26E+01	4.57E-02	1.63E-02	2.30E-03	5.95E-05
Northeast	Chromium (as Cr+6)	1/1	9.65E+00	1.93E+01		2.89E+01	2.62E+01	3.69E+00	9.80E+01	1.26E+01	4.57E-02	3.39E+00	4.78E-01	1.24E-02
Northeast	Cobalt	1/1	4.88E+00	9.76E+00	0.7				2.47E+00	2.44E-01	6.60E-03			
Northeast	Copper	1/1	9.45E+00	1.89E+01	1.0	4.40E+01	4.00E+01	5.62E+00	1.08E+01	1.79E+00	2.27E-01	2.46E-01	4.48E-02	4.04E-02
Northeast	Iron	1/1	1.30E+04	2.60E+04	0.9				3.24E+03	2.25E+02	1.92E+01			
Northeast	Lead	1/1	7.05E+00	1.41E+01	0.4	1.76E+02	1.60E+02	2.24E+01	2.49E+00	2.57E-01	2.69E-02	1.41E-02	1.61E-03	1.20E-03
Northeast	Magnesium	1/1	1.26E+03	2.51E+03	0.3				8.36E+02	4.16E+02	1.32E+02			
Northeast	Manganese	1/1	2.60E+02	5.20E+02	0.3	6.24E+02	5.67E+02	7.97E+01	7.71E+01	2.01E+01	5.95E+00	1.23E-01	3.54E-02	7.46E-02
Northeast	Mercury (as inorganic)	1/1	1.32E-02	2.63E-02	0.1	2.86E+00	2.60E+00	3.65E-01	7.22E-02	9.27E-03	8.49E-05	2.52E-02	3.57E-03	2.33E-04
Northeast	Mercury (as methyl)	1/1	1.32E-02	2.63E-02	0.1	3.52E-01	3.20E-01	4.49E-02	7.22E-02	9.27E-03	8.49E-05	2.05E-01	2.90E-02	1.89E-03
Northeast	Nickel	1/1	9.50E+00	1.90E+01	0.9	1.76E+02	1.60E+02	2.24E+01	6.74E+01	8.75E+00	9.70E-02	3.83E-01	5.48E-02	4.32E-03
Northeast	Potassium	1/1	1.77E+02	3.54E+02	0.3				1.29E+03	4.16E+02	1.01E+02			
Northeast	Sodium	1/1	1.38E+02	2.76E+02	0.9				1.07E+04	1.39E+03	5.33E+00			
Northeast	Uranium	1/1	1.38E+01	1.38E+01	2.8	7.17E+00	6.51E+00	9.15E-01	1.60E+00	9.08E-02	5.10E-03	2.23E-01	1.39E-02	5.58E-03
Northeast	Vanadium	1/1	1.52E+01	3.04E+01	0.8	4.28E+00	3.89E+00	5.47E-01	3.98E+00	4.51E-01	8.78E-02	9.28E-01	1.16E-01	1.61E-01
Northeast	Zinc	1/1	3.51E+01	7.02E+01	1.1	7.03E+02	6.39E+02	8.98E+01	2.78E+02	3.91E+01	1.57E+00	3.96E-01	6.12E-02	1.75E-02
Northeast	Acenaphthene	1/1	2.00E-02	4.00E-02					4.32E-03	3.10E-04	4.97E-05			
Northeast	Anthracene	1/1	4.00E-02	8.00E-02					8.64E-03	6.04E-04	9.28E-05			
Northeast	Benz(a)anthracene	1/1	1.75E-01	3.50E-01					3.64E-02	1.84E-03	1.60E-04			
Northeast	Benzo(a)pyrene	1/1	1.50E-01	3.00E-01		1.19E+01	1.08E+01	1.52E+00	3.32E-02	2.05E-03	2.22E-04	2.79E-03	1.90E-04	1.46E-04
Northeast	Benzo(b)fluoranthene	1/1	2.15E-01	4.30E-01					4.22E-02	2.20E-03	2.97E-04			
Northeast	Benzo(ghi)perylene	1/1	8.50E-02	1.70E-01					1.84E-02	9.39E-04	6.00E-05			
Northeast	Benzo(k)fluoranthene	1/1	1.40E-01	2.80E-01					2.75E-02	1.43E-03	1.93E-04			
Northeast	Chrysene	1/1	2.00E-01	4.00E-01					4.32E-02	2.32E-03	1.83E-04			
Northeast	Fluoranthene	1/1	4.30E-01	8.60E-01					9.29E-02	5.60E-03	6.41E-04			
Northeast	Indeno(1,2,3-cd)pyrene	1/1	9.00E-02	1.80E-01					1.94E-02	9.94E-04	6.35E-05			
Northeast	Methylene chloride	1/1	1.00E-03	2.00E-03		1.10E+02	9.99E+01	1.40E+01	2.16E-04	2.76E-04	1.06E-04	1.97E-06	2.76E-06	7.57E-06
Northeast	PCB-1260	1/1	4.30E-02	4.30E-02		6.68E-01	6.07E-01	8.53E-02	3.23E-01	4.12E-02	1.42E-05	4.84E-01	6.79E-02	1.66E-04
Northeast	Phenanthrene	1/1	2.35E-01	4.70E-01					5.08E-02	3.31E-03	4.51E-04			

