

**C-746-U Contained Landfill
Second Quarter Calendar Year 2014
(April–June)
Compliance Monitoring Report
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky**

This document is approved for public release per review by:

Robert Jones

LATA Kentucky Classification Support

8-26-14

Date

**C-746-U Contained Landfill
Second Quarter Calendar Year 2014
(April–June)
Compliance Monitoring Report
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky**

Date Issued—August 2014

Prepared for the
U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
LATA ENVIRONMENTAL SERVICES OF KENTUCKY, LLC
managing the
Environmental Remediation Activities at the
Paducah Gaseous Diffusion Plant
under contract DE-AC30-10CC40020

CLEARED FOR PUBLIC RELEASE

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ACRONYMS

<i>CFR</i>	<i>Code of Federal Regulations</i>
EPA	U.S. Environmental Protection Agency
<i>KAR</i>	<i>Kentucky Administrative Regulations</i>
KDWM	Kentucky Division of Waste Management
<i>KRS</i>	<i>Kentucky Revised Statutes</i>
LEL	lower explosive limit
LRGA	Lower Regional Gravel Aquifer
MCL	maximum contaminant level
MW	monitoring well
RGA	Regional Gravel Aquifer
UCRS	Upper Continental Recharge System
URGA	Upper Regional Gravel Aquifer

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1. INTRODUCTION

This report, *C-746-U Contained Landfill Second Quarter Calendar Year 2014 (April–June) Compliance Monitoring Report, Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, is being submitted in accordance with Solid Waste Landfill Permit Number 073-00045.

The groundwater, surface water, leachate, and methane monitoring sample data reporting form is provided in Appendix A. The facility information sheet is provided in Appendix B. Groundwater analytical results are recorded on the Kentucky Division of Waste Management (KDWM) groundwater reporting forms, which are presented in Appendix C. The total metals results reported in Appendix C are measured in an unfiltered sample, as required by Permit Condition GSTR0001, Standard Requirement 4. The statistical analyses and qualification statement are provided in Appendix D. The groundwater flow rate and direction determination are provided in Appendix E. Appendix F contains the notifications for parameters that exceed the maximum contaminant level (MCL) and for all parameters that had statistically significant increased concentrations relative to background concentrations, including those parameters listed in 40 *CFR* § 302.4, Appendix A. Appendix G provides a chart of MCL exceedances and statistically significant increases that have occurred, beginning in the fourth quarter calendar year 2002. Methane monitoring results are documented on the approved C-746-U Landfill Methane Monitoring Report form provided in Appendix H. The form includes pertinent remarks/observations as required by 401 *KAR* 48:090, Section 4. Surface water was monitored as specified in 401 *KAR* 48:300 § 2, and the approved surface water monitoring plan. The parameters identified in the Solid Waste Landfill Permit were analyzed for the three locations sampled for reporting only, pursuant to Permit Condition GMNP0003, Standard Requirement 1. Surface water results are provided in Appendix I.

1.1 BACKGROUND

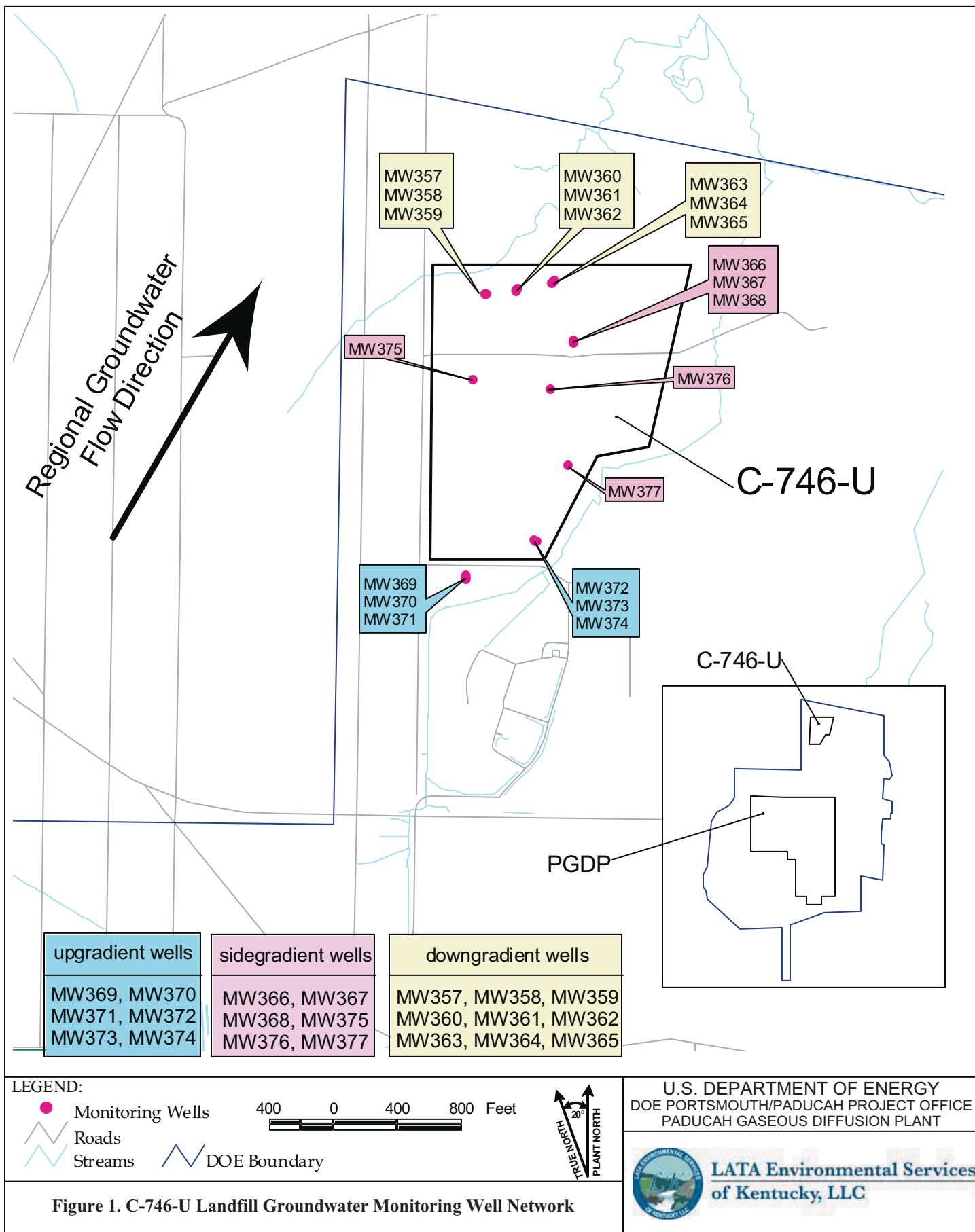
The C-746-U Landfill is an operating solid waste landfill located north of the Paducah Gaseous Diffusion Plant (PGDP) and north of the C-746-S&T Landfills. Construction and operation of the C-746-U Landfill was permitted in November 1996 under Solid Waste Landfill Permit Number 073-00045. The permitted C-746-U Landfill area covers about 60 acres and includes a liner and leachate collection system. C-746-U Landfill currently is operating in Phases 3, 4, and 5. Phases 1, 2, and most of Phase 3 have long-term cover. Phases 6 through 23 have not been constructed.

1.2 MONITORING PERIOD ACTIVITIES

1.2.1 Groundwater Monitoring

Groundwater sampling was conducted within the second quarter 2014 during April using LATA Environmental Services of Kentucky, LLC, procedure PAD-ENM-2101, *Groundwater Sampling*. Appropriate sample containers and preservatives were utilized. Due to United States Emrichment Corporation ceasing operations at PGDP, laboratory analyses were contracted to an off-site laboratory. The laboratory used lower reporting limits than the previously used laboratory. The laboratory also used U.S. Environmental Protection Agency (EPA)-approved methods, as applicable.

Three zones are monitored at the site: the Upper Continental Recharge System (UCRS), Upper Regional Gravel Aquifer (URGA), and the Lower Regional Gravel Aquifer (LRGA). There are 21 monitoring wells (MWs) under permit for the C-746-U Landfill; 9 UCRS wells, 6 URGA wells, and 6 LRGA wells. A map of the MW locations is presented in Figure 1. All MWs were sampled this quarter except MW376 and



MW377 (all screened in the UCRS), which had an insufficient amount of water to obtain samples; therefore, there are no analytical results for these locations.

The parameters specified in Permit Condition GSTR0001, Special Condition 1, were analyzed for all locations sampled.

The groundwater flow rate and direction determination are provided in Appendix E. Depth-to-water was measured on April 29, 2014, in MWs of the C-746-U Landfill (see Table E.1), in MWs of the C-746-S&T Landfills, and in MWs of the surrounding region (shown on Figure E.4). Water level measurements in 38 vicinity wells define the potentiometric surface for the Regional Gravel Aquifer (RGA).¹ Normal regional flow in the RGA is northeastward, toward the Ohio River. The hydraulic gradient in the vicinity of the C-746-U Landfill in January was 2.86×10^{-4} ft/ft. The hydraulic gradient for the URGa at the C-746-U Landfill was 3.35×10^{-4} ft/ft, and the hydraulic gradient for the LRGA was 3.41×10^{-4} ft/ft. Calculated groundwater flow rates (average linear velocity) at the C-746-U Landfill range from 0.57 to 0.99 ft/day for the URGa and LRGA (see Table E.3).

1.2.2 Methane Monitoring

Landfill operations staff monitored for the occurrence of methane on June 6, 2014, in four on-site building locations and four locations along the landfill boundary. See Appendix H for a map of the monitoring locations. Monitoring identified 0% of the lower explosive limit (LEL) of methane at all locations, which is compliant with the regulatory requirement of < 100% LEL at boundary locations and < 25% LEL at all other locations. The results are documented on the C-746-U Landfill Methane Log provided in Appendix H.

1.2.3 Surface Water Monitoring

Surface water was sampled in accordance with 401 KAR 48:300 § 2 and the approved surface water monitoring plan. Sampling was performed at three locations at the C-746-U Landfill. The C-746-U Landfill has an upstream location, L154; a downstream location, L351; and a location capturing runoff from the landfill surface, L150. A map of the surface water monitoring locations is presented in Figure 2. The parameters identified in the Solid Waste Landfill Permit were analyzed for the three locations sampled in report only format, pursuant to Permit Condition GMNP0003, Standard Requirement 1. Surface water reports are provided in Appendix I.

1.3 KEY RESULTS

The following parameters had concentrations that either exceeded the MCL (Table 1) or were shown to have statistically significant increases (Table 2) in concentrations² relative to background concentrations during the second quarter 2014.

¹ Although depth-to-water is measured in the UCRS wells, the UCRS has a strong vertical hydraulic gradient that varies locally. The UCRS wells are screened over different elevations; therefore, the UCRS well measurements are not sufficient for mapping the potentiometric surface.

² The term “concentration” may refer to a field measurement result such as pH, oxidation-reduction potential, or an analytical parameter such as trichloroethene or polychlorinated biphenyls (PCBs).

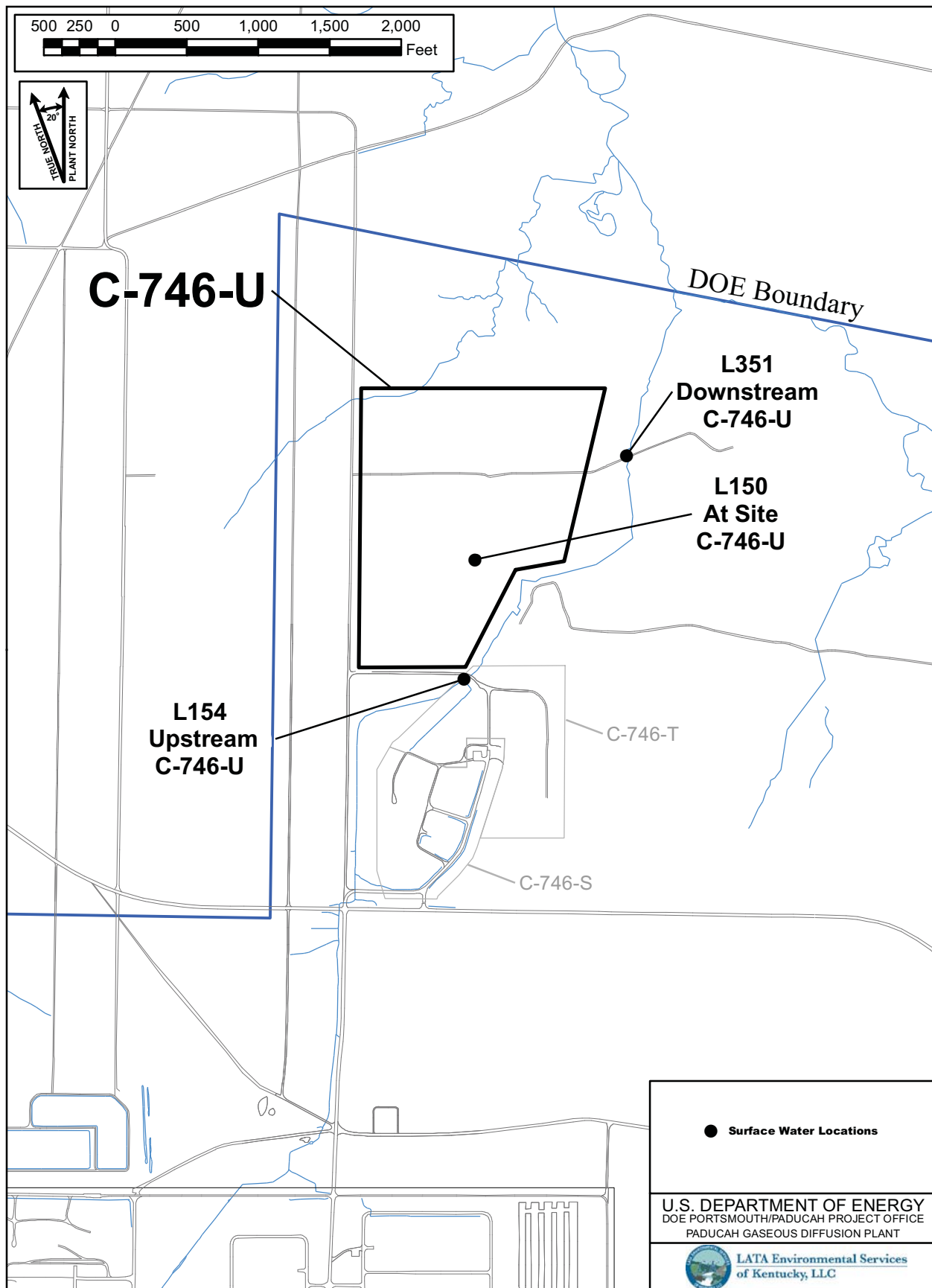


Figure 2. C-746-U Landfill Surface Water Monitoring Locations

Table 1. Summary of MCL Exceedances

<u>UCRS</u>	<u>URGA</u>	<u>LRGA</u>
NONE	MW372: Trichloroethene	MW358: Trichloroethene
		MW361: Trichloroethene

Table 2. Summary of Statistically Significant Increases

<u>UCRS</u>	<u>URGA</u>	<u>LRGA</u>
MW359: Dissolved oxygen, oxidation-reduction potential, sulfate	MW357: Oxidation-reduction potential	MW358: Oxidation-reduction potential
MW362: Dissolved oxygen, oxidation-reduction potential	MW360: Oxidation-reduction potential	MW361: Oxidation-reduction potential
MW365: Dissolved oxygen, oxidation-reduction potential, sulfate	MW363: Oxidation-reduction potential	MW364: Dissolved oxygen, oxidation-reduction potential, technetium-99
MW368: Dissolved oxygen, oxidation-reduction potential, sulfate	MW366: Oxidation-reduction potential, toluene	MW367: Oxidation-reduction potential
MW371: Dissolved oxygen, oxidation-reduction potential, sulfate	MW369: Oxidation-reduction potential, toluene	MW370: Oxidation-reduction potential
MW374: Dissolved oxygen, oxidation-reduction potential	MW372: Calcium, chloride, conductivity, dissolved solids, magnesium, oxidation-reduction potential, sulfate	MW373: Calcium, oxidation-reduction potential
MW375: Oxidation-reduction potential, sulfate		

Sidegradient wells: MW366, MW367, MW368, MW375, MW376, MW377

Downgradient wells: MW357, MW358, MW359, MW360, MW361, MW362, MW363, MW364, MW365

Upgradient wells: MW369, MW370, MW371, MW372, MW373, MW374

There were no new MCL exceedances for this quarter. The MCL exceedances, trichloroethene in MW358, MW361, and MW372, are related to sources of contamination that are upgradient of the C-746-U Landfill. The notification of parameters that exceeded the MCL has been submitted electronically to the KDWM in accordance with 401 KAR 48:300, Section 7, prior to the submittal of this report.

There were two new statistically significant increases for toluene this quarter. Toluene was detected in MW366 and MC369. Please note that toluene also was detected in the trip blanks and some data qualified as “U” (nondetect). The source is believed to be the sealing process that was used on the samples in preparation for shipment. Dissolved oxygen was also a statistically significant increase for MW364.

This report serves as the notification of parameters that had statistically significant increased concentrations relative to background concentrations, as required by Permit Number 073-00045, Condition GSTR0001, Standard Requirement 8, and 401 KAR 48:300, Section 7.

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2. DATA EVALUATION/STATISTICAL SYNOPSIS

The statistical analyses conducted on the second quarter 2014 groundwater data collected from the C-746-U Contained Landfill MWs were performed in accordance with Permit Condition GSTR0001, Standard Requirement 3, using the EPA guidance document, *EPA Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (1989), with the exception of pH. The method for conducting the statistical analysis of pH was selected by the statistician. The statistical analyses for this report utilize data from the first eight quarters that were sampled for each parameter, beginning with the first two baseline sampling events in 2002, when available. The sampling dates associated with background data are listed next to the result in the statistical analysis sheets in Appendix D (D-23–D-104).

For chemicals with an established MCL, no statistical analysis is required. Parameters that have an MCL can be found in 401 KAR 47:030, Section 6. For parameters with no established MCL, the data are divided into censored (nondetects) and uncensored (detected) observations. The one-sided tolerance interval statistical test is conducted only on parameters that have at least one uncensored observation. Results of the one-sided tolerance interval statistical test are used to determine whether the data show a statistically significant increase in concentrations with respect to upgradient (background) well data. For the statistical analysis of pH, a two-sided tolerance interval statistical test was conducted. The test well results were compared to both upper and lower tolerance limit to determine if statistically significant deviations in concentrations exist with respect to upgradient (background) well data. A stepwise list of the one-side tolerance interval statistical procedures applied to the data is provided in Appendix D under Statistical Analysis Process. The statistical analysis was conducted separately for each parameter in each well. The MWs included historically in the statistical analyses are listed in Table 3.

Table 3. Monitoring Wells Included Historically in Statistical Analysis*

UCRS	URGA	LRGA
MW359	MW357	MW358
MW362	MW360	MW361
MW365	MW363	MW364
MW368	MW366	MW367
MW371 (upgradient)	MW369 (upgradient)	MW370 (upgradient)
MW374 (upgradient)	MW372 (upgradient)	MW373 (upgradient)
MW375		
MW376 (dry)**		
MW377 (dry)**		

*A map showing the monitoring well locations is shown on Figure 1.

**MW376 and MW377 had sufficient water to permit a water level measurement, but insufficient water to provide water samples for laboratory analysis.

STATISTICAL ANALYSIS OF GROUNDWATER DATA

Parameters requiring statistical analysis are summarized in Appendix D for each hydrological unit. A stepwise list for determining statistically significant increases is provided in Appendix D under Statistical Analysis Process. Appendix G summarizes the occurrences (by well and by quarter) of statistically significant increases and MCL exceedances.

Upper Continental Recharge System

In this quarter, 27 parameters required statistical analysis in the UCRS. During the second quarter, dissolved oxygen, oxidation-reduction potential, and sulfate displayed elevated concentrations that were determined to qualify as statistically significant increases relative to background data and are listed in Table 2.

Upper Regional Gravel Aquifer

In this quarter, 28 parameters required statistical analysis in the URGA. During the second quarter, calcium, chloride, conductivity, dissolved solids, magnesium, oxidation-reduction potential, sulfate, and toluene displayed elevated concentrations that were determined to qualify as statistically significant increases relative to background data and are listed in Table 2.

Lower Regional Gravel Aquifer

In this quarter, 22 parameters required statistical analysis in the LRGA. During the second quarter, calcium, dissolved oxygen, oxidation-reduction potential, and technetium-99 displayed elevated concentrations that were determined to qualify as statistically significant increases relative to background data and are listed in Table 2.

3. DATA VALIDATION

Data validation was performed on the organic, inorganic, and radiochemical analytical data by an independent third-party validator. Validation qualifiers are not requested on the groundwater reporting forms. Validation qualifiers are used in the statistical analysis. Validation qualifiers are added by the third-party validator and not the laboratory.

Field quality control samples are collected each sampling event. Field blanks, rinseate blanks, and trip blanks are obtained to ensure quality of field and laboratory practices and data are reported in the Groundwater Sample Analysis forms in Appendix C. Laboratory quality control samples such as matrix spikes, matrix spike duplicates, and method blanks are performed by the laboratory. Both field and laboratory quality control sample results are reviewed as part of the data validation process.

The following summary from the data validation report is included to provide more information regarding the presence of toluene and radium-226 in the second quarter 2014 sampling event.

All laboratory and field blanks analyzed with the sample set were found to be acceptable. Toluene was detected in the trip blanks, and the following results have been qualified “U” (nondetect) by the third-party data validator: MW368, MW371, MW358, MW363, MW364, MW365, MW366, MW370, MW375, and MW362.

Radium-226 was detected in the rinseate blank. Based on the blank results, the following samples have been qualified “U” (nondetect) by the third-party data validator: MW357, MW358, MW360, MW361, MW367, MW369, MW370, MW371, and MW374.

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4. PROFESSIONAL GEOLOGIST AUTHORIZATION

DOCUMENT IDENTIFICATION: *C-746-U Contained Landfill
Second Quarter Calendar Year 2014 (April-June)
Compliance Monitoring Report,
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky (PAD-ENM-0089/V2)*

Stamped and signed pursuant to my authority as a duly registered geologist under the provisions of KRS Chapter 322A.



Kenneth R. Davis
Kenneth R. Davis

PG1194

August 27, 2014
Date

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5. REFERENCE

EPA (U.S. Environmental Protection Agency) 1989. *EPA Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Final Guidance, Office of Resource Conservation and Recovery, U.S. Environmental Protection Agency, Washington, DC.

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APPENDIX A

GROUNDWATER, SURFACE WATER, LEACHATE, AND METHANE MONITORING SAMPLE DATA REPORTING FORM

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**GROUNDWATER, SURFACE WATER, LEACHATE,
AND METHANE MONITORING
SAMPLE DATA REPORTING FORM**

**NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
SOLID WASTE BRANCH
14 REILLY ROAD
FRANKFORT, KY 40601**

Facility Name: U.S. DOE-Paducah Gaseous Diffusion Plant Activity: C-746-U Contained Landfill
(As officially shown on DWM Permit Face)

Permit No: 073-00045 Finds/Unit No: Quarter & Year 2nd Qtr. CY 2014

Please check the following as applicable:

 Characterization X Quarterly Semiannual Annual Assessment

Please check applicable submittal(s): X Groundwater X Surface Water

 Leachate X Methane Monitoring

This form is to be utilized by those sites required by regulation (Kentucky Waste Management Regulations-401 KAR 48:300 and 45:160) or by statute (Kentucky Revised Statutes Chapter 224) to conduct groundwater and surface water monitoring under the jurisdiction of the Division of Waste Management. **You must report any indication of contamination within forty-eight (48) hours of making the determination using statistical analyses, direct comparison, or other similar techniques. Submitting the lab report is NOT considered notification.** Instructions for completing the form are attached. Do not submit the instruction pages.

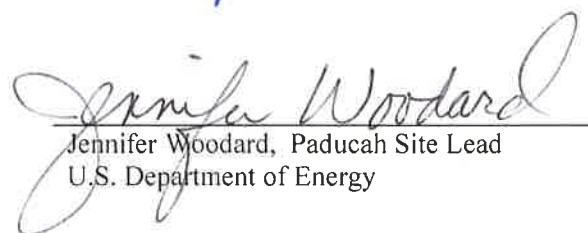
I certify under penalty of law that the document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations.



Mark L. Duff, Paducah Project Manager
LATA Environmental Services of Kentucky, LLC

8-29-14

Date



Jennifer Woodard, Paducah Site Lead
U.S. Department of Energy

8/29/14

Date

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APPENDIX B

FACILITY INFORMATION SHEET

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FACILITY INFORMATION SHEET

Groundwater, April, 2014
Surface Water: April, 2014
Sampling Date: Methane June 2014 County: McCracken Permit Nos. 073-00045

Facility Name: U.S. DOE - Paducah Gaseous Diffusion Plant
(As officially shown on DWM Permit Face)

Site Address: 5600 Hobbs Road Kevil, Kentucky 42053
Street City/State Zip

Phone No: (270) 441-6800 Latitude: N 37° 07' 45" Longitude: W 88° 47' 55"

OWNER INFORMATION

Facility Owner: U.S. DOE – W. E. Murphie, Manager Phone No: (859) 219-4001

Contact Person: Mark J. Duff Phone No: (270) 441-5030

Contact Person Title: Project Manager, LATA Environmental Services of Kentucky, LLC

Mailing Address: 761 Veterans Avenue Kevil, Kentucky 42053
Street City/State Zip

SAMPLING PERSONNEL (IF OTHER THAN LANDFILL OR LABORATORY)

Company: LATA Environmental Services of Kentucky, LLC

Contact Person: Jeff Boulton Phone No: (270) 441-5444

Mailing Address: 761 Veterans Avenue Kevil, Kentucky 42053
Street City/State Zip

LABORATORY RECORD #1

Laboratory GEL Laboratories, LLC Lab ID No: SC00012 (EPA ID Number)

Contact Person: Joanne Harley Phone No: (843) 769-7387

Mailing Address: 2040 Savage Road Charleston, South Carolina 29047
Street City/State Zip

LABORATORY RECORD #2

Laboratory: TestAmerica Laboratories, Inc. Lab ID No: MO00054 (EPA ID Number)

Contact Person: Elaine Wild Phone No: (314) 298-8566

Mailing Address: 13715 Rider Trail North Earth City, Missouri 63045
Street City/State Zip

LABORATORY RECORD #3

Laboratory: _____ Lab ID No: _____

Contact Person: _____ Phone No: _____

Mailing Address: _____
Street City/State Zip

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APPENDIX C

GROUNDWATER SAMPLE ANALYSES AND WRITTEN COMMENTS

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Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(S)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4798		8004-4799		8004-0981		8004-4800		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					357		358		359		360		
Sample Sequence #					1		1		1		1		
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA		NA		NA		NA		
Sample Date and Time (Month/Day/Year hour: minutes)					4/21/2014 08:47		4/15/2014 12:12		4/21/2014 09:43		4/16/2014 09:05		
Duplicate ("Y" or "N") ²					N		N		N		N		
Split ("Y" or "N") ³					N		N		N		N		
Facility Sample ID Number (if applicable)					MW357UG3-14		MW358UG3-14		MW359UG3-14		MW360UG3-14		
Laboratory Sample ID Number (if applicable)					347196001		346770007		347196002		346873002		
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/25/2014		4/22/2014		4/25/2014		4/23/2014		
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					DOWN		DOWN		DOWN		DOWN		
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056	0.351		0.486		<0.2		0.147	J
16887-00-6		Chloride(s)	T	mg/L	9056	31.5		36.4		1.3		9.87	
16984-48-8		Fluoride	T	mg/L	9056	0.209		0.163		0.0486	J	0.267	
S0595- -		Nitrate & Nitrite	T	mg/L	9056	1.24		0.892		2.44		0.0515	J
14808-79-8		Sulfate	T	mg/L	9056	56.9		88.5		58.9		38.1	
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field	30.05		30.2		30.05		30.12	
S0145- -		Specific Conductance	T	µMH0/cm	Field	431		522		255		505	

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4798		8004-4799		8004-0981		8004-4800	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					357		358		359		360	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -	Static Water Level Elevation	T	Ft. MSL	Field	326.63		326.05		337.61		325.83	
N238	Dissolved Oxygen	T	mg/L	Field	4.55		2.71		4.91		2.49	
S0266- -	Total Dissolved Solids	T	mg/L	160.1	213		299		154		294	
S0296- -	pH	T	Units	Field	6.11		6.22		5.89		6.3	
NS215	Eh	T	mV	Field	438		234		442		277	
S0907 - -	Temperature	T	°C	Field	17.94		14.22		18.11		13.67	
7429-90-5	Aluminum	T	mg/L	6020	<0.05		<0.05		0.135		0.131	
7440-36-0	Antimony	T	mg/L	6020	<0.003		<0.003		<0.003		<0.003	
7440-38-2	Arsenic	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7440-39-3	Barium	T	mg/L	6020	0.0552		0.0497		0.0293		0.154	
7440-41-7	Beryllium	T	mg/L	6020	<0.0005		<0.0005		<0.0005		<0.0005	
7440-42-8	Boron	T	mg/L	6020	0.332		0.369		<0.015		0.0601	
7440-43-9	Cadmium	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-70-2	Calcium	T	mg/L	6020	27.1		36.1		7.32		24.8	
7440-47-3	Chromium	T	mg/L	6020	<0.01		<0.01		0.00213	J	<0.01	
7440-48-4	Cobalt	T	mg/L	6020	0.00463		0.00281		0.00025	J	0.0189	
7440-50-8	Copper	T	mg/L	6020	0.00112		0.00066	J	0.00359		0.0009	J
7439-89-6	Iron	T	mg/L	6020	0.0894	J	1.74		0.245		4.27	
7439-92-1	Lead	T	mg/L	6020	<0.002		<0.002		<0.002		<0.002	
7439-95-4	Magnesium	T	mg/L	6020	11.2		15.5		4.2		8.76	
7439-96-5	Manganese	T	mg/L	6020	0.167		0.314		0.00279	J	0.22	
7439-97-6	Mercury	T	mg/L	7470	<0.0002		<0.0002		<0.0002		<0.0002	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4798		8004-4799		8004-0981		8004-4800		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					357		358		359		360		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020	<0.0005		<0.0005		<0.0005		0.00032	J
7440-02-0		Nickel	T	mg/L	6020	0.00132	J	0.00421		0.00119	J	0.00287	
7440-09-7		Potassium	T	mg/L	6020	1.59		2.43		0.117	J	0.676	
7440-16-6		Rhodium	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7782-49-2		Selenium	T	mg/L	6020	<0.005		0.00276	J	<0.005		<0.005	
7440-22-4		Silver	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-23-5		Sodium	T	mg/L	6020	42.1		41.9		42.7		74.1	
7440-25-7		Tantalum	T	mg/L	6020	<0.005		<0.005	*	<0.005		<0.005	
7440-28-0		Thallium	T	mg/L	6020	<0.002		<0.002		<0.002		<0.002	
7440-61-1		Uranium	T	mg/L	6020	<0.0002		<0.0002		0.00015	J	0.00019	J
7440-62-2		Vanadium	T	mg/L	6010	<0.005		<0.005		<0.005		<0.005	
7440-66-6		Zinc	T	mg/L	6020	<0.01		0.00535	J	<0.01		<0.01	
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003		<0.003	
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-88-3		Toluene	T	mg/L	8260	<0.001		0.0128		<0.001		<0.001	
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4798		8004-4799		8004-0981		8004-4800	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					357		358		359		360	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-01-6	Ethene, Trichloro-	T	mg/L	8260	0.00479		0.00631		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4798		8004-4799		8004-0981		8004-4800	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					357		358		359		360	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4	Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
591-78-6	2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
74-88-4	Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
124-48-1	Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
56-23-5	Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-09-2	Dichloromethane	T	mg/L	8260	<0.005		0.00168	J	<0.005		<0.005	
108-10-1	Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
96-12-8	Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.0000206		<0.0000201		<0.0000202		<0.0000203	
78-87-5	Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-02-6	trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-01-5	cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-60-5	trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-69-4	Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
96-18-4	1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
95-50-1	Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-46-7	Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1336-36-3	PCB, Total	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
12674-11-2	PCB-1016	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
11104-28-2	PCB-1221	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
11141-16-5	PCB-1232	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
53469-21-9	PCB-1242	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
12672-29-6	PCB-1248	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4798		8004-4799		8004-0981		8004-4800	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					357		358		359		360	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1	PCB-1254	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
11096-82-5	PCB-1260	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
11100-14-4	PCB-1268	T	ug/L	8082	<0.098		<0.098		<0.102		<0.0952	
12587-46-1	Gross Alpha	T	pCi/L	9310	-0.201	*	0.595	*	-2.44	*	-3.55	*
12587-47-2	Gross Beta	T	pCi/L	9310	12.2	*	43.4	*	5.51	*	-0.175	*
10043-66-0	Iodine-131	T	pCi/L			*		*		*		*
13982-63-3	Radium-226	T	pCi/L	903.1	2.52	*	3.96	*	0.924	*	3.15	*
10098-97-2	Strontium-90	T	pCi/L	905.0	3.68	*	3.69	*	-2.49	*	0.804	*
14133-76-7	Technetium-99	T	pCi/L	Tc-02-RC	27.8	*	44.4	*	1.95	*	9	*
14269-63-7	Thorium-230	T	pCi/L	Th-01-RC	3.16	*	1.83	*	0.808	*	-0.24	*
10028-17-8	Tritium	T	pCi/L	906.0	9.31	*	18.1	*	-35.2	*	26.5	*
S0130- -	Chemical Oxygen Demand	T	mg/L	410.4	<20		<20		<20		<20	
57-12-5	Cyanide	T	mg/L	9012	<0.2		<0.2		<0.2		<0.2	
20461-54-5	Iodide	T	mg/L	300.0	<0.1		<0.1		<0.1		<0.1	
S0268- -	Total Organic Carbon	T	mg/L	9060	0.882	J	1.12	J	0.877	J	2.49	
S0586- -	Total Organic Halides	T	mg/L	9020	0.00842	J	0.00932	J	<0.01		0.0173	

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4795	8004-0986	8004-4796	8004-4797					
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					361	362	363	364					
Sample Sequence #					1	1	1	1					
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA	NA	NA	NA					
Sample Date and Time (Month/Day/Year hour:minutes)					4/16/2014 07:50	4/16/2014 08:27	4/15/2014 08:33	4/15/2014 09:47					
Duplicate ("Y" or "N") ²					N	N	N	N					
Split ("Y" or "N") ³					N	N	N	N					
Facility Sample ID Number (if applicable)					MW361UG3-14	MW362UG3-14	MW363UG3-14	MW364UG3-14					
Laboratory Sample ID Number (if applicable)					346873004	346873005	346770003	346770005					
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/23/2014	4/23/2014	4/21/2014	4/22/2014					
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					DOWN	DOWN	DOWN	DOWN					
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056	0.431		0.161	J	0.135	J	0.374	
16887-00-6		Chloride(s)	T	mg/L	9056	33.7		9.81		29.7		31.1	
16984-48-8		Fluoride	T	mg/L	9056	0.181		0.388		0.238		0.15	
S0595- -		Nitrate & Nitrite	T	mg/L	9056	1.02		0.721		3.67		0.939	
14808-79-8		Sulfate	T	mg/L	9056	82.3		14.4		27.8		67.1	
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field	30.06		30.09		30.17		30.19	
S0145- -		Specific Conductance	T	µMH0/cm	Field	489		597		402		457	