A-763

531353

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
Northeast	Polychlorinated biphen	1/1	2.15E-02	4.30E-02					4.64E-03	2.44E-04	1.76E-05			
Northeast	Pyrene	1/1	3.40E-01	6.80E-01					7.34E-02	4.43E-03	5.07E-04			
Northwest	Aluminum	6/6	3.94E+03	4.90E+03	0.8	2.30E+01	2.09E+01	2.93E+00	7.29E+02	6.36E+01	6.02E+00	3.17E+01	3.05E+00	2.06E+00
Northwest	Antimony	2/6	3.33E-01	4.01E-01	4.8	1.49E+00	1.35E+00	1.90E-01	3.12E-02	9.28E-04	2.46E-04	2.10E-02	6.87E-04	1.30E-03
Northwest	Arsenic	6/6	2.55E+00	3.06E+00	0.6	1.50E+00	1.36E+00	1.91E-01	1.73E+00	2.04E-01	3.95E-03	1.15E+00	1.50E-01	2.06E-02
Northwest	Barium	6/6	3.60E+01	4.09E+01	0.4	4.35E+01	3.95E+01	5.55E+00	7.11E+00	1.32E+00	3.10E-01	1.63E-01	3.33E-02	5.59E-02
Northwest	Beryllium	6/6	2.61E-01	3.23E-01	1.1	1.45E+00	1.32E+00	1.85E-01	2.55E-01	3.10E-02	4.97E-04	1.76E-01	2.35E-02	2.69E-03
Northwest	Cadmium	3/6	8.42E-02	2.03E-01	3.6	2.12E+01	1.93E+01	2.71E+00	7.97E-01	1.18E-01	7.03E-03	3.76E-02	6.15E-03	2.60E-03
Northwest	Calcium	6/6	1.59E+04	3.18E+04	0.6				3.87E+04	1.42E+04	3.79E+03			
Northwest	Chromium (as Cr+3)	6/6	1.12E+01	2.03E+01		6.02E+03	5.47E+03	7.68E+02	1.03E+02	1.32E+01	4.80E-02	1.71E-02	2.41E-03	6.25E-05
Northwest	Chromium (as Cr+6)	6/6	1.12E+01	2.03E+01		2.89E+01	2.62E+01	3.69E+00	1.03E+02	1.32E+01	4.80E-02	3.56E+00	5.02E-01	1.30E-02
Northwest	Cobalt	6/6	2.96E+00	3.68E+00	0.6				9.30E-01	9.19E-02	2.49E-03			
Northwest	Copper	6/6	4.68E+00	5.62E+00	0.7	4.40E+01	4.00E+01	5.62E+00	3.22E+00	5.33E-01	6.76E-02	7.33E-02	1.33E-02	1.20E-02
Northwest	Iron	6/6	8.94E+03	1.22E+04	1.1				1.52E+03	1.06E+02	9.00E+00			
Northwest	Lead	6/6	7.60E+00	1.30E+01	1.2	1.76E+02	1.60E+02	2.24E+01	2.30E+00	2.37E-01	2.48E-02	1.31E-02	1.49E-03	1.11E-03
Northwest	Magnesium	6/6	7.18E+02	9.68E+02	0.3				3.22E+02	1.61E+02	5.09E+01			
Northwest	Manganese	6/6	1.90E+02	2.44E+02	0.4	6.24E+02	5.67E+02	7.97E+01	3.61E+01	9.39E+00	2.79E+00	5.78E-02	1.66E-02	3.50E-02
Northwest	Mercury (as inorganic)	5/6	2.19E-02	3.31E-02	0.4	2.86E+00	2.60E+00	3.65E-01	9.08E-02	1.17E-02	1.07E-04	3.17E-02	4.50E-03	2.93E-04
Northwest	Mercury (as methyl)	5/6	2.19E-02	3.31E-02	0.4	3.52E-01	3.20E-01	4.49E-02	9.08E-02	1.17E-02	1.07E-04	2.58E-01	3.65E-02	2.38E-03
Northwest	Nickel	6/6	4.40E+00	5.85E+00	0.7	1.76E+02	1.60E+02	2.24E+01	2.07E+01	2.69E+00	2.98E-02	1.18E-01	1.69E-02	1.33E-03
Northwest	Potassium	6/6	9.60E+01	1.15E+02	0.2				4.22E+02	1.36E+02	3.28E+01			
Northwest	Selenium	3/6	1.17E-01	1.38E-01	0.4	7.25E-01	6.59E-01	9.26E-02	1.26E-01	1.57E-02	2.97E-04	1.74E-01	2.38E-02	3.21E-03
Northwest	Silver	1/6	6.67E-02	1.16E-01	0.2				1.08E+00	1.39E-01	2.11E-04			
Northwest	Sodium	6/6	1.89E+02	2.38E+02	1.5				9.22E+03	1.20E+03	4.59E+00			
Northwest	Uranium	1/1	9.55E+00	9.55E+00	2.0	7.17E+00	6.51E+00	9.15E-01	1.11E+00	6.27E-02	3.52E-03	1.54E-01	9.64E-03	3.85E-03
Northwest	Vanadium	6/6	1.24E+01	1.65E+01	1.1	4.28E+00	3.89E+00	5.47E-01	2.16E+00	2.45E-01	4.77E-02	5.04E-01	6.29E-02	8.73E-02
Northwest	Zinc	6/6	1.41E+01	1.73E+01	0.6	7.03E+02	6.39E+02	8.98E+01	6.87E+01	9.66E+00	3.87E-01	9.77E-02	1.51E-02	4.31E-03
Northwest	Benz(a)anthracene	1/2	2.56E-01	3.00E-01					3.12E-02	1.58E-03	1.38E-04			
Northwest	Benzo(a)pyrene	1/2	2.81E-01	4.00E-01		1.19E+01	1.08E+01	1.52E+00	4.43E-02	2.73E-03	2.96E-04	3.72E-03	2.53E-04	1.95E-04
Northwest	Benzo(b)fluoranthene	1/2	3.31E-01	5.29E-01					5.19E-02	2.70E-03	3.65E-04			
Northwest	Benzo(k)fluoranthene	1/2	2.56E-01	3.00E-01					2.94E-02	1.53E-03	2.07E-04			
Northwest	Chrysene	1/2	2.54E-01	2.90E-01					3.13E-02	1.68E-03	1.33E-04			
Northwest	Fluoranthene	1/2	2.81E-01	4.00E-01					4.32E-02	2.60E-03	2.98E-04			
Northwest	Pyrene	1/2	2.81E-01	4.00E-01					4.32E-02	2.60E-03	2.98E-04			
Southeast	Aluminum	1/1	7.10E+03	1.42E+04	1.1	2.30E+01	2.09E+01	2.93E+00	2.11E+03	1.84E+02	1.75E+01	9.21E+01	8.84E+00	5.96E+00
Southeast	Antimony	1/1	3.00E-01	6.00E-01	2.9	1.49E+00	1.35E+00	1.90E-01	4.68E-02	1.39E-03	3.69E-04	3.15E-02	1.03E-03	1.94E-03
Southeast	Arsenic	1/1	5.00E+00	1.00E+01	0.8	1.50E+00	1.36E+00	1.91E-01	5.65E+00	6.67E-01	1.29E-02	3.77E+00	4.90E-01	6.75E-02
Southeast	Barium	1/1	4.38E+01	8.75E+01	0.4	4.35E+01	3.95E+01	5.55E+00	1.52E+01	2.82E+00	6.64E-01	3.50E-01	7.13E-02	1.20E-01

A-764

531354

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
Southeast	Beryllium	1/1	3.15E-01	6.30E-01	0.9	1.45E+00	1.32E+00	1.85E-01	4.96E-01	6.05E-02	9.68E-04	3.42E-01	4.58E-02	5.23E-03
Southeast	Cadmium	1/1	1.75E-01	3.50E-01	1.7	2.12E+01	1.93E+01	2.71E+00	1.37E+00	2.04E-01	1.21E-02	6.48E-02	1.06E-02	4.47E-03
Southeast	Calcium	1/1	9.20E+03	1.84E+04	0.1				2.24E+04	8.22E+03	2.19E+03			
Southeast	Chromium (as Cr+3)	1/1	1.18E+01	2.36E+01		6.02E+03	5.47E+03	7.68E+02	1.20E+02	1.54E+01	5.59E-02	1.99E-02	2.82E-03	7.28E-05
Southeast	Chromium (as Cr+6)	1/1	1.18E+01	2.36E+01		2.89E+01	2.62E+01	3.69E+00	1.20E+02	1.54E+01	5.59E-02	4.15E+00	5.85E-01	1.52E-02
Southeast	Cobalt	1/1	4.03E+00	8.06E+00	0.6				2.04E+00	2.01E-01	5.45E-03			
Southeast	Copper	1/1	7.65E+00	1.53E+01	0.8	4.40E+01	4.00E+01	5.62E+00	8.78E+00	1.45E+00	1.84E-01	1.99E-01	3.63E-02	3.27E-02
Southeast	Iron	1/1	1.39E+04	2.78E+04	1.0				3.47E+03	2.41E+02	2.05E+01			
Southeast	Lead	1/1	7.05E+00	1.41E+01	0.4	1.76E+02	1.60E+02	2.24E+01	2.49E+00	2.57E-01	2.69E-02	1.41E-02	1.61E-03	1.20E-03
Southeast	Magnesium	1/1	1.27E+03	2.54E+03	0.3				8.46E+02	4.21E+02	1.34E+02			
Southeast	Manganese	1/1	2.20E+02	4.39E+02	0.3	6.24E+02	5.67E+02	7.97E+01	6.51E+01	1.69E+01	5.02E+00	1.04E-01	2.98E-02	6.30E-02
Southeast	Nickel	1/1	6.65E+00	1.33E+01	0.6	1.76E+02	1.60E+02	2.24E+01	4.72E+01	6.12E+00	6.79E-02	2.68E-01	3.83E-02	3.02E-03
Southeast	Potassium	1/1	3.85E+02	7.69E+02	0.6				2.81E+03	9.04E+02	2.19E+02			
Southeast	Sodium	1/1	2.00E+02	4.00E+02	1.3				1.55E+04	2.01E+03	7.72E+00			
Southeast	Uranium	1/1	3.28E+00	3.28E+00	0.7	7.17E+00	6.51E+00	9.15E-01	3.80E-01	2.16E-02	1.21E-03	5.31E-02	3.31E-03	1.32E-03
Southeast	Vanadium	1/1	1.81E+01	3.61E+01	1.0	4.28E+00	3.89E+00	5.47E-01	4.72E+00	5.36E-01	1.04E-01	1.10E+00	1.38E-01	1.91E-01
Southeast	Zinc	1/1	2.44E+01	4.88E+01	0.8	7.03E+02	6.39E+02	8.98E+01	1.94E+02	2.72E+01	1.09E+00	2.75E-01	4.26E-02	1.21E-02
Southeast	Benz(a)anthracene	1/1	3.50E-02	7.00E-02					7.27E-03	3.68E-04	3.21E-05			
Southeast	Benzo(a)pyrene	1/1	4.00E-02	8.00E-02		1.19E+01	1.08E+01	1.52E+00	8.85E-03	5.47E-04	5.92E-05	7.44E-04	5.06E-05	3.90E-05
Southeast	Benzo(b)fluoranthene	1/1	3.50E-02	7.00E-02					6.87E-03	3.57E-04	4.84E-05			
Southeast	Benzo(k)fluoranthene	1/1	3.00E-02	6.00E-02					5.89E-03	3.06E-04	4.15E-05			
Southeast	Chrysene	1/1	4.00E-02	8.00E-02					8.64E-03	4.63E-04	3.67E-05			
Southeast	Fluoranthene	1/1	7.50E-02	1.50E-01					1.62E-02	9.77E-04	1.12E-04			
Southeast	PCB-1262	1/1	3.80E-02	3.80E-02		6.68E-01	6.07E-01	8.53E-02	4.10E-03	2.15E-04	1.55E-05	6.14E-03	3.54E-04	1.82E-04
Southeast	Phenanthrene	1/1	3.50E-02	7.00E-02					7.56E-03	4.94E-04	6.72E-05			
Southeast	Polychlorinated biphen	1/1	1.90E-02	3.80E-02					4.10E-03	2.15E-04	1.55E-05			
Southeast	Pyrene	1/1	6.00E-02	1.20E-01					1.30E-02	7.81E-04	8.95E-05			
Southwest	Aluminum	4/4	3.88E+03	5.84E+03	0.8	2.30E+01	2.09E+01	2.93E+00	8.69E+02	7.59E+01	7.19E+00	3.79E+01	3.64E+00	2.45E+00
Southwest	Antimony	3/4	8.50E-01	1.45E+00	13.3	1.49E+00	1.35E+00	1.90E-01	1.13E-01	3.37E-03	8.93E-04	7.62E-02	2.49E-03	4.70E-03
Southwest	Arsenic	4/4	2.24E+00	2.34E+00	0.4	1.50E+00	1.36E+00	1.91E-01	1.32E+00	1.56E-01	3.02E-03	8.81E-01	1.14E-01	1.58E-02
Southwest	Barium	4/4	3.01E+01	4.10E+01	0.4	4.35E+01	3.95E+01	5.55E+00	7.14E+00	1.32E+00	3.12E-01	1.64E-01	3.34E-02	5.61E-02
Southwest	Beryllium	4/4	2.38E-01	3.77E-01	1.2	1.45E+00	1.32E+00	1.85E-01	2.97E-01	3.62E-02	5.80E-04	2.05E-01	2.74E-02	3.14E-03
Southwest	Cadmium	4/4	2.20E-01	3.63E-01	3.7	2.12E+01	1.93E+01	2.71E+00	1.42E+00	2.11E-01	1.25E-02	6.71E-02	1.10E-02	4.63E-03
Southwest	Calcium	4/4	6.90E+04	1.31E+05	1.4				1.59E+05	5.85E+04	1.56E+04			
Southwest	Chromium (as Cr+3)	4/4	1.11E+01	2.12E+01		6.02E+03	5.47E+03	7.68E+02	1.08E+02	1.38E+01	5.03E-02	1.79E-02	2.52E-03	6.55E-05
Southwest	Chromium (as Cr+6)	4/4	1.11E+01	2.12E+01		2.89E+01	2.62E+01	3.69E+00	1.08E+02	1.38E+01	5.03E-02	3.73E+00	5.27E-01	1.36E-02
Southwest	Cobalt	4/4	3.73E+00	5.69E+00	0.8				1.44E+00	1.42E-01	3.85E-03			
Southwest	Copper	4/4	5.53E+00	9.50E+00	1.1	4.40E+01	4.00E+01	5.62E+00	5.45E+00	9.01E-01	1.14E-01	1.24E-01	2.25E-02	2.03E-02

A-765

531355

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
Southwest	Iron	4/4	1.07E+04	1.70E+04	1.3				2.12E+03	1.47E+02	1.26E+01			
Southwest	Lead	4/4	8.76E+00	1.39E+01	0.8	1.76E+02	1.60E+02	2.24E+01	2.45E+00	2.53E-01	2.65E-02	1.39E-02	1.58E-03	1.18E-03
Southwest	Magnesium	4/4	2.39E+03	4.87E+03	1.4				1.62E+03	8.07E+02	2.56E+02			
Southwest	Manganese	4/4	1.62E+02	2.30E+02	0.3	6.24E+02	5.67E+02	7.97E+01	3.41E+01	8.87E+00	2.63E+00	5.46E-02	1.56E-02	3.30E-02
Southwest	Mercury (as inorganic)	4/4	2.61E-02	5.95E-02	0.7	2.86E+00	2.60E+00	3.65E-01	1.63E-01	2.10E-02	1.92E-04	5.70E-02	8.08E-03	5.26E-04
Southwest	Mercury (as methyl)	4/4	2.61E-02	5.95E-02	0.7	3.52E-01	3.20E-01	4.49E-02	1.63E-01	2.10E-02	1.92E-04	4.65E-01	6.56E-02	4.28E-03
Southwest	Nickel	4/4	6.94E+00	1.13E+01	1.1	1.76E+02	1.60E+02	2.24E+01	4.02E+01	5.22E+00	5.78E-02	2.29E-01	3.26E-02	2.58E-03
Southwest	Potassium	4/4	2.27E+02	3.28E+02	0.5				1.20E+03	3.86E+02	9.32E+01			
Southwest	Silver	3/4	2.66E-01	5.65E-01	0.5				5.24E+00	6.72E-01	1.02E-03			
Southwest	Sodium	4/4	2.11E+02	3.66E+02	2.6				1.42E+04	1.84E+03	7.06E+00			
Southwest	Thallium	2/4	4.38E-01	7.02E-01	7.1	1.64E-01	1.49E-01	2.10E-02	5.48E-02	2.33E-03	7.12E-04	3.33E-01	1.56E-02	3.40E-02
Southwest	Uranium	3/3	2.10E+01	5.01E+01	10.2	7.17E+00	6.51E+00	9.15E-01	5.81E+00	3.29E-01	1.85E-02	8.10E-01	5.06E-02	2.02E-02
Southwest	Vanadium	4/4	8.96E+00	1.56E+01	0.9	4.28E+00	3.89E+00	5.47E-01	2.04E+00	2.31E-01	4.51E-02	4.76E-01	5.94E-02	8.24E-02
Southwest	Zinc	4/4	2.74E+01	5.03E+01	1.7	7.03E+02	6.39E+02	8.98E+01	1.99E+02	2.80E+01	1.12E+00	2.84E-01	4.39E-02	1.25E-02
Southwest	Acenaphthene	4/5	4.78E-01	9.90E-01					1.07E-01	7.68E-03	1.23E-03			
Southwest	Acenaphthylene	1/5	2.27E+00	2.20E-01					2.38E-02	1.92E-03	3.58E-04			
Southwest	Anthracene	5/5	7.93E-01	1.82E+00					1.96E-01	1.37E-02	2.11E-03			
Southwest	Benz(a)anthracene	5/5	2.33E+00	5.02E+00					5.21E-01	2.64E-02	2.30E-03			
Southwest	Benzo(a)pyrene	5/5	2.34E+00	4.83E+00		1.19E+01	1.08E+01	1.52E+00	5.35E-01	3.30E-02	3.58E-03	4.50E-02	3.06E-03	2.36E-03
Southwest	Benzo(b)fluoranthene	5/5	2.46E+00	5.11E+00					5.02E-01	2.61E-02	3.53E-03			
Southwest	Benzo(ghi)perylene	5/5	1.18E+00	2.37E+00					2.55E-01	1.31E-02	8.35E-04			
Southwest	Benzo(k)fluoranthene	5/5	1.72E+00	3.38E+00					3.31E-01	1.72E-02	2.33E-03			
Southwest	Bis(2-ethylhexyl)phthal	1/5	2.26E+00	8.00E-02		2.18E+02	1.98E+02	2.78E+01	8.64E-03	5.00E-04	5.14E-05	3.97E-05	2.53E-06	1.85E-06
Southwest	Chrysene	5/5	2.22E+00	4.52E+00					4.88E-01	2.61E-02	2.07E-03			
Southwest	Dibenz(a,h)anthracene	3/5	1.04E+00	1.30E+00					1.40E-01	7.15E-03	4.45E-04			
Southwest	Dibenzofuran	3/5	1.51E+00	7.00E-01					7.56E-02	3.79E-03	2.15E-04			
Southwest	Fluoranthene	5/5	5.11E+00	1.09E+01					1.18E+00	7.10E-02	8.13E-03			
Southwest	Fluorene	3/5	9.57E-01	1.20E+00					1.30E-01	9.06E-03	1.39E-03			
Southwest	Indeno(1,2,3-cd)pyrene	5/5	9.63E-01	1.80E+00					1.95E-01	9.96E-03	6.37E-04			
Southwest	Naphthalene	1/5	2.24E+00	2.40E-03					2.59E-04	3.52E-05	9.58E-06			
Southwest	PCB-1260	2/2	2.05E-02	3.80E-02		6.68E-01	6.07E-01	8.53E-02	2.85E-01	3.64E-02	1.26E-05	4.27E-01	6.00E-02	1.48E-04
Southwest	Phenanthrene	5/5	2.60E+00	5.72E+00					6.17E-01	4.03E-02	5.49E-03			
Southwest	Polychlorinated biphen	2/5	3.04E-01	3.80E-02					4.10E-03	2.15E-04	1.55E-05			
Southwest	Pyrene	5/5	4.19E+00	9.20E+00					9.93E-01	5.99E-02	6.85E-03			
Southwest	Toluene	1/1	1.55E-03	3.10E-03		3.09E+02	2.81E+02	3.95E+01	3.35E-04	8.06E-05	2.63E-05	1.08E-06	2.87E-07	6.67E-07
West	Aluminum	9/9	6.23E+03	7.28E+03	1.4	2.30E+01	2.09E+01	2.93E+00	1.08E+03	9.45E+01	8.95E+00	4.72E+01	4.53E+00	3.05E+00
West	Antimony	4/9	7.18E-01	9.92E-01	6.2	1.49E+00	1.35E+00	1.90E-01	7.74E-02	2.30E-03	6.10E-04	5.20E-02	1.70E-03	3.21E-03
West	Arsenic	9/9	7.96E+00	1.32E+01	3.8	1.50E+00	1.36E+00	1.91E-01	7.45E+00	8.80E-01	1.70E-02	4.97E+00	6.46E-01	8.91E-02