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis
of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4795		8004-0986		8004-4796		8004-4797		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					361		362		363		364		
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field	325.97		336.61		325.78		325.75	
N238		Dissolved Oxygen	T	mg/L	Field	3.68		8		1.6		5.55	
S0266- -		Total Dissolved Solids	T	mg/L	160.1	273		671		241		254	
S0296- -		pH	T	Units	Field	6.14		6.85		6.29		6.38	
NS215		Eh	T	mV	Field	445		382		399		358	
S0907 - -		Temperature	T	°C	Field	12.17		12.89		14.06		14.11	
7429-90-5		Aluminum	T	mg/L	6020	<0.05		15.4		<0.05		0.0226	J
7440-36-0		Antimony	T	mg/L	6020	<0.003		<0.003		<0.003		<0.003	
7440-38-2		Arsenic	T	mg/L	6020	0.00199	J	0.00309	J	<0.005		<0.005	
7440-39-3		Barium	T	mg/L	6020	0.052		0.122		0.181		0.0762	
7440-41-7		Beryllium	T	mg/L	6020	<0.0005		0.00044	J	<0.0005		<0.0005	
7440-42-8		Boron	T	mg/L	6020	0.347		0.0306		0.0167		0.0123	J
7440-43-9		Cadmium	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-70-2		Calcium	T	mg/L	6020	32.7		16.9		25.3		28.7	
7440-47-3		Chromium	T	mg/L	6020	<0.01		0.013		<0.01		<0.01	
7440-48-4		Cobalt	T	mg/L	6020	0.0001	J	0.00356		0.00135		0.00081	J
7440-50-8		Copper	T	mg/L	6020	0.00051	J	0.00785		0.00072	J	0.00072	J
7439-89-6		Iron	T	mg/L	6020	0.0871	J	9.91		0.144		0.564	
7439-92-1		Lead	T	mg/L	6020	<0.002		0.00621		<0.002		<0.002	
7439-95-4		Magnesium	T	mg/L	6020	12.9		7.4		9.66		11.3	
7439-96-5		Manganese	T	mg/L	6020	0.00186	J	0.0415		0.31		0.14	
7439-97-6		Mercury	T	mg/L	7470	<0.0002		<0.0002		<0.0002		<0.0002	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4795		8004-0986		8004-4796		8004-4797		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					361		362		363		364		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020	<0.0005		0.00164		0.00017	J	<0.0005	
7440-02-0		Nickel	T	mg/L	6020	0.00131	J	0.00778		0.00153	J	0.00117	J
7440-09-7		Potassium	T	mg/L	6020	1.82		1.04		1.2		1.79	
7440-16-6		Rhodium	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7782-49-2		Selenium	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7440-22-4		Silver	T	mg/L	6020	<0.001		0.00027	J	<0.001		<0.001	
7440-23-5		Sodium	T	mg/L	6020	44.2		121		36.6		43.3	
7440-25-7		Tantalum	T	mg/L	6020	<0.005		<0.005		<0.005	*	<0.005	*
7440-28-0		Thallium	T	mg/L	6020	<0.002		<0.002		<0.002		<0.002	
7440-61-1		Uranium	T	mg/L	6020	<0.0002		0.00662		<0.0002		<0.0002	
7440-62-2		Vanadium	T	mg/L	6010	<0.005		0.0044	J	<0.005		<0.005	
7440-66-6		Zinc	T	mg/L	6020	<0.01		0.0198		<0.01		0.0253	
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003		<0.003	
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-88-3		Toluene	T	mg/L	8260	<0.001		0.00058	J	0.00132		0.01	
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4795		8004-0986		8004-4796		8004-4797	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					361		362		363		364	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-01-6	Ethene, Trichloro-	T	mg/L	8260	0.00535		<0.001		0.00041	J	0.00425	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4795		8004-0986		8004-4796		8004-4797	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					361		362		363		364	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4	Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
591-78-6	2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
74-88-4	Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
124-48-1	Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
56-23-5	Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-09-2	Dichloromethane	T	mg/L	8260	<0.005		<0.005		<0.005		0.00157	J
108-10-1	Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
96-12-8	Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.00002		<0.0000203		<0.0000202		<0.0000203	
78-87-5	Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-02-6	trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-01-5	cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-60-5	trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-69-4	Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
96-18-4	1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
95-50-1	Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-46-7	Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1336-36-3	PCB, Total	T	ug/L	8082	<0.0952		<0.098		0.127		<0.106	
12674-11-2	PCB-1016	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	
11104-28-2	PCB-1221	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	
11141-16-5	PCB-1232	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	
53469-21-9	PCB-1242	T	ug/L	8082	<0.0952		<0.098		0.127		<0.106	
12672-29-6	PCB-1248	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4795		8004-0986		8004-4796		8004-4797	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					361		362		363		364	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1	PCB-1254	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	
11096-82-5	PCB-1260	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	
11100-14-4	PCB-1268	T	ug/L	8082	<0.0952		<0.098		<0.104		<0.106	
12587-46-1	Gross Alpha	T	pCi/L	9310	2.36	*	9.11	*	-1.82	*	1.75	*
12587-47-2	Gross Beta	T	pCi/L	9310	27.8	*	5.23	*	10.7	*	36.5	*
10043-66-0	Iodine-131	T	pCi/L			*		*		*		*
13982-63-3	Radium-226	T	pCi/L	903.1	3.27	*	0.484	*	1.51	*	-0.587	*
10098-97-2	Strontium-90	T	pCi/L	905.0	-0.784	*	-0.222	*	-2.57	*	0.387	*
14133-76-7	Technetium-99	T	pCi/L	Tc-02-RC	40.6	*	5.69	*	18.3	*	52.5	*
14269-63-7	Thorium-230	T	pCi/L	Th-01-RC	0.506	*	-0.699	*	-1.01	*	-1.6	*
10028-17-8	Tritium	T	pCi/L	906.0	54.4	*	-26.4	*	66.7	*	63.2	*
S0130- -	Chemical Oxygen Demand	T	mg/L	410.4	<20		<20		<20		<20	
57-12-5	Cyanide	T	mg/L	9012	<0.2		<0.2		<0.2		<0.2	
20461-54-5	Iodide	T	mg/L	300.0	<0.1		<0.1		<0.1		<0.1	
S0268- -	Total Organic Carbon	T	mg/L	9060	0.67	J	2.57		1.08	J	0.728	J
S0586- -	Total Organic Halides	T	mg/L	9020	0.00938	J	0.013		0.00884	J	0.0082	J

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0984	8004-0982	8004-4793	8004-0983					
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					365	366	367	368					
Sample Sequence #					1	1	1	1					
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA	NA	NA	NA					
Sample Date and Time (Month/Day/Year hour:minutes)					4/15/2014 09:09	4/15/2014 07:52	4/14/2014 12:33	4/14/2014 13:09					
Duplicate ("Y" or "N") ²					N	N	N	N					
Split ("Y" or "N") ³					N	N	N	N					
Facility Sample ID Number (if applicable)					MW365UG3-14	MW366UG3-14	MW367UG3-14	MW368UG3-14					
Laboratory Sample ID Number (if applicable)					346770006	346770004	346700003	346700004					
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/22/2014	4/21/2014	4/21/2014	4/21/2014					
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					DOWN	SIDE	SIDE	SIDE					
CAS RN ⁴		CONSTITUENT	T D S ⁵	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056	<0.2		0.497		0.435		<0.2	
16887-00-6		Chloride(s)	T	mg/L	9056	4.62		40.1		34.2		2.33	
16984-48-8		Fluoride	T	mg/L	9056	0.352		0.176		0.144		0.669	
S0595- -		Nitrate & Nitrite	T	mg/L	9056	0.526		0.875		0.36		0.0629	J
14808-79-8		Sulfate	T	mg/L	9056	69.5		43.8		41.5		67.7	
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field	30.17		30.17		29.81		29.81	
S0145- -		Specific Conductance	T	µMH0/cm	Field	449		456		421		798	

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0984		8004-0982		8004-4793		8004-0983		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					365		366		367		368		
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field	333.87		325.81		326.19		334.39	
N238		Dissolved Oxygen	T	mg/L	Field	5.49		3.48		2.27		5.47	
S0266- -		Total Dissolved Solids	T	mg/L	160.1	279		241		229		639	
S0296- -		pH	T	Units	Field	6.32		6.49		6.01		6.63	
NS215		Eh	T	mV	Field	410		463		446		417	
S0907 - -		Temperature	T	°C	Field	14.67		12.44		14.61		14.11	
7429-90-5		Aluminum	T	mg/L	6020	0.0459	J	<0.05		<0.05		2.14	
7440-36-0		Antimony	T	mg/L	6020	<0.003		<0.003		<0.003		<0.003	
7440-38-2		Arsenic	T	mg/L	6020	<0.005		<0.005		<0.005		0.0143	
7440-39-3		Barium	T	mg/L	6020	0.0763		0.154		0.193		0.0142	
7440-41-7		Beryllium	T	mg/L	6020	<0.0005		<0.0005		<0.0005		<0.0005	
7440-42-8		Boron	T	mg/L	6020	<0.015		0.0766		0.0173		0.027	
7440-43-9		Cadmium	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-70-2		Calcium	T	mg/L	6020	22.4		28.5		27.2		19.6	
7440-47-3		Chromium	T	mg/L	6020	<0.01		<0.01		<0.01		0.00348	J
7440-48-4		Cobalt	T	mg/L	6020	0.00187		0.00045	J	0.00158		0.00133	
7440-50-8		Copper	T	mg/L	6020	0.00211		0.00054	J	0.00077	J	0.00197	
7439-89-6		Iron	T	mg/L	6020	0.0963	J	0.1		0.827		1.16	
7439-92-1		Lead	T	mg/L	6020	<0.002		<0.002		<0.002		0.00134	J
7439-95-4		Magnesium	T	mg/L	6020	10		11.1		11.1		5.96	
7439-96-5		Manganese	T	mg/L	6020	0.0557		0.0353		0.455		0.00919	
7439-97-6		Mercury	T	mg/L	7470	<0.0002		<0.0002		<0.0002		<0.0002	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0984		8004-0982		8004-4793		8004-0983		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					365		366		367		368		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020	0.00053		<0.0005		<0.0005		0.00556	
7440-02-0		Nickel	T	mg/L	6020	0.0074		0.00117	J	0.00164	J	0.00564	
7440-09-7		Potassium	T	mg/L	6020	0.348		1.71		2.75		1.12	
7440-16-6		Rhodium	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7782-49-2		Selenium	T	mg/L	6020	<0.005		0.00206	J	<0.005		<0.005	
7440-22-4		Silver	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-23-5		Sodium	T	mg/L	6020	58.8		43.7		36.3		191	
7440-25-7		Tantalum	T	mg/L	6020	<0.005	*	<0.005	*	<0.005	*	<0.005	*
7440-28-0		Thallium	T	mg/L	6020	<0.002		<0.002		<0.002		<0.002	
7440-61-1		Uranium	T	mg/L	6020	0.000081	J	<0.0002		<0.0002		0.00156	
7440-62-2		Vanadium	T	mg/L	6010	<0.005		<0.005		<0.005		0.008	
7440-66-6		Zinc	T	mg/L	6020	0.00623	J	<0.01		<0.01		0.00697	J
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003		<0.003	
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-88-3		Toluene	T	mg/L	8260	0.0203		0.0128		<0.001		0.00056	J
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0984		8004-0982		8004-4793		8004-0983	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					365		366		367		368	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		0.00287	J	<0.005		<0.005	
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-01-6	Ethene, Trichloro-	T	mg/L	8260	<0.001		0.00358		0.00304		<0.001	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0984		8004-0982		8004-4793		8004-0983	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					365		366		367		368	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4	Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
591-78-6	2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
74-88-4	Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
124-48-1	Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
56-23-5	Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-09-2	Dichloromethane	T	mg/L	8260	0.00162	J	<0.005		<0.005		<0.005	
108-10-1	Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
96-12-8	Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.0000213		<0.0000199		<0.0000199		<0.0000202	
78-87-5	Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-02-6	trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-01-5	cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-60-5	trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-69-4	Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
96-18-4	1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
95-50-1	Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-46-7	Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1336-36-3	PCB, Total	T	ug/L	8082	0.18		<0.1		<0.104		0.168	
12674-11-2	PCB-1016	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	
11104-28-2	PCB-1221	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	
11141-16-5	PCB-1232	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	
53469-21-9	PCB-1242	T	ug/L	8082	0.18		<0.1		<0.104		0.168	
12672-29-6	PCB-1248	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0984		8004-0982		8004-4793		8004-0983	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					365		366		367		368	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1	PCB-1254	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	
11096-82-5	PCB-1260	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	
11100-14-4	PCB-1268	T	ug/L	8082	<0.102		<0.1		<0.104		<0.102	
12587-46-1	Gross Alpha	T	pCi/L	9310	-3.71	*	-0.427	*	-0.0213	*	5.6	*
12587-47-2	Gross Beta	T	pCi/L	9310	2.95	*	44.3	*	48.7	*	2.41	*
10043-66-0	Iodine-131	T	pCi/L			*		*		*		*
13982-63-3	Radium-226	T	pCi/L	903.1	0.32	*	1.6	*	4.32	*	1.58	*
10098-97-2	Strontium-90	T	pCi/L	905.0	-2.2	*	3.4	*	-1.67	*	-3.38	*
14133-76-7	Technetium-99	T	pCi/L	Tc-02-RC	-7.68	*	53.5	*	38.1	*	-0.402	*
14269-63-7	Thorium-230	T	pCi/L	Th-01-RC	0.15	*	1.1	*	-1.73	*	-0.475	*
10028-17-8	Tritium	T	pCi/L	906.0	39.2	*	-52.9	*	98.5	*	17.8	*
S0130- -	Chemical Oxygen Demand	T	mg/L	410.4	<20		7.49	J	<20		7.49	J
57-12-5	Cyanide	T	mg/L	9012	<0.2		<0.2		<0.2		<0.2	
20461-54-5	Iodide	T	mg/L	300.0	<0.1		<0.1		<0.1		<0.1	
S0268- -	Total Organic Carbon	T	mg/L	9060	1.89	J	1.14	J	0.98	J	2.38	
S0586- -	Total Organic Halides	T	mg/L	9020	0.017		0.0074	J	0.00662	J	0.0152	

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4820	8004-4818	8004-4819	8004-4808					
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					369	370	371	372					
Sample Sequence #					1	1	1	1					
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA	NA	NA	NA					
Sample Date and Time (Month/Day/Year hour:minutes)					4/14/2014 09:49	4/15/2014 08:27	4/14/2014 13:04	4/16/2014 08:02					
Duplicate ("Y" or "N") ²					N	N	N	N					
Split ("Y" or "N") ³					N	N	N	N					
Facility Sample ID Number (if applicable)					MW369UG3-14	MW370UG3-14	MW371UG3-14	MW372UG3-14					
Laboratory Sample ID Number (if applicable)					346700005	346770001	346700002	346873003					
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/18/2014	4/21/2014	4/21/2014	4/23/2014					
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					UP	UP	UP	UP					
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056	0.337		0.513		0.152	J	0.624	
16887-00-6		Chloride(s)	T	mg/L	9056	31		42.6		6.6		56.3	
16984-48-8		Fluoride	T	mg/L	9056	0.189		0.17		0.308		0.205	
S0595- -		Nitrate & Nitrite	T	mg/L	9056	0.192		1.23		1.06		<0.1	
14808-79-8		Sulfate	T	mg/L	9056	8.09		18.9		16.4		176	
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field	29.78		30.15		29.81		30.3	
S0145- -		Specific Conductance	T	µMH0/cm	Field	380		432		672		837	

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4820		8004-4818		8004-4819		8004-4808		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					369		370		371		372		
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field	326.52		322.22		341.88		326.03	
N238		Dissolved Oxygen	T	mg/L	Field	1.33		4.15		3.87		3	
S0266- -		Total Dissolved Solids	T	mg/L	160.1	213		223		406		546	
S0296- -		pH	T	Units	Field	6.21		6.08		6.74		6.14	
NS215		Eh	T	mV	Field	514		535		476		236	
S0907 - -		Temperature	T	°C	Field	15.67		13.17		14.39		13.11	
7429-90-5		Aluminum	T	mg/L	6020	0.62		<0.05		0.213		0.0492	J
7440-36-0		Antimony	T	mg/L	6020	<0.003		<0.003		<0.003		<0.003	
7440-38-2		Arsenic	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7440-39-3		Barium	T	mg/L	6020	0.37		0.197		0.141		0.0665	
7440-41-7		Beryllium	T	mg/L	6020	<0.0005		<0.0005		<0.0005		<0.0005	
7440-42-8		Boron	T	mg/L	6020	0.0108	J	0.0309		<0.015		1.7	
7440-43-9		Cadmium	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-70-2		Calcium	T	mg/L	6020	16.4		28		28		70.5	
7440-47-3		Chromium	T	mg/L	6020	0.00416	J	<0.01		<0.01		<0.01	
7440-48-4		Cobalt	T	mg/L	6020	0.0119		0.00049	J	0.00012	J	0.00027	J
7440-50-8		Copper	T	mg/L	6020	0.002		0.00085	J	0.00127		0.00301	
7439-89-6		Iron	T	mg/L	6020	1.42		0.163		0.305		1.99	
7439-92-1		Lead	T	mg/L	6020	<0.002		<0.002		<0.002		<0.002	
7439-95-4		Magnesium	T	mg/L	6020	6.7		11.8		10.6		26.1	
7439-96-5		Manganese	T	mg/L	6020	0.138		0.00577		0.0086		0.0372	
7439-97-6		Mercury	T	mg/L	7470	<0.0002		<0.0002		<0.0002		<0.0002	

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4820		8004-4818		8004-4819		8004-4808		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					369		370		371		372		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020	0.00056		0.00018	J	0.00023	J	0.0004	J
7440-02-0		Nickel	T	mg/L	6020	0.00806		0.00172	J	0.00142	J	0.0009	J
7440-09-7		Potassium	T	mg/L	6020	0.601		2.38		0.383		2.66	
7440-16-6		Rhodium	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7782-49-2		Selenium	T	mg/L	6020	<0.005		<0.005		<0.005		<0.005	
7440-22-4		Silver	T	mg/L	6020	<0.001		<0.001		<0.001		<0.001	
7440-23-5		Sodium	T	mg/L	6020	58.7		39.6		121		65.5	
7440-25-7		Tantalum	T	mg/L	6020	<0.005	*	<0.005	*	<0.005	*	<0.005	
7440-28-0		Thallium	T	mg/L	6020	<0.002		<0.002		<0.002		<0.002	
7440-61-1		Uranium	T	mg/L	6020	<0.0002		<0.0002		0.00209		<0.0002	
7440-62-2		Vanadium	T	mg/L	6010	<0.005		<0.005		0.00278	J	<0.005	
7440-66-6		Zinc	T	mg/L	6020	0.00421	J	<0.01		<0.01		<0.01	
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003		<0.003	
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-88-3		Toluene	T	mg/L	8260	0.00716		0.0122		0.00055	J	<0.001	
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4820		8004-4818		8004-4819		8004-4808	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					369		370		371		372	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		0.00031	J
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-01-6	Ethene, Trichloro-	T	mg/L	8260	0.00076	J	0.0014		<0.001		0.00759	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4820		8004-4818		8004-4819		8004-4808	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					369		370		371		372	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4	Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
591-78-6	2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
74-88-4	Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
124-48-1	Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
56-23-5	Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-09-2	Dichloromethane	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
108-10-1	Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
96-12-8	Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.00002		<0.0000202		<0.0000199		<0.0000201	
78-87-5	Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-02-6	trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-01-5	cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-60-5	trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-69-4	Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
96-18-4	1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
95-50-1	Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-46-7	Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1336-36-3	PCB, Total	T	ug/L	8082	0.0806	J	<0.102		<0.1		<0.0971	
12674-11-2	PCB-1016	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	
11104-28-2	PCB-1221	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	
11141-16-5	PCB-1232	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	
53469-21-9	PCB-1242	T	ug/L	8082	0.0806	J	<0.102		<0.1		<0.0971	
12672-29-6	PCB-1248	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4820		8004-4818		8004-4819		8004-4808	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					369		370		371		372	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1	PCB-1254	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	
11096-82-5	PCB-1260	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	
11100-14-4	PCB-1268	T	ug/L	8082	<0.098		<0.102		<0.1		<0.0971	
12587-46-1	Gross Alpha	T	pCi/L	9310	4.44	*	0.000434	*	4.05	*	-1.2	*
12587-47-2	Gross Beta	T	pCi/L	9310	15.7	*	27.2	*	9.51	*	7.56	*
10043-66-0	Iodine-131	T	pCi/L			*		*		*		*
13982-63-3	Radium-226	T	pCi/L	903.1	2.67	*	1.86	*	2.07	*	0.375	*
10098-97-2	Strontium-90	T	pCi/L	905.0	-1.12	*	4.37	*	-0.313	*	-1.75	*
14133-76-7	Technetium-99	T	pCi/L	Tc-02-RC	35.4	*	27.9	*	-8.15	*	13.4	*
14269-63-7	Thorium-230	T	pCi/L	Th-01-RC	0.751	*	0.782	*	2.62	*	0.85	*
10028-17-8	Tritium	T	pCi/L	906.0	-61.7	*	23.8	*	-67	*	81.2	*
S0130- -	Chemical Oxygen Demand	T	mg/L	410.4	<20		7.49	J	<20		<20	
57-12-5	Cyanide	T	mg/L	9012	<0.2		<0.2		<0.2		<0.2	
20461-54-5	Iodide	T	mg/L	300.0	<0.1		<0.1		<0.1		<0.1	
S0268- -	Total Organic Carbon	T	mg/L	9060	1.38	J	0.993	J	2.13		1.68	J
S0586- -	Total Organic Halides	T	mg/L	9020	0.0256		0.00612	J	0.00722	J	0.0139	

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4792		8004-0990		8004-0985		8004-0988		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					373		374		375		376		
Sample Sequence #					1		1		1		1		
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA		NA		NA		NA		
Sample Date and Time (Month/Day/Year hour:minutes)					4/16/2014 08:50		4/15/2014 09:20		4/15/2014 12:23		NA		
Duplicate ("Y" or "N") ²					N		N		N		N		
Split ("Y" or "N") ³					N		N		N		N		
Facility Sample ID Number (if applicable)					MW373UG3-14		MW374UG3-14		MW375UG3-14		NA		
Laboratory Sample ID Number (if applicable)					346873001		346770002		346770008		NA		
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/23/2014		4/21/2014		4/22/2014		NA		
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					UP		UP		SIDE		SIDE		
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056	0.606		0.964		<0.2			*
16887-00-6		Chloride(s)	T	mg/L	9056	44		82.2		4.66			*
16984-48-8		Fluoride	T	mg/L	9056	0.222		0.199		0.36			*
S0595- -		Nitrate & Nitrite	T	mg/L	9056	0.895		0.418		<0.1			*
14808-79-8		Sulfate	T	mg/L	9056	209		5.63		37.6			*
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field	30.32		30.17		30.2			*
S0145- -		Specific Conductance	T	µMH0/cm	Field	914		714		432			*

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis
of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4792		8004-0990		8004-0985		8004-0988		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					373		374		375		376		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field	326.02		332.82		342.21			*
N238		Dissolved Oxygen	T	mg/L	Field	3.01		3.44		2.17			*
S0266- -		Total Dissolved Solids	T	mg/L	160.1	573		411		283			*
S0296- -		pH	T	Units	Field	6.08		6.59		6.48			*
NS215		Eh	T	mV	Field	398		499		329			*
S0907 - -		Temperature	T	°C	Field	15.17		13.78		14.39			*
7429-90-5		Aluminum	T	mg/L	6020	<0.05		0.0278	J	0.0182	J		*
7440-36-0		Antimony	T	mg/L	6020	<0.003		<0.003		<0.003			*
7440-38-2		Arsenic	T	mg/L	6020	<0.005		<0.005		<0.005			*
7440-39-3		Barium	T	mg/L	6020	0.0237		0.16		0.176			*
7440-41-7		Beryllium	T	mg/L	6020	<0.0005		<0.0005		<0.0005			*
7440-42-8		Boron	T	mg/L	6020	2.18		0.0108	J	0.0122	J		*
7440-43-9		Cadmium	T	mg/L	6020	<0.001		<0.001		<0.001			*
7440-70-2		Calcium	T	mg/L	6020	78.4		22		15.4			*
7440-47-3		Chromium	T	mg/L	6020	<0.01		<0.01		<0.01			*
7440-48-4		Cobalt	T	mg/L	6020	0.00013	J	<0.001		0.0007	J		*
7440-50-8		Copper	T	mg/L	6020	0.00098	J	0.00067	J	0.0006	J		*
7439-89-6		Iron	T	mg/L	6020	0.116		0.0813	J	0.906			*
7439-92-1		Lead	T	mg/L	6020	<0.002		<0.002		<0.002			*
7439-95-4		Magnesium	T	mg/L	6020	27		5.8		5.85			*
7439-96-5		Manganese	T	mg/L	6020	0.00319	J	0.00201	J	0.022			*
7439-97-6		Mercury	T	mg/L	7470	<0.0002		<0.0002		<0.0002			*

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4792		8004-0990		8004-0985		8004-0988		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					373		374		375		376		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020	<0.0005		0.00022	J	<0.0005			*
7440-02-0		Nickel	T	mg/L	6020	0.00115	J	0.00133	J	0.00143	J		*
7440-09-7		Potassium	T	mg/L	6020	2.69		0.526		0.358			*
7440-16-6		Rhodium	T	mg/L	6020	<0.005		<0.005		<0.005			*
7782-49-2		Selenium	T	mg/L	6020	<0.005		0.0122		<0.005			*
7440-22-4		Silver	T	mg/L	6020	<0.001		<0.001		<0.001			*
7440-23-5		Sodium	T	mg/L	6020	68		124		82.4			*
7440-25-7		Tantalum	T	mg/L	6020	<0.005		<0.005	*	<0.005	*		*
7440-28-0		Thallium	T	mg/L	6020	<0.002		<0.002		<0.002			*
7440-61-1		Uranium	T	mg/L	6020	<0.0002		0.0006		0.00014	J		*
7440-62-2		Vanadium	T	mg/L	6010	<0.005		<0.005		<0.005			*
7440-66-6		Zinc	T	mg/L	6020	<0.01		<0.01		<0.01			*
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005			*
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005			*
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005			*
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005			*
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001			*
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001			*
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003			*
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001			*
108-88-3		Toluene	T	mg/L	8260	<0.001		<0.001		0.0131			*
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001			*

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

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GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4792		8004-0990		8004-0985		8004-0988	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					373		374		375		376	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001			*
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001			*
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001			*
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005			*
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005			*
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005			*
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001			*
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001			*
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001			*
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001			*
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001			*
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001			*
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001			*
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001			*
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001			*
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001			*
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			*
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001			*
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001			*
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001			*
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001			*
79-01-6	Ethene, Trichloro-	T	mg/L	8260	0.00432		<0.001		<0.001			*

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4792		8004-0990		8004-0985		8004-0988	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					373		374		375		376	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4	Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001			*
591-78-6	2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005			*
74-88-4	Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005			*
124-48-1	Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001			*
56-23-5	Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001			*
75-09-2	Dichloromethane	T	mg/L	8260	<0.005		<0.005		0.00162	J		*
108-10-1	Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005			*
96-12-8	Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.0000198		<0.0000201		<0.0000203			*
78-87-5	Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			*
10061-02-6	trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001			*
10061-01-5	cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001			*
156-60-5	trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001			*
75-69-4	Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001			*
96-18-4	1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001			*
95-50-1	Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			*
106-46-7	Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			*
1336-36-3	PCB, Total	T	ug/L	8082	<0.0952		<0.098		<0.102			*
12674-11-2	PCB-1016	T	ug/L	8082	<0.0952		<0.098		<0.102			*
11104-28-2	PCB-1221	T	ug/L	8082	<0.0952		<0.098		<0.102			*
11141-16-5	PCB-1232	T	ug/L	8082	<0.0952		<0.098		<0.102			*
53469-21-9	PCB-1242	T	ug/L	8082	<0.0952		<0.098		<0.102			*
12672-29-6	PCB-1248	T	ug/L	8082	<0.0952		<0.098		<0.102			*

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-4792		8004-0990		8004-0985		8004-0988	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					373		374		375		376	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1	PCB-1254	T	ug/L	8082	<0.0952		<0.098		<0.102			*
11096-82-5	PCB-1260	T	ug/L	8082	<0.0952		<0.098		<0.102			*
11100-14-4	PCB-1268	T	ug/L	8082	<0.0952		<0.098		<0.102			*
12587-46-1	Gross Alpha	T	pCi/L	9310	-2.35	*	-0.376	*	1.42	*		*
12587-47-2	Gross Beta	T	pCi/L	9310	19.1	*	2.36	*	0.905	*		*
10043-66-0	Iodine-131	T	pCi/L			*		*		*		*
13982-63-3	Radium-226	T	pCi/L	903.1	2.13	*	2.9	*	3.2	*		*
10098-97-2	Strontium-90	T	pCi/L	905.0	0.6	*	4.44	*	-2.49	*		*
14133-76-7	Technetium-99	T	pCi/L	Tc-02-RC	43.6	*	12.1	*	-2.95	*		*
14269-63-7	Thorium-230	T	pCi/L	Th-01-RC	3.23	*	0.427	*	0.457	*		*
10028-17-8	Tritium	T	pCi/L	906.0	1.59	*	62	*	7.2	*		*
S0130- -	Chemical Oxygen Demand	T	mg/L	410.4	<20		9.93	J	<20			*
57-12-5	Cyanide	T	mg/L	9012	<0.2		<0.2		<0.2			*
20461-54-5	Iodide	T	mg/L	300.0	<0.1		<0.1		<0.1			*
S0268- -	Total Organic Carbon	T	mg/L	9060	1.29	J	2.1		2.69			*
S0586- -	Total Organic Halides	T	mg/L	9020	0.00904	J	0.017		0.04			*

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0989	0000-0000		0000-0000		0000-0000			
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					377	E. BLANK		F. BLANK		T. BLANK 1			
Sample Sequence #					1	1		1		1			
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA	E		F		T			
Sample Date and Time (Month/Day/Year hour: minutes)					NA	4/21/2014 07:25		4/21/2014 08:50		4/14/2014 08:00			
Duplicate ("Y" or "N") ²					N	N		N		N			
Split ("Y" or "N") ³					N	N		N		N			
Facility Sample ID Number (if applicable)					NA	RI1UG3-14		FB1UG3-14		TB1UG3-14			
Laboratory Sample ID Number (if applicable)					NA	347196005		347196003		346700006			
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					NA	4/25/2014		4/25/2014		4/21/2014			
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					SIDE	NA		NA		NA			
CAS RN ⁴		CONSTITUENT	T D S ⁵	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056		*		*		*		*
16887-00-6		Chloride(s)	T	mg/L	9056		*		*		*		*
16984-48-8		Fluoride	T	mg/L	9056		*		*		*		*
S0595- -		Nitrate & Nitrite	T	mg/L	9056		*		*		*		*
14808-79-8		Sulfate	T	mg/L	9056		*		*		*		*
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field		*		*		*		*
S0145- -		Specific Conductance	T	µMH0/cm	Field		*		*		*		*

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis
of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0989		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					377		E. BLANK		F. BLANK		T. BLANK 1		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field		*		*		*		*
N238		Dissolved Oxygen	T	mg/L	Field		*		*		*		*
S0266- -		Total Dissolved Solids	T	mg/L	160.1		*		*		*		*
S0296- -		pH	T	Units	Field		*		*		*		*
NS215		Eh	T	mV	Field		*		*		*		*
S0907 - -		Temperature	T	°C	Field		*		*		*		*
7429-90-5		Aluminum	T	mg/L	6020		*	<0.05		<0.05			*
7440-36-0		Antimony	T	mg/L	6020		*	<0.003		<0.003			*
7440-38-2		Arsenic	T	mg/L	6020		*	<0.005		<0.005			*
7440-39-3		Barium	T	mg/L	6020		*	<0.002		<0.002			*
7440-41-7		Beryllium	T	mg/L	6020		*	<0.0005		<0.0005			*
7440-42-8		Boron	T	mg/L	6020		*	<0.015		<0.015			*
7440-43-9		Cadmium	T	mg/L	6020		*	<0.001		<0.001			*
7440-70-2		Calcium	T	mg/L	6020		*	<0.2		<0.2			*
7440-47-3		Chromium	T	mg/L	6020		*	0.00219	J	0.00229	J		*
7440-48-4		Cobalt	T	mg/L	6020		*	<0.001		<0.001			*
7440-50-8		Copper	T	mg/L	6020		*	0.00075	J	0.00104			*
7439-89-6		Iron	T	mg/L	6020		*	<0.1		<0.1			*
7439-92-1		Lead	T	mg/L	6020		*	<0.002		<0.002			*
7439-95-4		Magnesium	T	mg/L	6020		*	<0.03		<0.03			*
7439-96-5		Manganese	T	mg/L	6020		*	<0.005		<0.005			*
7439-97-6		Mercury	T	mg/L	7470		*	<0.0002		<0.0002			*