A–766

531356

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
West	Barium	9/9	4.81E+01	5.61E+01	0.6	4.35E+01	3.95E+01	5.55E+00	9.76E+00	1.81E+00	4.26E-01	2.24E-01	4.57E-02	7.67E-02
West	Beryllium	9/9	2.65E-01	3.15E-01	1.2	1.45E+00	1.32E+00	1.85E-01	2.48E-01	3.02E-02	4.84E-04	1.71E-01	2.29E-02	2.62E-03
West	Cadmium	8/9	3.53E-01	9.05E-01	20.2	2.12E+01	1.93E+01	2.71E+00	3.55E+00	5.28E-01	3.13E-02	1.68E-01	2.74E-02	1.16E-02
West	Calcium	9/9	9.03E+03	2.02E+04	0.4				2.45E+04	9.01E+03	2.40E+03			
West	Chromium (as Cr+3)	9/9	1.02E+01	1.26E+01		6.02E+03	5.47E+03	7.68E+02	6.37E+01	8.17E+00	2.97E-02	1.06E-02	1.49E-03	3.87E-05
West	Chromium (as Cr+6)	9/9	1.02E+01	1.26E+01		2.89E+01	2.62E+01	3.69E+00	6.37E+01	8.17E+00	2.97E-02	2.21E+00	3.11E-01	8.06E-03
West	Cobalt	9/9	3.72E+00	4.74E+00	1.0				1.20E+00	1.18E-01	3.21E-03			
West	Copper	9/9	8.68E+00	1.02E+01	1.5	4.40E+01	4.00E+01	5.62E+00	5.86E+00	9.68E-01	1.23E-01	1.33E-01	2.42E-02	2.19E-02
West	Iron	9/9	1.01E+04	1.11E+04	0.9				1.39E+03	9.64E+01	8.22E+00			
West	Lead	9/9	6.18E+00	6.76E+00	0.4	1.76E+02	1.60E+02	2.24E+01	1.19E+00	1.23E-01	1.29E-02	6.78E-03	7.71E-04	5.74E-04
West	Magnesium	9/9	1.19E+03	1.51E+03	0.5				5.02E+02	2.50E+02	7.93E+01			
West	Manganese	9/9	1.81E+02	2.17E+02	0.4	6.24E+02	5.67E+02	7.97E+01	3.21E+01	8.36E+00	2.48E+00	5.15E-02	1.47E-02	3.11E-02
West	Mercury (as inorganic)	9/9	1.66E-02	2.03E-02	0.3	2.86E+00	2.60E+00	3.65E-01	5.56E-02	7.14E-03	6.54E-05	1.94E-02	2.75E-03	1.79E-04
West	Mercury (as methyl)	9/9	1.66E-02	2.03E-02	0.3	3.52E-01	3.20E-01	4.49E-02	5.56E-02	7.14E-03	6.54E-05	1.58E-01	2.23E-02	1.46E-03
West	Nickel	9/9	8.15E+00	9.45E+00	1.2	1.76E+02	1.60E+02	2.24E+01	3.35E+01	4.35E+00	4.82E-02	1.91E-01	2.72E-02	2.15E-03
West	Potassium	9/9	3.10E+02	3.83E+02	0.8				1.40E+03	4.51E+02	1.09E+02			
West	Selenium	3/9	1.57E-01	2.13E-01	0.4	7.25E-01	6.59E-01	9.26E-02	1.95E-01	2.43E-02	4.58E-04	2.69E-01	3.68E-02	4.95E-03
West	Silver	1/9	6.27E-02	9.42E-02	0.3				8.74E-01	1.12E-01	1.71E-04			
West	Sodium	9/9	2.39E+02	2.84E+02	2.1				1.10E+04	1.43E+03	5.49E+00			
West	Uranium	9/9	2.14E+01	3.63E+01	24.2	7.17E+00	6.51E+00	9.15E-01	4.20E+00	2.38E-01	1.34E-02	5.86E-01	3.66E-02	1.46E-02
West	Vanadium	9/9	1.38E+01	1.54E+01	0.9	4.28E+00	3.89E+00	5.47E-01	2.02E+00	2.29E-01	4.46E-02	4.71E-01	5.88E-02	8.16E-02
West	Zinc	9/9	2.56E+01	3.00E+01	1.2	7.03E+02	6.39E+02	8.98E+01	1.19E+02	1.67E+01	6.69E-01	1.69E-01	2.62E-02	7.46E-03
West	2-Methylnaphthalene	2/9	2.95E+00	9.00E-01					9.72E-02	8.62E-03	1.77E-03			
West	Acenaphthene	4/9	2.47E+00	3.37E+00					3.63E-01	2.61E-02	4.18E-03			
West	Anthracene	6/9	4.81E+00	1.46E+01					1.57E+00	1.10E-01	1.69E-02			
West	Benz(a)anthracene	7/9	5.98E+00	2.01E+01					2.09E+00	1.06E-01	9.23E-03			
West	Benzo(a)pyrene	7/9	5.56E+00	1.81E+01		1.19E+01	1.08E+01	1.52E+00	2.00E+00	1.24E-01	1.34E-02	1.68E-01	1.15E-02	8.82E-03
West	Benzo(b)fluoranthene	7/9	6.72E+00	2.25E+01					2.21E+00	1.15E-01	1.56E-02			
West	Benzo(ghi)perylene	5/9	2.82E+00	3.70E+00					4.00E-01	2.04E-02	1.31E-03			
West	Benzo(k)fluoranthene	7/9	5.70E+00	2.22E+01					2.18E+00	1.13E-01	1.53E-02			
West	Bis(2-ethylhexyl)phthal	1/9	3.42E+00	1.00E-01		2.18E+02	1.98E+02	2.78E+01	1.08E-02	6.25E-04	6.43E-05	4.96E-05	3.16E-06	2.31E-06
West	Chrysene	7/9	6.50E+00	2.17E+01					2.34E+00	1.26E-01	9.94E-03			
West	Di-n-butyl phthalate	1/9	3.50E+00	2.05E-01		2.18E+03	1.98E+03	2.78E+02	2.21E-02	1.33E-03	1.53E-04	1.02E-05	6.74E-07	5.49E-07
West	Dibenz(a,h)anthracene	2/9	2.96E+00	3.75E+00					4.05E-01	2.06E-02	1.29E-03			
West	Dibenzofuran	4/9	1.78E+00	2.84E+00					3.07E-01	1.54E-02	8.74E-04			
West	Fluoranthene	8/9	1.28E+01	4.51E+01					4.87E+00	2.94E-01	3.36E-02			
West	Fluorene	4/9	2.18E+00	3.13E+00					3.38E-01	2.36E-02	3.63E-03			
West	Indeno(1,2,3-cd)pyrene	5/9	2.88E+00	3.80E+00					4.10E-01	2.10E-02	1.34E-03			

531357

Table 2.2. Exposure concentrations, toxicological benchmarks, daily dose estimates, and hazard quotients for shrews, mice, and deer exposed to chemicals in future surface soil.

			Concentration (mg/kg)			LOAEL (mg/kg/d) [c]			Dose (mg/kg/d)			Hazard quotient [d]		
Sector	Chemical	Freq. of detect.	mean	exposure [a]	BQ [b]	shrew	mouse	deer	shrew	mouse	deer	shrew	mouse	deer
West	Naphthalene	4/9	9.65E-01	1.45E+00					1.57E-01	2.13E-02	5.80E-03			
West	PCB-1254	2/3	3.52E-01	9.60E-01		6.68E-01	6.07E-01	8.53E-02	4.35E-01	4.82E-02	4.20E-04	6.51E-01	7.93E-02	4.93E-03
West	PCB-1260	1/3	8.13E-02	1.60E-02		6.68E-01	6.07E-01	8.53E-02	1.20E-01	1.53E-02	5.29E-06	1.80E-01	2.52E-02	6.20E-05
West	Phenanthrene	8/9	9.49E+00	3.50E+01					3.78E+00	2.47E-01	3.36E-02			
West	Polychlorinated biphen	3/9	1.67E-01	5.61E-01					6.06E-02	3.18E-03	2.29E-04			
West	Pyrene	8/9	1.13E+01	3.95E+01					4.26E+00	2.57E-01	2.94E-02			

[a] The exposure concentration is the lower of the UCL95 and the maximum detect.

[b] BQ = background quotient. This is the maximum detect divided by the background concentration. Values less than 1 indicate the chemical is within background. A blank indicates background was unavailable.

[c] LOAEL = Lowest Observed Adverse Effects Level. LOAELs were obtained from Sample et al. (1996). If a LOAEL was unavailable, a NOAEL was used.

[d] The hazard quotient is the dose divided by the LOAEL. Values greater than 1 suggest risks may be present.

[e] Species analyses were not performed. Results are presented for both the more toxic (i.e. Cr+6, methylmercury) and less toxic forms (Cr+3, inorganic mercury) because the less toxic form is more likely to occur.

A-768

Table 2.3. Species-specific exposure parameters for wildlife[a]

Receptor Species	Body Weight (kg)	Dietary Ingestion Rate (kg/d)	Fraction Soil in diet	Fraction Invertebrate in diet	Fraction Plant in diet
White-tailed Deer	56.6	1.74	0.01	0	0.99
Short-tailed Shrew	0.015	0.009	0.13	0.87	0
White-footed Mouse	0.022	0.0034	0.01	0.49	0.5

[a] = Sample and Suter (1994)

Table 2.4. Average energy of decay and absorbed fractions for radionuclides detected in soil

Radionuclide	Average energy of decay[a] alpha	beta	gamma	Gamma absorption[b] A	B	C	DFgrd 0-15 (Sv m3/s Bq)[c]
Americium-241	5.479	0.052	0.033	0.04	0.05	0.3	2.34E-19
Cesium-137		0.187					3.94E-21
Neptunium-237	4.769	0.07	0.035	0.027	0.04	0.29	4.16E-19
Plutonium-239	5.148	0.007		0.63	0.79	0.94	1.52E-21
Technetium-99		0.101					6.70E-22
Thorium-230	4.671	0.015	0.002	0.63	0.79	0.94	6.39E-21
Uranium-234	4.758	0.013	0.002	0.63	0.79	0.94	2.14E-21
Uranium-235	4.396	0.049	0.156	0.008	0.0115	0.14	3.75E-18
Uranium-238	4.187	0.01	0.001	0.63	0.79	0.94	5.52E-22

[a] Values were obtained from ICRP (1983)

[b] Absorbed fractions for worms, plants, and mouse were derived from data in Blaylock et al. (1993). Absorbed fraction for deer were derived following methodology of Cristy and Eckerman (1987). Absorbed fractions for beta radiation were 100% for all radionuclides listed.

[c] DFgrad is the dose coefficient for soil 0-15 cm in depth (Eckerman and Ryman, 1993).

A = Worms, Plants

B = Shrew, Mouse

C = Deer

Table 2.5. Contaminant biotransfer factors for selected ecological receptors

COPC	Soil to Plant BTF		Soil to Invertebrate BTF		Plant-to-Meat BTF (wet wt.) (days/kg)		Soil-mammal	
ALUMINUM	3.00E-02	b	1.18E-01	a	1.50E-03	l	1.40E-02	a
ANTIMONY	1.00E-02	r			1.00E-03	l		
ARSENIC	3.20E-02	b	8.11E-01	a	2.00E-03	l	8.00E-03	a
BARIUM	2.37E-01	b	1.60E-01	a	1.50E-04	l	6.10E-02	a
BERYLLIUM	4.00E-02	b	1.18E+00	a	1.00E-03	l		
CADMIUM	1.12E+00	b	6.41E+00	a	5.50E-04	l	1.32E-01	a
CALCIUM	3.87E+00	b	1.90E+00	a	7.00E-04	l	9.38E+00	a
CHLORIDE								
CHROMIUM	6.70E-02	b	8.33E+00	a	5.50E-03	l	2.21E-01	a
COBALT	1.20E-02	b	2.91E-01	a	2.00E-02	l	1.00E-02	a
COPPER	3.81E-01	b	8.26E-01	a	1.00E-02	l	7.40E-01	a
CYANIDE	2.24E+00	o	5.00E-02	aa	3.16E-07	o		
FLUORIDE								
IRON	1.40E-02	b	7.80E-02	a	2.00E-02	l	7.00E-03	a
LEAD	5.20E-02	b	1.64E-01	a	3.00E-04	l	4.50E-02	a
MAGNESIUM	1.70E+00	b	4.25E-01	a	5.00E-03	l	8.75E-01	a
MERCURY	9.50E-02	b	4.44E+00	a	2.50E-01	l	7.47E-01	a
MOLYBDENUM	8.50E-02	b	2.09E+00	a	6.00E-03	l	1.00E-02	a
NICKEL	1.56E-01	b	5.78E+00	a	6.00E-03	l	2.32E-01	a
NITRATE-NITRITE								
NEPTUNIUM-237	9E-3	c	.009	s	.00384	i		
PLUTONIUM-239	.0003	c	.00912	j			6.467	a
POTASSIUM	9.24E+00	b	5.96E+00	a	2.00E-02	l	5.11E+00	a
SELENIUM	6.00E-02	b	1.40E+00	a	1.50E-02	l	2.31E-01	a
SILVER	4.90E-02	b	1.53E+01	a	3.00E-03	l		
SODIUM	6.18E-01	b	6.45E+01	a	5.50E-02	l	1.02E+01	a
SULFATE								
TECHNETIUM-99	76	c	76	s	.0005			
THALLIUM	2.30E-02	b			4.00E-02	l		
THORIUM-230	.0009	c	.005	s			.000032	g
TIN	3.00E-01	r			8.00E-02	l		
URANIUM	2.00E-03	b	6.30E-02	a	2.00E-04	l		
URANIUM-234	1.965	b	.063	a			.00032	g
URANIUM-235	1.965	b	.063	a			.00032	g
URANIUM-238	1.965	b	.063	a			.00032	g
VANADIUM	8.40E-02	b	8.80E-02	a	2.50E-03	l		
ZINC	7.16E-01	b	6.48E+00	a	1.00E-01	l	2.38E+00	a
2-BUTANONE	6.76E+00	o	5.00E-02	aa	4.68E-08	o		
2-METHYLNAPHTHALENE	5.39E-02	o	5.00E-02	aa	2.00E-04	o		
3-METHYLCHOLANTHRENE								
ACENAPHTHENE	3.04E-02	o	5.00E-02	aa	5.37E-04	o		
ACENAPHTHYLENE	4.30E-02	o	5.00E-02	aa	2.95E-04	o		
ACETONE	1.33E+01	o	5.00E-02	aa	1.45E-08	o		
ACETOPHENONE								
ADIPATE ESTER								
ANTHRACENE	2.77E-02	o	5.00E-02	aa	6.31E-04	o		
AROCLOR-1016	3.76E-03	o	5.00E-02	aa	2.00E-02	o		
AROCLOR-1254	4.25E-03	o	6.25E-01	a	5.25E-02	o		
AROCLOR-1260	7.62E-04	o	1.24E+01	a			5.22E+00	a
BENZO(A)ANTHRACENE	4.91E-03	o	4.32E-02	z	1.26E-02	o		
BENZO(A)PYRENE	1.41E-02	o	5.44E-02	z	2.51E-02	o		
BENZO(B)FLUORANTHENE	1.25E-02	o	3.36E-02	z	2.51E-03	o		
BENZO(GHI)PERYLENE	1.48E-03	o	5.00E-02	aa	1.00E-01	o		
BENZO(K)FLUORANTHENE	1.25E-02	o	3.36E-02	z	2.51E-03	o		
BENZOIC ACID	7.72E-01	o	5.00E-02	aa	2.00E-06	o		
BIS(2-ETHYLHEXYL)PHTHALATE	1.09E-02	o	5.00E-02	aa	3.16E-03	o		
CHLOROFORM	6.76E-01	o	5.00E-02	aa	2.51E-06	o		
CHRYSENE	4.91E-03	o	5.00E-02	aa	1.26E-02	o		
DI-N-BUTYLPHTHALATE	1.42E-02	o	5.00E-02	aa	2.00E-03	o		
DIBENZO(A,H)ANTHRACENE	1.14E-03	o	5.00E-02	aa	1.58E-01	o		