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0989		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					377		E. BLANK		F. BLANK		T. BLANK 1		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020		*	<0.0005		<0.0005			*
7440-02-0		Nickel	T	mg/L	6020		*	<0.002		<0.002			*
7440-09-7		Potassium	T	mg/L	6020		*	6		<0.3			*
7440-16-6		Rhodium	T	mg/L	6020		*	<0.005		<0.005			*
7782-49-2		Selenium	T	mg/L	6020		*	<0.005		<0.005			*
7440-22-4		Silver	T	mg/L	6020		*	<0.001		<0.001			*
7440-23-5		Sodium	T	mg/L	6020		*	0.651		<0.25			*
7440-25-7		Tantalum	T	mg/L	6020		*	<0.005		<0.005			*
7440-28-0		Thallium	T	mg/L	6020		*	<0.002		<0.002			*
7440-61-1		Uranium	T	mg/L	6020		*	<0.0002		<0.0002			*
7440-62-2		Vanadium	T	mg/L	6010		*	<0.005		<0.005			*
7440-66-6		Zinc	T	mg/L	6020		*	0.00753	J	<0.01			*
108-05-4		Vinyl acetate	T	mg/L	8260		*	<0.005		<0.005		<0.005	
67-64-1		Acetone	T	mg/L	8260		*	0.00648		<0.005		<0.005	
107-02-8		Acrolein	T	mg/L	8260		*	<0.005		<0.005		<0.005	
107-13-1		Acrylonitrile	T	mg/L	8260		*	<0.005		<0.005		<0.005	
71-43-2		Benzene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
108-90-7		Chlorobenzene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
1330-20-7		Xylenes	T	mg/L	8260		*	<0.003		<0.003		<0.003	
100-42-5		Styrene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
108-88-3		Toluene	T	mg/L	8260		*	<0.001		<0.001		0.00033	J
74-97-5		Chlorobromomethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0989		0000-0000		0000-0000		0000-0000	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					377		E. BLANK		F. BLANK		T. BLANK 1	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
75-25-2	Tribromomethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
74-83-9	Methyl bromide	T	mg/L	8260		*	<0.001		<0.001		<0.001	
78-93-3	Methyl ethyl ketone	T	mg/L	8260		*	0.00345	J	<0.005		<0.005	
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260		*	<0.005		<0.005		<0.005	
75-15-0	Carbon disulfide	T	mg/L	8260		*	<0.005		<0.005		<0.005	
75-00-3	Chloroethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
67-66-3	Chloroform	T	mg/L	8260		*	<0.001		<0.001		<0.001	
74-87-3	Methyl chloride	T	mg/L	8260		*	<0.001		<0.001		<0.001	
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
74-95-3	Methylene bromide	T	mg/L	8260		*	<0.001		<0.001		<0.001	
75-34-3	1,1-Dichloroethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
107-06-2	1,2-Dichloroethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
75-35-4	1,1-Dichloroethylene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260		*	<0.001		<0.001		<0.001	
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260		*	<0.001		<0.001		<0.001	
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260		*	<0.001		<0.001		<0.001	
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260		*	<0.001		<0.001		<0.001	
75-01-4	Vinyl chloride	T	mg/L	8260		*	<0.001		<0.001		<0.001	
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	
79-01-6	Ethene, Trichloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0989		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					377		E. BLANK		F. BLANK		T. BLANK 1		
CAS RN ⁴		CONSTITUENT	T D ⁵	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4		Ethylbenzene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
591-78-6		2-Hexanone	T	mg/L	8260		*	<0.005		<0.005		<0.005	
74-88-4		Iodomethane	T	mg/L	8260		*	<0.005		<0.005		<0.005	
124-48-1		Methane, Dibromochloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	
56-23-5		Carbon Tetrachloride	T	mg/L	8260		*	<0.001		<0.001		<0.001	
75-09-2		Dichloromethane	T	mg/L	8260		*	<0.005		<0.005		<0.005	
108-10-1		Methyl isobutyl ketone	T	mg/L	8260		*	<0.005		<0.005		<0.005	
96-12-8		Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011		*	<0.0000199		<0.0000199		<0.0000198	
78-87-5		Propane, 1,2-Dichloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	
10061-02-6		trans-1,3-Dichloro-1-propene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
10061-01-5		cis-1,3-Dichloro-1-propene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
156-60-5		trans-1,2-Dichloroethene	T	mg/L	8260		*	<0.001		<0.001		<0.001	
75-69-4		Trichlorofluoromethane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
96-18-4		1,2,3-Trichloropropane	T	mg/L	8260		*	<0.001		<0.001		<0.001	
95-50-1		Benzene, 1,2-Dichloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	
106-46-7		Benzene, 1,4-Dichloro-	T	mg/L	8260		*	<0.001		<0.001		<0.001	
1336-36-3		PCB,Total	T	ug/L	8082		*	<0.1		<0.098			*
12674-11-2		PCB-1016	T	ug/L	8082		*	<0.1		<0.098			*
11104-28-2		PCB-1221	T	ug/L	8082		*	<0.1		<0.098			*
11141-16-5		PCB-1232	T	ug/L	8082		*	<0.1		<0.098			*
53469-21-9		PCB-1242	T	ug/L	8082		*	<0.1		<0.098			*
12672-29-6		PCB-1248	T	ug/L	8082		*	<0.1		<0.098			*

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					8004-0989		0000-0000		0000-0000		0000-0000	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					377		E. BLANK		F. BLANK		T. BLANK 1	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1	PCB-1254	T	ug/L	8082		*	<0.1		<0.098			*
11096-82-5	PCB-1260	T	ug/L	8082		*	<0.1		<0.098			*
11100-14-4	PCB-1268	T	ug/L	8082		*	<0.1		<0.098			*
12587-46-1	Gross Alpha	T	pCi/L	9310		*	-2.8	*	-1.37	*		*
12587-47-2	Gross Beta	T	pCi/L	9310		*	-3.63	*	-2.17	*		*
10043-66-0	Iodine-131	T	pCi/L			*		*		*		*
13982-63-3	Radium-226	T	pCi/L	903.1		*	3.6	*	1.09	*		*
10098-97-2	Strontium-90	T	pCi/L	905.0		*	5.02	*	1.88	*		*
14133-76-7	Technetium-99	T	pCi/L	Tc-02-RC		*	0.567	*	7.43	*		*
14269-63-7	Thorium-230	T	pCi/L	Th-01-RC		*	2	*	0.519	*		*
10028-17-8	Tritium	T	pCi/L	906.0		*	63	*	18.9	*		*
S0130- -	Chemical Oxygen Demand	T	mg/L	410.4		*		*		*		*
57-12-5	Cyanide	T	mg/L	9012		*		*		*		*
20461-54-5	Iodide	T	mg/L	300.0		*	<0.1		<0.1			*
S0268- -	Total Organic Carbon	T	mg/L	9060		*		*		*		*
S0586- -	Total Organic Halides	T	mg/L	9020		*		*		*		*

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 2		T. BLANK 3		T. BLANK 4		T. BLANK 5		
Sample Sequence #					1		1		1		1		
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					T		T		T		T		
Sample Date and Time (Month/Day/Year hour: minutes)					4/14/2014 10:15		4/15/2014 06:45		4/15/2014 07:15		4/16/2014 06:40		
Duplicate ("Y" or "N") ²					N		N		N		N		
Split ("Y" or "N") ³					N		N		N		N		
Facility Sample ID Number (if applicable)					TB2UG3-14		TB3UG3-14		TB4UG3-14		TB5UG3-14		
Laboratory Sample ID Number (if applicable)					346700007		346770009		346770010		346873006		
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/21/2014		4/22/2014		4/22/2014		4/23/2014		
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					NA		NA		NA		NA		
CAS RN ⁴		CONSTITUENT	T D S ⁵	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056		*		*		*		*
16887-00-6		Chloride(s)	T	mg/L	9056		*		*		*		*
16984-48-8		Fluoride	T	mg/L	9056		*		*		*		*
S0595- -		Nitrate & Nitrite	T	mg/L	9056		*		*		*		*
14808-79-8		Sulfate	T	mg/L	9056		*		*		*		*
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field		*		*		*		*
S0145- -		Specific Conductance	T	µMH0/cm	Field		*		*		*		*

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis
of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					T. BLANK 2		T. BLANK 3		T. BLANK 4		T. BLANK 5		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field		*		*		*		*
N238		Dissolved Oxygen	T	mg/L	Field		*		*		*		*
S0266- -		Total Dissolved Solids	T	mg/L	160.1		*		*		*		*
S0296- -		pH	T	Units	Field		*		*		*		*
NS215		Eh	T	mV	Field		*		*		*		*
S0907 - -		Temperature	T	°C	Field		*		*		*		*
7429-90-5		Aluminum	T	mg/L	6020		*		*		*		*
7440-36-0		Antimony	T	mg/L	6020		*		*		*		*
7440-38-2		Arsenic	T	mg/L	6020		*		*		*		*
7440-39-3		Barium	T	mg/L	6020		*		*		*		*
7440-41-7		Beryllium	T	mg/L	6020		*		*		*		*
7440-42-8		Boron	T	mg/L	6020		*		*		*		*
7440-43-9		Cadmium	T	mg/L	6020		*		*		*		*
7440-70-2		Calcium	T	mg/L	6020		*		*		*		*
7440-47-3		Chromium	T	mg/L	6020		*		*		*		*
7440-48-4		Cobalt	T	mg/L	6020		*		*		*		*
7440-50-8		Copper	T	mg/L	6020		*		*		*		*
7439-89-6		Iron	T	mg/L	6020		*		*		*		*
7439-92-1		Lead	T	mg/L	6020		*		*		*		*
7439-95-4		Magnesium	T	mg/L	6020		*		*		*		*
7439-96-5		Manganese	T	mg/L	6020		*		*		*		*
7439-97-6		Mercury	T	mg/L	7470		*		*		*		*

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 2		T. BLANK 3		T. BLANK 4		T. BLANK 5		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020		*		*		*		*
7440-02-0		Nickel	T	mg/L	6020		*		*		*		*
7440-09-7		Potassium	T	mg/L	6020		*		*		*		*
7440-16-6		Rhodium	T	mg/L	6020		*		*		*		*
7782-49-2		Selenium	T	mg/L	6020		*		*		*		*
7440-22-4		Silver	T	mg/L	6020		*		*		*		*
7440-23-5		Sodium	T	mg/L	6020		*		*		*		*
7440-25-7		Tantalum	T	mg/L	6020		*		*		*		*
7440-28-0		Thallium	T	mg/L	6020		*		*		*		*
7440-61-1		Uranium	T	mg/L	6020		*		*		*		*
7440-62-2		Vanadium	T	mg/L	6010		*		*		*		*
7440-66-6		Zinc	T	mg/L	6020		*		*		*		*
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003		<0.003	
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
108-88-3		Toluene	T	mg/L	8260	0.00086	J	0.0143		0.00492		0.00061	J
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		0000-0000		0000-0000	
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 2		T. BLANK 3		T. BLANK 4		T. BLANK 5	
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
79-01-6	Ethene, Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 2		T. BLANK 3		T. BLANK 4		T. BLANK 5		
CAS RN ⁴		CONSTITUENT	T D ⁵	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4		Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
591-78-6		2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
74-88-4		Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
124-48-1		Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
56-23-5		Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-09-2		Dichloromethane	T	mg/L	8260	<0.005		0.00168	J	0.0017	J	<0.005	
108-10-1		Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005		<0.005	
96-12-8		Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.00002		<0.0000201		<0.00002		<0.0000197	
78-87-5		Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-02-6		trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
10061-01-5		cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
156-60-5		trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
75-69-4		Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
96-18-4		1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
95-50-1		Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
106-46-7		Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001		<0.001	
1336-36-3		PCB, Total	T	ug/L	8082		*		*		*		*
12674-11-2		PCB-1016	T	ug/L	8082		*		*		*		*
11104-28-2		PCB-1221	T	ug/L	8082		*		*		*		*
11141-16-5		PCB-1232	T	ug/L	8082		*		*		*		*
53469-21-9		PCB-1242	T	ug/L	8082		*		*		*		*
12672-29-6		PCB-1248	T	ug/L	8082		*		*		*		*

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		0000-0000		0000-0000		
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 2		T. BLANK 3		T. BLANK 4		T. BLANK 5		
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1		PCB-1254	T	ug/L	8082		*		*		*		*
11096-82-5		PCB-1260	T	ug/L	8082		*		*		*		*
11100-14-4		PCB-1268	T	ug/L	8082		*		*		*		*
12587-46-1		Gross Alpha	T	pCi/L	9310		*		*		*		*
12587-47-2		Gross Beta	T	pCi/L	9310		*		*		*		*
10043-66-0		Iodine-131	T	pCi/L			*		*		*		*
13982-63-3		Radium-226	T	pCi/L	903.1		*		*		*		*
10098-97-2		Strontium-90	T	pCi/L	905.0		*		*		*		*
14133-76-7		Technetium-99	T	pCi/L	Tc-02-RC		*		*		*		*
14269-63-7		Thorium-230	T	pCi/L	Th-01-RC		*		*		*		*
10028-17-8		Tritium	T	pCi/L	906.0		*		*		*		*
S0130- -		Chemical Oxygen Demand	T	mg/L	410.4		*		*		*		*
57-12-5		Cyanide	T	mg/L	9012		*		*		*		*
20461-54-5		Iodide	T	mg/L	300.0		*		*		*		*
S0268- -		Total Organic Carbon	T	mg/L	9060		*		*		*		*
S0586- -		Total Organic Halides	T	mg/L	9020		*		*		*		*

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1
LAB ID: None
For Official Use Only

GROUNDWATER SAMPLE ANALYSIS_(s)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000	0000-0000	8004-4819						
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 6	T. BLANK 7	371						
Sample Sequence #					1	1	2						
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					T	T	NA						
Sample Date and Time (Month/Day/Year hour: minutes)					4/16/2014 06:20	4/21/2014 07:07	4/14/2014 13:04						
Duplicate ("Y" or "N") ²					N	N	Y						
Split ("Y" or "N") ³					N	N	N						
Facility Sample ID Number (if applicable)					TB6UG3-14	TB7UG3-14	MW371DUG3-14						
Laboratory Sample ID Number (if applicable)					346873007	347196004	346700001						
Date of Analysis (Month/Day/Year) For <u>Volatile Organics</u> Analysis					4/23/2014	4/25/2014	4/21/2014						
Gradient with respect to Monitored Unit (UP, DOWN, SIDE, UNKNOWN)					NA	NA	UP						
CAS RN ⁴		CONSTITUENT	T D S ⁵	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S ⁷	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
24959-67-9		Bromide	T	mg/L	9056		*		*	<0.2			
16887-00-6		Chloride(s)	T	mg/L	9056		*		*	6.57			
16984-48-8		Fluoride	T	mg/L	9056		*		*	0.281			
S0595- -		Nitrate & Nitrite	T	mg/L	9056		*		*	1.06			
14808-79-8		Sulfate	T	mg/L	9056		*		*	16.3			
NS1894		Barometric Pressure Reading	T	Inches/Hg	Field		*		*	29.81			
S0145- -		Specific Conductance	T	µMH0/cm	Field		*		*	672			

STANDARD FLAGS:

* = See Comments
J = Estimated Value
B = Analyte found in blank
A = Average value
N = Presumptive ID
D = Concentration from analysis
of a secondary dilution

¹AKGWA # is 0000-0000 for any type of blank.

²Respond "Y" if the sample was a duplicate of another sample in this report.

³Respond "Y" if the sample was split and analyzed by separate laboratories.

⁴Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁵"T" = Total; "D" = Dissolved

⁶"<" indicates a non-detect; do not use "ND" or "BDL". Value shown is Practical Quantification Limit.

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments Page."

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		8004-4819				
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, BLANK-F, etc.)					T. BLANK 6		T. BLANK 7		371				
CAS RN ⁴		CONSTITUENT	T D S	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
S0906 - -		Static Water Level Elevation	T	Ft. MSL	Field		*		*	341.88			
N238		Dissolved Oxygen	T	mg/L	Field		*		*	3.87			
S0266- -		Total Dissolved Solids	T	mg/L	160.1		*		*	620			
S0296- -		pH	T	Units	Field		*		*	6.74			
NS215		Eh	T	mV	Field		*		*	476			
S0907 - -		Temperature	T	°C	Field		*		*	14.39			
7429-90-5		Aluminum	T	mg/L	6020		*		*	0.369			
7440-36-0		Antimony	T	mg/L	6020		*		*	<0.003			
7440-38-2		Arsenic	T	mg/L	6020		*		*	<0.005			
7440-39-3		Barium	T	mg/L	6020		*		*	0.145			
7440-41-7		Beryllium	T	mg/L	6020		*		*	<0.0005			
7440-42-8		Boron	T	mg/L	6020		*		*	<0.015			
7440-43-9		Cadmium	T	mg/L	6020		*		*	<0.001			
7440-70-2		Calcium	T	mg/L	6020		*		*	27.9			
7440-47-3		Chromium	T	mg/L	6020		*		*	<0.01			
7440-48-4		Cobalt	T	mg/L	6020		*		*	0.00017	J		
7440-50-8		Copper	T	mg/L	6020		*		*	0.0013			
7439-89-6		Iron	T	mg/L	6020		*		*	0.414			
7439-92-1		Lead	T	mg/L	6020		*		*	0.00059	J		
7439-95-4		Magnesium	T	mg/L	6020		*		*	10.1			
7439-96-5		Manganese	T	mg/L	6020		*		*	0.0161			
7439-97-6		Mercury	T	mg/L	7470		*		*	<0.0002			

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		8004-4819				
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 6		T. BLANK 7		371				
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
7439-98-7		Molybdenum	T	mg/L	6020		*		*	0.00018	J		
7440-02-0		Nickel	T	mg/L	6020		*		*	0.00141	J		
7440-09-7		Potassium	T	mg/L	6020		*		*	0.372			
7440-16-6		Rhodium	T	mg/L	6020		*		*	<0.005			
7782-49-2		Selenium	T	mg/L	6020		*		*	<0.005			
7440-22-4		Silver	T	mg/L	6020		*		*	<0.001			
7440-23-5		Sodium	T	mg/L	6020		*		*	128			
7440-25-7		Tantalum	T	mg/L	6020		*		*	<0.005	*		
7440-28-0		Thallium	T	mg/L	6020		*		*	<0.002			
7440-61-1		Uranium	T	mg/L	6020		*		*	0.00206			
7440-62-2		Vanadium	T	mg/L	6010		*		*	0.00275	J		
7440-66-6		Zinc	T	mg/L	6020		*		*	0.00487	J		
108-05-4		Vinyl acetate	T	mg/L	8260	<0.005		<0.005		<0.005			
67-64-1		Acetone	T	mg/L	8260	<0.005		<0.005		<0.005			
107-02-8		Acrolein	T	mg/L	8260	<0.005		<0.005		<0.005			
107-13-1		Acrylonitrile	T	mg/L	8260	<0.005		<0.005		<0.005			
71-43-2		Benzene	T	mg/L	8260	<0.001		<0.001		<0.001			
108-90-7		Chlorobenzene	T	mg/L	8260	<0.001		<0.001		<0.001			
1330-20-7		Xylenes	T	mg/L	8260	<0.003		<0.003		<0.003			
100-42-5		Styrene	T	mg/L	8260	<0.001		<0.001		<0.001			
108-88-3		Toluene	T	mg/L	8260	<0.001		<0.001		0.00035	J		
74-97-5		Chlorobromomethane	T	mg/L	8260	<0.001		<0.001		<0.001			

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		8004-4819			
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 6		T. BLANK 7		371			
CAS RN ⁴	CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
75-27-4	Bromodichloromethane	T	mg/L	8260	<0.001		<0.001		<0.001			
75-25-2	Tribromomethane	T	mg/L	8260	<0.001		<0.001		<0.001			
74-83-9	Methyl bromide	T	mg/L	8260	<0.001		<0.001		<0.001			
78-93-3	Methyl ethyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005			
110-57-6	trans-1,4-Dichloro-2-butene	T	mg/L	8260	<0.005		<0.005		<0.005			
75-15-0	Carbon disulfide	T	mg/L	8260	<0.005		<0.005		<0.005			
75-00-3	Chloroethane	T	mg/L	8260	<0.001		<0.001		<0.001			
67-66-3	Chloroform	T	mg/L	8260	<0.001		<0.001		<0.001			
74-87-3	Methyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001			
156-59-2	cis-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001			
74-95-3	Methylene bromide	T	mg/L	8260	<0.001		<0.001		<0.001			
75-34-3	1,1-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001			
107-06-2	1,2-Dichloroethane	T	mg/L	8260	<0.001		<0.001		<0.001			
75-35-4	1,1-Dichloroethylene	T	mg/L	8260	<0.001		<0.001		<0.001			
106-93-4	Ethane, 1,2-dibromo	T	mg/L	8260	<0.001		<0.001		<0.001			
79-34-5	Ethane, 1,1,2,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001			
71-55-6	Ethane, 1,1,1-Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			
79-00-5	Ethane, 1,1,2-Trichloro	T	mg/L	8260	<0.001		<0.001		<0.001			
630-20-6	Ethane, 1,1,1,2-Tetrachloro	T	mg/L	8260	<0.001		<0.001		<0.001			
75-01-4	Vinyl chloride	T	mg/L	8260	<0.001		<0.001		<0.001			
127-18-4	Ethene, Tetrachloro-	T	mg/L	8260	<0.001		<0.001		<0.001			
79-01-6	Ethene, Trichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		8004-4819				
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 6		T. BLANK 7		371				
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
100-41-4		Ethylbenzene	T	mg/L	8260	<0.001		<0.001		<0.001			
591-78-6		2-Hexanone	T	mg/L	8260	<0.005		<0.005		<0.005			
74-88-4		Iodomethane	T	mg/L	8260	<0.005		<0.005		<0.005			
124-48-1		Methane, Dibromochloro-	T	mg/L	8260	<0.001		<0.001		<0.001			
56-23-5		Carbon Tetrachloride	T	mg/L	8260	<0.001		<0.001		<0.001			
75-09-2		Dichloromethane	T	mg/L	8260	<0.005		<0.005		<0.005			
108-10-1		Methyl isobutyl ketone	T	mg/L	8260	<0.005		<0.005		<0.005			
96-12-8		Propane, 1,2-Dibromo-3-chloro	T	mg/L	8011	<0.0000198		<0.0000201		<0.0000201			
78-87-5		Propane, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			
10061-02-6		trans-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001			
10061-01-5		cis-1,3-Dichloro-1-propene	T	mg/L	8260	<0.001		<0.001		<0.001			
156-60-5		trans-1,2-Dichloroethene	T	mg/L	8260	<0.001		<0.001		<0.001			
75-69-4		Trichlorofluoromethane	T	mg/L	8260	<0.001		<0.001		<0.001			
96-18-4		1,2,3-Trichloropropane	T	mg/L	8260	<0.001		<0.001		<0.001			
95-50-1		Benzene, 1,2-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			
106-46-7		Benzene, 1,4-Dichloro-	T	mg/L	8260	<0.001		<0.001		<0.001			
1336-36-3		PCB,Total	T	ug/L	8082		*		*	<0.106			
12674-11-2		PCB-1016	T	ug/L	8082		*		*	<0.106			
11104-28-2		PCB-1221	T	ug/L	8082		*		*	<0.106			
11141-16-5		PCB-1232	T	ug/L	8082		*		*	<0.106			
53469-21-9		PCB-1242	T	ug/L	8082		*		*	<0.106			
12672-29-6		PCB-1248	T	ug/L	8082		*		*	<0.106			

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RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None

For Official Use Only

GROUNDWATER SAMPLE ANALYSIS - (Cont.)

AKGWA NUMBER ¹ , Facility Well/Spring Number					0000-0000		0000-0000		8004-4819				
Facility's Local Well or Spring Number (e.g., MW-1, MW-2, etc.)					T. BLANK 6		T. BLANK 7		371				
CAS RN ⁴		CONSTITUENT	T D 5	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S	DETECTED VALUE OR PQL ⁶	F L A G S
11097-69-1		PCB-1254	T	ug/L	8082		*		*	<0.106			
11096-82-5		PCB-1260	T	ug/L	8082		*		*	<0.106			
11100-14-4		PCB-1268	T	ug/L	8082		*		*	<0.106			
12587-46-1		Gross Alpha	T	pCi/L	9310		*		*	5.97	*		
12587-47-2		Gross Beta	T	pCi/L	9310		*		*	-0.887	*		
10043-66-0		Iodine-131	T	pCi/L			*		*		*		
13982-63-3		Radium-226	T	pCi/L	903.1		*		*	3.41	*		
10098-97-2		Strontium-90	T	pCi/L	905.0		*		*	-2.86	*		
14133-76-7		Technetium-99	T	pCi/L	Tc-02-RC		*		*	0.913	*		
14269-63-7		Thorium-230	T	pCi/L	Th-01-RC		*		*	1.53	*		
10028-17-8		Tritium	T	pCi/L	906.0		*		*	138	*		
S0130- -		Chemical Oxygen Demand	T	mg/L	410.4		*		*	7.49	J		
57-12-5		Cyanide	T	mg/L	9012		*		*	<0.2			
20461-54-5		Iodide	T	mg/L	300.0		*		*	<0.1			
S0268- -		Total Organic Carbon	T	mg/L	9060		*		*	2.27			
S0586- -		Total Organic Halides	T	mg/L	9020		*		*	0.00696	J		

RESIDENTIAL/CONTAINED – QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
LAB ID: None
For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-4798 MW357	MW357UG3-14	Gross alpha	*	TPU is 5.23. Rad error is 5.23.
		Gross beta		TPU is 6.45. Rad error is 6.12.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 1.55. Rad error is 1.48.
		Strontium-90	*	TPU is 3.63. Rad error is 3.59.
		Technetium-99		TPU is 13.6. Rad error is 13.3.
		Thorium-230	*	TPU is 5.05. Rad error is 4.96.
		Tritium	*	TPU is 92.2. Rad error is 92.1.
8004-4799 MW358	MW358UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 4.57. Rad error is 4.56.
		Gross beta		TPU is 13.1. Rad error is 11.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 1.95. Rad error is 1.85.
		Strontium-90	*	TPU is 3.99. Rad error is 3.95.
		Technetium-99		TPU is 15.3. Rad error is 14.5.
		Thorium-230	*	TPU is 3.96. Rad error is 3.92.
8004-0981 MW359	MW359UG3-14	Tritium	*	TPU is 139. Rad error is 139.
		Gross alpha	*	TPU is 3.05. Rad error is 3.04.
		Gross beta	*	TPU is 4.84. Rad error is 4.75.
		Iodine-131		During sampling, the well went dry; therefore, no sample was collected.
		Radium-226	*	TPU is 1.14. Rad error is 1.13.
		Strontium-90	*	TPU is 2.63. Rad error is 2.63.
		Technetium-99	*	TPU is 12. Rad error is 12.
		Thorium-230	*	TPU is 3.66. Rad error is 3.63.
8004-4800 MW360	MW360UG3-14	Tritium	*	TPU is 88.7. Rad error is 88.7.
		Gross alpha	*	TPU is 2.82. Rad error is 2.81.
		Gross beta	*	TPU is 4.69. Rad error is 4.69.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 2.15. Rad error is 2.09.
		Strontium-90	*	TPU is 2.68. Rad error is 2.68.
		Technetium-99	*	TPU is 12.5. Rad error is 12.5.
		Thorium-230	*	TPU is 3.01. Rad error is 3.
		Tritium	*	TPU is 96.7. Rad error is 96.6.

RESIDENTIAL/CONTAINED – QUARTERLY
 Facility: US DOE - Paducah Gaseous Diffusion Plant
 Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
 LAB ID: None
 For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-4795 MW361	MW361UG3-14	Gross alpha	*	TPU is 6.09. Rad error is 6.04.
		Gross beta		TPU is 11.5. Rad error is 10.6.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 1.85. Rad error is 1.74.
		Strontium-90	*	TPU is 2.49. Rad error is 2.49.
		Technetium-99		TPU is 13.9. Rad error is 13.2.
		Thorium-230	*	TPU is 3.06. Rad error is 3.04.
		Tritium	*	TPU is 98.6. Rad error is 98.
8004-0986 MW362	MW362UG3-14	Gross alpha	*	TPU is 7.81. Rad error is 7.65.
		Gross beta	*	TPU is 6.28. Rad error is 6.21.
		Iodine-131		During sampling, the well went dry; therefore, no sample was collected.
		Radium-226	*	TPU is 1.38. Rad error is 1.38.
		Strontium-90	*	TPU is 2.65. Rad error is 2.65.
		Technetium-99	*	TPU is 12.3. Rad error is 12.3.
		Thorium-230	*	TPU is 3.91. Rad error is 3.9.
		Tritium	*	TPU is 87.1. Rad error is 87.
8004-4796 MW363	MW363UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 4.43. Rad error is 4.43.
		Gross beta	*	TPU is 8.42. Rad error is 8.23.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 1.51. Rad error is 1.48.
		Strontium-90	*	TPU is 3.65. Rad error is 3.65.
		Technetium-99	*	TPU is 13.6. Rad error is 13.4.
		Thorium-230	*	TPU is 2.6. Rad error is 2.59.
8004-4797 MW364	MW364UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 5.01. Rad error is 5.
		Gross beta		TPU is 11.6. Rad error is 9.93.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 0.996. Rad error is 0.996.
		Strontium-90	*	TPU is 2.49. Rad error is 2.49.
		Technetium-99		TPU is 15.7. Rad error is 14.6.
		Thorium-230	*	TPU is 2.55. Rad error is 2.55.
		Tritium	*	TPU is 141. Rad error is 140.

RESIDENTIAL/CONTAINED – QUARTERLY
 Facility: US DOE - Paducah Gaseous Diffusion Plant
 Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
 LAB ID: None
 For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0984 MW365	MW365UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 3.38. Rad error is 3.37.
		Gross beta	*	TPU is 5.24. Rad error is 5.22.
		Iodine-131		During sampling, the well went dry; therefore, no sample was collected.
		Radium-226	*	TPU is 1.33. Rad error is 1.33.
		Strontium-90	*	TPU is 3.24. Rad error is 3.24.
		Technetium-99	*	TPU is 12.4. Rad error is 12.4.
		Thorium-230	*	TPU is 3.29. Rad error is 3.28.
		Tritium	*	TPU is 139. Rad error is 139.
8004-0982 MW366	MW366UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 4.57. Rad error is 4.57.
		Gross beta		TPU is 12.8. Rad error is 10.6.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 1.51. Rad error is 1.48.
		Strontium-90	*	TPU is 4.18. Rad error is 4.15.
		Technetium-99		TPU is 15.9. Rad error is 14.8.
		Thorium-230	*	TPU is 3.81. Rad error is 3.78.
		Tritium	*	TPU is 133. Rad error is 133.
8004-4793 MW367	MW367UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 5.05. Rad error is 5.05.
		Gross beta		TPU is 13.8. Rad error is 11.3.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 2.21. Rad error is 2.11.
		Strontium-90	*	TPU is 2.01. Rad error is 2.01.
		Technetium-99		TPU is 14.7. Rad error is 14.
		Thorium-230	*	TPU is 2.09. Rad error is 2.08.
		Tritium	*	TPU is 146. Rad error is 144.
8004-0983 MW368	MW368UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 6.71. Rad error is 6.65.
		Gross beta	*	TPU is 8.25. Rad error is 8.24.
		Iodine-131		During sampling, the well went dry; therefore, no sample was collected.
		Radium-226	*	TPU is 1.5. Rad error is 1.46.
		Strontium-90	*	TPU is 2.82. Rad error is 2.82.
		Technetium-99	*	TPU is 13.9. Rad error is 13.9.
		Thorium-230	*	TPU is 3.66. Rad error is 3.65.
		Tritium	*	TPU is 138. Rad error is 137.

RESIDENTIAL/CONTAINED – QUARTERLY
 Facility: US DOE - Paducah Gaseous Diffusion Plant
 Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
 LAB ID: None
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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-4820 MW369	MW369UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 6.95. Rad error is 6.91.
		Gross beta		TPU is 8.28. Rad error is 7.88.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 1.86. Rad error is 1.81.
		Strontium-90	*	TPU is 2.22. Rad error is 2.22.
		Technetium-99		TPU is 15.3. Rad error is 14.8.
		Thorium-230	*	TPU is 3.54. Rad error is 3.52.
		Tritium	*	TPU is 136. Rad error is 136.
8004-4818 MW370	MW370UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 4.08. Rad error is 4.08.
		Gross beta		TPU is 10.9. Rad error is 9.99.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 1.32. Rad error is 1.28.
		Strontium-90	*	TPU is 3.16. Rad error is 3.09.
		Technetium-99		TPU is 14.4. Rad error is 14.1.
		Thorium-230	*	TPU is 4.21. Rad error is 4.19.
		Tritium	*	TPU is 140. Rad error is 140.
8004-4819 MW371	MW371UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 6.73. Rad error is 6.69.
		Gross beta	*	TPU is 10.2. Rad error is 10.1.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 1.94. Rad error is 1.91.
		Strontium-90	*	TPU is 3.84. Rad error is 3.84.
		Technetium-99	*	TPU is 13.5. Rad error is 13.5.
		Thorium-230	*	TPU is 4.01. Rad error is 3.94.
		Tritium	*	TPU is 133. Rad error is 133.
8004-4808 MW372	MW372UG3-14	Gross alpha	*	TPU is 4.07. Rad error is 4.07.
		Gross beta	*	TPU is 5.88. Rad error is 5.75.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 1.56. Rad error is 1.56.
		Strontium-90	*	TPU is 2.01. Rad error is 2.01.
		Technetium-99	*	TPU is 12.5. Rad error is 12.4.
		Thorium-230	*	TPU is 3.03. Rad error is 3.
		Tritium	*	TPU is 107. Rad error is 106.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-4792 MW373	MW373UG3-14	Gross alpha	*	TPU is 4.84. Rad error is 4.84.
		Gross beta		TPU is 8.11. Rad error is 7.49.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 1.66. Rad error is 1.61.
		Strontium-90	*	TPU is 2.71. Rad error is 2.71.
		Technetium-99		TPU is 14.9. Rad error is 14.1.
		Thorium-230	*	TPU is 4.34. Rad error is 4.26.
		Tritium	*	TPU is 88.7. Rad error is 88.7.
8004-0990 MW374	MW374UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 3.5. Rad error is 3.49.
		Gross beta	*	TPU is 8.64. Rad error is 8.63.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 1.87. Rad error is 1.82.
		Strontium-90	*	TPU is 4.41. Rad error is 4.35.
		Technetium-99	*	TPU is 13.3. Rad error is 13.3.
		Thorium-230	*	TPU is 3.39. Rad error is 3.37.
8004-0985 MW375	MW375UG3-14	Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 4.71. Rad error is 4.7.
		Gross beta	*	TPU is 6.58. Rad error is 6.58.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 2.28. Rad error is 2.21.
		Strontium-90	*	TPU is 1.7. Rad error is 1.7.
		Technetium-99	*	TPU is 12.7. Rad error is 12.7.
		Thorium-230	*	TPU is 3.45. Rad error is 3.44.
		Tritium	*	TPU is 139. Rad error is 139.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0988 MW376		Bromide		During sampling, the well went dry; therefore, no sample was collected.
		Chloride		During sampling, the well went dry; therefore, no sample was collected.
		Fluoride		During sampling, the well went dry; therefore, no sample was collected.
		Nitrate & Nitrite		During sampling, the well went dry; therefore, no sample was collected.
		Sulfate		During sampling, the well went dry; therefore, no sample was collected.
		Barometric Pressure Reading		During sampling, the well went dry; therefore, no sample was collected.
		Specific Conductance		During sampling, the well went dry; therefore, no sample was collected.
		Static Water Level Elevation		During sampling, the well went dry; therefore, no sample was collected.
		Dissolved Oxygen		During sampling, the well went dry; therefore, no sample was collected.
		Total Dissolved Solids		During sampling, the well went dry; therefore, no sample was collected.
		pH		During sampling, the well went dry; therefore, no sample was collected.
		Eh		During sampling, the well went dry; therefore, no sample was collected.
		Temperature		During sampling, the well went dry; therefore, no sample was collected.
		Aluminum		During sampling, the well went dry; therefore, no sample was collected.
		Antimony		During sampling, the well went dry; therefore, no sample was collected.
		Arsenic		During sampling, the well went dry; therefore, no sample was collected.
		Barium		During sampling, the well went dry; therefore, no sample was collected.
		Beryllium		During sampling, the well went dry; therefore, no sample was collected.
		Boron		During sampling, the well went dry; therefore, no sample was collected.
		Cadmium		During sampling, the well went dry; therefore, no sample was collected.
		Calcium		During sampling, the well went dry; therefore, no sample was collected.
		Chromium		During sampling, the well went dry; therefore, no sample was collected.
		Cobalt		During sampling, the well went dry; therefore, no sample was collected.
		Copper		During sampling, the well went dry; therefore, no sample was collected.
		Iron		During sampling, the well went dry; therefore, no sample was collected.
		Lead		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0988 MW376		Magnesium		During sampling, the well went dry; therefore, no sample was collected.
		Manganese		During sampling, the well went dry; therefore, no sample was collected.
		Mercury		During sampling, the well went dry; therefore, no sample was collected.
		Molybdenum		During sampling, the well went dry; therefore, no sample was collected.
		Nickel		During sampling, the well went dry; therefore, no sample was collected.
		Potassium		During sampling, the well went dry; therefore, no sample was collected.
		Rhodium		During sampling, the well went dry; therefore, no sample was collected.
		Selenium		During sampling, the well went dry; therefore, no sample was collected.
		Silver		During sampling, the well went dry; therefore, no sample was collected.
		Sodium		During sampling, the well went dry; therefore, no sample was collected.
		Tantalum		During sampling, the well went dry; therefore, no sample was collected.
		Thallium		During sampling, the well went dry; therefore, no sample was collected.
		Uranium		During sampling, the well went dry; therefore, no sample was collected.
		Vanadium		During sampling, the well went dry; therefore, no sample was collected.
		Zinc		During sampling, the well went dry; therefore, no sample was collected.
		Vinyl acetate		During sampling, the well went dry; therefore, no sample was collected.
		Acetone		During sampling, the well went dry; therefore, no sample was collected.
		Acrolein		During sampling, the well went dry; therefore, no sample was collected.
		Acrylonitrile		During sampling, the well went dry; therefore, no sample was collected.
		Benzene		During sampling, the well went dry; therefore, no sample was collected.
		Chlorobenzene		During sampling, the well went dry; therefore, no sample was collected.
		Xylenes		During sampling, the well went dry; therefore, no sample was collected.
		Styrene		During sampling, the well went dry; therefore, no sample was collected.
		Toluene		During sampling, the well went dry; therefore, no sample was collected.
		Chlorobromomethane		During sampling, the well went dry; therefore, no sample was collected.
		Bromodichloromethane		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0988 MW376		Tribromomethane		During sampling, the well went dry; therefore, no sample was collected.
		Methyl bromide		During sampling, the well went dry; therefore, no sample was collected.
		Methyl Ethyl Ketone		During sampling, the well went dry; therefore, no sample was collected.
		trans-1,4-Dichloro-2-butene		During sampling, the well went dry; therefore, no sample was collected.
		Carbon disulfide		During sampling, the well went dry; therefore, no sample was collected.
		Chloroethane		During sampling, the well went dry; therefore, no sample was collected.
		Chloroform		During sampling, the well went dry; therefore, no sample was collected.
		Methyl chloride		During sampling, the well went dry; therefore, no sample was collected.
		cis-1,2-Dichloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Methylene bromide		During sampling, the well went dry; therefore, no sample was collected.
		1,1-Dichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1-Dichloroethylene		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dibromoethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,2,2-Tetrachloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,1-Trichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,2-Trichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,1,2-Tetrachloroethane		During sampling, the well went dry; therefore, no sample was collected.
		Vinyl chloride		During sampling, the well went dry; therefore, no sample was collected.
		Tetrachloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Trichloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Ethylbenzene		During sampling, the well went dry; therefore, no sample was collected.
		2-Hexanone		During sampling, the well went dry; therefore, no sample was collected.
		Iodomethane		During sampling, the well went dry; therefore, no sample was collected.
		Dibromochloromethane		During sampling, the well went dry; therefore, no sample was collected.
		Carbon tetrachloride		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0988 MW376		Dichloromethane		During sampling, the well went dry; therefore, no sample was collected.
		Methyl Isobutyl Ketone		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dibromo-3-chloropropane		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dichloropropane		During sampling, the well went dry; therefore, no sample was collected.
		trans-1,3-Dichloropropene		During sampling, the well went dry; therefore, no sample was collected.
		cis-1,3-Dichloropropene		During sampling, the well went dry; therefore, no sample was collected.
		trans-1,2-Dichloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Trichlorofluoromethane		During sampling, the well went dry; therefore, no sample was collected.
		1,2,3-Trichloropropane		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dichlorobenzene		During sampling, the well went dry; therefore, no sample was collected.
		1,4-Dichlorobenzene		During sampling, the well went dry; therefore, no sample was collected.
		PCB, Total		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1016		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1221		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1232		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1242		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1248		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1254		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1260		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1268		During sampling, the well went dry; therefore, no sample was collected.
		Gross alpha		During sampling, the well went dry; therefore, no sample was collected.
		Gross beta		During sampling, the well went dry; therefore, no sample was collected.
		Iodine-131		During sampling, the well went dry; therefore, no sample was collected.
		Radium-226		During sampling, the well went dry; therefore, no sample was collected.
		Strontium-90		During sampling, the well went dry; therefore, no sample was collected.
		Technetium-99		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0988 MW376		Thorium-230		During sampling, the well went dry; therefore, no sample was collected.
		Tritium		During sampling, the well went dry; therefore, no sample was collected.
		Chemical Oxygen Demand		During sampling, the well went dry; therefore, no sample was collected.
		Cyanide		During sampling, the well went dry; therefore, no sample was collected.
		Iodide		During sampling, the well went dry; therefore, no sample was collected.
		Total Organic Carbon		During sampling, the well went dry; therefore, no sample was collected.
		Total Organic Halides		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0989 MW377		Bromide		During sampling, the well went dry; therefore, no sample was collected.
		Chloride		During sampling, the well went dry; therefore, no sample was collected.
		Fluoride		During sampling, the well went dry; therefore, no sample was collected.
		Nitrate & Nitrite		During sampling, the well went dry; therefore, no sample was collected.
		Sulfate		During sampling, the well went dry; therefore, no sample was collected.
		Barometric Pressure Reading		During sampling, the well went dry; therefore, no sample was collected.
		Specific Conductance		During sampling, the well went dry; therefore, no sample was collected.
		Static Water Level Elevation		During sampling, the well went dry; therefore, no sample was collected.
		Dissolved Oxygen		During sampling, the well went dry; therefore, no sample was collected.
		Total Dissolved Solids		During sampling, the well went dry; therefore, no sample was collected.
		pH		During sampling, the well went dry; therefore, no sample was collected.
		Eh		During sampling, the well went dry; therefore, no sample was collected.
		Temperature		During sampling, the well went dry; therefore, no sample was collected.
		Aluminum		During sampling, the well went dry; therefore, no sample was collected.
		Antimony		During sampling, the well went dry; therefore, no sample was collected.
		Arsenic		During sampling, the well went dry; therefore, no sample was collected.
		Barium		During sampling, the well went dry; therefore, no sample was collected.
		Beryllium		During sampling, the well went dry; therefore, no sample was collected.
		Boron		During sampling, the well went dry; therefore, no sample was collected.
		Cadmium		During sampling, the well went dry; therefore, no sample was collected.
		Calcium		During sampling, the well went dry; therefore, no sample was collected.
		Chromium		During sampling, the well went dry; therefore, no sample was collected.
		Cobalt		During sampling, the well went dry; therefore, no sample was collected.
		Copper		During sampling, the well went dry; therefore, no sample was collected.
		Iron		During sampling, the well went dry; therefore, no sample was collected.
		Lead		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0989 MW377		Magnesium		During sampling, the well went dry; therefore, no sample was collected.
		Manganese		During sampling, the well went dry; therefore, no sample was collected.
		Mercury		During sampling, the well went dry; therefore, no sample was collected.
		Molybdenum		During sampling, the well went dry; therefore, no sample was collected.
		Nickel		During sampling, the well went dry; therefore, no sample was collected.
		Potassium		During sampling, the well went dry; therefore, no sample was collected.
		Rhodium		During sampling, the well went dry; therefore, no sample was collected.
		Selenium		During sampling, the well went dry; therefore, no sample was collected.
		Silver		During sampling, the well went dry; therefore, no sample was collected.
		Sodium		During sampling, the well went dry; therefore, no sample was collected.
		Tantalum		During sampling, the well went dry; therefore, no sample was collected.
		Thallium		During sampling, the well went dry; therefore, no sample was collected.
		Uranium		During sampling, the well went dry; therefore, no sample was collected.
		Vanadium		During sampling, the well went dry; therefore, no sample was collected.
		Zinc		During sampling, the well went dry; therefore, no sample was collected.
		Vinyl acetate		During sampling, the well went dry; therefore, no sample was collected.
		Acetone		During sampling, the well went dry; therefore, no sample was collected.
		Acrolein		During sampling, the well went dry; therefore, no sample was collected.
		Acrylonitrile		During sampling, the well went dry; therefore, no sample was collected.
		Benzene		During sampling, the well went dry; therefore, no sample was collected.
		Chlorobenzene		During sampling, the well went dry; therefore, no sample was collected.
		Xylenes		During sampling, the well went dry; therefore, no sample was collected.
		Styrene		During sampling, the well went dry; therefore, no sample was collected.
		Toluene		During sampling, the well went dry; therefore, no sample was collected.
		Chlorobromomethane		During sampling, the well went dry; therefore, no sample was collected.
		Bromodichloromethane		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0989 MW377		Tribromomethane		During sampling, the well went dry; therefore, no sample was collected.
		Methyl bromide		During sampling, the well went dry; therefore, no sample was collected.
		Methyl Ethyl Ketone		During sampling, the well went dry; therefore, no sample was collected.
		trans-1,4-Dichloro-2-butene		During sampling, the well went dry; therefore, no sample was collected.
		Carbon disulfide		During sampling, the well went dry; therefore, no sample was collected.
		Chloroethane		During sampling, the well went dry; therefore, no sample was collected.
		Chloroform		During sampling, the well went dry; therefore, no sample was collected.
		Methyl chloride		During sampling, the well went dry; therefore, no sample was collected.
		cis-1,2-Dichloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Methylene bromide		During sampling, the well went dry; therefore, no sample was collected.
		1,1-Dichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1-Dichloroethylene		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dibromoethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,2,2-Tetrachloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,1-Trichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,2-Trichloroethane		During sampling, the well went dry; therefore, no sample was collected.
		1,1,1,2-Tetrachloroethane		During sampling, the well went dry; therefore, no sample was collected.
		Vinyl chloride		During sampling, the well went dry; therefore, no sample was collected.
		Tetrachloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Trichloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Ethylbenzene		During sampling, the well went dry; therefore, no sample was collected.
		2-Hexanone		During sampling, the well went dry; therefore, no sample was collected.
		Iodomethane		During sampling, the well went dry; therefore, no sample was collected.
		Dibromochloromethane		During sampling, the well went dry; therefore, no sample was collected.
		Carbon tetrachloride		During sampling, the well went dry; therefore, no sample was collected.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0989 MW377		Dichloromethane		During sampling, the well went dry; therefore, no sample was collected.
		Methyl Isobutyl Ketone		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dibromo-3-chloropropane		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dichloropropane		During sampling, the well went dry; therefore, no sample was collected.
		trans-1,3-Dichloropropene		During sampling, the well went dry; therefore, no sample was collected.
		cis-1,3-Dichloropropene		During sampling, the well went dry; therefore, no sample was collected.
		trans-1,2-Dichloroethene		During sampling, the well went dry; therefore, no sample was collected.
		Trichlorofluoromethane		During sampling, the well went dry; therefore, no sample was collected.
		1,2,3-Trichloropropane		During sampling, the well went dry; therefore, no sample was collected.
		1,2-Dichlorobenzene		During sampling, the well went dry; therefore, no sample was collected.
		1,4-Dichlorobenzene		During sampling, the well went dry; therefore, no sample was collected.
		PCB, Total		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1016		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1221		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1232		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1242		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1248		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1254		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1260		During sampling, the well went dry; therefore, no sample was collected.
		PCB-1268		During sampling, the well went dry; therefore, no sample was collected.
		Gross alpha		During sampling, the well went dry; therefore, no sample was collected.
		Gross beta		During sampling, the well went dry; therefore, no sample was collected.
		Iodine-131		During sampling, the well went dry; therefore, no sample was collected.
		Radium-226		During sampling, the well went dry; therefore, no sample was collected.
		Strontium-90		During sampling, the well went dry; therefore, no sample was collected.
		Technetium-99		During sampling, the well went dry; therefore, no sample was collected.

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Finds/Unit: KY8-890-008-982 / 1
 LAB ID: None
 For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
8004-0989 MW377		Thorium-230		During sampling, the well went dry; therefore, no sample was collected.
		Tritium		During sampling, the well went dry; therefore, no sample was collected.
		Chemical Oxygen Demand		During sampling, the well went dry; therefore, no sample was collected.
		Cyanide		During sampling, the well went dry; therefore, no sample was collected.
		Iodide		During sampling, the well went dry; therefore, no sample was collected.
		Total Organic Carbon		During sampling, the well went dry; therefore, no sample was collected.
		Total Organic Halides		During sampling, the well went dry; therefore, no sample was collected.
0000-0000 QC	RI1UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Gross alpha	*	TPU is 3.49. Rad error is 3.49.
		Gross beta	*	TPU is 3.97. Rad error is 3.97.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 2.08. Rad error is 1.98.
		Strontium-90	*	TPU is 3.96. Rad error is 3.88.
		Technetium-99	*	TPU is 12. Rad error is 12.
		Thorium-230	*	TPU is 4.05. Rad error is 4.
		Tritium	*	TPU is 101. Rad error is 99.9.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

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 LAB ID: None
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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	FB1UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Gross alpha	*	TPU is 3.58. Rad error is 3.58.
		Gross beta	*	TPU is 3.78. Rad error is 3.78.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226	*	TPU is 1.36. Rad error is 1.34.
		Strontium-90	*	TPU is 3.68. Rad error is 3.67.
		Technetium-99	*	TPU is 11.9. Rad error is 11.8.
		Thorium-230	*	TPU is 3.08. Rad error is 3.07.
		Tritium	*	TPU is 91.1. Rad error is 91.1.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB1UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB1UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB2UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB2UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB3UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB3UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB4UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

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Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB4UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB5UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

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LAB ID: None
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GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB5UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

RESIDENTIAL/CONTAINED – QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
LAB ID: None
For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB6UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

RESIDENTIAL/CONTAINED – QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
LAB ID: None
For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB6UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
		Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.

RESIDENTIAL/CONTAINED – QUARTERLY
 Facility: US DOE - Paducah Gaseous Diffusion Plant
 Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
 LAB ID: None
 For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB7UG3-14	Bromide		Analysis of constituent not required and not performed.
		Chloride		Analysis of constituent not required and not performed.
		Fluoride		Analysis of constituent not required and not performed.
		Nitrate & Nitrite		Analysis of constituent not required and not performed.
		Sulfate		Analysis of constituent not required and not performed.
		Barometric Pressure Reading		Analysis of constituent not required and not performed.
		Specific Conductance		Analysis of constituent not required and not performed.
		Static Water Level Elevation		Analysis of constituent not required and not performed.
		Dissolved Oxygen		Analysis of constituent not required and not performed.
		Total Dissolved Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Eh		Analysis of constituent not required and not performed.
		Temperature		Analysis of constituent not required and not performed.
		Aluminum		Analysis of constituent not required and not performed.
		Antimony		Analysis of constituent not required and not performed.
		Arsenic		Analysis of constituent not required and not performed.
		Barium		Analysis of constituent not required and not performed.
		Beryllium		Analysis of constituent not required and not performed.
		Boron		Analysis of constituent not required and not performed.
		Cadmium		Analysis of constituent not required and not performed.
		Calcium		Analysis of constituent not required and not performed.
		Chromium		Analysis of constituent not required and not performed.
		Cobalt		Analysis of constituent not required and not performed.
		Copper		Analysis of constituent not required and not performed.
		Iron		Analysis of constituent not required and not performed.
		Lead		Analysis of constituent not required and not performed.
		Magnesium		Analysis of constituent not required and not performed.
		Manganese		Analysis of constituent not required and not performed.
		Mercury		Analysis of constituent not required and not performed.
		Molybdenum		Analysis of constituent not required and not performed.
		Nickel		Analysis of constituent not required and not performed.
		Potassium		Analysis of constituent not required and not performed.
		Rhodium		Analysis of constituent not required and not performed.
		Selenium		Analysis of constituent not required and not performed.
		Silver		Analysis of constituent not required and not performed.
		Sodium		Analysis of constituent not required and not performed.
		Tantalum		Analysis of constituent not required and not performed.
		Thallium		Analysis of constituent not required and not performed.
		Uranium		Analysis of constituent not required and not performed.
		Vanadium		Analysis of constituent not required and not performed.

RESIDENTIAL/CONTAINED – QUARTERLY
 Facility: US DOE - Paducah Gaseous Diffusion Plant
 Permit Numbers: 073-00045

Finds/Unit: KY8-890-008-982 / 1
 LAB ID: None
 For Official Use Only

GROUNDWATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
0000-0000 QC	TB7UG3-14	Zinc		Analysis of constituent not required and not performed.
		PCB, Total		Analysis of constituent not required and not performed.
		PCB-1016		Analysis of constituent not required and not performed.
		PCB-1221		Analysis of constituent not required and not performed.
		PCB-1232		Analysis of constituent not required and not performed.
		PCB-1242		Analysis of constituent not required and not performed.
		PCB-1248		Analysis of constituent not required and not performed.
		PCB-1254		Analysis of constituent not required and not performed.
		PCB-1260		Analysis of constituent not required and not performed.
		PCB-1268		Analysis of constituent not required and not performed.
		Gross alpha		Analysis of constituent not required and not performed.
		Gross beta		Analysis of constituent not required and not performed.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		Analysis of constituent not required and not performed.
		Strontium-90		Analysis of constituent not required and not performed.
		Technetium-99		Analysis of constituent not required and not performed.
		Thorium-230		Analysis of constituent not required and not performed.
		Tritium		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand		Analysis of constituent not required and not performed.
		Cyanide		Analysis of constituent not required and not performed.
		Iodide		Analysis of constituent not required and not performed.
8004-4819 MW371	MW371DUG3-14	Total Organic Carbon		Analysis of constituent not required and not performed.
		Total Organic Halides		Analysis of constituent not required and not performed.
		Tantalum	N	Sample spike recovery not within control limits.
		Gross alpha	*	TPU is 6.66. Rad error is 6.59.
		Gross beta	*	TPU is 6.26. Rad error is 6.26.
		Iodine-131		Analysis of constituent not required and not performed.
		Radium-226		TPU is 2.08. Rad error is 2.01.
		Strontium-90	*	TPU is 3.59. Rad error is 3.59.
		Technetium-99	*	TPU is 14. Rad error is 14.
		Thorium-230	*	TPU is 3.85. Rad error is 3.82.
		Tritium	*	TPU is 149. Rad error is 146.

APPENDIX D

STATISTICAL ANALYSES AND QUALIFICATION STATEMENT

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RESIDENTIAL/CONTAINED – QUARTERLY, 2nd Quarter 2014
Facility: U.S. DOE – Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

Finds/Unit: _____
Lab ID: None
For Official Use Only

GROUNDWATER STATISTICAL COMMENTS

Introduction

The statistical analyses conducted on the second quarter 2014 groundwater data collected from the C-746-U Landfill monitoring wells (MWs) were performed in accordance with Permit GSTR0001, Standard Requirement 3, using the U.S. Environmental Protection Agency (EPA) guidance document, *EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance* (1989), with the exception of pH. The method for conducting the statistical analysis of pH was selected by the project statistician.

The statistical evaluation was conducted separately for the three groundwater systems: the Upper Continental Recharge System (UCRS), the Upper Regional Gravel Aquifer (URGA), and the Lower Regional Gravel Aquifer (LRGA). For each groundwater system, data included two background wells for comparison with at least three test wells or sidegradient wells (Exhibit 1). The second quarter 2014 data used to conduct the statistical analyses was collected in April 2014. The statistical analyses for this report utilize data from the first eight quarters that were sampled for each parameter, beginning with the first two baseline sampling events in 2002, when available. The sampling dates associated with background data are listed next to the result in the statistical analysis sheets of this appendix.

Statistical Analysis Process

For chemicals with established maximum contaminant levels (MCLs), no statistical analysis was performed. Parameters that have MCLs can be found in 401 KAR 47:030, Section 6. For parameters with no established MCL, the data are divided into censored and uncensored observations. The one-sided tolerance interval statistical test is conducted only on parameters that have at least one uncensored (detected) observation. Results of the one-sided tolerance interval statistical test conclude whether the data show a statistically significant increase of concentrations with respect to upgradient (background) well data. For the statistical analysis of pH, a two-sided tolerance interval statistical test was conducted. The test well results were compared to both an upper and lower tolerance limit to determine if statistically significant deviations in concentrations exist with respect to upgradient (background) well data. The tolerance interval statistical analysis was conducted separately for each parameter in each well (no pooling of downgradient data).

Statistical analyses are performed on historical background data, not on the data for the current quarter. Once a statistical result is obtained using the background data, the data for the current quarter is compared to that value. If the value is exceeded, the well has a statistically significant increase in concentration compared to the background concentration.

A stepwise list of the one-sided tolerance interval statistical procedure applied to the data is summarized below:¹

1. The tolerance limit (TL) was calculated for the background data.
 - For each parameter, the background data were used to establish a baseline. On this data set, the mean (X) and the standard deviation (S) were computed.
 - The data set was checked for normality using coefficient of variation (CV). If $CV \leq 1.0$, then the data are assumed to be potentially normally distributed. Data sets with $CV > 1.0$ are assumed to be log-normally distributed; the data are log-transformed and analyzed.
 - The factor (K) for one-sided upper tolerance limit with 95% minimum coverage was determined (Table 5, Appendix B; *EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance*, 1989) based on the number of background data points.
 - The one-sided upper tolerance limit was calculated using the following equation:
$$TL = X + (K \times S)$$
2. Each observation from downgradient wells was compared to the calculated one-sided upper tolerance limit in Step 1. If an observation value exceeds the tolerance limit, then there is statistically significant evidence that the well has increased concentration with respect to background data.

Type of Data Used

Exhibit 1 presents the upgradient or background wells (identified as “BG”), the downgradient or test wells (identified as “TW”), and the sidegradient wells (identified as “SG”) for the C-746-U Contained Landfill. Exhibit 2 presents the parameters from the available data set and the statistical test performed using the one-sided tolerance interval.

Excluding parameters that have an MCL, Exhibits 3, 4, and 5 list the number of analyses (observations), nondetects (censored observations), detects (uncensored observations), and missing observations by parameter in the UCRS, the URGAs, and the LRGA, respectively. Those parameters displayed with bold-face type indicate the one-sided tolerance interval statistical test was performed. The data presented in Exhibits 3, 4, and 5 were collected during the current quarter, second quarter 2014. The observations that are listed are not background data. Background data are presented on pages D-23 through D-104. The sampling dates associated with background data are listed next to the result on pages D-23 through D-104. When field duplicate data are available, the higher of the two readings is retained for further evaluation.

¹ For pH, two-sided TL (upper and lower) were calculated with an adjusted K factor using the following equations:

$$\text{upper TL} = X + (K \times S)$$

$$\text{lower TL} = X - (K \times S)$$

**Exhibit 1. Station Identification for Monitoring
Wells Analyzed**

Station	Type	Aquifer
MW357	TW	URGA
MW358	TW	LRGA
MW359	TW	UCRS
MW360	TW	URGA
MW361	TW	LRGA
MW362	TW	UCRS
MW363	TW	URGA
MW364	TW	LRGA
MW365	TW	UCRS
MW366	SG	URGA
MW367	SG	LRGA
MW368	SG	UCRS
MW369	BG	URGA
MW370	BG	LRGA
MW371	BG	UCRS
MW372	BG	URGA
MW373	BG	LRGA
MW374	BG	UCRS
MW375	SG	UCRS
MW376*	SG	UCRS
MW377*	SG	UCRS

BG: upgradient or background wells

TW: downgradient or test wells

SG: sidegradient wells

*Well was dry this quarter, and a groundwater sample could not be collected.

Exhibit 2. List of Parameters Tested Using the One-Sided Upper Tolerance Level Test

Parameters
2-Butanone
Aluminum
Beryllium
Boron
Bromide
Calcium
Chemical Oxygen Demand (COD)
Chloride
<i>cis</i> -1,2-Dichloroethene
Cobalt
Conductivity
Copper
Dissolved Oxygen
Dissolved Solids
Iron
Magnesium
Manganese
Molybdenum
Nickel
Oxidation-Reduction Potential
PCB, Total
PCB-1242
pH*
Sodium
Sulfate
Technetium-99
Toluene
Total Organic Carbon (TOC)
Total Organic Halides (TOX)
Uranium
Vanadium

*For pH, the test well results were compared to both an upper and lower TL to determine if statistically significant deviations exist in concentrations with respect to upgradient well data.

Exhibit 3. Summary of Missing, Censored, and Uncensored Data—UCRS

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
1,1,1,2-Tetrachloroethane	7	0	7	0	No
1,1,2,2-Tetrachloroethane	7	0	7	0	No
1,1,2-Trichloroethane	7	0	7	0	No
1,1-Dichloroethane	7	0	7	0	No
1,2,3-Trichloropropane	7	0	7	0	No
1,2-Dibromo-3-chloropropane	7	0	7	0	No
1,2-Dibromoethane	7	0	7	0	No
1,2-Dichlorobenzene	7	0	7	0	No
1,2-Dichloropropane	7	0	7	0	No
2-Butanone	7	0	7	0	No
2-Hexanone	7	0	7	0	No
4-Methyl-2-pentanone	7	0	7	0	No
Acetone	7	0	7	0	No
Acrolein	7	0	7	0	No
Acrylonitrile	7	0	7	0	No
Aluminum	7	0	0	7	YES
Antimony	7	0	7	0	No
Beryllium	7	0	6	1	YES
Boron	7	0	3	4	YES
Bromide	7	0	4	3	YES
Bromochloromethane	7	0	7	0	No
Bromodichloromethane	7	0	7	0	No
Bromoform	7	0	7	0	No
Bromomethane	7	0	7	0	No
Calcium	7	0	0	7	YES
Carbon disulfide	7	0	7	0	No
Chemical Oxygen Demand (COD)	7	0	4	3	YES
Chloride	7	0	0	7	YES
Chlorobenzene	7	0	7	0	No
Chloroethane	7	0	7	0	No
Chloroform	7	0	7	0	No
Chloromethane	7	0	7	0	No
<i>cis</i> -1,2-Dichloroethene	7	0	7	0	No
<i>cis</i> -1,3-Dichloropropene	7	0	7	0	No
Cobalt	7	0	1	6	YES
Conductivity	7	0	0	7	YES
Copper	7	0	6	1	YES
Cyanide	7	0	7	0	No
Dibromochloromethane	7	0	7	0	No
Dibromomethane	7	0	7	0	No

Exhibit 3. Summary of Missing, Censored, and Uncensored Data—UCRS (Continued)

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
Dimethylbenzene, Total	7	0	7	0	No
Dissolved Oxygen	7	0	0	7	YES
Dissolved Solids	7	0	0	7	YES
Ethylbenzene	7	0	7	0	No
Iodide	7	0	7	0	No
Iodomethane	7	0	7	0	No
Iron	7	0	0	7	YES
Magnesium	7	0	0	7	YES
Manganese	7	0	0	7	YES
Methylene chloride	7	0	7	0	No
Molybdenum	7	0	2	5	YES
Nickel	7	0	0	7	YES
Oxidation-Reduction Potential	7	0	0	7	YES
PCB, Total	7	0	5	2	YES
PCB-1016	7	0	7	0	No
PCB-1221	7	0	7	0	No
PCB-1232	7	0	7	0	No
PCB-1242	7	0	5	2	YES
PCB-1248	7	0	7	0	No
PCB-1254	7	0	7	0	No
PCB-1260	7	0	7	0	No
PCB-1268	7	0	7	0	No
pH	7	0	0	7	YES
Potassium	7	0	7	0	No
Radium-226	7	0	7	0	No
Rhodium	7	0	7	0	No
Sodium	7	0	0	7	YES
Styrene	7	0	7	0	No
Sulfate	7	0	0	7	YES
Tantalum	7	0	7	0	No
Technetium-99	7	0	7	0	No
Tetrachloroethene	7	0	7	0	No
Thallium	7	0	7	0	No
Thorium-230	7	0	7	0	No
Toluene	7	0	7	0	No
Total Organic Carbon (TOC)	7	0	0	7	YES
Total Organic Halides (TOX)	7	0	1	6	YES
<i>trans</i> -1,2-Dichloroethene	7	0	7	0	No
<i>trans</i> -1,3-Dichloropropene	7	0	7	0	No
<i>Trans</i> -1,4-Dichloro-2-butene	7	0	7	0	No

Exhibit 3. Summary of Missing, Censored, and Uncensored Data—UCRS (Continued)

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
Trichlorofluoromethane	7	0	7	0	No
Uranium	7	0	0	7	YES
Vanadium	7	0	4	3	YES
Vinyl acetate	7	0	7	0	No
Zinc	7	0	7	0	No

Bold denotes parameters with at least one uncensored observation.

Exhibit 4. Summary of Missing, Censored, and Uncensored Data—URGA

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
1,1,1,2-Tetrachloroethane	6	0	6	0	No
1,1,2,2-Tetrachloroethane	6	0	6	0	No
1,1,2-Trichloroethane	6	0	6	0	No
1,1-Dichloroethane	6	0	6	0	No
1,2,3-Trichloropropane	6	0	6	0	No
1,2-Dibromo-3-chloropropane	6	0	6	0	No
1,2-Dibromoethane	6	0	6	0	No
1,2-Dichlorobenzene	6	0	6	0	No
1,2-Dichloropropane	6	0	6	0	No
2-Butanone	6	0	5	1	YES
2-Hexanone	6	0	6	0	No
4-Methyl-2-pentanone	6	0	6	0	No
Acetone	6	0	6	0	No
Acrolein	6	0	6	0	No
Acrylonitrile	6	0	6	0	No
Aluminum	6	0	3	3	YES
Antimony	6	0	6	0	No
Beryllium	6	0	6	0	No
Boron	6	0	0	6	YES
Bromide	6	0	0	6	YES
Bromochloromethane	6	0	6	0	No
Bromodichloromethane	6	0	6	0	No
Bromoform	6	0	6	0	No
Bromomethane	6	0	6	0	No
Calcium	6	0	0	6	YES
Carbon disulfide	6	0	6	0	No
Chemical Oxygen Demand (COD)	6	0	5	1	YES
Chloride	6	0	0	6	YES
Chlorobenzene	6	0	6	0	No
Chloroethane	6	0	6	0	No
Chloroform	6	0	6	0	No
Chloromethane	6	0	6	0	No
cis-1,2-Dichloroethene	6	0	5	1	YES
cis-1,3-Dichloropropene	6	0	6	0	No
Cobalt	6	0	0	6	YES
Conductivity	6	0	0	6	YES
Copper	6	0	6	0	No
Cyanide	6	0	6	0	No
Dibromochloromethane	6	0	6	0	No
Dibromomethane	6	0	6	0	No

Exhibit 4. Summary of Missing, Censored, and Uncensored Data—URGA (Continued)

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
Dimethylbenzene, Total	6	0	6	0	No
Dissolved Oxygen	6	0	0	6	YES
Dissolved Solids	6	0	0	6	YES
Ethylbenzene	6	0	6	0	No
Iodide	6	0	6	0	No
Iodomethane	6	0	6	0	No
Iron	6	0	0	6	YES
Magnesium	6	0	0	6	YES
Manganese	6	0	0	6	YES
Methylene chloride	6	0	6	0	No
Molybdenum	6	0	4	2	YES
Nickel	6	0	0	6	YES
Oxidation-Reduction Potential	6	0	0	6	YES
PCB, Total	6	0	4	2	YES
PCB-1016	6	0	6	0	No
PCB-1221	6	0	6	0	No
PCB-1232	6	0	6	0	No
PCB-1242	6	0	4	2	YES
PCB-1248	6	0	6	0	No
PCB-1254	6	0	6	0	No
PCB-1260	6	0	6	0	No
PCB-1268	6	0	6	0	No
pH	6	0	0	6	YES
Potassium	6	0	6	0	No
Radium-226	6	0	6	0	No
Rhodium	6	0	6	0	No
Sodium	6	0	0	6	YES
Styrene	6	0	6	0	No
Sulfate	6	0	0	6	YES
Tantalum	6	0	6	0	No
Technetium-99	6	0	3	3	YES
Tetrachloroethene	6	0	6	0	No
Thallium	6	0	6	0	No
Thorium-230	6	0	6	0	No
Toluene	6	0	5	1	YES
Total Organic Carbon (TOC)	6	0	0	6	YES
Total Organic Halides (TOX)	6	0	0	6	YES
<i>trans</i> -1,2-Dichloroethene	6	0	6	0	No
<i>trans</i> -1,3-Dichloropropene	6	0	6	0	No
<i>Trans</i> -1,4-Dichloro-2-butene	6	0	6	0	No

Exhibit 4. Summary of Missing, Censored, and Uncensored Data—URGA (Continued)

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
Trichlorofluoromethane	6	0	6	0	No
Uranium	6	0	5	1	YES
Vanadium	6	0	6	0	No
Vinyl acetate	6	0	6	0	No
Zinc	6	0	6	0	No

Bold denotes parameters with at least one uncensored observation.

Exhibit 5. Summary of Missing, Censored, and Uncensored Data—LRGA

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
1,1,1,2-Tetrachloroethane	6	0	6	0	No
1,1,2,2-Tetrachloroethane	6	0	6	0	No
1,1,2-Trichloroethane	6	0	6	0	No
1,1-Dichloroethane	6	0	6	0	No
1,2,3-Trichloropropane	6	0	6	0	No
1,2-Dibromo-3-chloropropane	6	0	6	0	No
1,2-Dibromoethane	6	0	6	0	No
1,2-Dichlorobenzene	6	0	6	0	No
1,2-Dichloropropane	6	0	6	0	No
2-Butanone	6	0	6	0	No
2-Hexanone	6	0	6	0	No
4-Methyl-2-pentanone	6	0	6	0	No
Acetone	6	0	6	0	No
Acrolein	6	0	6	0	No
Acrylonitrile	6	0	6	0	No
Aluminum	6	0	5	1	YES
Antimony	6	0	6	0	No
Beryllium	6	0	6	0	No
Boron	6	0	1	5	YES
Bromide	6	0	0	6	YES
Bromochloromethane	6	0	6	0	No
Bromodichloromethane	6	0	6	0	No
Bromoform	6	0	6	0	No
Bromomethane	6	0	6	0	No
Calcium	6	0	0	6	YES
Carbon disulfide	6	0	6	0	No
Chemical Oxygen Demand (COD)	6	0	5	1	YES
Chloride	6	0	0	6	YES
Chlorobenzene	6	0	6	0	No
Chloroethane	6	0	6	0	No
Chloroform	6	0	6	0	No
Chloromethane	6	0	6	0	No
<i>cis</i> -1,2-Dichloroethene	6	0	6	0	No
<i>cis</i> -1,3-Dichloropropene	6	0	6	0	No
Cobalt	6	0	0	6	YES
Conductivity	6	0	0	6	YES
Copper	6	0	6	0	No
Cyanide	6	0	6	0	No
Dibromochloromethane	6	0	6	0	No
Dibromomethane	6	0	6	0	No
Dimethylbenzene, Total	6	0	6	0	No

Exhibit 5. Summary of Missing, Censored, and Uncensored Data—LRGA (Continued)

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
Dissolved Oxygen	6	0	0	6	YES
Dissolved Solids	6	0	0	6	YES
Ethylbenzene	6	0	6	0	No
Iodide	6	0	6	0	No
Iodomethane	6	0	6	0	No
Iron	6	0	0	6	YES
Magnesium	6	0	0	6	YES
Manganese	6	0	0	6	YES
Methylene chloride	6	0	6	0	No
Molybdenum	6	0	5	1	YES
Nickel	6	0	0	6	YES
Oxidation-Reduction Potential	6	0	0	6	YES
PCB, Total	6	0	6	0	No
PCB-1016	6	0	6	0	No
PCB-1221	6	0	6	0	No
PCB-1232	6	0	6	0	No
PCB-1242	6	0	6	0	No
PCB-1248	6	0	6	0	No
PCB-1254	6	0	6	0	No
PCB-1260	6	0	6	0	No
PCB-1268	6	0	6	0	No
pH	6	0	0	6	YES
Potassium	6	0	6	0	No
Radium-226	6	0	6	0	No
Rhodium	6	0	6	0	No
Sodium	6	0	0	6	YES
Styrene	6	0	6	0	No
Sulfate	6	0	0	6	YES
Tantalum	6	0	6	0	No
Technetium-99	6	0	0	6	YES
Tetrachloroethene	6	0	6	0	No
Thallium	6	0	6	0	No
Thorium-230	6	0	6	0	No
Toluene	6	0	6	0	No
Total Organic Carbon (TOC)	6	0	0	6	YES
Total Organic Halides (TOX)	6	0	0	6	YES
<i>trans</i> -1,2-Dichloroethene	6	0	6	0	No
<i>trans</i> -1,3-Dichloropropene	6	0	6	0	No
<i>Trans</i> -1,4-Dichloro-2-butene	6	0	6	0	No
Trichlorofluoromethane	6	0	6	0	No
Uranium	6	0	6	0	No
Vanadium	6	0	6	0	No

Exhibit 5. Summary of Missing, Censored, and Uncensored Data—LRGA (Continued)

Parameters	Observations	Missing Observation	Censored Observation	Uncensored Observation	Statistical Analysis?
Vinyl acetate	6	0	6	0	No
Zinc	6	0	6	0	No

Bold denotes parameters with at least one uncensored observation.