Table 2.5. Contaminant biotransfer factors for selected ecological receptors

COPC	Soil to Plant BTF		Soil to Invertebrate BTF		Plant-to-Meat BTF (wet wt.) (days/kg)		Soil-mammal
DIBENZOFURAN			5.00E-02	aa			
FLUORANTHENE	1.42E-02	o	5.00E-02	aa	2.00E-03	o	
FLUORENE	2.77E-02	o	5.00E-02	aa	6.31E-04	o	
HEXADECANOIC ACID			5.00E-02	aa			
INDENO(1,2,3-CD)PYRENE	1.48E-03	o	5.00E-02	aa	1.00E-01	o	
NAPHTHALENE	1.20E-01	o	5.00E-02	aa	5.01E-05	o	
ORGANIC CARBON							
PENTACHLOROPHENOL	3.76E-03	o	5.00E-02	aa	2.00E-02	o	
PHENANTHRENE	2.12E-02	o	5.00E-02	aa	1.00E-03	o	
PHTHALATE ESTER							
PROPANOIC ACID, 2-METHYL-, 1							
PYRENE	1.42E-02	o	5.00E-02	aa	2.00E-03	o	
TOLUENE	2.66E-01	o	5.00E-02	aa	1.26E-05	o	

All transfer factors based on wet tissue concentrations. Conversions from original sources were conducted when necessary.

a = Sample et al. (1996b) [ES/ER/TM-197]

b = Efroymson et al. (1996) [ES/ER/TM-198]

c = IAEA (1994)

g = Garten et al. (1987)

i = Trabalka and Garten (1983)

j = Garten and Dahlman (1978)

l = Baes et al. (1984)

o = Travis and Arms (1988)

r = NCRP (1989).

s = Uptake factor for earthworms was unavailable. Used larger of plant and mammal values.

z = Beyer and Stafford (1993)

aa = Menzie et al. (1992)

Table 2.6. Chemical/receptor combinations lacking toxicity values

Chemical	Frequency of detection	Microbes	Plants	Worms	Wildlife
Sector 1 (Central)					
Di-n-butyl phthalate	1/1	X		X	
Methylene chloride	1/1	X	X	X	
Trichloroethene	1/1	X	X	X	
Sector 2 (Northeast)					
Uranium	1/1	X		X	
Acenaphthene	1/1	X		X	X
Anthracene	1/1	X	X	X	X
Benz(a)anthracene	1/1	X	X	X	X
Benzo(a)pyrene	1/1	X	X	X	
Benzo(b)fluoranthene	1/1	X	X	X	X
Benzo(ghi)perylene	1/1	X	X	X	X
Benzo(k)fluoranthene	1/1	X	X	X	X
Chrysene	1/1	X	X	X	X
Fluoranthene	1/1	X	X	X	X
Indeno(1,2,3-cd)pyrene	1/1	X	X	X	X
Methylene chloride	1/1	X	X	X	
Phenanthrene	1/1	X	X	X	X
Polychlorinated biphenyl	1/1	X		X	
Pyrene	1/1	X	X	X	X
Sector 3 (East)					
Thallium	1/2	X		X	
Uranium	1/1	X		X	
Acenaphthene	1/2	X		X	X
Anthracene	1/2	X	X	X	X
Benz(a)anthracene	1/2	X	X	X	X
Benzo(a)pyrene	1/2	X	X	X	
Benzo(b)fluoranthene	1/2	X	X	X	X
Benzo(ghi)perylene	1/2	X	X	X	X
Benzo(k)fluoranthene	2/2	X	X	X	X
Chrysene	1/2	X	X	X	X
Dibenz(a,h)anthracene	1/2	X	X	X	X
Di-n-butyl phthalate	2/2	X		X	
Fluoranthene	2/2	X	X	X	X
Fluorene	1/2	X	X		X
Indeno(1,2,3-cd)pyrene	1/2	X	X	X	X
Phenanthrene	1/2	X	X	X	X
Polychlorinated biphenyl	1/2	X		X	
Pyrene	2/2	X	X	X	X

Table 2.6. (Continued)

Chemical	Frequency of detection	Microbes	Plants	Worms	Wildlife
Sector 4 (Southeast)					
Aluminum	1/1			X	
Antimony	1/1	X		X	
Benz(a)anthracene	1/1	X	X	X	X
Benzo(a)pyrene	1/1	X	X	X	
Benzo(b)fluoranthene	1/1	X	X	X	X
Benzo(k)fluoranthene	1/1	X	X	X	X
Chrysene	1/1	X	X	X	X
Fluoranthene	1/1	X	X	X	X
Phenanthrene	1/1	X	X	X	X
Polychlorinated biphenyl	1/1	X		X	
Pyrene	1/1	X	X	X	X
Sector 5 (Southwest)					
Antimony	3/4	X		X	
Beryllium	4/4	X		X	
Iron	4/4		X	X	
Thallium	2/4	X		X	
Uranium	3/3	X		X	
Acenaphthene	4/5	X		X	X
Acenaphthylene	1/5	X	X	X	X
Anthracene	5/5	X	X	X	X
Benz(a)anthracene	5/5	X	X	X	X
Benzo(a)pyrene	5/5	X	X	X	
Benzo(b)fluoranthene	5/5	X	X	X	X
Benzo(ghi)perylene	5/5	X	X	X	X
Benzo(k)fluoranthene	5/5	X	X	X	X
Bis(2-ethylhexyl)phthalate	1/5	X	X	X	
Chrysene	5/5	X	X	X	X
Dibenz(a,h)anthracene	3/5	X	X	X	X
Dibenzofuran	3/5	X	X	X	X
Fluoranthene	5/5	X	X	X	X
Fluorene	3/5	X	X		X
Indeno(1,2,3-cd)pyrene	5/5	X	X	X	X
Naphthalene	1/5	X	X	X	X
Phenanthrene	5/5	X	X	X	X
Polychlorinated biphenyl	2/5	X		X	
Pyrene	5/5	X	X	X	X
Toluene	1/1	X		X	

Table 2.6. (Continued)

Chemical	Frequency of detection	Microbes	Plants	Worms	Wildlife
		Sector 6 (West)			
Aluminum	9/9			X	
Antimony	4/9	X		X	
Beryllium	9/9	X		X	
Cobalt	9/9			X	
Uranium	9/9	X		X	
2-Methylnaphthalene	2/9	X	X	X	X
Acenaphthene	4/9	X		X	X
Anthracene	6/9	X	X	X	X
Benz(a)anthracene	7/9	X	X	X	X
Benzo(a)pyrene	7/9	X	X	X	
Benzo(b)fluoranthene	7/9	X	X	X	X
Benzo(ghi)perylene	5/9	X	X	X	X
Benzo(k)fluoranthene	7/9	X	X	X	X
Bis(2-ethylhexyl)phthalate	1/9	X	X	X	
Chrysene	7/9	X	X	X	X
Dibenz(a,h)anthracene	2/9	X	X	X	X
Dibenzofuran	4/9	X	X	X	X
Di-n-butyl phthalate	1/9	X		X	
Fluoranthene	8/9	X	X	X	X
Fluorene	4/9	X	X		X
Indeno(1,2,3-cd)pyrene	5/9	X	X	X	X
Naphthalene	4/9	X	X	X	X
Phenanthrene	8/9	X	X	X	X
Polychlorinated biphenyl	3/9	X		X	
Pyrene	8/9	X	X	X	X
		Sector 7 (Northwest)			
Antimony	2/6	X		X	
Beryllium	6/6	X		X	
Iron	6/6		X	X	
Uranium	1/1	X		X	
Vanadium	6/6			X	
Benz(a)anthracene	1/2	X	X	X	X
Benzo(a)pyrene	1/2	X	X	X	
Benzo(b)fluoranthene	1/2	X	X	X	X
Benzo(k)fluoranthene	1/2	X	X	X	X
Chrysene	1/2	X	X	X	X
Fluoranthene	1/2	X	X	X	X
Pyrene	1/2	X	X	X	X