Discussion of Results

For the UCRS, URGAs, and LRGA, the results of the one-sided upper tolerance interval test are presented on pages D-23 through D-104 and the statistician qualification statement is presented on page D-105. For the UCRS, URGAs, and LRGA, the test was applied to 27, 28, and 22 parameters, respectively, listed in bold print in Exhibits 3, 4, and 5. A summary of statistically significant increases by well number is shown in Exhibit 6.

UCRS

In this quarter, statistical test results indicated there were statistically significant increases for dissolved oxygen, oxidation-reduction potential, and sulfate.

URGA

In this quarter, statistical test results indicated that there were statistically significant increases for calcium, chloride, conductivity, dissolved solids, magnesium, oxidation-reduction potential, sulfate, and toluene.

LRGA

In this quarter, statistical test results indicated that there were statistically significant increases for calcium, dissolved oxygen, oxidation-reduction potential, and technetium-99.

Conclusion

Summaries of the statistical tests conducted on data obtained from wells in the UCRS, the URGAs, and in the LRGA are presented in Exhibit 7, Exhibit 8, and Exhibit 9, respectively.

Exhibit 6. Summary of Statistically Significant Increases

UCRS	URGA	LRGA
MW359: Dissolved oxygen, oxidation-reduction potential, sulfate	MW357: Oxidation-reduction potential	MW358: Oxidation-reduction potential
MW362: Dissolved oxygen, oxidation-reduction potential	MW360: Oxidation-reduction potential	MW361: Oxidation-reduction potential
MW365: Dissolved oxygen, oxidation-reduction potential, sulfate	MW363: Oxidation-reduction potential	MW364: Dissolved oxygen, oxidation-reduction potential, technetium-99
MW368: Dissolved oxygen, oxidation-reduction potential, sulfate	MW366: Oxidation-reduction potential, toluene	MW367: Oxidation-reduction potential
MW371: Dissolved oxygen, Oxidation-reduction potential, sulfate	MW369: Oxidation-reduction potential, toluene	MW370: Oxidation-reduction potential
MW374: Dissolved oxygen, oxidation-reduction potential	MW372: Calcium, chloride, conductivity, dissolved solids, magnesium, oxidation-reduction potential, sulfate	MW373: Calcium, oxidation-reduction potential
MW375: Oxidation-reduction potential, sulfate		

Exhibit 7. Tests Summary for Qualified Parameters—UCRS

Parameter	Performed Test	CV Normality Test	Results of Tolerance Interval Test Conducted
Aluminum	Tolerance Interval	2.08	No statistically significant increases relative to background data
Beryllium	Tolerance Interval	1.13	No statistically significant increases relative to background data
Boron	Tolerance Interval	1.24	No statistically significant increases relative to background data
Bromide	Tolerance Interval	0.34	No statistically significant increases relative to background data
Calcium	Tolerance Interval	0.40	No statistically significant increases relative to background data
Chemical Oxygen Demand (COD)	Tolerance Interval	0.97	No statistically significant increases relative to background data
Chloride	Tolerance Interval	0.95	No statistically significant increases relative to background data
Cobalt	Tolerance Interval	1.31	No statistically significant increases relative to background data
Conductivity	Tolerance Interval	0.45	No statistically significant increases relative to background data
Copper	Tolerance Interval	1.28	No statistically significant increases relative to background data
Dissolved Oxygen	Tolerance Interval	0.55	Statistically significant increases relative to background data in MW359, MW362, MW365, MW368, MW371, and MW374
Dissolved Solids	Tolerance Interval	0.42	No statistically significant increases relative to background data
Iron	Tolerance Interval	0.98	No statistically significant increases relative to background data
Magnesium	Tolerance Interval	0.27	No statistically significant increases relative to background data
Manganese	Tolerance Interval	0.89	No statistically significant increases relative to background data
Molybdenum	Tolerance Interval	1.65	No statistically significant increases relative to background data
Nickel	Tolerance Interval	0.98	No statistically significant increases relative to background data

Exhibit 7. Tests Summary for Qualified Parameters—UCRS (Continued)

Parameter	Performed Test	CV Normality Test	Results of Tolerance Interval Test Conducted
Oxidation-Reduction Potential	Tolerance Interval	3.54	Statistically significant increases relative to background data in MW359, MW362, MW365, MW368, MW371, MW374, and MW375
PCB, Total	Tolerance Interval	0.92	No statistically significant increases relative to background data
PCB-1242	Tolerance Interval	1.41	No statistically significant increases relative to background data
pH	Tolerance Interval	0.05	No statistically significant deviations relative to background data
Sodium	Tolerance Interval	0.40	No statistically significant increases relative to background data
Sulfate	Tolerance Interval	0.49	Statistically significant increases relative to background data in MW359, MW365, MW368, MW371, and MW375
Total Organic Carbon	Tolerance Interval	1.38	No statistically significant increases relative to background data
Total Organic Halides	Tolerance Interval	1.08	No statistically significant increases relative to background data
Uranium	Tolerance Interval	1.68	No statistically significant increases relative to background data
Vanadium	Tolerance Interval	1.32	No statistically significant increases relative to background data

CV: coefficient of variation

Exhibit 8. Tests Summary for Qualified Parameters—URGA

Parameter	Performed Test	CV Normality Test	Results of Tolerance Interval Test Conducted
2-Butanone	Tolerance Interval	0.89	No statistically significant increases relative to background data
Aluminum	Tolerance Interval	1.24	No statistically significant increases relative to background data
Boron	Tolerance Interval	0.84	No statistically significant increases relative to background data
Bromide	Tolerance Interval	0.00	No statistically significant increases relative to background data
Calcium	Tolerance Interval	0.29	Statistically significant increase relative to background data in MW372
Chemical Oxygen Demand (COD)	Tolerance Interval	0.10	No statistically significant increases relative to background data
Chloride	Tolerance Interval	0.10	Statistically significant increase relative to background data in MW372
<i>cis</i> -1,2-Dichloroethene	Tolerance Interval	0.00	No statistically significant increases relative to background data
Cobalt	Tolerance Interval	0.85	No statistically significant increases relative to background data
Conductivity	Tolerance Interval	0.12	Statistically significant increase relative to background data in MW372
Dissolved Oxygen	Tolerance Interval	0.76	No statistically significant increases relative to background data
Dissolved Solids	Tolerance Interval	0.16	Statistically significant increase relative to background data in MW372
Iron	Tolerance Interval	0.95	No statistically significant increases relative to background data
Magnesium	Tolerance Interval	0.27	Statistically significant increase relative to background data in MW372
Manganese	Tolerance Interval	0.66	No statistically significant increases relative to background data
Molybdenum	Tolerance Interval	1.20	No statistically significant increases relative to background data
Nickel	Tolerance Interval	0.91	No statistically significant increases relative to background data

Exhibit 8. Tests Summary for Qualified Parameters—URGA (Continued)

Parameter	Performed Test	CV Normality Test	Results of Tolerance Interval Test Conducted
Oxidation-Reduction Potential	Tolerance Interval	1.26	Statistically significant increases relative to background data in MW357, MW360, MW363, MW366, MW369, and MW372
PCB, Total	Tolerance Interval	0.90	No statistically significant increases relative to background data
PCB-1242	Tolerance Interval	1.36	No statistically significant increases relative to background data
pH	Tolerance Interval	0.03	No statistically significant deviations relative to background data
Sodium	Tolerance Interval	0.26	No statistically significant increases relative to background data
Sulfate	Tolerance Interval	0.75	Statistically significant increase relative to background data in MW372
Technetium-99	Tolerance Interval	0.87	No statistically significant increases relative to background data
Toluene	Tolerance Interval	0.00	Statistically significant increase relative to background data in MW366 and MW369
Total Organic Carbon	Tolerance Interval	1.23	No statistically significant increases relative to background data
Total Organic Halides	Tolerance Interval	0.95	No statistically significant increases relative to background data
Uranium	Tolerance Interval	0.92	No statistically significant increases relative to background data

CV: coefficient of variation

Exhibit 9. Tests Summary for Qualified Parameters—LRGA

Parameter	Performed Test	CV Normality Test	Results of Tolerance Interval Test Conducted
Aluminum	Tolerance Interval	2.78	No statistically significant increases relative to background data
Boron	Tolerance Interval	0.68	No statistically significant increases relative to background data
Bromide	Tolerance Interval	0.00	No statistically significant increases relative to background data
Calcium	Tolerance Interval	0.31	Statistically significant increases relative to background data in MW373
Chemical Oxygen Demand (COD)	Tolerance Interval	0.59	No statistically significant increases relative to background data
Chloride	Tolerance Interval	0.16	No statistically significant increases relative to background data
Cobalt	Tolerance Interval	1.17	No statistically significant increases relative to background data
Conductivity	Tolerance Interval	0.26	No statistically significant increases relative to background data
Dissolved Oxygen	Tolerance Interval	0.83	Statistically significant increases relative to background data in MW364
Dissolved Solids	Tolerance Interval	0.30	No statistically significant increases relative to background data
Iron	Tolerance Interval	0.96	No statistically significant increases relative to background data
Magnesium	Tolerance Interval	0.34	No statistically significant increases relative to background data
Manganese	Tolerance Interval	0.62	No statistically significant increases relative to background data
Molybdenum	Tolerance Interval	1.20	No statistically significant increases relative to background data
Nickel	Tolerance Interval	0.90	No statistically significant increases relative to background data
Oxidation-Reduction Potential	Tolerance Interval	1.31	Statistically significant increases relative to background data in MW358, MW361, MW364, MW367, MW370, and MW373
pH	Tolerance Interval	0.03	No statistically significant deviations relative to background data

Exhibit 9. Tests Summary for Qualified Parameters—LRGA (Continued)

Parameter	Performed Test	CV Normality Test	Results of Tolerance Interval Test Conducted
Sodium	Tolerance Interval	0.30	No statistically significant increases relative to background data
Sulfate	Tolerance Interval	1.59	No statistically significant increases relative to background data
Technetium-99	Tolerance Interval	1.73	Statistically significant increases relative to background data in MW364
Total Organic Carbon	Tolerance Interval	1.96	No statistically significant increases relative to background data
Total Organic Halides	Tolerance Interval	0.98	No statistically significant increases relative to background data

CV: coefficient of variation

C-746-U Second Quarter 2014 Statistical Analysis Aluminum

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data	Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 3.300 S= 6.859 CV= 2.078 K factor** = 2.523 TL= 20.604	Well Number: MW371	
Date Collected	Result		Date Collected	LN(Result)
3/18/2002	2.240		3/18/2002	0.806
4/22/2002	0.200		4/22/2002	-1.609
7/15/2002	0.200		7/15/2002	-1.609
10/8/2002	0.200		10/8/2002	-1.609
1/8/2003	0.200		1/8/2003	-1.609
4/3/2003	0.200		4/3/2003	-1.609
7/9/2003	0.200		7/9/2003	-1.609
10/6/2003	0.200		10/6/2003	-1.609
Well Number: MW374		Statistics on Transformed Background Data X= -0.371 S= 1.678 CV= -4.521 K factor** = 2.523 TL= 3.863	Well Number: MW374	
Date Collected	Result		Date Collected	LN(Result)
10/8/2002	21.300		10/8/2002	3.059
1/7/2003	20.000		1/7/2003	2.996
4/2/2003	4.110		4/2/2003	1.413
7/9/2003	1.410		7/9/2003	0.344
10/7/2003	1.090		10/7/2003	0.086
1/6/2004	0.854		1/6/2004	-0.158
4/7/2004	0.200		4/7/2004	-1.609
7/14/2004	0.200		7/14/2004	-1.609

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.135	Downgradient	N/A	MW376	Sidegradient	MW359	-2.002	NO
MW362	15.400	Downgradient	N/A	MW377	Sidegradient	MW362	2.734	NO
MW365	0.046	Downgradient	N/A			MW365	-3.081	NO
MW368	2.140	Sidegradient	N/A			MW368	0.761	NO
MW371	0.369	Upgradient	N/A			MW371	-0.997	NO
MW374	0.028	Upgradient	N/A			MW374	-3.583	NO
MW375	0.018	Sidegradient	N/A			MW375	-4.006	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Beryllium

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells	Statistics on Background Data	Transformed Background Data from Upgradient Wells
Well Number: MW371	X= 0.002	Well Number: MW371
Date Collected Result	S= 0.003	Date Collected LN(Result)
3/18/2002 0.005	CV= 1.125	3/18/2002 -5.298
4/22/2002 0.005	K factor** = 2.523	4/22/2002 -5.298
7/15/2002 0.005	TL= 0.009	7/15/2002 -5.298
10/8/2002 0.001	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	10/8/2002 -6.908
1/8/2003 0.001		1/8/2003 -6.908
4/3/2003 0.001		4/3/2003 -6.908
7/9/2003 0.001		7/9/2003 -6.908
10/6/2003 0.001		10/6/2003 -6.908
Well Number: MW374	Statistics on Transformed Background Data	Well Number: MW374
Date Collected Result	X= -6.462	Date Collected LN(Result)
10/8/2002 0.010	S= 0.812	10/8/2002 -4.605
1/7/2003 0.001	CV= -0.126	1/7/2003 -6.908
4/2/2003 0.001	K factor** = 2.523	4/2/2003 -6.908
7/9/2003 0.001	TL= -4.413	7/9/2003 -6.908
10/7/2003 0.001		10/7/2003 -6.908
1/6/2004 0.001		1/6/2004 -6.908
4/7/2004 0.001		4/7/2004 -6.908
7/14/2004 0.001		7/14/2004 -6.908

Second Quarter 2014 Data Collected in April 2014	Second Quarter 2014 Dry/Partially Dry Wells	Transformed Second Quarter 2014 Data Collected in April 2014
Well No. Result Gradient Result >TL?	Well No. Gradient	Well Number LN(Result) Result >TL?
MW359 0.001 Downgradient N/A	MW376 Sidegradient	MW359 -7.601 NO
MW362 0.000 Downgradient N/A	MW377 Sidegradient	MW362 -7.729 NO
MW365 0.001 Downgradient N/A		MW365 -7.601 NO
MW368 0.001 Sidegradient N/A		MW368 -7.601 NO
MW371 0.001 Upgradient N/A		MW371 -7.601 NO
MW374 0.001 Upgradient N/A		MW374 -7.601 NO
MW375 0.001 Sidegradient N/A		MW375 -7.601 NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Boron

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells				Statistics on Background Data		Transformed Background Data from Upgradient Wells			
Well Number:		MW371		X= 0.650		Well Number:		MW371	
Date Collected		Result		S= 0.805		Date Collected		LN(Result)	
3/18/2002		2.000		CV= 1.238		3/18/2002		0.693	
4/22/2002		2.000		K factor** = 2.523		4/22/2002		0.693	
7/15/2002		2.000		TL= 2.681		7/15/2002		0.693	
10/8/2002		0.200		Because CV is greater than 1, the natural logarithm of background and test well results were calculated.		10/8/2002		-1.609	
1/8/2003		0.200				1/8/2003		-1.609	
4/3/2003		0.200				4/3/2003		-1.609	
7/9/2003		0.200				7/9/2003		-1.609	
10/6/2003		0.200				10/6/2003		-1.609	
Well Number:		MW374		Statistics on Transformed Background Data		Well Number:		MW374	
Date Collected		Result		X= -1.034		Date Collected		LN(Result)	
10/8/2002		2.000		S= 1.030		10/8/2002		0.693	
1/7/2003		0.200		CV= -0.996		1/7/2003		-1.609	
4/2/2003		0.200		K factor** = 2.523		4/2/2003		-1.609	
7/9/2003		0.200		TL= 1.564		7/9/2003		-1.609	
10/7/2003		0.200				10/7/2003		-1.609	
1/6/2004		0.200				1/6/2004		-1.609	
4/7/2004		0.200				4/7/2004		-1.609	
7/14/2004		0.200				7/14/2004		-1.609	

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.015	Downgradient	N/A	MW376	Sidegradient	MW359	-4.200	NO
MW362	0.031	Downgradient	N/A	MW377	Sidegradient	MW362	-3.487	NO
MW365	0.015	Downgradient	N/A			MW365	-4.200	NO
MW368	0.027	Sidegradient	N/A			MW368	-3.612	NO
MW371	0.015	Upgradient	N/A			MW371	-4.200	NO
MW374	0.011	Upgradient	N/A			MW374	-4.528	NO
MW375	0.012	Sidegradient	N/A			MW375	-4.406	NO

Conclusion of Statistical Analysis on Transformed Data								
None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.								

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Bromide

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	1.000
4/22/2002	1.000
7/15/2002	1.000
10/8/2002	1.000
1/8/2003	1.000
4/3/2003	1.000
7/9/2003	1.000
10/6/2003	1.000

Well Number: MW374

Date Collected	Result
10/8/2002	2.100
1/7/2003	2.100
4/2/2003	1.900
7/9/2003	1.000
10/7/2003	1.900
1/6/2004	1.900
4/7/2004	1.800
7/14/2004	1.600

Statistics on Background Data

X= 1.394
S= 0.474
CV= 0.340
K factor** = 2.523
TL= 2.590

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	0.200	Downgradient	NO
MW362	0.161	Downgradient	NO
MW365	0.200	Downgradient	NO
MW368	0.200	Sidegradient	NO
MW371	0.152	Upgradient	NO
MW374	0.964	Upgradient	NO
MW375	0.200	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Calcium

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	17.200
4/22/2002	22.400
7/15/2002	25.500
10/8/2002	26.400
1/8/2003	27.200
4/3/2003	30.300
7/9/2003	25.900
10/6/2003	27.000

Well Number: MW374

Date Collected	Result
10/8/2002	67.300
1/7/2003	60.600
4/2/2003	47.200
7/9/2003	34.700
10/7/2003	37.100
1/6/2004	37.700
4/7/2004	32.200
7/14/2004	26.900

Statistics on Background Data

X= 34.100
S= 13.637
CV= 0.400
K factor** = 2.523
TL= 68.505

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	7.320	Downgradient	NO
MW362	16.900	Downgradient	NO
MW365	22.400	Downgradient	NO
MW368	19.600	Sidegradient	NO
MW371	28.000	Upgradient	NO
MW374	22.000	Upgradient	NO
MW375	15.400	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Chemical Oxygen Demand (COD)

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	35.000
4/22/2002	35.000
7/15/2002	35.000
10/8/2002	35.000
1/8/2003	35.000
4/3/2003	35.000
7/9/2003	35.000
10/6/2003	35.000

Well Number: MW374

Date Collected	Result
10/8/2002	260.000
1/7/2003	214.000
4/2/2003	147.000
7/9/2003	72.000
10/7/2003	56.000
1/6/2004	68.000
4/7/2004	35.000
7/14/2004	35.000

Statistics on Background Data

X= 72.938
S= 70.749
CV= 0.970
K factor** = 2.523
TL= 251.437

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	20.000	Downgradient	NO
MW362	20.000	Downgradient	NO
MW365	20.000	Downgradient	NO
MW368	7.490	Sidegradient	NO
MW371	7.490	Upgradient	NO
MW374	9.930	Upgradient	NO
MW375	20.000	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Chloride

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
7/15/2002	8.300
10/8/2002	7.600
1/8/2003	7.700
4/3/2003	8.800
7/9/2003	8.100
10/6/2003	8.600
1/7/2004	7.600
4/6/2004	7.600

Well Number: MW374

Date Collected	Result
10/8/2002	199.200
1/7/2003	199.700
4/2/2003	171.800
7/9/2003	178.700
10/7/2003	175.600
1/6/2004	170.400
4/7/2004	156.400
7/14/2004	144.700

Statistics on Background Data

X= 91.300
S= 86.959
CV= 0.952
K factor** = 2.523
TL= 310.697

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	1.300	Downgradient	NO
MW362	9.810	Downgradient	NO
MW365	4.620	Downgradient	NO
MW368	2.330	Sidegradient	NO
MW371	6.600	Upgradient	NO
MW374	82.200	Upgradient	NO
MW375	4.660	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Cobalt

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 0.007 S= 0.009 CV= 1.314 K factor** = 2.523 TL= 0.031		Well Number: MW371	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	0.025			3/18/2002	-3.689
4/22/2002	0.025			4/22/2002	-3.689
7/15/2002	0.025			7/15/2002	-3.689
10/8/2002	0.001			10/8/2002	-6.908
1/8/2003	0.001			1/8/2003	-6.908
4/3/2003	0.001			4/3/2003	-6.908
7/9/2003	0.001			7/9/2003	-6.908
10/6/2003	0.001			10/6/2003	-6.908
Well Number: MW374		X= -5.843 S= 1.392 CV= -0.238 K factor** = 2.523 TL= -2.331		Well Number: MW374	
Date Collected	Result			Date Collected	LN(Result)
10/8/2002	0.010			10/8/2002	-4.605
1/7/2003	0.010			1/7/2003	-4.605
4/2/2003	0.010			4/2/2003	-4.605
7/9/2003	0.002			7/9/2003	-6.432
10/7/2003	0.001			10/7/2003	-6.908
1/6/2004	0.001			1/6/2004	-6.908
4/7/2004	0.001			4/7/2004	-6.908
7/14/2004	0.001			7/14/2004	-6.908

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.000	Downgradient	N/A	MW376	Sidegradient	MW359	-8.294	NO
MW362	0.004	Downgradient	N/A	MW377	Sidegradient	MW362	-5.638	NO
MW365	0.002	Downgradient	N/A			MW365	-6.282	NO
MW368	0.001	Sidegradient	N/A			MW368	-6.623	NO
MW371	0.000	Upgradient	N/A			MW371	-8.680	NO
MW374	0.001	Upgradient	N/A			MW374	-6.908	NO
MW375	0.001	Sidegradient	N/A			MW375	-7.264	NO

Conclusion of Statistical Analysis on Transformed Data
None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Conductivity

UCRS
UNITS: umho/cm

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	541.000
4/22/2002	643.000
7/15/2002	632.000
10/8/2002	631.000
1/8/2003	680.000
4/3/2003	749.000
7/9/2003	734.000
10/6/2003	753.000

Well Number: MW374

Date Collected	Result
3/18/2002	1007.00
10/8/2002	1680.00
1/7/2003	1715.90
4/2/2003	172.000
7/9/2003	1231.00
10/7/2003	1214.00
1/6/2004	1172.00
4/7/2004	1145.00

Statistics on Background Data

X= 918.744
S= 417.257
CV= 0.454
K factor** = 2.523
TL= 1971.483

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	255.00	Downgradient	NO
MW362	597.00	Downgradient	NO
MW365	449.00	Downgradient	NO
MW368	798.00	Sidegradient	NO
MW371	672.00	Upgradient	NO
MW374	714.00	Upgradient	NO
MW375	432.00	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Copper

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 0.056 S= 0.072 CV= 1.275 K factor** = 2.523 TL= 0.237		Well Number: MW371	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	0.025			3/18/2002	-3.689
4/22/2002	0.025			4/22/2002	-3.689
7/15/2002	0.050			7/15/2002	-2.996
10/8/2002	0.020			10/8/2002	-3.912
1/8/2003	0.020			1/8/2003	-3.912
4/3/2003	0.020			4/3/2003	-3.912
7/9/2003	0.020			7/9/2003	-3.912
10/6/2003	0.020			10/6/2003	-3.912
Well Number: MW374		X= -3.395 S= 0.915 CV= -0.270 K factor** = 2.523 TL= -1.086		Well Number: MW374	
Date Collected	Result			Date Collected	LN(Result)
10/8/2002	0.200			10/8/2002	-1.609
1/7/2003	0.200			1/7/2003	-1.609
4/2/2003	0.200			4/2/2003	-1.609
7/9/2003	0.020			7/9/2003	-3.912
10/7/2003	0.020			10/7/2003	-3.912
1/6/2004	0.020			1/6/2004	-3.912
4/7/2004	0.020			4/7/2004	-3.912
7/14/2004	0.020			7/14/2004	-3.912

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.004	Downgradient	N/A	MW376	Sidegradient	MW359	-5.630	NO
MW362	0.008	Downgradient	N/A	MW377	Sidegradient	MW362	-4.847	NO
MW365	0.002	Downgradient	N/A			MW365	-6.161	NO
MW368	0.002	Sidegradient	N/A			MW368	-6.230	NO
MW371	0.001	Upgradient	N/A			MW371	-6.645	NO
MW374	0.001	Upgradient	N/A			MW374	-7.308	NO
MW375	0.001	Sidegradient	N/A			MW375	-7.419	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Dissolved Oxygen

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	2.260
4/22/2002	1.150
7/15/2002	0.940
10/8/2002	0.740
1/8/2003	2.620
4/3/2003	1.500
7/9/2003	1.660
10/6/2003	1.280

Well Number: MW374

Date Collected	Result
3/18/2002	0.600
10/8/2002	0.670
1/7/2003	0.230
4/2/2003	0.650
7/9/2003	0.920
10/7/2003	0.990
1/6/2004	1.110
4/7/2004	0.880

Statistics on Background Data

X= 1.138
S= 0.621
CV= 0.546
K factor** = 2.523
TL= 2.704

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result > TL?
MW359	4.910	Downgradient	YES
MW362	8.000	Downgradient	YES
MW365	5.490	Downgradient	YES
MW368	5.470	Sidegradient	YES
MW371	3.870	Upgradient	YES
MW374	3.440	Upgradient	YES
MW375	2.170	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW359

MW362

MW365

MW368

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

**C-746-U Second Quarter 2014 Statistical Analysis
Dissolved Oxygen (Continued)**

**UCRS
UNITS: mg/L**

MW371

MW374

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Dissolved Solids

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	274.000
4/22/2002	409.000
7/15/2002	418.000
10/8/2002	424.000
1/8/2003	431.000
4/3/2003	444.000
7/9/2003	445.000
10/6/2003	438.000

Well Number: MW374

Date Collected	Result
10/8/2002	1136.00
1/7/2003	1101.00
4/2/2003	863.000
7/9/2003	682.000
10/7/2003	589.000
1/6/2004	603.000
4/7/2004	601.000
7/14/2004	582.000

Statistics on Background Data

X= 590.000
S= 248.068
CV= 0.420
K factor** = 2.523
TL= 1215.876

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	154.00	Downgradient	NO
MW362	671.00	Downgradient	NO
MW365	279.00	Downgradient	NO
MW368	639.00	Sidegradient	NO
MW371	620.00	Upgradient	NO
MW374	411.00	Upgradient	NO
MW375	283.00	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Iron

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	1.310
4/22/2002	0.913
7/15/2002	0.881
10/8/2002	3.860
1/8/2003	1.880
4/3/2003	3.180
7/9/2003	0.484
10/6/2003	2.720

Well Number: MW374

Date Collected	Result
10/8/2002	23.000
1/7/2003	13.900
4/2/2003	14.000
7/9/2003	14.200
10/7/2003	7.920
1/6/2004	7.860
4/7/2004	4.820
7/14/2004	4.870

Statistics on Background Data

X= 6.612
S= 6.487
CV= 0.981
K factor** = 2.523
TL= 22.979

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	0.245	Downgradient	NO
MW362	9.910	Downgradient	NO
MW365	0.096	Downgradient	NO
MW368	1.160	Sidegradient	NO
MW371	0.414	Upgradient	NO
MW374	0.081	Upgradient	NO
MW375	0.906	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Magnesium

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	7.100
4/22/2002	9.770
7/15/2002	10.400
10/8/2002	10.200
1/8/2003	10.700
4/3/2003	11.900
7/9/2003	10.800
10/6/2003	10.900

Well Number: MW374

Date Collected	Result
10/8/2002	20.000
1/7/2003	16.100
4/2/2003	13.100
7/9/2003	10.300
10/7/2003	11.100
1/6/2004	11.000
4/7/2004	9.690
7/14/2004	8.490

Statistics on Background Data

X= 11.347
S= 3.019
CV= 0.266
K factor** = 2.523
TL= 18.963

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	4.200	Downgradient	NO
MW362	7.400	Downgradient	NO
MW365	10.000	Downgradient	NO
MW368	5.960	Sidegradient	NO
MW371	10.600	Upgradient	NO
MW374	5.800	Upgradient	NO
MW375	5.850	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Manganese

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	0.063
4/22/2002	0.067
7/15/2002	0.074
10/8/2002	0.052
1/8/2003	0.039
4/3/2003	0.055
7/9/2003	0.055
10/6/2003	0.054

Well Number: MW374

Date Collected	Result
10/8/2002	0.596
1/7/2003	0.565
4/2/2003	0.675
7/9/2003	0.397
10/7/2003	0.312
1/6/2004	0.299
4/7/2004	0.329
7/14/2004	0.342

Statistics on Background Data

X= 0.248
S= 0.222
CV= 0.894
K factor** = 2.523
TL= 0.809

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	0.003	Downgradient	NO
MW362	0.042	Downgradient	NO
MW365	0.056	Downgradient	NO
MW368	0.009	Sidegradient	NO
MW371	0.016	Upgradient	NO
MW374	0.002	Upgradient	NO
MW375	0.022	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Molybdenum

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 0.006 S= 0.010 CV= 1.650 K factor** = 2.523 TL= 0.030		Well Number: MW371	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	0.025			3/18/2002	-3.689
4/22/2002	0.025			4/22/2002	-3.689
7/15/2002	0.025			7/15/2002	-3.689
10/8/2002	0.001			10/8/2002	-6.908
1/8/2003	0.001			1/8/2003	-6.717
4/3/2003	0.001			4/3/2003	-6.908
7/9/2003	0.001			7/9/2003	-6.803
10/6/2003	0.001			10/6/2003	-6.908
Well Number: MW374		X= -6.108 S= 1.239 CV= -0.203 K factor** = 2.523 TL= -2.983		Well Number: MW374	
Date Collected	Result			Date Collected	LN(Result)
10/8/2002	0.002			10/8/2002	-6.110
1/7/2003	0.002			1/7/2003	-6.210
4/2/2003	0.002			4/2/2003	-6.444
7/9/2003	0.002			7/9/2003	-6.024
10/7/2003	0.001			10/7/2003	-6.908
1/6/2004	0.001			1/6/2004	-6.908
4/7/2004	0.001			4/7/2004	-6.908
7/14/2004	0.001			7/14/2004	-6.908

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.001	Downgradient	N/A	MW376	Sidegradient	MW359	-7.601	NO
MW362	0.002	Downgradient	N/A	MW377	Sidegradient	MW362	-6.413	NO
MW365	0.001	Downgradient	N/A			MW365	-7.543	NO
MW368	0.006	Sidegradient	N/A			MW368	-5.192	NO
MW371	0.000	Upgradient	N/A			MW371	-8.377	NO
MW374	0.000	Upgradient	N/A			MW374	-8.422	NO
MW375	0.001	Sidegradient	N/A			MW375	-7.601	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Nickel

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	0.050
4/22/2002	0.050
7/15/2002	0.050
10/8/2002	0.012
1/8/2003	0.005
4/3/2003	0.005
7/9/2003	0.005
10/6/2003	0.005

Well Number: MW374

Date Collected	Result
10/8/2002	0.050
1/7/2003	0.050
4/2/2003	0.050
7/9/2003	0.008
10/7/2003	0.005
1/6/2004	0.005
4/7/2004	0.005
7/14/2004	0.005

Statistics on Background Data

X= 0.023
S= 0.022
CV= 0.980
K factor** = 2.523
TL= 0.078

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	0.001	Downgradient	NO
MW362	0.008	Downgradient	NO
MW365	0.007	Downgradient	NO
MW368	0.006	Sidegradient	NO
MW371	0.001	Upgradient	NO
MW374	0.001	Upgradient	NO
MW375	0.001	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Oxidation-Reduction Potential

UCRS
UNITS: mV

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells	Statistics on Background Data	Transformed Background Data from Upgradient Wells
Well Number: MW371	X= 22.281 S= 78.889 CV= 3.541 K factor** = 2.523 TL= 221.319	Well Number: MW371
Date Collected Result		Date Collected LN(Result)
3/18/2002 75.000		3/18/2002 4.317
4/22/2002 165.000		4/22/2002 5.106
7/15/2002 65.000		7/15/2002 4.174
4/3/2003 -19.000		4/3/2003 #Func!
7/9/2003 114.000		7/9/2003 4.736
10/6/2003 -22.000		10/6/2003 #Func!
1/7/2004 20.500		1/7/2004 3.020
4/6/2004 113.000		4/6/2004 4.727
Well Number: MW374		Well Number: MW374
Date Collected Result		Date Collected LN(Result)
3/18/2002 135.000		3/18/2002 4.905
4/2/2003 -56.000		4/2/2003 #Func!
7/9/2003 -68.000		7/9/2003 #Func!
10/7/2003 -50.000		10/7/2003 #Func!
1/6/2004 -85.000		1/6/2004 #Func!
4/7/2004 6.000		4/7/2004 1.792
7/14/2004 -38.000		7/14/2004 #Func!
10/7/2004 1.000		10/7/2004 0.000

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Statistics on Transformed Background Data
X = error S = error CV = error K factor** = 2.523 TL# = 5.106

Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Second Quarter 2014 Data Collected in April 2014	Second Quarter 2014 Dry/Partially Dry Wells	Transformed Second Quarter 2014 Data Collected in April 2014
Well No. Result Gradient Result >TL?	Well No. Gradient	Well Number LN(Result) Result >TL?
MW359 442.000 Downgradient N/A	MW376 Sidegradient	MW359 6.091 YES
MW362 382.000 Downgradient N/A	MW377 Sidegradient	MW362 5.945 YES
MW365 410.000 Downgradient N/A		MW365 6.016 YES
MW368 417.000 Sidegradient N/A		MW368 6.033 YES
MW371 476.000 Upgradient N/A		MW371 6.165 YES
MW374 499.000 Upgradient N/A		MW374 6.213 YES
MW375 329.000 Sidegradient N/A		MW375 5.796 YES

Conclusion of Statistical Analysis on Transformed Data
The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.
MW359
MW362
MW365

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

**C-746-U Second Quarter 2014 Statistical Analysis
Oxidation-Reduction Potential (Continued)**

**UCRS
UNITS: mV**

MW368
MW371
MW374
MW375

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis PCB, Total

UCRS
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	1.000
4/22/2002	0.170
7/15/2002	0.170
7/9/2003	0.170
10/6/2003	0.170
7/13/2004	0.180
7/25/2005	0.170
4/5/2006	0.180

Well Number: MW374

Date Collected	Result
7/9/2003	0.170
10/7/2003	0.170
7/14/2004	0.180
7/26/2005	0.170
4/6/2006	0.180
7/10/2006	0.170
10/12/2006	0.170
1/8/2007	0.170

Statistics on Background Data

X= 0.224
S= 0.207
CV= 0.922
K factor** = 2.523
TL= 0.746

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	0.102	Downgradient	NO
MW362	0.098	Downgradient	NO
MW365	0.180	Downgradient	NO
MW368	0.168	Sidegradient	NO
MW371	0.106	Upgradient	NO
MW374	0.098	Upgradient	NO
MW375	0.102	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis PCB-1242

UCRS
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number:	MW371	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	X= 0.159 S= 0.224 CV= 1.409 K factor** = 2.523 TL= 0.726	Well Number:	MW371
Date Collected	Result		Date Collected	LN(Result)	
3/18/2002	1.000		3/18/2002	0.000	
4/22/2002	0.110		4/22/2002	-2.207	
7/15/2002	0.110		7/15/2002	-2.207	
7/9/2003	0.130		7/9/2003	-2.040	
10/6/2003	0.090		10/6/2003	-2.408	
7/13/2004	0.100		7/13/2004	-2.303	
7/25/2005	0.090		7/25/2005	-2.408	
4/5/2006	0.100		4/5/2006	-2.303	
Well Number:	MW374	Statistics on Transformed Background Data		Well Number:	MW374
Date Collected	Result	X= -2.134 S= 0.579 CV= -0.272 K factor** = 2.523 TL= -0.672	Date Collected	LN(Result)	
7/9/2003	0.130	7/9/2003	-2.040		
10/7/2003	0.090	10/7/2003	-2.408		
7/14/2004	0.100	7/14/2004	-2.303		
7/26/2005	0.100	7/26/2005	-2.303		
4/6/2006	0.100	4/6/2006	-2.303		
7/10/2006	0.100	7/10/2006	-2.303		
7/10/2006	0.100	7/10/2006	-2.303		
10/12/2006	0.100	10/12/2006	-2.303		

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.102	Downgradient	N/A	MW376	Sidegradient	MW359	-2.283	NO
MW362	0.098	Downgradient	N/A	MW377	Sidegradient	MW362	-2.323	NO
MW365	0.180	Downgradient	N/A			MW365	-1.715	NO
MW368	0.168	Sidegradient	N/A			MW368	-1.784	NO
MW371	0.106	Upgradient	N/A			MW371	-2.244	NO
MW374	0.098	Upgradient	N/A			MW374	-2.323	NO
MW375	0.102	Sidegradient	N/A			MW375	-2.283	NO

Conclusion of Statistical Analysis on Transformed Data
None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis pH

UCRS
UNITS: Std Unit

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL and LL. If the test well result exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	6.300
4/22/2002	6.500
7/15/2002	6.500
10/8/2002	6.600
1/8/2003	6.600
4/3/2003	6.900
7/9/2003	6.700
10/6/2003	7.000

Well Number: MW374

Date Collected	Result
3/18/2002	5.750
10/8/2002	6.600
1/7/2003	6.820
4/2/2003	6.860
7/9/2003	6.700
10/7/2003	6.600
1/6/2004	6.900
4/7/2004	6.580

Statistics on Background Data

X= 6.619
S= 0.295
CV= 0.045
K factor** = 2.904
TL= 7.475
LL= 5.764

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?	Result <LL?
MW359	5.890	Downgradient	NO	NO
MW362	6.850	Downgradient	NO	NO
MW365	6.320	Downgradient	NO	NO
MW368	6.630	Sidegradient	NO	NO
MW371	6.740	Upgradient	NO	NO
MW374	6.590	Upgradient	NO	NO
MW375	6.480	Sidegradient	NO	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit or were less than the Lower Tolerance Limit, which is statistically significant evidence that these wells have no deviated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$, LL Lower Tolerance Limit, $LL = X - (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** The K-factor was adjusted for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K- factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, <http://www.itl.nist.gov/div898/handbook/>, 2009.

C-746-U Second Quarter 2014 Statistical Analysis Sodium

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	129.000
4/22/2002	131.000
7/15/2002	127.000
10/8/2002	123.000
1/8/2003	128.000
4/3/2003	144.000
7/9/2003	126.000
10/6/2003	120.000

Well Number: MW374

Date Collected	Result
10/8/2002	336.000
1/7/2003	329.000
4/2/2003	287.000
7/9/2003	181.000
10/7/2003	182.000
1/6/2004	206.000
4/7/2004	182.000
7/14/2004	198.000

Statistics on Background Data

X= 183.063
S= 73.222
CV= 0.400
K factor** = 2.523
TL= 367.800

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW359	42.700	Downgradient	NO
MW362	121.00	Downgradient	NO
MW365	58.800	Downgradient	NO
MW368	191.00	Sidegradient	NO
MW371	128.00	Upgradient	NO
MW374	124.00	Upgradient	NO
MW375	82.400	Sidegradient	NO

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Sulfate

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW371

Date Collected	Result
3/18/2002	16.300
4/22/2002	8.600
7/15/2002	6.700
10/8/2002	5.000
1/8/2003	5.000
4/3/2003	5.000
7/9/2003	5.000
10/6/2003	5.000

Well Number: MW374

Date Collected	Result
10/8/2002	5.000
1/7/2003	5.000
4/2/2003	5.000
7/9/2003	5.600
10/7/2003	5.000
1/6/2004	5.000
4/7/2004	11.300
7/14/2004	5.000

Statistics on Background Data

X= 6.469
S= 3.153
CV= 0.487
K factor** = 2.523
TL= 14.423

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result > TL?
MW359	58.900	Downgradient	YES
MW362	14.400	Downgradient	NO
MW365	69.500	Downgradient	YES
MW368	67.700	Sidegradient	YES
MW371	16.400	Upgradient	YES
MW374	5.630	Upgradient	NO
MW375	37.600	Sidegradient	YES

Second Quarter 2014 Dry/Partially Dry Wells

Well No.	Gradient
MW376	Sidegradient
MW377	Sidegradient

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW359

MW365

MW368

MW371

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

**C-746-U Second Quarter 2014 Statistical Analysis
Sulfate (Continued)**

**UCRS
UNITS: mg/L**

MW375

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / [\text{count of background results} - 1]]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Total Organic Carbon (TOC)

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data	Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 17.631 S= 24.314 CV= 1.379 K factor** = 2.523 TL= 78.977	Well Number: MW371	
Date Collected	Result		Date Collected	LN(Result)
3/18/2002	11.100		3/18/2002	2.407
4/22/2002	7.000		4/22/2002	1.946
7/15/2002	4.100		7/15/2002	1.411
10/8/2002	6.000		10/8/2002	1.792
1/8/2003	5.300		1/8/2003	1.668
4/3/2003	5.300		4/3/2003	1.668
7/9/2003	2.900		7/9/2003	1.065
10/6/2003	3.200		10/6/2003	1.163
Well Number: MW374		X= 2.318 S= 0.979 CV= 0.422 K factor** = 2.523 TL= 4.788	Well Number: MW374	
Date Collected	Result		Date Collected	LN(Result)
10/8/2002	90.000		10/8/2002	4.500
1/7/2003	64.000		1/7/2003	4.159
4/2/2003	25.000		4/2/2003	3.219
7/9/2003	16.000		7/9/2003	2.773
10/7/2003	13.000		10/7/2003	2.565
1/6/2004	10.000		1/6/2004	2.303
4/7/2004	7.200		4/7/2004	1.974
7/14/2004	12.000		7/14/2004	2.485

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.877	Downgradient	N/A	MW376	Sidegradient	MW359	-0.131	NO
MW362	2.570	Downgradient	N/A	MW377	Sidegradient	MW362	0.944	NO
MW365	1.890	Downgradient	N/A			MW365	0.637	NO
MW368	2.380	Sidegradient	N/A			MW368	0.867	NO
MW371	2.270	Upgradient	N/A			MW371	0.820	NO
MW374	2.100	Upgradient	N/A			MW374	0.742	NO
MW375	2.690	Sidegradient	N/A			MW375	0.990	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Total Organic Halides (TOX)

UCRS
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 214.094 S= 231.089 CV= 1.079 K factor** = 2.523 TL= 797.131		Well Number: MW371	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	50.000			3/18/2002	3.912
4/22/2002	105.000			4/22/2002	4.654
7/15/2002	70.000			7/15/2002	4.248
10/8/2002	52.000			10/8/2002	3.951
1/8/2003	20.200			1/8/2003	3.006
4/3/2003	104.000			4/3/2003	4.644
7/9/2003	34.200			7/9/2003	3.532
10/6/2003	46.100			10/6/2003	3.831
Well Number: MW374		X= 4.867 S= 1.065 CV= 0.219 K factor** = 2.523 TL= 7.554		Well Number: MW374	
Date Collected	Result			Date Collected	LN(Result)
10/8/2002	903.000			10/8/2002	6.806
1/7/2003	539.000			1/7/2003	6.290
4/2/2003	295.000			4/2/2003	5.687
7/9/2003	272.000			7/9/2003	5.606
10/7/2003	197.000			10/7/2003	5.283
1/6/2004	330.000			1/6/2004	5.799
4/7/2004	183.000			4/7/2004	5.209
7/14/2004	225.000			7/14/2004	5.416

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	10.000	Downgradient	N/A	MW376	Sidegradient	MW359	2.303	NO
MW362	13.000	Downgradient	N/A	MW377	Sidegradient	MW362	2.565	NO
MW365	17.000	Downgradient	N/A			MW365	2.833	NO
MW368	15.200	Sidegradient	N/A			MW368	2.721	NO
MW371	7.220	Upgradient	N/A			MW371	1.977	NO
MW374	17.000	Upgradient	N/A			MW374	2.833	NO
MW375	40.000	Sidegradient	N/A			MW375	3.689	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Uranium

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 0.007 S= 0.012 CV= 1.678 K factor** = 2.523 TL= 0.037		Well Number: MW371	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	0.001			3/18/2002	-6.908
4/22/2002	0.001			4/22/2002	-6.908
7/15/2002	0.001			7/15/2002	-6.908
10/8/2002	0.027			10/8/2002	-3.612
1/8/2003	0.001			1/8/2003	-6.908
4/3/2003	0.001			4/3/2003	-6.908
7/9/2003	0.001	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.		7/9/2003	-6.822
10/6/2003	0.001			10/6/2003	-6.908
Well Number: MW374				Well Number: MW374	
Date Collected	Result			Date Collected	LN(Result)
10/8/2002	0.044			10/8/2002	-3.128
1/7/2003	0.011			1/7/2003	-4.510
4/2/2003	0.009			4/2/2003	-4.705
7/9/2003	0.007			7/9/2003	-4.970
10/7/2003	0.001			10/7/2003	-6.908
1/6/2004	0.003			1/6/2004	-5.760
4/7/2004	0.003			4/7/2004	-5.960
7/14/2004	0.002	7/14/2004	-6.320		

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.000	Downgradient	N/A	MW376	Sidegradient	MW359	-8.805	NO
MW362	0.007	Downgradient	N/A	MW377	Sidegradient	MW362	-5.018	NO
MW365	0.000	Downgradient	N/A			MW365	-9.421	NO
MW368	0.002	Sidegradient	N/A			MW368	-6.463	NO
MW371	0.002	Upgradient	N/A			MW371	-6.171	NO
MW374	0.001	Upgradient	N/A			MW374	-7.419	NO
MW375	0.000	Sidegradient	N/A			MW375	-8.874	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Vanadium

UCRS
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW371		X= 0.055 S= 0.072 CV= 1.319 K factor** = 2.523 TL= 0.237		Well Number: MW371	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	0.025			3/18/2002	-3.689
4/22/2002	0.025			4/22/2002	-3.689
7/15/2002	0.025			7/15/2002	-3.689
10/8/2002	0.020			10/8/2002	-3.912
1/8/2003	0.020			1/8/2003	-3.912
4/3/2003	0.020			4/3/2003	-3.912
7/9/2003	0.020	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.		7/9/2003	-3.912
10/6/2003	0.020			10/6/2003	-3.912
Well Number: MW374				Well Number: MW374	
Date Collected	Result			Date Collected	LN(Result)
10/8/2002	0.200			10/8/2002	-1.609
1/7/2003	0.200			1/7/2003	-1.609
4/2/2003	0.200			4/2/2003	-1.609
7/9/2003	0.020			7/9/2003	-3.912
10/7/2003	0.020	X= -3.438 S= 0.912 CV= -0.265 K factor** = 2.523 TL= -1.138		10/7/2003	-3.912
1/6/2004	0.020			1/6/2004	-3.912
4/7/2004	0.020			4/7/2004	-3.912
7/14/2004	0.020			7/14/2004	-3.912

Second Quarter 2014 Data Collected in April 2014				Second Quarter 2014 Dry/Partially Dry Wells		Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well No.	Gradient	Well Number	LN(Result)	Result >TL?
MW359	0.005	Downgradient	N/A	MW376	Sidegradient	MW359	-5.298	NO
MW362	0.004	Downgradient	N/A	MW377	Sidegradient	MW362	-5.426	NO
MW365	0.005	Downgradient	N/A			MW365	-5.298	NO
MW368	0.008	Sidegradient	N/A			MW368	-4.828	NO
MW371	0.003	Upgradient	N/A			MW371	-5.885	NO
MW374	0.005	Upgradient	N/A			MW374	-5.298	NO
MW375	0.005	Sidegradient	N/A			MW375	-5.298	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis 2-Butanone

URGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	50.000
4/22/2002	50.000
7/15/2002	10.000
10/8/2002	10.000
1/8/2003	10.000
4/3/2003	10.000
7/8/2003	10.000
10/6/2003	10.000

Well Number: MW372

Date Collected	Result
3/19/2002	50.000
4/23/2002	50.000
7/16/2002	10.000
10/8/2002	10.000
1/7/2003	10.000
4/2/2003	10.000
7/9/2003	10.000
10/7/2003	10.000

Statistics on Background Data

X= 20.000
S= 17.889
CV= 0.894
K factor = 2.523**
TL= 65.133

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	5.000	Downgradient	NO
MW360	5.000	Downgradient	NO
MW363	5.000	Downgradient	NO
MW366	2.870	Sidegradient	NO
MW369	5.000	Upgradient	NO
MW372	5.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Aluminum

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW369		X= 0.625 S= 0.774 CV= 1.239 K factor** = 2.523 TL= 2.578		Well Number: MW369	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	0.255			3/18/2002	-1.366
4/22/2002	0.200			4/22/2002	-1.609
7/15/2002	0.322			7/15/2002	-1.133
10/8/2002	0.200			10/8/2002	-1.609
1/8/2003	0.200			1/8/2003	-1.609
4/3/2003	0.200			4/3/2003	-1.609
7/8/2003	0.200			7/8/2003	-1.609
10/6/2003	0.689			10/6/2003	-0.373
Well Number: MW372		X= -0.973 S= 0.935 CV= -0.961 K factor** = 2.523 TL= 1.386		Well Number: MW372	
Date Collected	Result			Date Collected	LN(Result)
3/19/2002	2.610			3/19/2002	0.959
4/23/2002	0.200			4/23/2002	-1.609
7/16/2002	1.140			7/16/2002	0.131
10/8/2002	0.862			10/8/2002	-0.149
1/7/2003	2.320			1/7/2003	0.842
4/2/2003	0.200			4/2/2003	-1.609
7/9/2003	0.200			7/9/2003	-1.609
10/7/2003	0.200			10/7/2003	-1.609

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.050	Downgradient	N/A
MW360	0.131	Downgradient	N/A
MW363	0.050	Downgradient	N/A
MW366	0.050	Sidegradient	N/A
MW369	0.620	Upgradient	N/A
MW372	0.049	Upgradient	N/A

Transformed Second Quarter 2014 Data Collected in April 2014

Well Number	LN(Result)	Result >TL?
MW357	-2.996	NO
MW360	-2.033	NO
MW363	-2.996	NO
MW366	-2.996	NO
MW369	-0.478	NO
MW372	-3.012	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Boron

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	2.000
4/22/2002	2.000
7/15/2002	2.000
10/8/2002	0.200
1/8/2003	0.200
4/3/2003	0.200
7/8/2003	0.200
10/6/2003	0.200

Well Number: MW372

Date Collected	Result
3/19/2002	2.000
4/23/2002	2.000
7/16/2002	2.000
10/8/2002	0.492
1/7/2003	0.492
4/2/2003	0.600
7/9/2003	0.570
10/7/2003	0.604

Statistics on Background Data

X= 0.985
S= 0.825
CV= 0.838
K factor = 2.523**
TL= 3.067

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.332	Downgradient	NO
MW360	0.060	Downgradient	NO
MW363	0.017	Downgradient	NO
MW366	0.077	Sidegradient	NO
MW369	0.011	Upgradient	NO
MW372	1.700	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Bromide

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	1.000
4/22/2002	1.000
7/15/2002	1.000
10/8/2002	1.000
1/8/2003	1.000
4/3/2003	1.000
7/8/2003	1.000
10/6/2003	1.000

Well Number: MW372

Date Collected	Result
3/19/2002	1.000
4/23/2002	1.000
7/16/2002	1.000
10/8/2002	1.000
1/7/2003	1.000
4/2/2003	1.000
7/9/2003	1.000
10/7/2003	1.000

Statistics on Background Data

X= 1.000
S= 0.000
CV= 0.000
K factor = 2.523**
TL= 1.000

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.351	Downgradient	NO
MW360	0.147	Downgradient	NO
MW363	0.135	Downgradient	NO
MW366	0.497	Sidegradient	NO
MW369	0.337	Upgradient	NO
MW372	0.624	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Calcium

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	29.500
4/22/2002	29.800
7/15/2002	25.300
10/8/2002	21.900
1/8/2003	20.900
4/3/2003	22.200
7/8/2003	22.900
10/6/2003	21.700

Well Number: MW372

Date Collected	Result
3/19/2002	41.500
4/23/2002	43.600
7/16/2002	40.400
10/8/2002	38.800
1/7/2003	41.100
4/2/2003	42.900
7/9/2003	35.100
10/7/2003	46.600

Statistics on Background Data

X= 32.763
S= 9.391
CV= 0.287
K factor = 2.523**
TL= 56.456

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	27.100	Downgradient	NO
MW360	24.800	Downgradient	NO
MW363	25.300	Downgradient	NO
MW366	28.500	Sidegradient	NO
MW369	16.400	Upgradient	NO
MW372	70.500	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Chemical Oxygen Demand (COD)

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	35.000
4/22/2002	35.000
7/15/2002	35.000
10/8/2002	50.000
1/8/2003	35.000
4/3/2003	35.000
7/8/2003	35.000
10/6/2003	35.000

Well Number: MW372

Date Collected	Result
3/19/2002	35.000
4/23/2002	35.000
7/16/2002	35.000
10/8/2002	35.000
1/7/2003	35.000
4/2/2003	35.000
7/9/2003	35.000
10/7/2003	35.000

Statistics on Background Data

X= 35.938
S= 3.750
CV= 0.104
K factor = 2.523**
TL= 45.399

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	20.000	Downgradient	NO
MW360	20.000	Downgradient	NO
MW363	20.000	Downgradient	NO
MW366	7.490	Sidegradient	NO
MW369	20.000	Upgradient	NO
MW372	20.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Chloride

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
7/15/2002	48.300
10/8/2002	47.700
1/8/2003	45.700
4/3/2003	47.400
7/8/2003	55.900
10/6/2003	47.400
1/7/2004	45.500
4/7/2004	43.400

Well Number: MW372

Date Collected	Result
7/16/2002	39.800
10/8/2002	41.000
1/7/2003	39.400
4/2/2003	39.200
7/9/2003	39.800
10/7/2003	40.000
1/5/2004	43.400
4/5/2004	42.000

Statistics on Background Data

X= 44.119
S= 4.554
CV= 0.103
K factor = 2.523**
TL= 55.607

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	31.500	Downgradient	NO
MW360	9.870	Downgradient	NO
MW363	29.700	Downgradient	NO
MW366	40.100	Sidegradient	NO
MW369	31.000	Upgradient	NO
MW372	56.300	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis cis-1,2-Dichloroethene

URGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	5.000
4/22/2002	5.000
7/15/2002	5.000
10/8/2002	5.000
1/8/2003	5.000
4/3/2003	5.000
7/8/2003	5.000
10/6/2003	5.000

Well Number: MW372

Date Collected	Result
3/19/2002	5.000
4/23/2002	5.000
7/16/2002	5.000
10/8/2002	5.000
1/7/2003	5.000
4/2/2003	5.000
7/9/2003	5.000
10/7/2003	5.000

Statistics on Background Data

X= 5.000
S= 0.000
CV= 0.000
K factor = 2.523**
TL= 5.000

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	1.000	Downgradient	NO
MW360	1.000	Downgradient	NO
MW363	1.000	Downgradient	NO
MW366	1.000	Sidegradient	NO
MW369	1.000	Upgradient	NO
MW372	0.310	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Cobalt

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	0.025
4/22/2002	0.025
7/15/2002	0.025
10/8/2002	0.009
1/8/2003	0.005
4/3/2003	0.006
7/8/2003	0.054
10/6/2003	0.069

Well Number: MW372

Date Collected	Result
3/19/2002	0.025
4/23/2002	0.025
7/16/2002	0.025
10/8/2002	0.002
1/7/2003	0.015
4/2/2003	0.012
7/9/2003	0.065
10/7/2003	0.008

Statistics on Background Data

X= 0.025
S= 0.021
CV= 0.845
K factor = 2.523**
TL= 0.077

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.005	Downgradient	NO
MW360	0.019	Downgradient	NO
MW363	0.001	Downgradient	NO
MW366	0.000	Sidegradient	NO
MW369	0.012	Upgradient	NO
MW372	0.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Conductivity

URGA
UNITS: umho/cm

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	388.000
4/22/2002	404.000
7/15/2002	394.000
10/8/2002	403.000
1/8/2003	520.000
4/3/2003	487.000
7/8/2003	478.000
10/6/2003	476.000

Well Number: MW372

Date Collected	Result
3/19/2002	508.000
4/23/2002	501.000
7/16/2002	507.000
10/8/2002	495.000
1/7/2003	508.700
4/2/2003	515.000
7/9/2003	576.000
10/7/2003	565.000

Statistics on Background Data

X= 482.856
S= 57.603
CV= 0.119
K factor = 2.523**
TL= 628.189

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	431.00	Downgradient	NO
MW360	505.00	Downgradient	NO
MW363	402.00	Downgradient	NO
MW366	456.00	Sidegradient	NO
MW369	380.00	Upgradient	NO
MW372	837.00	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Dissolved Oxygen

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	5.410
4/22/2002	1.570
7/15/2002	0.800
10/8/2002	1.090
1/8/2003	2.690
4/3/2003	2.040
7/8/2003	1.190
10/6/2003	1.780

Well Number: MW372

Date Collected	Result
3/19/2002	3.890
4/23/2002	0.050
7/16/2002	1.330
10/8/2002	2.660
1/7/2003	0.400
4/2/2003	0.910
7/9/2003	1.420
10/7/2003	1.260

Statistics on Background Data

X= 1.781
S= 1.351
CV= 0.759
K factor = 2.523**
TL= 5.190

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	4.550	Downgradient	NO
MW360	2.490	Downgradient	NO
MW363	1.600	Downgradient	NO
MW366	3.480	Sidegradient	NO
MW369	1.330	Upgradient	NO
MW372	3.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Dissolved Solids

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	173.000
4/22/2002	246.000
7/15/2002	232.000
10/8/2002	275.000
1/8/2003	269.000
4/3/2003	250.000
7/8/2003	295.000
10/6/2003	276.000

Well Number: MW372

Date Collected	Result
3/19/2002	295.000
4/23/2002	322.000
7/16/2002	329.000
10/8/2002	290.000
1/7/2003	316.000
4/2/2003	311.000
7/9/2003	347.000
10/7/2003	337.000

Statistics on Background Data

X= 285.188
S= 44.908
CV= 0.157
K factor = 2.523**
TL= 398.489

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	213.00	Downgradient	NO
MW360	294.00	Downgradient	NO
MW363	241.00	Downgradient	NO
MW366	241.00	Sidegradient	NO
MW369	213.00	Upgradient	NO
MW372	546.00	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Iron

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	0.656
4/22/2002	0.695
7/15/2002	7.100
10/8/2002	21.500
1/8/2003	18.500
4/3/2003	14.900
7/8/2003	11.300
10/6/2003	14.900

Well Number: MW372

Date Collected	Result
3/19/2002	5.950
4/23/2002	0.792
7/16/2002	1.780
10/8/2002	0.776
1/7/2003	3.550
4/2/2003	5.020
7/9/2003	10.000
10/7/2003	0.733

Statistics on Background Data

X= 7.385
S= 6.991
CV= 0.947
K factor = 2.523**
TL= 25.024

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.089	Downgradient	NO
MW360	4.270	Downgradient	NO
MW363	0.144	Downgradient	NO
MW366	0.100	Sidegradient	NO
MW369	1.420	Upgradient	NO
MW372	1.990	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Magnesium

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	11.400
4/22/2002	12.000
7/15/2002	10.000
10/8/2002	8.620
1/8/2003	7.890
4/3/2003	7.970
7/8/2003	10.300
10/6/2003	9.140

Well Number: MW372

Date Collected	Result
3/19/2002	15.700
4/23/2002	16.600
7/16/2002	15.400
10/8/2002	15.800
1/7/2003	15.800
4/2/2003	16.400
7/9/2003	15.200
10/7/2003	17.600

Statistics on Background Data

X= 12.864
S= 3.505
CV= 0.272
K factor = 2.523**
TL= 21.707

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	11.200	Downgradient	NO
MW360	8.760	Downgradient	NO
MW363	9.660	Downgradient	NO
MW366	11.100	Sidegradient	NO
MW369	6.700	Upgradient	NO
MW372	26.100	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Manganese

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	0.034
4/22/2002	0.062
7/15/2002	0.436
10/8/2002	0.867
1/8/2003	0.828
4/3/2003	0.672
7/8/2003	0.321
10/6/2003	0.714

Well Number: MW372

Date Collected	Result
3/19/2002	0.205
4/23/2002	0.345
7/16/2002	0.210
10/8/2002	0.054
1/7/2003	0.537
4/2/2003	0.415
7/9/2003	0.654
10/7/2003	0.254

Statistics on Background Data

X= 0.413
S= 0.274
CV= 0.664
K factor = 2.523**
TL= 1.105

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.167	Downgradient	NO
MW360	0.220	Downgradient	NO
MW363	0.310	Downgradient	NO
MW366	0.035	Sidegradient	NO
MW369	0.138	Upgradient	NO
MW372	0.037	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Molybdenum

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells		
Well Number:	MW369	X= 0.010 S= 0.012 CV= 1.199 K factor** = 2.523 TL= 0.040		Well Number:	MW369	
Date Collected	Result		Date Collected	LN(Result)		
3/18/2002	0.025		3/18/2002	-3.689		
4/22/2002	0.025		4/22/2002	-3.689		
7/15/2002	0.025		7/15/2002	-3.689		
10/8/2002	0.001		10/8/2002	-6.908		
1/8/2003	0.001		1/8/2003	-6.908		
4/3/2003	0.001		4/3/2003	-6.908		
7/8/2003	0.001		7/8/2003	-6.908		
10/6/2003	0.001		10/6/2003	-6.908		
Well Number:	MW372	Statistics on Transformed Background Data X= -5.698 S= 1.607 CV= -0.282 K factor** = 2.523 TL= -1.643		Well Number:	MW372	
Date Collected	Result		Date Collected	LN(Result)		
3/19/2002	0.025		3/19/2002	-3.689		
4/23/2002	0.025		4/23/2002	-3.689		
7/16/2002	0.025		7/16/2002	-3.689		
10/8/2002	0.001		10/8/2002	-6.908		
1/7/2003	0.001		1/7/2003	-6.908		
4/2/2003	0.001		4/2/2003	-6.908		
7/9/2003	0.001		7/9/2003	-6.859		
10/7/2003	0.001		10/7/2003	-6.908		
Because CV is greater than 1, the natural logarithm of background and test well results were calculated.						
Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW357	0.001	Downgradient	N/A	MW357	-7.601	NO
MW360	0.000	Downgradient	N/A	MW360	-8.047	NO
MW363	0.000	Downgradient	N/A	MW363	-8.680	NO
MW366	0.001	Sidegradient	N/A	MW366	-7.601	NO
MW369	0.001	Upgradient	N/A	MW369	-7.488	NO
MW372	0.000	Upgradient	N/A	MW372	-7.824	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Nickel

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	0.050
4/22/2002	0.050
7/15/2002	0.050
10/8/2002	0.005
1/8/2003	0.005
4/3/2003	0.005
7/8/2003	0.013
10/6/2003	0.010

Well Number: MW372

Date Collected	Result
3/19/2002	0.050
4/23/2002	0.050
7/16/2002	0.050
10/8/2002	0.005
1/7/2003	0.005
4/2/2003	0.005
7/9/2003	0.019
10/7/2003	0.005

Statistics on Background Data

X= 0.024
S= 0.021
CV= 0.910
K factor = 2.523**
TL= 0.078

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.001	Downgradient	NO
MW360	0.003	Downgradient	NO
MW363	0.002	Downgradient	NO
MW366	0.001	Sidegradient	NO
MW369	0.008	Upgradient	NO
MW372	0.001	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Oxidation-Reduction Potential

URGA
UNITS: mV

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells	Statistics on Background Data	Transformed Background Data from Upgradient Wells
Well Number: MW369	X= 74.563	Well Number: MW369
Date Collected Result	S= 94.243	Date Collected LN(Result)
3/18/2002 215.000	CV= 1.264	3/18/2002 5.371
4/22/2002 110.000	K factor** = 2.523	4/22/2002 4.700
7/15/2002 20.000	TL= 312.337	7/15/2002 2.996
1/8/2003 -5.000	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	1/8/2003 #Func!
4/3/2003 -18.000		4/3/2003 #Func!
7/8/2003 -67.000	Statistics on Transformed Background Data	7/8/2003 #Func!
10/6/2003 -1.000		10/6/2003 #Func!
1/7/2004 55.000	X = error	1/7/2004 4.007
Well Number: MW372		Well Number: MW372
Date Collected Result	S = error	Date Collected LN(Result)
3/19/2002 210.000	CV = error	3/19/2002 5.347
4/23/2002 65.000	K factor** = 2.523	4/23/2002 4.174
7/16/2002 215.000	TL# = 5.371	7/16/2002 5.371
10/8/2002 185.000	# Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.	10/8/2002 5.220
1/7/2003 45.000		1/7/2003 3.807
4/2/2003 65.000		4/2/2003 4.174
7/9/2003 -39.000		7/9/2003 #Func!
10/7/2003 138.000		10/7/2003 4.927

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	438.000	Downgradient	N/A
MW360	277.000	Downgradient	N/A
MW363	399.000	Downgradient	N/A
MW366	463.000	Sidegradient	N/A
MW369	514.000	Upgradient	N/A
MW372	236.000	Upgradient	N/A

Transformed Second Quarter 2014 Data Collected in April 2014

Well Number	LN(Result)	Result >TL?
MW357	6.082	YES
MW360	5.624	YES
MW363	5.989	YES
MW366	6.138	YES
MW369	6.242	YES
MW372	5.464	YES

Conclusion of Statistical Analysis on Transformed Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW357

MW360

MW363

MW366

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

**C-746-U Second Quarter 2014 Statistical Analysis
Oxidation-Reduction Potential (Continued)**

**URGA
UNITS: mV**

MW369

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis PCB, total

URGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	1.000
4/22/2002	0.170
7/15/2002	0.170
7/8/2003	1.150
10/6/2003	0.605
7/13/2004	0.420
7/20/2005	0.280
4/4/2006	0.230

Well Number: MW372

Date Collected	Result
3/19/2002	1.000
4/23/2002	0.170
7/16/2002	0.170
7/9/2003	0.170
10/7/2003	0.170
7/14/2004	0.180
7/21/2005	0.170
4/5/2006	0.180

Statistics on Background Data

X= 0.390
S= 0.350
CV= 0.897
K factor = 2.523**
TL= 1.272

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.098	Downgradient	NO
MW360	0.095	Downgradient	NO
MW363	0.127	Downgradient	NO
MW366	0.100	Sidegradient	NO
MW369	0.081	Upgradient	NO
MW372	0.097	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis PCB-1242

URGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data	Transformed Background Data from Upgradient Wells	
Well Number: MW369			Well Number: MW369	
Date Collected	Result	X= 0.281 S= 0.383 CV= 1.361 K factor** = 2.523 TL= 1.247	Date Collected	LN(Result)
3/18/2002	1.000		3/18/2002	0.000
4/22/2002	0.110		4/22/2002	-2.207
7/15/2002	0.110		7/15/2002	-2.207
7/8/2003	1.150		7/8/2003	0.140
10/6/2003	0.090		10/6/2003	-2.408
7/13/2004	0.100		7/13/2004	-2.303
7/20/2005	0.100		7/20/2005	-2.303
4/4/2006	0.100		4/4/2006	-2.303
Well Number: MW372		Statistics on Transformed Background Data X= -1.835 S= 0.938 CV= -0.511 K factor** = 2.523 TL= 0.532	Well Number: MW372	
Date Collected	Result		Date Collected	LN(Result)
3/19/2002	1.000		3/19/2002	0.000
4/23/2002	0.110		4/23/2002	-2.207
7/16/2002	0.110		7/16/2002	-2.207
7/9/2003	0.130		7/9/2003	-2.040
10/7/2003	0.090		10/7/2003	-2.408
7/14/2004	0.100		7/14/2004	-2.303
7/21/2005	0.100		7/21/2005	-2.303
4/5/2006	0.100		4/5/2006	-2.303

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW357	0.098	Downgradient	N/A	MW357	-2.323	NO
MW360	0.095	Downgradient	N/A	MW360	-2.352	NO
MW363	0.127	Downgradient	N/A	MW363	-2.064	NO
MW366	0.100	Sidegradient	N/A	MW366	-2.303	NO
MW369	0.081	Upgradient	N/A	MW369	-2.518	NO
MW372	0.097	Upgradient	N/A	MW372	-2.332	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis pH

URGA
UNITS: Std Unit

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL and LL. If the test well result exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	6.100
4/22/2002	6.100
7/15/2002	6.100
10/8/2002	6.500
1/8/2003	6.500
4/3/2003	6.600
7/8/2003	6.500
10/6/2003	6.500

Well Number: MW372

Date Collected	Result
3/19/2002	6.100
4/23/2002	6.120
7/16/2002	6.100
10/8/2002	6.060
1/7/2003	6.260
4/2/2003	6.150
7/9/2003	6.300
10/7/2003	6.400

Statistics on Background Data

X= 6.274
S= 0.194
CV= 0.031
K factor** = 2.904
TL= 6.837
LL= 5.711

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?	Result <LL?
MW357	6.110	Downgradient	NO	NO
MW360	6.300	Downgradient	NO	NO
MW363	6.290	Downgradient	NO	NO
MW366	6.490	Sidegradient	NO	NO
MW369	6.210	Upgradient	NO	NO
MW372	6.140	Upgradient	NO	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit or were less than the Lower Tolerance Limit, which is statistically significant evidence that these wells have no deviated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$, LL Lower Tolerance Limit, $LL = X - (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** The K-factor was adjusted for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K- factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, <http://www.itl.nist.gov/div898/handbook/>, 2009.