Table 2.6. (Continued)

Chemical	Frequency of detection	Microbes	Plants	Worms	Wildlife
Sector 8 (Far North/Northwest)					
Antimony	2/2	X		X	
Beryllium	2/2	X		X	
Thallium	1/2	X		X	
Uranium	2/2	X		X	
Acenaphthene	1/2	X		X	X
Anthracene	1/2	X	X	X	X
Benz(a)anthracene	1/2	X	X	X	X
Benzo(a)pyrene	1/2	X	X	X	
Benzo(b)fluoranthene	1/2	X	X	X	X
Benzo(ghi)perylene	1/2	X	X	X	X
Benzo(k)fluoranthene	1/2	X	X	X	X
Bis(2-ethylhexyl)phthalate	1/2	X	X	X	
Chrysene	1/2	X	X	X	X
Di-n-butyl phthalate	1/2	X		X	
Fluoranthene	2/2	X	X	X	X
Fluorene	1/2	X	X		X
Indeno(1,2,3-cd)pyrene	1/2	X	X	X	X
Phenanthrene	1/2	X	X	X	X
Pyrene	1/2	X	X	X	X
Sector 9 (Far East/Northeast)					
Aluminum	2/2			X	
Antimony	2/2	X		X	
Uranium	2/2	X		X	
Benz(a)anthracene	1/2	X	X	X	X
Benzo(a)pyrene	1/2	X	X	X	
Benzo(b)fluoranthene	1/2	X	X	X	X
Benzo(k)fluoranthene	1/2	X	X	X	X
Chrysene	1/2	X	X	X	X
Fluoranthene	2/2	X	X	X	X
Phenanthrene	1/2	X	X	X	X
Polychlorinated biphenyl	1/2	X		X	
Pyrene	2/2	X	X	X	X

Notes: "X" indicates that a toxicity values was not available for chemical/receptor combination.
A blank cell indicates that a toxicity value was available for the chemical/receptor combination.
Chemicals with toxicity values for all receptors are not listed.

531366

Table 2.7. Risks[a] to plants, soil invertebrates, and wildlife from potential future exposures to radionuclides in soil

Sector	Radionuclide	Freq. of det.	Max. detect. (pCi/g)	Repres. activ. (pCi/g)[b]	Plants	Soil inverts	Shrew	Mouse	Deer
Central	Cesium-137	1/1	2.00E-01	2.00E-01	1.19E-06	8.81E-06	4.23E-05	3.49E-05	1.43E-05
Central	Technetium-99	1/1	1.50E+00	1.50E+00	5.90E-04	5.98E-04	2.96E-06	2.96E-06	2.95E-06
Central	Thorium-230	1/1	1.00E+00	1.00E+00	4.31E-06	2.48E-05	2.56E-06	2.56E-06	5.02E-06
Central	Uranium-234	1/1	5.00E-01	5.00E-01	4.79E-03	1.54E-04	8.31E-06	8.31E-06	7.25E-04
Central	Uranium-238	1/1	5.00E-01	5.00E-01	4.26E-03	1.61E-04	1.02E-05	1.02E-05	6.46E-04
Sector Total[c]					9.64E-03	9.46E-04	6.63E-05	5.89E-05	1.39E-03
East	Cesium-137	1/1	5.00E-01	5.00E-01	2.98E-06	2.20E-05	1.06E-04	8.72E-05	3.57E-05
East	Neptunium-237	1/1	4.00E-01	4.00E-01	1.84E-05	2.85E-05	3.57E-05	2.74E-05	1.02E-05
East	Technetium-99	1/1	3.50E+00	3.50E+00	1.38E-03	1.39E-03	6.91E-06	6.90E-06	6.89E-06
East	Thorium-230	1/1	4.20E+00	4.20E+00	1.81E-05	1.04E-04	1.08E-05	1.08E-05	2.11E-05
East	Uranium-234	1/1	7.10E+00	7.10E+00	6.80E-02	2.19E-03	1.18E-04	1.18E-04	1.03E-02
East	Uranium-235	1/1	4.00E-01	4.00E-01	3.55E-03	1.22E-04	2.44E-05	2.44E-05	5.43E-04
East	Uranium-238	1/1	9.10E+00	9.10E+00	7.75E-02	2.93E-03	1.86E-04	1.86E-04	1.18E-02
Sector Total					1.50E-01	6.79E-03	4.87E-04	4.61E-04	2.27E-02
Far East/Northeast	Americium-241	1/2	1.00E+00	1.00E+00	1.40E-02	2.05E-02	1.56E-01	1.56E-01	2.83E-04
Far East/Northeast	Cesium-137	1/2	4.00E-01	4.00E-01	2.39E-06	1.76E-05	8.45E-05	6.98E-05	2.86E-05
Far East/Northeast	Technetium-99	2/2	1.00E+00	1.00E+00	3.93E-04	3.98E-04	1.97E-06	1.97E-06	1.97E-06
Far East/Northeast	Thorium-230	2/2	1.30E+00	1.30E+00	5.60E-06	3.23E-05	3.33E-06	3.33E-06	6.53E-06
Far East/Northeast	Uranium-234	2/2	7.90E+00	7.90E+00	7.56E-02	2.43E-03	1.31E-04	1.31E-04	1.15E-02
Far East/Northeast	Uranium-235	1/2	5.00E-01	5.00E-01	4.43E-03	1.53E-04	3.05E-05	3.05E-05	6.79E-04
Far East/Northeast	Uranium-238	2/2	8.70E+00	8.70E+00	7.41E-02	2.80E-03	1.78E-04	1.78E-04	1.12E-02
Sector Total					1.69E-01	2.63E-02	1.56E-01	1.56E-01	2.37E-02
Far North/Northwest	Cesium-137	2/2	2.00E-01	2.00E-01	1.19E-06	8.81E-06	4.23E-05	3.49E-05	1.43E-05
Far North/Northwest	Neptunium-237	1/2	6.00E-01	6.00E-01	2.76E-05	4.27E-05	5.36E-05	4.11E-05	1.53E-05
Far North/Northwest	Plutonium-239	2/2	4.00E-01	4.00E-01	6.33E-07	1.94E-05	1.36E-01	1.36E-01	2.16E-07
Far North/Northwest	Technetium-99	2/2	1.70E+01	1.70E+01	6.68E-03	6.77E-03	3.35E-05	3.35E-05	3.35E-05
Far North/Northwest	Thorium-230	2/2	1.60E+00	1.60E+00	6.89E-06	3.97E-05	4.10E-06	4.10E-06	8.04E-06

531367

Table 2.7. Risks[a] to plants, soil invertebrates, and wildlife from potential future exposures to radionuclides in soil