C-746-U Second Quarter 2014 Statistical Analysis Sodium

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	35.700
4/22/2002	37.600
7/15/2002	42.400
10/8/2002	66.900
1/8/2003	67.900
4/3/2003	61.800
7/8/2003	45.600
10/6/2003	59.100

Well Number: MW372

Date Collected	Result
3/19/2002	37.200
4/23/2002	38.600
7/16/2002	35.600
10/8/2002	37.500
1/7/2003	34.100
4/2/2003	34.400
7/9/2003	44.100
10/7/2003	43.100

Statistics on Background Data

X= 45.100
S= 11.875
CV= 0.263
K factor = 2.523**
TL= 75.061

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	42.100	Downgradient	NO
MW360	74.100	Downgradient	NO
MW363	36.600	Downgradient	NO
MW366	43.700	Sidegradient	NO
MW369	58.700	Upgradient	NO
MW372	65.500	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Sulfate

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	15.500
4/22/2002	15.800
7/15/2002	13.800
10/8/2002	6.900
1/8/2003	10.500
4/3/2003	10.500
7/8/2003	10.900
10/6/2003	16.300

Well Number: MW372

Date Collected	Result
3/19/2002	71.700
4/23/2002	74.700
7/16/2002	74.100
10/8/2002	70.500
1/7/2003	75.800
4/2/2003	81.800
7/9/2003	83.600
10/7/2003	88.100

Statistics on Background Data

X= 45.031
S= 33.919
CV= 0.753
K factor = 2.523**
TL= 130.609

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	56.900	Downgradient	NO
MW360	38.100	Downgradient	NO
MW363	27.800	Downgradient	NO
MW366	43.800	Sidegradient	NO
MW369	8.090	Upgradient	NO
MW372	176.00	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW372

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Technetium-99

URGA
UNITS: pCi/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	41.700
4/22/2002	53.100
7/15/2002	18.100
10/8/2002	16.400
1/8/2003	3.490
4/3/2003	9.340
7/8/2003	17.500
10/6/2003	17.000

Well Number: MW372

Date Collected	Result
3/19/2002	44.800
4/23/2002	0.802
7/16/2002	19.800
10/8/2002	46.100
1/7/2003	-0.973
4/2/2003	9.070
7/9/2003	0.000
10/7/2003	36.900

Statistics on Background Data

X= 20.821
S= 18.044
CV= 0.867
K factor** = 2.523
TL= 66.344

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result > TL?
MW357	27.800	Downgradient	NO
MW360	9.000	Downgradient	NO
MW363	18.300	Downgradient	NO
MW366	53.500	Sidegradient	NO
MW369	35.400	Upgradient	NO
MW372	13.400	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Toluene

URGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	5.000
4/22/2002	5.000
7/15/2002	5.000
10/8/2002	5.000
1/8/2003	5.000
4/3/2003	5.000
7/8/2003	5.000
10/6/2003	5.000

Well Number: MW372

Date Collected	Result
3/19/2002	5.000
4/23/2002	5.000
7/16/2002	5.000
10/8/2002	5.000
1/7/2003	5.000
4/2/2003	5.000
7/9/2003	5.000
10/7/2003	5.000

Statistics on Background Data

X= 5.000
S= 0.000
CV= 0.000
K factor = 2.523**
TL= 5.000

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	1.000	Downgradient	NO
MW360	1.000	Downgradient	NO
MW363	1.320	Downgradient	NO
MW366	12.800	Sidegradient	YES
MW369	7.160	Upgradient	YES
MW372	1.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW366

MW369

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Total Organic Carbon (TOC)

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number:	MW369	X= 3.513 S= 4.307 CV= 1.226 K factor** = 2.523 TL= 14.378	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	Well Number:	MW369
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	1.700			3/18/2002	0.531
4/22/2002	1.600			4/22/2002	0.470
7/15/2002	3.100			7/15/2002	1.131
10/8/2002	17.700			10/8/2002	2.874
1/8/2003	9.000			1/8/2003	2.197
4/3/2003	4.000			4/3/2003	1.386
7/8/2003	4.900			7/8/2003	1.589
10/6/2003	2.400	10/6/2003	0.875		
Well Number:	MW372	Statistics on Transformed Background Data X= 0.851 S= 0.828 CV= 0.973 K factor** = 2.523 TL= 2.940		Well Number:	MW372
Date Collected	Result			Date Collected	LN(Result)
3/19/2002	1.000			3/19/2002	0.000
4/23/2002	1.200			4/23/2002	0.182
7/16/2002	1.000			7/16/2002	0.000
10/8/2002	1.000			10/8/2002	0.000
1/7/2003	1.600			1/7/2003	0.470
4/2/2003	1.500			4/2/2003	0.405
7/9/2003	3.000			7/9/2003	1.099
10/7/2003	1.500			10/7/2003	0.405

Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW357	0.882	Downgradient	N/A	MW357	-0.126	NO
MW360	2.490	Downgradient	N/A	MW360	0.912	NO
MW363	1.080	Downgradient	N/A	MW363	0.077	NO
MW366	1.140	Sidegradient	N/A	MW366	0.131	NO
MW369	1.380	Upgradient	N/A	MW369	0.322	NO
MW372	1.680	Upgradient	N/A	MW372	0.519	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Total Organic Halides (TOX)

URGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	50.000
4/22/2002	50.000
7/15/2002	81.000
10/8/2002	202.000
1/8/2003	177.000
4/3/2003	93.100
7/8/2003	17.500
10/6/2003	37.500

Well Number: MW372

Date Collected	Result
3/19/2002	184.000
4/23/2002	50.000
7/16/2002	50.000
10/8/2002	50.000
1/7/2003	10.000
4/2/2003	12.700
7/9/2003	10.000
10/7/2003	12.600

Statistics on Background Data

X= 67.963
S= 64.316
CV= 0.946
K factor = 2.523**
TL= 230.231

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	8.420	Downgradient	NO
MW360	17.300	Downgradient	NO
MW363	8.840	Downgradient	NO
MW366	7.400	Sidegradient	NO
MW369	25.600	Upgradient	NO
MW372	13.900	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Uranium

URGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW369

Date Collected	Result
3/18/2002	0.001
4/22/2002	0.001
7/15/2002	0.001
10/8/2002	0.004
1/8/2003	0.001
4/3/2003	0.001
7/8/2003	0.001
10/6/2003	0.001

Well Number: MW372

Date Collected	Result
3/19/2002	0.001
4/23/2002	0.001
7/16/2002	0.001
10/8/2002	0.006
1/7/2003	0.001
4/2/2003	0.001
7/9/2003	0.001
10/7/2003	0.001

Statistics on Background Data

X= 0.001
S= 0.001
CV= 0.917
K factor = 2.523**
TL= 0.005

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW357	0.000	Downgradient	NO
MW360	0.000	Downgradient	NO
MW363	0.000	Downgradient	NO
MW366	0.000	Sidegradient	NO
MW369	0.000	Upgradient	NO
MW372	0.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Aluminum

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number:	MW370	X= 2.026 S= 5.626 CV= 2.777 K factor** = 2.523 TL= 16.219	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	Well Number:	MW370
Date Collected	Result			Date Collected	LN(Result)
3/17/2002	4.660			3/17/2002	1.539
4/23/2002	0.200			4/23/2002	-1.609
7/15/2002	0.200			7/15/2002	-1.609
10/8/2002	0.200			10/8/2002	-1.609
1/8/2003	0.200			1/8/2003	-1.609
4/3/2003	0.200			4/3/2003	-1.609
7/9/2003	0.200			7/9/2003	-1.609
10/6/2003	0.200			10/6/2003	-1.609
Well Number:	MW373	Statistics on Transformed Background Data X= -0.803 S= 1.380 CV= -1.718 K factor** = 2.523 TL= 2.678		Well Number:	MW373
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	22.700			3/18/2002	3.122
4/23/2002	1.460			4/23/2002	0.378
7/16/2002	0.253			7/16/2002	-1.374
10/8/2002	0.482			10/8/2002	-0.730
1/7/2003	0.608			1/7/2003	-0.498
4/2/2003	0.446			4/2/2003	-0.807
7/9/2003	0.200			7/9/2003	-1.609
10/7/2003	0.200			10/7/2003	-1.609

Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW358	0.050	Downgradient	N/A	MW358	-2.996	NO
MW361	0.050	Downgradient	N/A	MW361	-2.996	NO
MW364	0.023	Downgradient	N/A	MW364	-3.790	NO
MW367	0.050	Sidegradient	N/A	MW367	-2.996	NO
MW370	0.050	Upgradient	N/A	MW370	-2.996	NO
MW373	0.050	Upgradient	N/A	MW373	-2.996	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Boron

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	2.000
4/23/2002	2.000
7/15/2002	2.000
10/8/2002	0.200
1/8/2003	0.200
4/3/2003	0.200
7/9/2003	0.200
10/6/2003	0.200

Well Number: MW373

Date Collected	Result
3/18/2002	2.000
4/23/2002	2.000
7/16/2002	2.000
10/8/2002	0.790
1/7/2003	0.807
4/2/2003	1.130
7/9/2003	1.280
10/7/2003	1.240

Statistics on Background Data

X= 1.140
S= 0.780
CV= 0.684
K factor = 2.523**
TL= 3.108

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	0.369	Downgradient	NO
MW361	0.347	Downgradient	NO
MW364	0.012	Downgradient	NO
MW367	0.017	Sidegradient	NO
MW370	0.031	Upgradient	NO
MW373	2.180	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Bromide

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	1.000
4/23/2002	1.000
7/15/2002	1.000
10/8/2002	1.000
1/8/2003	1.000
4/3/2003	1.000
7/9/2003	1.000
10/6/2003	1.000

Well Number: MW373

Date Collected	Result
3/18/2002	1.000
4/23/2002	1.000
7/16/2002	1.000
10/8/2002	1.000
1/7/2003	1.000
4/2/2003	1.000
7/9/2003	1.000
10/7/2003	1.000

Statistics on Background Data

X= 1.000
S= 0.000
CV= 0.000
K factor = 2.523**
TL= 1.000

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	0.486	Downgradient	NO
MW361	0.431	Downgradient	NO
MW364	0.374	Downgradient	NO
MW367	0.435	Sidegradient	NO
MW370	0.513	Upgradient	NO
MW373	0.606	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Calcium

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	34.800
4/23/2002	43.400
7/15/2002	33.200
10/8/2002	29.200
1/8/2003	31.300
4/3/2003	32.400
7/9/2003	22.900
10/6/2003	28.000

Well Number: MW373

Date Collected	Result
3/18/2002	61.900
4/23/2002	59.200
7/16/2002	47.600
10/8/2002	46.100
1/7/2003	49.200
4/2/2003	57.800
7/9/2003	52.700
10/7/2003	64.900

Statistics on Background Data

X= 43.413
S= 13.444
CV= 0.310
K factor = 2.523**
TL= 77.331

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	36.100	Downgradient	NO
MW361	32.700	Downgradient	NO
MW364	28.700	Downgradient	NO
MW367	27.200	Sidegradient	NO
MW370	28.000	Upgradient	NO
MW373	78.400	Upgradient	YES

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW373

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Chemical Oxygen Demand (COD)

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	35.000
4/23/2002	134.000
7/15/2002	35.000
10/8/2002	35.000
1/8/2003	35.000
4/3/2003	35.000
7/9/2003	35.000
10/6/2003	35.000

Well Number: MW373

Date Collected	Result
3/18/2002	35.000
4/23/2002	47.000
7/16/2002	35.000
10/8/2002	35.000
1/7/2003	35.000
4/2/2003	35.000
7/9/2003	35.000
10/7/2003	35.000

Statistics on Background Data

X= 41.938
S= 24.732
CV= 0.590
K factor = 2.523**
TL= 104.336

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	20.000	Downgradient	NO
MW361	20.000	Downgradient	NO
MW364	20.000	Downgradient	NO
MW367	20.000	Sidegradient	NO
MW370	7.490	Upgradient	NO
MW373	20.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Chloride

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
7/15/2002	55.500
10/8/2002	53.600
1/8/2003	52.900
4/3/2003	53.600
7/9/2003	51.900
10/6/2003	53.000
1/7/2004	53.000
4/7/2004	51.600

Well Number: MW373

Date Collected	Result
7/16/2002	40.600
10/8/2002	38.800
1/7/2003	39.000
4/2/2003	38.400
7/9/2003	38.100
10/7/2003	38.000
1/6/2004	37.900
4/7/2004	38.800

Statistics on Background Data

X= 45.919
S= 7.524
CV= 0.164
K factor = 2.523**
TL= 64.901

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	36.400	Downgradient	NO
MW361	33.700	Downgradient	NO
MW364	31.100	Downgradient	NO
MW367	34.200	Sidegradient	NO
MW370	42.600	Upgradient	NO
MW373	44.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Cobalt

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells		
Well Number:	MW370	X= 0.027 S= 0.032 CV= 1.165 K factor** = 2.523 TL= 0.108	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	Well Number:	MW370	
Date Collected	Result			Date Collected	LN(Result)	
3/17/2002	0.025			3/17/2002	-3.689	
4/23/2002	0.025			4/23/2002	-3.689	
7/15/2002	0.025			7/15/2002	-3.689	
10/8/2002	0.017			10/8/2002	-4.051	
1/8/2003	0.011			1/8/2003	-4.556	
4/3/2003	0.009			4/3/2003	-4.677	
7/9/2003	0.137			7/9/2003	-1.988	
10/6/2003	0.046			10/6/2003	-3.073	
Well Number:	MW373	Statistics on Transformed Background Data X= -4.058 S= 1.011 CV= -0.249 K factor** = 2.523 TL= -1.507		Well Number:	MW373	
Date Collected	Result			Date Collected	LN(Result)	
3/18/2002	0.025			3/18/2002	-3.689	
4/23/2002	0.034			4/23/2002	-3.381	
7/16/2002	0.025			7/16/2002	-3.689	
10/8/2002	0.004			10/8/2002	-5.494	
1/7/2003	0.003			1/7/2003	-5.672	
4/2/2003	0.004			4/2/2003	-5.605	
7/9/2003	0.041			7/9/2003	-3.206	
10/7/2003	0.008			10/7/2003	-4.776	
Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW358	0.003	Downgradient	N/A	MW358	-5.875	NO
MW361	0.000	Downgradient	N/A	MW361	-9.210	NO
MW364	0.001	Downgradient	N/A	MW364	-7.118	NO
MW367	0.002	Sidegradient	N/A	MW367	-6.450	NO
MW370	0.000	Upgradient	N/A	MW370	-7.621	NO
MW373	0.000	Upgradient	N/A	MW373	-8.948	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Conductivity

LRGA
UNITS: umho/cm

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	406.000
4/23/2002	543.000
7/15/2002	476.000
10/8/2002	441.000
1/8/2003	486.000
4/3/2003	466.000
7/9/2003	479.000
10/6/2003	435.000

Well Number: MW373

Date Collected	Result
3/18/2002	661.000
4/23/2002	801.000
7/16/2002	774.000
10/8/2002	680.000
1/7/2003	686.500
4/2/2003	763.000
7/9/2003	828.000
10/7/2003	814.000

Statistics on Background Data

X= 608.719
S= 156.157
CV= 0.257
K factor = 2.523**
TL= 1002.702

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	522.00	Downgradient	NO
MW361	489.00	Downgradient	NO
MW364	457.00	Downgradient	NO
MW367	421.00	Sidegradient	NO
MW370	432.00	Upgradient	NO
MW373	914.00	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Dissolved Oxygen

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	4.320
4/23/2002	1.240
7/15/2002	0.750
10/8/2002	0.940
1/8/2003	3.080
4/3/2003	1.450
7/9/2003	1.220
10/6/2003	1.070

Well Number: MW373

Date Collected	Result
3/18/2002	3.040
4/23/2002	0.030
7/16/2002	0.230
10/8/2002	0.860
1/7/2003	0.210
4/2/2003	1.190
7/9/2003	1.100
10/7/2003	1.460

Statistics on Background Data

X= 1.387
S= 1.153
CV= 0.831
K factor = 2.523**
TL= 4.295

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	2.710	Downgradient	NO
MW361	3.680	Downgradient	NO
MW364	5.550	Downgradient	YES
MW367	2.270	Sidegradient	NO
MW370	4.150	Upgradient	NO
MW373	3.010	Upgradient	NO

Conclusion of Statistical Analysis on Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW364

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Dissolved Solids

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	236.000
4/23/2002	337.000
7/15/2002	266.000
10/8/2002	240.000
1/8/2003	282.000
4/3/2003	238.000
7/9/2003	248.000
10/6/2003	224.000

Well Number: MW373

Date Collected	Result
3/18/2002	427.000
4/23/2002	507.000
7/16/2002	464.000
10/8/2002	408.000
1/7/2003	404.000
4/2/2003	450.000
7/9/2003	487.000
10/7/2003	481.000

Statistics on Background Data

X= 356.188
S= 106.752
CV= 0.300
K factor = 2.523**
TL= 625.523

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	299.00	Downgradient	NO
MW361	273.00	Downgradient	NO
MW364	254.00	Downgradient	NO
MW367	229.00	Sidegradient	NO
MW370	223.00	Upgradient	NO
MW373	573.00	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Iron

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	9.340
4/23/2002	4.330
7/15/2002	3.520
10/8/2002	7.450
1/8/2003	7.040
4/3/2003	4.640
7/9/2003	15.800
10/6/2003	6.490

Well Number: MW373

Date Collected	Result
3/18/2002	37.600
4/23/2002	19.000
7/16/2002	10.700
10/8/2002	3.750
1/7/2003	3.870
4/2/2003	3.500
7/9/2003	7.720
10/7/2003	2.930

Statistics on Background Data

X= 9.230
S= 8.841
CV= 0.958
K factor = 2.523**
TL= 31.535

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	1.740	Downgradient	NO
MW361	0.087	Downgradient	NO
MW364	0.564	Downgradient	NO
MW367	0.827	Sidegradient	NO
MW370	0.163	Upgradient	NO
MW373	0.116	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Magnesium

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	12.100
4/23/2002	15.100
7/15/2002	12.400
10/8/2002	12.200
1/8/2003	11.500
4/3/2003	12.300
7/9/2003	10.000
10/6/2003	12.100

Well Number: MW373

Date Collected	Result
3/18/2002	24.800
4/23/2002	22.700
7/16/2002	18.800
10/8/2002	21.100
1/7/2003	19.900
4/2/2003	25.500
7/9/2003	23.300
10/7/2003	26.900

Statistics on Background Data

X= 17.544
S= 5.911
CV= 0.337
K factor = 2.523**
TL= 32.458

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	15.500	Downgradient	NO
MW361	12.900	Downgradient	NO
MW364	11.300	Downgradient	NO
MW367	11.100	Sidegradient	NO
MW370	11.800	Upgradient	NO
MW373	27.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum} ((\text{background result} - X)^2) / [\text{count of background results} - 1]]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Manganese

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	0.244
4/23/2002	1.820
7/15/2002	1.220
10/8/2002	0.988
1/8/2003	0.729
4/3/2003	0.637
7/9/2003	2.510
10/6/2003	1.050

Well Number: MW373

Date Collected	Result
3/18/2002	0.355
4/23/2002	2.160
7/16/2002	1.390
10/8/2002	0.717
1/7/2003	0.587
4/2/2003	0.545
7/9/2003	1.760
10/7/2003	0.570

Statistics on Background Data

X= 1.080
S= 0.674
CV= 0.624
K factor = 2.523**
TL= 2.780

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	0.314	Downgradient	NO
MW361	0.002	Downgradient	NO
MW364	0.140	Downgradient	NO
MW367	0.455	Sidegradient	NO
MW370	0.006	Upgradient	NO
MW373	0.003	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Molybdenum

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number:	MW370	X= 0.010 S= 0.012 CV= 1.198 K factor** = 2.523 TL= 0.040	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	Well Number:	MW370
Date Collected	Result			Date Collected	LN(Result)
3/17/2002	0.025			3/17/2002	-3.689
4/23/2002	0.025			4/23/2002	-3.689
7/15/2002	0.025			7/15/2002	-3.689
10/8/2002	0.001			10/8/2002	-6.786
1/8/2003	0.001			1/8/2003	-6.908
4/3/2003	0.001			4/3/2003	-6.908
7/9/2003	0.001			7/9/2003	-6.908
10/6/2003	0.001			10/6/2003	-6.908
Well Number:	MW373	Statistics on Transformed Background Data		Well Number:	MW373
Date Collected	Result	X= -5.693 S= 1.604 CV= -0.282 K factor** = 2.523 TL= -1.647		Date Collected	LN(Result)
3/18/2002	0.025			3/18/2002	-3.689
4/23/2002	0.025			4/23/2002	-3.689
7/16/2002	0.025			7/16/2002	-3.689
10/8/2002	0.001			10/8/2002	-6.908
1/7/2003	0.001			1/7/2003	-6.908
4/2/2003	0.001			4/2/2003	-6.908
7/9/2003	0.001			7/9/2003	-6.908
10/7/2003	0.001			10/7/2003	-6.908

Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW358	0.001	Downgradient	N/A	MW358	-7.601	NO
MW361	0.001	Downgradient	N/A	MW361	-7.601	NO
MW364	0.001	Downgradient	N/A	MW364	-7.601	NO
MW367	0.001	Sidegradient	N/A	MW367	-7.601	NO
MW370	0.000	Upgradient	N/A	MW370	-8.623	NO
MW373	0.001	Upgradient	N/A	MW373	-7.601	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Nickel

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	0.050
4/23/2002	0.050
7/15/2002	0.050
10/8/2002	0.005
1/8/2003	0.005
4/3/2003	0.005
7/9/2003	0.026
10/6/2003	0.010

Well Number: MW373

Date Collected	Result
3/18/2002	0.050
4/23/2002	0.050
7/16/2002	0.050
10/8/2002	0.005
1/7/2003	0.005
4/2/2003	0.005
7/9/2003	0.011
10/7/2003	0.005

Statistics on Background Data

X= 0.024
S= 0.022
CV= 0.901
K factor = 2.523**
TL= 0.078

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	0.004	Downgradient	NO
MW361	0.001	Downgradient	NO
MW364	0.001	Downgradient	NO
MW367	0.002	Sidegradient	NO
MW370	0.002	Upgradient	NO
MW373	0.001	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Oxidation-Reduction Potential

LRGA
UNITS: mV

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells	Statistics on Background Data	Transformed Background Data from Upgradient Wells
Well Number: MW370	X= 46.688	Well Number: MW370
Date Collected Result	S= 60.986	Date Collected LN(Result)
3/17/2002 140.000	CV= 1.306	3/17/2002 4.942
4/23/2002 -15.000	K factor** = 2.523	4/23/2002 #Func!
7/15/2002 5.000	TL= 200.555	7/15/2002 1.609
4/3/2003 49.000	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	4/3/2003 3.892
7/9/2003 -35.000		7/9/2003 #Func!
10/6/2003 40.000		10/6/2003 3.689
1/7/2004 101.000		1/7/2004 4.615
4/7/2004 105.000		4/7/2004 4.654
Well Number: MW373	Statistics on Transformed Background Data	Well Number: MW373
Date Collected Result	X = error	Date Collected LN(Result)
3/18/2002 140.000	S = error	3/18/2002 4.942
4/23/2002 -20.000	CV = error	4/23/2002 #Func!
10/8/2002 10.000	K factor** = 2.523	10/8/2002 2.303
1/7/2003 10.000	TL# = 4.942	1/7/2003 2.303
4/2/2003 67.000	# Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.	4/2/2003 4.205
7/9/2003 -29.000		7/9/2003 #Func!
10/7/2003 127.000		10/7/2003 4.844
1/6/2004 52.000		1/6/2004 3.951

Second Quarter 2014 Data Collected in April 2014	Transformed Second Quarter 2014 Data Collected in April 2014
Well No. Result Gradient Result >TL?	Well Number LN(Result) Result >TL?
MW358 234.000 Downgradient N/A	MW358 5.455 YES
MW361 445.000 Downgradient N/A	MW361 6.098 YES
MW364 358.000 Downgradient N/A	MW364 5.881 YES
MW367 446.000 Sidegradient N/A	MW367 6.100 YES
MW370 535.000 Upgradient N/A	MW370 6.282 YES
MW373 398.000 Upgradient N/A	MW373 5.986 YES

Conclusion of Statistical Analysis on Transformed Data
The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.
MW358
MW361
MW364
MW367

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

**C-746-U Second Quarter 2014 Statistical Analysis
Oxidation-Reduction Potential (Continued)**

**LRGA
UNITS: mV**

MW370

MW373

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum } ((\text{background result} - X)^2) / (\text{count of background results} - 1)]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results}) / (\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis pH

LRGA
UNITS: Std Unit

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL and LL. If the test well result exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	6.300
4/23/2002	6.400
7/15/2002	6.300
10/8/2002	6.300
1/8/2003	6.400
4/3/2003	6.500
7/9/2003	6.300
10/6/2003	6.500

Well Number: MW373

Date Collected	Result
3/18/2002	6.000
4/23/2002	6.300
7/16/2002	6.450
10/8/2002	6.180
1/7/2003	6.350
4/2/2003	6.140
7/9/2003	6.100
10/7/2003	6.000

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?	Result <LL?
MW358	6.220	Downgradient	NO	NO
MW361	6.140	Downgradient	NO	NO
MW364	6.380	Downgradient	NO	NO
MW367	6.010	Sidegradient	NO	NO
MW370	6.080	Upgradient	NO	NO
MW373	6.080	Upgradient	NO	NO

Statistics on Background Data

X= 6.283
S= 0.159
CV= 0.025
K factor** = 2.904
TL= 6.745
LL= 5.820

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit or were less than the Lower Tolerance Limit, which is statistically significant evidence that these wells have no deviated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$, LL Lower Tolerance Limit, $LL = X - (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** The K-factor was adjusted for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K- factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, <http://www.itl.nist.gov/div898/handbook/>, 2009.

C-746-U Second Quarter 2014 Statistical Analysis Sodium

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	31.800
4/23/2002	50.000
7/15/2002	44.700
10/8/2002	40.000
1/8/2003	44.600
4/3/2003	41.900
7/9/2003	40.000
10/6/2003	38.100

Well Number: MW373

Date Collected	Result
3/18/2002	43.400
4/23/2002	79.800
7/16/2002	87.700
10/8/2002	61.600
1/7/2003	59.300
4/2/2003	62.100
7/9/2003	50.100
10/7/2003	49.600

Statistics on Background Data

X= 51.544
S= 15.227
CV= 0.295
K factor = 2.523**
TL= 89.962

Because CV is less than or equal to 1, assume normal distribution and continue with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	41.900	Downgradient	NO
MW361	44.200	Downgradient	NO
MW364	43.300	Downgradient	NO
MW367	36.300	Sidegradient	NO
MW370	39.600	Upgradient	NO
MW373	68.000	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Sulfate

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells	
Well Number: MW370		X= 122.381 S= 195.095 CV= 1.594 K factor** = 2.523 TL= 614.606		Well Number: MW370	
Date Collected	Result			Date Collected	LN(Result)
3/17/2002	17.400			3/17/2002	2.856
4/23/2002	37.900			4/23/2002	3.635
7/15/2002	15.700			7/15/2002	2.754
10/8/2002	13.400			10/8/2002	2.595
1/8/2003	14.400			1/8/2003	2.667
4/3/2003	18.100			4/3/2003	2.896
7/9/2003	9.600	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.		7/9/2003	2.262
10/6/2003	16.500			10/6/2003	2.803
Well Number: MW373				Well Number: MW373	
Date Collected	Result			Date Collected	LN(Result)
3/18/2002	163.300			3/18/2002	5.096
4/23/2002	809.600			4/23/2002	6.697
7/16/2002	109.400			7/16/2002	4.695
10/8/2002	110.600			10/8/2002	4.706
1/7/2003	113.700			1/7/2003	4.734
4/2/2003	133.000			4/2/2003	4.890
7/9/2003	182.100			7/9/2003	5.205
10/7/2003	193.400	10/7/2003	5.265		

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW358	88.500	Downgradient	N/A	MW358	4.483	NO
MW361	82.300	Downgradient	N/A	MW361	4.410	NO
MW364	67.100	Downgradient	N/A	MW364	4.206	NO
MW367	41.500	Sidegradient	N/A	MW367	3.726	NO
MW370	18.900	Upgradient	N/A	MW370	2.939	NO
MW373	209.000	Upgradient	N/A	MW373	5.342	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Technetium-99

LRGA
UNITS: pCi/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells	Statistics on Background Data	Transformed Background Data from Upgradient Wells
Well Number: MW370	X = 7.655 S = 13.274 CV = 1.734 K factor** = 2.523 TL = 41.146	Well Number: MW370
Date Collected Result		Date Collected LN(Result)
3/17/2002 10.800		3/17/2002 2.380
4/23/2002 8.530		4/23/2002 2.144
7/15/2002 5.090		7/15/2002 1.627
10/8/2002 4.780		10/8/2002 1.564
1/8/2003 -5.120		1/8/2003 #Func!
4/3/2003 5.110		4/3/2003 1.631
7/9/2003 4.250		7/9/2003 1.447
10/6/2003 6.540		10/6/2003 1.878
Well Number: MW373		Well Number: MW373
Date Collected Result		Date Collected LN(Result)
3/18/2002 16.500		3/18/2002 2.803
4/23/2002 3.490		4/23/2002 1.250
7/16/2002 1.420		7/16/2002 0.351
10/8/2002 -6.060		10/8/2002 #Func!
1/7/2003 -8.410		1/7/2003 #Func!
4/2/2003 26.300		4/2/2003 3.270
7/9/2003 3.060		7/9/2003 1.118
10/7/2003 46.200		10/7/2003 3.833

Because CV is greater than 1, the natural logarithm of background and test well results were calculated.

Statistics on Transformed Background Data
X = error S = error CV = error K factor** = 2.523 TL# = 3.833

Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	44.400	Downgradient	N/A
MW361	40.600	Downgradient	N/A
MW364	52.500	Downgradient	N/A
MW367	38.100	Sidegradient	N/A
MW370	27.900	Upgradient	N/A
MW373	43.600	Upgradient	N/A

Transformed Second Quarter 2014 Data Collected in April 2014

Well Number	LN(Result)	Result >TL?
MW358	3.793	NO
MW361	3.704	NO
MW364	3.961	YES
MW367	3.640	NO
MW370	3.329	NO
MW373	3.775	NO

Conclusion of Statistical Analysis on Transformed Data

The following test well(s) exceeded the Upper Tolerance Limit, which is statistically significant evidence of elevated concentration with respect to background data.

MW364

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Total Organic Carbon (TOC)

LRGA
UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells		Statistics on Background Data		Transformed Background Data from Upgradient Wells		
Well Number:	MW370	X= 6.169 S= 12.072 CV= 1.957 K factor** = 2.523 TL= 36.626	Because CV is greater than 1, the natural logarithm of background and test well results were calculated.	Well Number:	MW370	
Date Collected	Result			Date Collected	LN(Result)	
3/17/2002	1.200			3/17/2002	0.182	
4/23/2002	4.300			4/23/2002	1.459	
7/15/2002	2.600			7/15/2002	0.956	
10/8/2002	2.300			10/8/2002	0.833	
1/8/2003	3.000			1/8/2003	1.099	
4/3/2003	1.200			4/3/2003	0.182	
7/9/2003	2.600			7/9/2003	0.956	
10/6/2003	1.700			10/6/2003	0.531	
Well Number:	MW373	Statistics on Transformed Background Data X= 1.069 S= 1.014 CV= 0.948 K factor** = 2.523 TL= 3.626		Well Number:	MW373	
Date Collected	Result			Date Collected	LN(Result)	
3/18/2002	1.100			3/18/2002	0.095	
4/23/2002	17.500			4/23/2002	2.862	
7/16/2002	49.000			7/16/2002	3.892	
10/8/2002	2.900			10/8/2002	1.065	
1/7/2003	3.900			1/7/2003	1.361	
4/2/2003	2.500			4/2/2003	0.916	
7/9/2003	1.700			7/9/2003	0.531	
10/7/2003	1.200			10/7/2003	0.182	
Second Quarter 2014 Data Collected in April 2014				Transformed Second Quarter 2014 Data Collected in April 2014		
Well No.	Result	Gradient	Result >TL?	Well Number	LN(Result)	Result >TL?
MW358	1.120	Downgradient	N/A	MW358	0.113	NO
MW361	0.670	Downgradient	N/A	MW361	-0.400	NO
MW364	0.728	Downgradient	N/A	MW364	-0.317	NO
MW367	0.980	Sidegradient	N/A	MW367	-0.020	NO
MW370	0.993	Upgradient	N/A	MW370	-0.007	NO
MW373	1.290	Upgradient	N/A	MW373	0.255	NO

Conclusion of Statistical Analysis on Transformed Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results

C-746-U Second Quarter 2014 Statistical Analysis Total Organic Halides (TOX)

LRGA
UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well.

Background Data from Upgradient Wells

Well Number: MW370

Date Collected	Result
3/17/2002	50.000
4/23/2002	228.000
7/15/2002	88.000
10/8/2002	58.000
1/8/2003	72.400
4/3/2003	26.600
7/9/2003	16.400
10/6/2003	31.100

Well Number: MW373

Date Collected	Result
3/18/2002	50.000
4/23/2002	276.000
7/16/2002	177.000
10/8/2002	76.000
1/7/2003	45.900
4/2/2003	57.800
7/9/2003	10.000
10/7/2003	13.900

Statistics on Background Data

X= 79.819
S= 78.470
CV= 0.983
K factor = 2.523**
TL= 277.798

Because CV is less than or equal to 1,
assume normal distribution and continue
with statistical analysis.

Second Quarter 2014 Data Collected in April 2014

Well No.	Result	Gradient	Result >TL?
MW358	9.320	Downgradient	NO
MW361	9.380	Downgradient	NO
MW364	8.200	Downgradient	NO
MW367	6.620	Sidegradient	NO
MW370	6.120	Upgradient	NO
MW373	9.040	Upgradient	NO

Conclusion of Statistical Analysis on Data

None of the test wells exceeded the Upper Tolerance Limit, which is statistically significant evidence that these wells have no elevated concentrations with respect to background data.

CV Coefficient-of-Variation, $CV = S/X$ If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [\text{Sum}([(background\ result - X)^2]/[\text{count of background results} - 1])]^{0.5}$

TL Upper Tolerance Limit, $TL = X + (K * S)$

X Mean, $X = (\text{sum of background results})/(\text{count of background results})$

** Read from Table 5, Appendix B of *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities*, Interim Guidance, EPA, 1989, based on total number of background results



August 12th, 2014

Mr. Craig Jones
LATA Environmental Services of Kentucky, LLC
761 Veterans Avenue
Kevil, Kentucky 42053

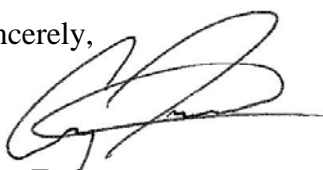
Dear Mr. Jones:

This statement is submitted in response to your request that it be included with the completed statistical analysis that I have performed on the groundwater data for the C-746-S&T and C-746-U Landfills at the Paducah Gaseous Diffusion Plant.