Sector	Radionuclide	Freq. of det.	Max. detect. (pCi/g)	Repres. activ. (pCi/g)[b]	Plants	Soil inverts	Shrew	Mouse	Deer
Far North/Northwest	Uranium-234	2/2	3.10E+00	3.10E+00	2.97E-02	9.54E-04	5.15E-05	5.15E-05	4.50E-03
Far North/Northwest	Uranium-235	1/2	2.00E-01	2.00E-01	1.77E-03	6.11E-05	1.22E-05	1.22E-05	2.72E-04
Far North/Northwest	Uranium-238	2/2	4.60E+00	4.60E+00	3.92E-02	1.48E-03	9.40E-05	9.40E-05	5.95E-03
Sector Total					7.73E-02	9.38E-03	1.37E-01	1.37E-01	1.08E-02
Northeast	Technetium-99	1/1	3.60E+00	3.60E+00	1.41E-03	1.43E-03	7.10E-06	7.09E-06	7.08E-06
Northeast	Thorium-230	1/1	1.80E+00	1.80E+00	7.75E-06	4.47E-05	4.61E-06	4.61E-06	9.04E-06
Northeast	Uranium-234	1/1	3.40E+00	3.40E+00	3.26E-02	1.05E-03	5.65E-05	5.65E-05	4.93E-03
Northeast	Uranium-235	1/1	2.00E-01	2.00E-01	1.77E-03	6.11E-05	1.22E-05	1.22E-05	2.72E-04
Northeast	Uranium-238	1/1	4.60E+00	4.60E+00	3.92E-02	1.48E-03	9.40E-05	9.40E-05	5.95E-03
Sector Total					7.49E-02	4.07E-03	1.74E-04	1.74E-04	1.12E-02
Northwest	Cesium-137	1/1	2.00E-01	2.00E-01	1.19E-06	8.81E-06	4.23E-05	3.49E-05	1.43E-05
Northwest	Technetium-99	1/1	4.20E+00	4.20E+00	1.65E-03	1.67E-03	8.29E-06	8.28E-06	8.27E-06
Northwest	Thorium-230	1/1	1.10E+00	1.10E+00	4.74E-06	2.73E-05	2.82E-06	2.82E-06	5.52E-06
Northwest	Uranium-234	1/1	2.80E+00	2.80E+00	2.68E-02	8.62E-04	4.65E-05	4.65E-05	4.06E-03
Northwest	Uranium-238	1/1	3.20E+00	3.20E+00	2.73E-02	1.03E-03	6.54E-05	6.54E-05	4.14E-03
Sector Total					5.57E-02	3.60E-03	1.65E-04	1.58E-04	8.23E-03
Southeast	Technetium-99	1/1	2.00E+00	2.00E+00	7.86E-04	7.97E-04	3.95E-06	3.94E-06	3.94E-06
Southeast	Thorium-230	1/1	9.00E-01	9.00E-01	3.88E-06	2.24E-05	2.31E-06	2.31E-06	4.52E-06
Southeast	Uranium-234	1/1	1.00E+00	1.00E+00	9.58E-03	3.08E-04	1.66E-05	1.66E-05	1.45E-03
Southeast	Uranium-238	1/1	1.10E+00	1.10E+00	9.37E-03	3.55E-04	2.25E-05	2.25E-05	1.42E-03
Sector Total					1.97E-02	1.48E-03	4.53E-05	4.53E-05	2.88E-03
Southwest	Cesium-137	1/3	2.00E-01	2.00E-01	1.19E-06	8.81E-06	4.23E-05	3.49E-05	1.43E-05
Southwest	Neptunium-237	1/3	3.00E-01	3.00E-01	1.38E-05	2.14E-05	2.68E-05	2.06E-05	7.63E-06
Southwest	Plutonium-239	1/3	2.00E-01	2.00E-01	3.16E-07	9.69E-06	6.82E-02	6.82E-02	1.08E-07
Southwest	Technetium-99	2/3	3.30E+01	3.30E+01	1.30E-02	1.31E-02	6.51E-05	6.50E-05	6.49E-05
Southwest	Thorium-230	3/3	2.20E+00	2.20E+00	9.48E-06	5.46E-05	5.64E-06	5.64E-06	1.10E-05

531368

A-779

Table 2.7. Risks[a] to plants, soil invertebrates, and wildlife from potential future exposures to radionuclides in soil

Sector	Radionuclide	Freq. of det.	Max. detect. (pCi/g)	Repres. activ. (pCi/g)[b]	Plants	Soil inverts	Shrew	Mouse	Deer
Southwest	Uranium-234	3/3	1.09E+01	1.09E+01	1.04E-01	3.36E-03	1.81E-04	1.81E-04	1.58E-02
Southwest	Uranium-235	1/3	6.00E-01	6.00E-01	5.32E-03	1.83E-04	3.66E-05	3.66E-05	8.15E-04
Southwest	Uranium-238	3/3	1.67E+01	1.67E+01	1.42E-01	5.38E-03	3.41E-04	3.41E-04	2.16E-02
Sector Total					2.65E-01	2.22E-02	6.89E-02	6.89E-02	3.83E-02
West	Americium-241	2/9	2.00E-01	1.50E-01	2.79E-03	4.09E-03	2.34E-02	2.34E-02	4.24E-05
West	Cesium-137	5/9	1.50E+00	6.72E-01	8.95E-06	6.61E-05	1.42E-04	1.17E-04	4.80E-05
West	Neptunium-237	8/9	3.00E+00	1.52E+00	1.38E-04	2.14E-04	1.36E-04	1.04E-04	3.87E-05
West	Plutonium-239	3/9	1.70E+00	7.19E-01	2.69E-06	8.24E-05	2.45E-01	2.45E-01	3.89E-07
West	Technetium-99	9/9	5.30E+01	5.30E+01	2.08E-02	2.11E-02	1.05E-04	1.04E-04	1.04E-04
West	Thorium-230	9/9	1.09E+01	6.29E+00	4.70E-05	2.71E-04	1.61E-05	1.61E-05	3.16E-05
West	Uranium-234	9/9	3.11E+01	9.48E+00	2.98E-01	9.57E-03	1.58E-04	1.58E-04	1.38E-02
West	Uranium-235	6/9	1.90E+00	6.60E-01	1.69E-02	5.81E-04	4.03E-05	4.03E-05	8.96E-04
West	Uranium-238	9/9	3.95E+01	1.21E+01	3.36E-01	1.27E-02	2.47E-04	2.47E-04	1.56E-02
Sector Total					6.75E-01	4.87E-02	2.69E-01	2.69E-01	3.06E-02

[a] Risks are calculated by dividing estimated exposure in mrad/d by the recommended dose rate limit of 1 rad/d for plants and soil invertebrates and 100 mrad/d for wildlife. Estimated exposures assume 100% exposure within the sector. Doses for plants and soil invertebrates are based on exposure to the maximum activity level; dose rates for wildlife are based on exposure to the representative activity. Estimated exposures include parent radionuclides plus all short-lived daughter products.

[b] The representative activity is the lower of the UCL95 on the mean and the maximum detect.

c The sector total is sum of estimated risks across all radionuclides in a sector. A value less than 1.0 indicates no unacceptable risks are expected.

Table 2.8. Summary of chemicals[a] posing potential future risks[b] to soil microbes, terrestrial plants, or earthworms.

Sector	Receptor	Al	As	Cd	Cr	Fe	Tl	U	V	Zn
East	microbe				1.8				1.3	
East	plant				18.2		1.2	5.5	13.3	
East	worm				45.5					
Far East/Northeast	microbe	26.2			1.7					
Far East/Northeast	plant	314.0			16.8			5.2		
Far East/Northeast	worm				42.0					
Far North/Northwest	microbe				2.7					
Far North/Northwest	plant				27.2			2.8		
Far North/Northwest	worm				68.0					
Northeast	microbe				1.9					
Northeast	plant				19.3			2.8		1.4
Northeast	worm				48.3					
Northwest	microbe				6.6	153.0			2.1	
Northwest	plant				66.0			1.9	21.2	
Northwest	worm				165.0					
Southeast	microbe	23.7			2.4					
Southeast	plant	284.0			23.6					
Southeast	worm				59.0					
Southwest	microbe				4.8	185.0				1.1
Southwest	plant				48.0		1.5	10.0		2.2
Southwest	worm				120.0					
West	microbe	29.5			4.6					
West	plant	354.0	4.5	1.4	45.8			23.8		1.5
West	worm				115.0					

Al = aluminum, As = arsenic, Cd = cadmium, Cr = chromium, Fe = iron, Tl = thallium, U = uranium, V = vanadium, and Zn = zinc.

[a] Includes only those chemicals with maximum concentrations above background (or no background available) and a hazard quotient > 1.0.

[b] Values in table are hazard quotients. Hazard quotients are estimated dose to receptor divided by benchmark dose.

Table 2.9. Summary of chemicals[a] posing potential future risks[b] to wildlife receptors

Sector	Receptor	Aluminum	Arsenic	Chromium [c]	PCB-1260
East	shrew			2.4	37.1
East	mouse				5.2
Far E/NE	shrew	89.6		1.8	
Far E/NE	mouse	8.6			
Far E/NE	deer	5.8			
Far N/NW	shrew			4.8	
Northeast	shrew			3.4	
Northwest	shrew			3.6	
Southeast	shrew	92.1		4.2	
Southeast	mouse	8.8			
Southeast	deer	6.0			
Southwest	shrew			3.7	
West	shrew	47.2	5.0	2.2	
West	mouse	4.5			
West	deer	3.1			

[a] Includes only those chemicals with maximum concentrations above background (or no background available) and a hazard quotient > 1.0.

[b] Values in table are hazard quotients. Hazard quotients are estimated dose to receptor divided by benchmark dose.

[c] Hazard quotient for chromium assuming chromium present as more toxic Cr+6. If present as Cr+3, none of the receptors would have hazard quotients > 1.0.