As a Chemist, with a Bachelor of Science degree in chemistry and a minor in mathematics, I have over two years of experience in reviewing and assessing laboratory analytical results associated with environmental sampling and investigation activities. For the generation of these statistical analyses, my work was observed and reviewed by a senior chemist with LATA.

For this project, the statistical analyses conducted on the second quarter 2014 monitoring well data collected from the C-746-S&T and C-746-U Landfills were performed in accordance with guidance provided in the U.S. Environmental Protection Agency guidance document, *EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance* (1989). For pH, an additional lower tolerance interval was established. For pH only, the test well data was compared to both the upper and lower tolerance intervals to determine if statistically significant deviations in concentration with respect to upgradient well exist.

Sincerely,



Cory Tackett
LATA Project Chemist

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APPENDIX E

GROUNDWATER FLOW RATE AND DIRECTION

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GROUNDWATER FLOW RATE AND DIRECTION

Determination of groundwater flow rate and direction of flow in the uppermost aquifer whenever the monitoring wells (MWs) are sampled is a requirement of 401 KAR 48.300, Section 11. The uppermost aquifer below C-746-U Landfill is the Regional Gravel Aquifer (RGA). Water level measurements currently are recorded in several wells at the landfill on a quarterly basis. These measurements were used to plot the potentiometric surface of the RGA for the second quarter 2014 and determine groundwater flow rate and direction.

Water levels during this reporting period were measured on April 29, 2014. As shown on Figure E.1, all Upper Continental Recharge System (UCRS) wells had sufficient water to permit water level measurement during this reporting period. Two UCRS wells, MW376 and MW377, had insufficient water to permit sampling.

The UCRS has a strong vertical hydraulic gradient; therefore, the available UCRS wells screened over different elevations are not sufficient for mapping the potentiometric surface. As shown in Table E.1, the RGA data were converted to elevations to plot the potentiometric surfaces within the Upper Regional Gravel Aquifer (URGA) and Lower Regional Gravel Aquifer (LRGA). (At the request of the Commonwealth of Kentucky, the RGA is differentiated into two zones, the URGA and LRGA.) Based on the potentiometric maps (Figures E.2 and E.3), the hydraulic gradient for both the URGA and LRGA at the C-746-U Landfill were similar (3.35×10^{-4} ft/ft and 3.41×10^{-4} ft/ft, respectively). Water level measurements in wells at the C-746-U Landfill and in wells of the surrounding region (MW98, MW100, MW125, MW139, MW173, MW193, MW197, and MW200), along with the C-746-S&T Landfill wells, were used to contour the general RGA potentiometric surface (Figure E.4). The hydraulic gradient for the RGA, as a whole, in the vicinity of the C-746-U Landfill was 2.86×10^{-4} ft/ft. The hydraulic gradients are shown in Table E.2.

The average linear groundwater flow velocity (v) is determined by multiplying the hydraulic gradient (i) by the hydraulic conductivity (K) [resulting in the specific discharge (q)] and dividing by the effective porosity (n_e). The RGA hydraulic conductivity values used are reported in the Administrative Application for the New Solid Waste Landfill Permit No. 073-00045NWC1 and range from 425 to 725 ft/day (0.150 to 0.256 cm/s). RGA (both URGA and LRGA) effective porosity is assumed to be 25%. Flow velocities were calculated for the URGA and LRGA using the low and high values for hydraulic conductivity, as shown in the Table E.3.

Groundwater flow beneath the C-746-U Landfill typically trends northeastward toward the Ohio River. During April 2014, groundwater flow in the vicinity of the landfills was directed eastward, in response to changes in the Ohio River stage. As demonstrated on the potentiometric map for April 2014, the groundwater flow direction in the immediate area of the landfill commonly varies slightly from regional trends; however, as groundwater flows away from the landfill, it eventually conforms to the regional flow direction.

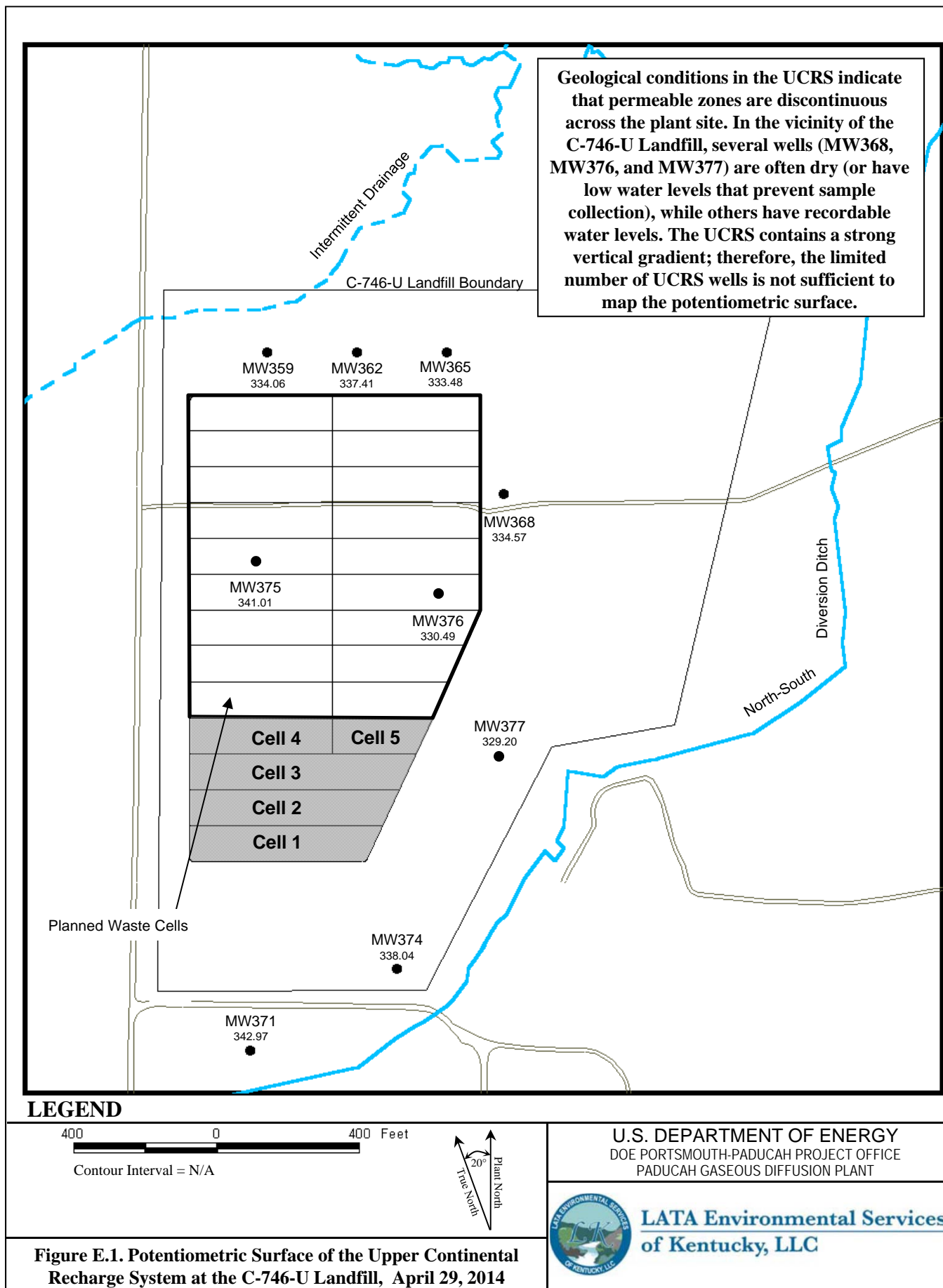
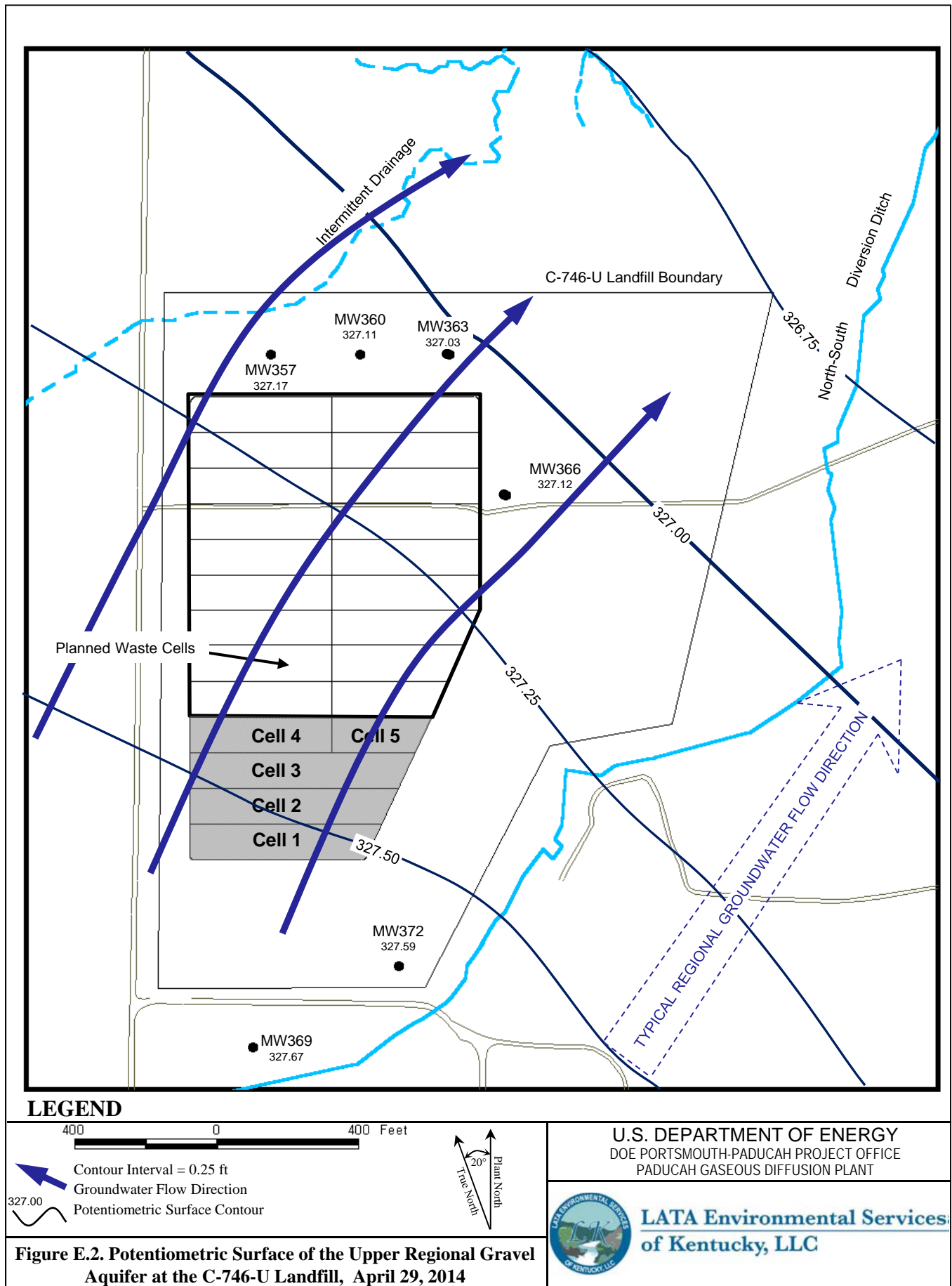
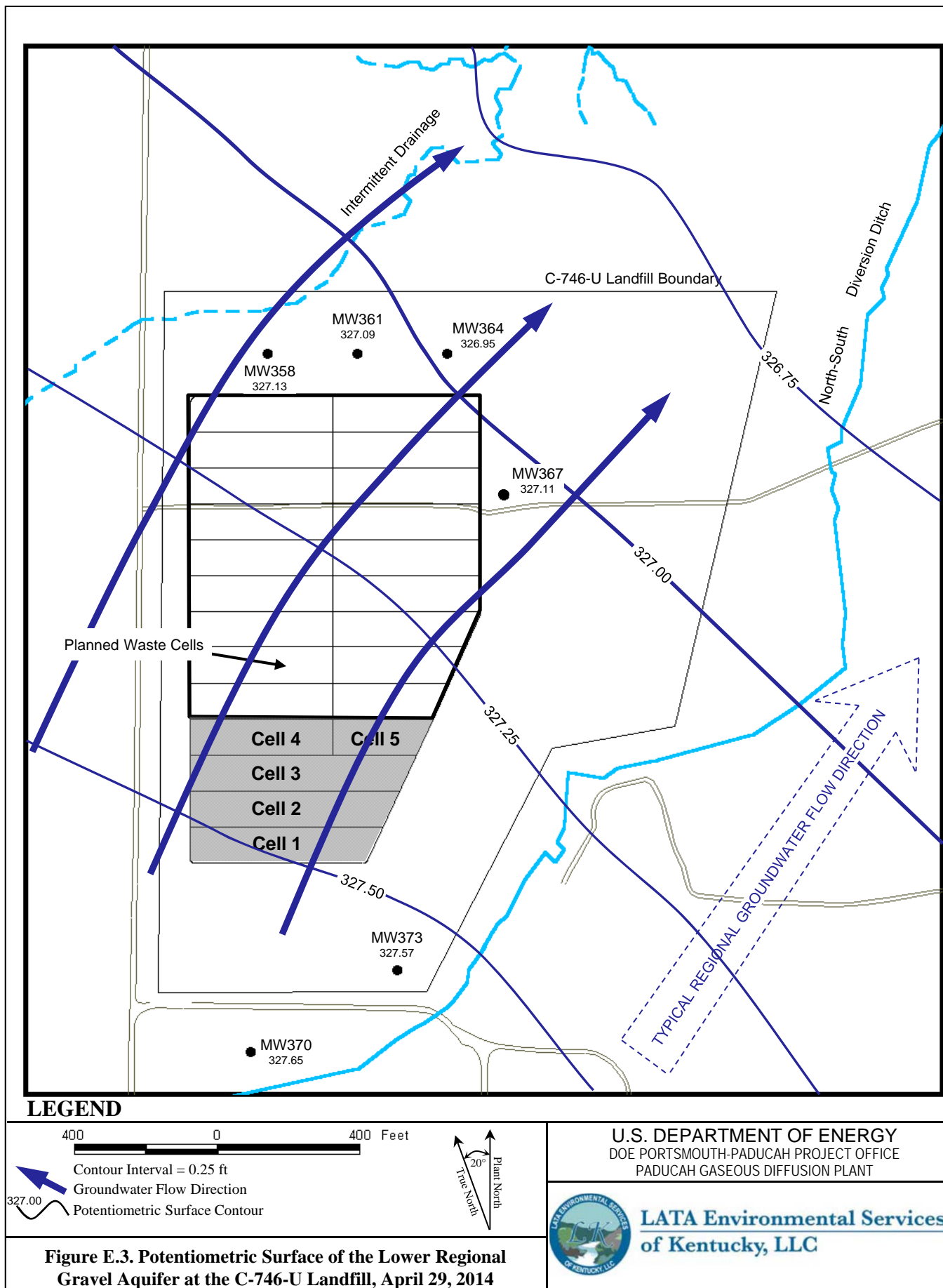


Table E.1. C-746-U Landfill Second Quarter 2014 (April) Water Levels

C-746-U Landfill (April 2014) Water Levels										
Date	Time	Well	Aquifer	Datum Elev (ft amsl)	BP (in Hg)	Delta BP (ft H2O)	Raw Data		*Corrected Data	
							DTW (ft)	Elev (ft amsl)	DTW (ft)	Elev (ft amsl)
4/29/2014	9:02	MW357	URGA	368.99	29.63	0.00	41.82	327.17	41.82	327.17
4/29/2014	9:00	MW358	LRGA	369.13	29.63	0.00	42.00	327.13	42.00	327.13
4/29/2014	9:01	MW359	UCRS	369.11	29.63	0.00	35.05	334.06	35.05	334.06
4/29/2014	9:05	MW360	URGA	362.30	29.63	0.00	35.19	327.11	35.19	327.11
4/29/2014	9:07	MW361	LRGA	361.54	29.63	0.00	34.45	327.09	34.45	327.09
4/29/2014	9:06	MW362	UCRS	362.04	29.63	0.00	24.63	337.41	24.63	337.41
4/29/2014	8:56	MW363	URGA	368.83	29.63	0.00	41.80	327.03	41.80	327.03
4/29/2014	8:54	MW364	LRGA	367.75	29.63	0.00	40.80	326.95	40.80	326.95
4/29/2014	8:55	MW365	UCRS	368.37	29.63	0.00	34.89	333.48	34.89	333.48
4/29/2014	8:52	MW366	URGA	369.27	29.63	0.00	42.15	327.12	42.15	327.12
4/29/2014	8:50	MW367	LRGA	369.66	29.63	0.00	42.55	327.11	42.55	327.11
4/29/2014	8:51	MW368	UCRS	369.27	29.63	0.00	34.70	334.57	34.70	334.57
4/29/2014	7:57	MW369	URGA	364.48	29.63	0.00	36.81	327.67	36.81	327.67
4/29/2014	8:00	MW370	LRGA	365.35	29.63	0.00	37.70	327.65	37.70	327.65
4/29/2014	7:58	MW371	UCRS	364.88	29.63	0.00	21.91	342.97	21.91	342.97
4/29/2014	7:52	MW372	URGA	359.66	29.61	0.02	32.05	327.61	32.07	327.59
4/29/2014	7:56	MW373	LRGA	359.95	29.63	0.00	32.38	327.57	32.38	327.57
4/29/2014	7:54	MW374	UCRS	359.71	29.63	0.00	21.67	338.04	21.67	338.04
4/29/2014	7:43	MW375	UCRS	370.53	29.61	0.02	29.50	341.03	29.52	341.01
4/29/2014	7:47	MW376	UCRS	370.61	29.61	0.02	40.10	330.51	40.12	330.49
4/29/2014	7:49	MW377	UCRS	365.92	29.61	0.02	36.70	329.22	36.72	329.20
<p>Initial Barometric Pressure 29.63</p> <p>Elev = elevation</p> <p>amsl = above mean sea level</p> <p>BP = barometric pressure</p> <p>DTW = depth to water in feet below datum</p> <p>URGA = Upper Regional Gravel Aquifer</p> <p>LRGA = Lower Regional Gravel Aquifer</p> <p>UCRS = Upper Continental Recharge System</p> <p>ND = No Data acquired</p> <p>*Assumes a barometric efficiency of 1.0</p>										





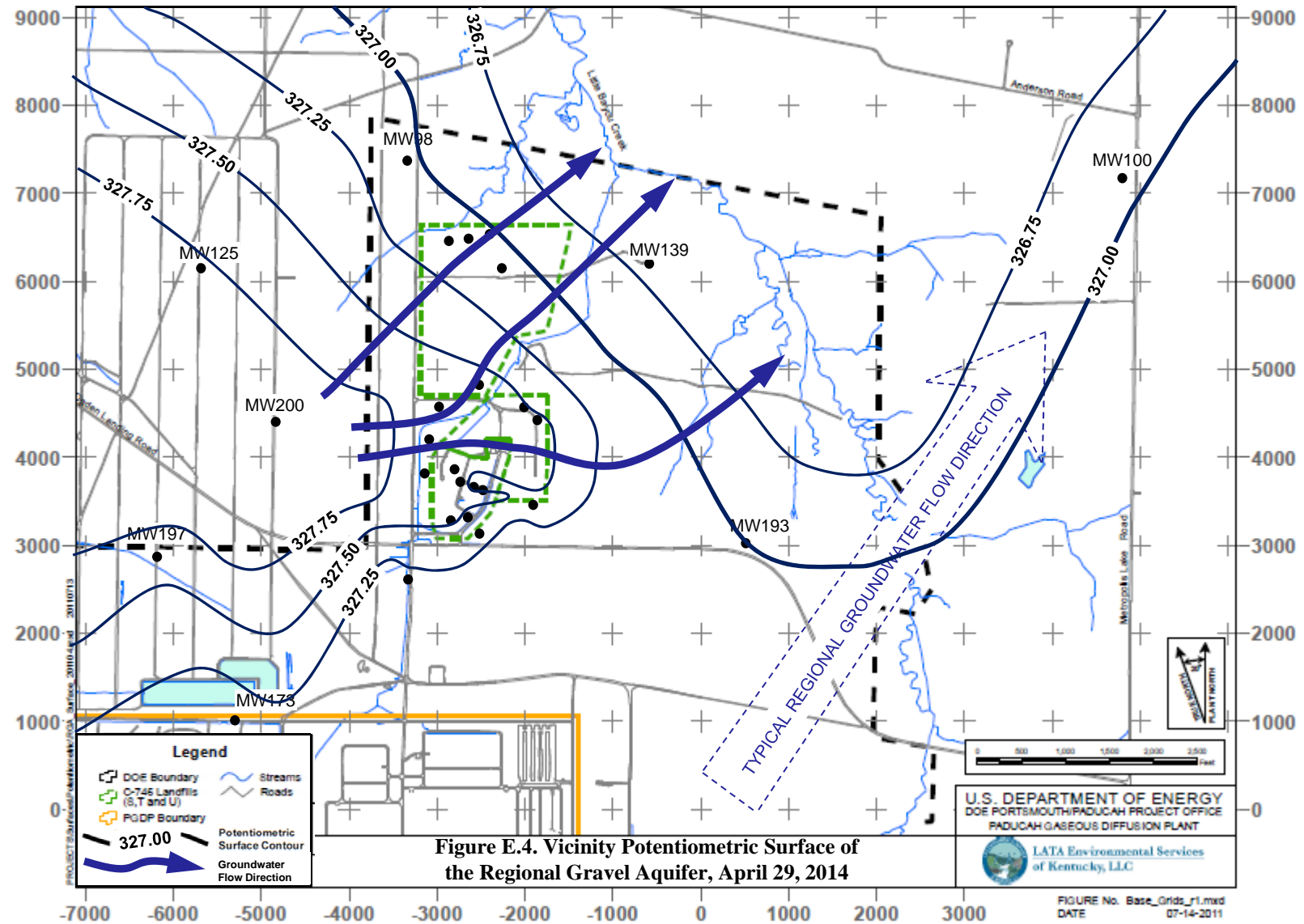


Table E.2. C-746-U Landfill Hydraulic Gradients

	ft/ft
Beneath Landfill—Upper RGA	3.35×10^{-4}
Beneath Landfill—Lower RGA	3.41×10^{-4}
Vicinity	2.86×10^{-4}

Table E.3. C-746-U Landfill Groundwater Flow Rate

Hydraulic Conductivity (K)		Specific Discharge (q)		Average Linear Velocity (v)	
ft/day	cm/s	ft/day	cm/s	ft/day	cm/s
<u>Upper RGA</u>					
725	0.256	0.24	8.57×10^{-5}	0.97	3.43×10^{-4}
425	0.150	0.14	5.02×10^{-5}	0.57	2.01×10^{-4}
<u>Lower RGA</u>					
725	0.256	0.25	8.73×10^{-5}	0.99	3.49×10^{-4}
425	0.150	0.14	5.11×10^{-5}	0.58	2.05×10^{-4}

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APPENDIX F
NOTIFICATIONS

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NOTIFICATIONS

In accordance with 401 KAR 48:300, Section 7, the notification for parameters that exceed the maximum contaminant level (MCL) has been submitted to the Kentucky Division of Waste Management. The parameters submitted are listed on Page F-4. The notification for parameters that had statistically significant increased concentrations relative to background concentrations is provided below.

Statistical Analysis of Parameters Notification

The statistical analyses conducted on the second quarter 2014 groundwater data collected from the C-746-U Landfill monitoring wells (MWs) were performed in accordance with Permit Condition GSTR0001, Standard Requirement 3, using the U.S. Environmental Protection Agency guidance document, *EPA Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance* (1989), with the exception of pH. The method for conducting the statistical analysis of pH was selected by the project statistician.

The following are the parameters in 40 CFR § 302.4, Appendix A, which had statistically significant increased concentrations relative to background concentrations.

<u>Parameter</u>	<u>Monitoring Well</u>
Upper Continental Recharge System	
None	
Upper Regional Gravel Aquifer	
Toluene	MW366, MW369
Lower Regional Gravel Aquifer	
Technetium-99	MW364

NOTE: Although technetium-99 is not cited in 40 CFR § 302.4, Appendix A, this radionuclide is being reported along with the parameters of this regulation.

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APPENDIX G

CHART OF MCL EXCEEDANCES AND STATISTICALLY SIGNIFICANT INCREASES

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Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
ACETONE																						
Quarter 3, 2002											*	*	*									
Quarter 4, 2002											*	*	*									
Quarter 1, 2003												*	*	*								
Quarter 2, 2003												*	*	*								
Quarter 3, 2003	*						*				*	*	*			*			*			
Quarter 4, 2003						*	*					*			*							
Quarter 3, 2004						*											*					
Quarter 3, 2005						*																
Quarter 4, 2005						*																
ALPHA ACTIVITY																						
Quarter 1, 2004																						■
Quarter 2, 2004						■																
Quarter 3, 2009						■																
ALUMINUM																						
Quarter 3, 2003												*										
BETA ACTIVITY																						
Quarter 1, 2004																■						
Quarter 2, 2004																■						■
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Quarter 4, 2008											■					■				■		
Quarter 1, 2009											■					■						
Quarter 2, 2009																■	■	■				
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Quarter 4, 2009											■					■						
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Quarter 2, 2010											■						■					
Quarter 3, 2010											■											
Quarter 4, 2010																■						
Quarter 2, 2011											■						■					
Quarter 4, 2011																■						
Quarter 1, 2012											■											
Quarter 2, 2012											■								■			
Quarter 3, 2012											■					■						
Quarter 4, 2012																■						■

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 1, 2013																■						■
Quarter 3, 2013																■						■
Quarter 4, 2013																■						
Quarter 1, 2014																■						
BROMIDE																						
Quarter 2, 2004														*								
CALCIUM																						
Quarter 3, 2003											*											
Quarter 2, 2005																						*
Quarter 3, 2006																*						
Quarter 2, 2008																*						
Quarter 3, 2009																*						
Quarter 4, 2009																*						
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CARBON DISULFIDE																						
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Quarter 4, 2010															*							
Quarter 1, 2011																*						
CHEMICAL OXYGEN DEMAND																						
Quarter 3, 2002											*	*	*	*	*	*						
Quarter 4, 2002											*	*										
Quarter 1, 2003											*	*										
Quarter 2, 2003											*	*	*									
Quarter 3, 2003	*										*	*					*					
Quarter 4, 2003						*					*	*										
Quarter 3, 2004											*											

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS									URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U	S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374	366	360	363	357	369	372	367	361	364	358	370	373
Quarter 3, 2005						*				*					*	*			*		
Quarter 4, 2005						*												*	*		
Quarter 1, 2006																			*		
CHLORIDE																					
Quarter 1, 2006																				*	
Quarter 2, 2014															*						
COBALT																					
Quarter 3, 2003	*						*			*	*		*	*	*	*	*	*		*	
Quarter 1, 2004														*							
CONDUCTIVITY																					
Quarter 4, 2002										*											
Quarter 1, 2003										*											
Quarter 2, 2003										*	*										
Quarter 4, 2003										*											
Quarter 1, 2004										*											
Quarter 2, 2004										*											
Quarter 3, 2004										*											
Quarter 1, 2005															*						
Quarter 2, 2005															*						
Quarter 3, 2005						*												*			
Quarter 4, 2005															*		*				
Quarter 1, 2006															*						
Quarter 2, 2006															*						
Quarter 3, 2006															*						
Quarter 1, 2007															*						
Quarter 2, 2007															*						
Quarter 3, 2007															*						
Quarter 4, 2007															*						
Quarter 1, 2008															*						
Quarter 2, 2008															*						
Quarter 3, 2008															*						
Quarter 4, 2008															*						
Quarter 1, 2009															*						
Quarter 2, 2009															*						
Quarter 3, 2009															*						
Quarter 4, 2009															*						
Quarter 1, 2010															*						
Quarter 2, 2010															*						
Quarter 3, 2010															*						
Quarter 4, 2010															*						
Quarter 1, 2011															*						
Quarter 2, 2011															*						
Quarter 3, 2011															*						
Quarter 4, 2011															*						
Quarter 1, 2012														*	*						
Quarter 2, 2012															*						
Quarter 3, 2012															*						
Quarter 4, 2012															*						

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 1, 2013																*						
Quarter 2, 2013																*						
Quarter 3, 2013																*						
Quarter 4, 2013																*						
Quarter 1, 2014																*						
Quarter 2, 2014																*						
DISSOLVED OXYGEN																						
Quarter 1, 2003					*	*					*											
Quarter 3, 2003					*						*											
Quarter 4, 2003					*																	
Quarter 1, 2004					*																	
Quarter 2, 2004								*									*					
Quarter 1, 2005					*																	
Quarter 2, 2005								*														
Quarter 1, 2006					*																	
Quarter 2, 2006					*			*														
Quarter 3, 2006					*			*														
Quarter 4, 2006					*				*													
Quarter 2, 2007					*			*														
Quarter 3, 2007					*			*	*													
Quarter 1, 2008					*														*			
Quarter 2, 2008								*	*													
Quarter 3, 2008								*														
Quarter 1, 2009							*															
Quarter 2, 2009					*			*	*													
Quarter 3, 2009						*		*	*													
Quarter 1, 2010					*		*															
Quarter 2, 2010					*	*		*	*											*	*	
Quarter 3, 2010					*	*																
Quarter 4, 2010							*					*								*		
Quarter 1, 2011						*																
Quarter 2, 2011					*	*	*	*	*						*							
Quarter 3, 2011						*			*													
Quarter 1, 2012							*		*													
Quarter 2, 2012	*			*	*	*		*	*													
Quarter 3, 2012						*																
Quarter 4, 2012									*													
Quarter 1, 2013						*			*													
Quarter 2, 2013							*		*													
Quarter 3, 2013	*				*		*	*	*													
Quarter 4, 2013									*												*	
Quarter 2, 2014	*				*	*	*	*	*									*				
DISSOLVED SOLIDS																						
Quarter 4, 2002											*											
Quarter 1, 2003											*											
Quarter 2, 2003											*											
Quarter 3, 2003							*				*	*										

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 4, 2003											*											
Quarter 3, 2005						*																
Quarter 4, 2006																*						
Quarter 1, 2007																*						
Quarter 2, 2007																*						
Quarter 4, 2008																*						
Quarter 1, 2009																*						
Quarter 2, 2009																*						
Quarter 3, 2009																*						
Quarter 4, 2009																*						
Quarter 1, 2010																*						
Quarter 2, 2010																*						
Quarter 3, 2010																*						
Quarter 4, 2010																*						
Quarter 1, 2011																*						
Quarter 2, 2011																*						
Quarter 3, 2011																*						
Quarter 4, 2011																*						
Quarter 1, 2012															*	*						
Quarter 2, 2012																*						*
Quarter 3, 2012																*						*
Quarter 4, 2012																*						
Quarter 1, 2013																*						
Quarter 2, 2013																*						
Quarter 3, 2013																*						
Quarter 4, 2013																*						
Quarter 1, 2014																*						
Quarter 2, 2014																*						
IODIDE																						
Quarter 2, 2003																	*					
Quarter 3, 2003	*										*											
Quarter 4, 2003							*															
Quarter 3, 2010						*		*					*					*				
IODINE-131																						
Quarter 3, 2010																			■			
IODOMETHANE																						
Quarter 4, 2003						*																
IRON																						
Quarter 4, 2002						*																
Quarter 3, 2003																	*					
Quarter 4, 2003											*						*					
Quarter 1, 2004											*						*					
Quarter 2, 2004											*											
Quarter 3, 2004											*											
Quarter 3, 2005																	*					
MAGNESIUM																						
Quarter 2, 2005																*						*
Quarter 3, 2005						*																*
Quarter 2, 2006																*						*

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 3, 2006																*						
Quarter 1, 2007																*						
Quarter 2, 2008																*						
Quarter 2, 2009																*						
Quarter 3, 2009																*						
Quarter 4, 2009																*						
Quarter 1, 2010																*						
Quarter 2, 2010																*						
Quarter 3, 2010																*						
Quarter 1, 2011																*						
Quarter 2, 2011																*						
Quarter 3, 2011																*						
Quarter 4, 2011																*						
Quarter 1, 2012																*						
Quarter 2, 2012																*						
Quarter 3, 2012																*						
Quarter 4, 2012																*						
Quarter 1, 2013																*						
Quarter 2, 2013																*						
Quarter 3, 2013																*						
Quarter 4, 2013																*						
Quarter 2, 2014																*						
MANGANESE																						
Quarter 3, 2002											*		*									
Quarter 4, 2002		*				*	*				*		*		*							
Quarter 2, 2003											*		*									
Quarter 3, 2003											*		*	*			*	*	*	*		
Quarter 4, 2003											*	*	*	*				*	*			
Quarter 1, 2004											*	*	*				*	*	*			
Quarter 2, 2004							*				*	*	*					*				
Quarter 3, 2004							*				*	*	*				*					
Quarter 4, 2004											*		*				*					
Quarter 1, 2005											*		*									
Quarter 2, 2005											*		*									
Quarter 3, 2005											*		*				*					
Quarter 4, 2005											*						*					
Quarter 1, 2006											*											
Quarter 2, 2006							*				*		*									
Quarter 3, 2006											*						*					
Quarter 4, 2006											*											
Quarter 1, 2007											*											
Quarter 2, 2007							*				*											
Quarter 3, 2007							*															
Quarter 3, 2008							*															
Quarter 4, 2008							*															
Quarter 3, 2009							*															
Quarter 3, 2011							*															
NICKEL																						
Quarter 3, 2003											*											

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
OXIDATION-REDUCTION POTENTIAL																						
Quarter 4, 2002																		*		*		
Quarter 1, 2003																		*		*		
Quarter 2, 2003																				*		
Quarter 3, 2003	*																					
Quarter 4, 2003					*																	
Quarter 2, 2004														*				*				*
Quarter 3, 2004					*			*						*	*	*		*			*	*
Quarter 4, 2004													*									*
Quarter 1, 2005																		*			*	*
Quarter 2, 2005								*						*				*			*	
Quarter 3, 2005					*	*		*				*	*	*				*		*	*	*
Quarter 4, 2005		*						*						*				*			*	
Quarter 1, 2006					*			*	*									*				*
Quarter 2, 2006					*		*	*						*				*			*	
Quarter 3, 2006					*			*						*				*			*	
Quarter 4, 2006					*		*				*		*	*				*			*	*
Quarter 1, 2007		*			*			*						*				*			*	*
Quarter 2, 2007					*									*				*			*	*
Quarter 3, 2007					*			*										*			*	
Quarter 4, 2007																		*			*	*
Quarter 1, 2008					*			*					*	*						*	*	
Quarter 2, 2008					*			*			*			*	*				*		*	*
Quarter 3, 2008					*		*	*	*		*		*	*	*			*	*	*	*	*
Quarter 4, 2008								*			*		*	*	*			*	*		*	*
Quarter 1, 2009							*	*			*		*	*	*				*		*	
Quarter 2, 2009					*		*	*			*		*	*	*			*	*		*	*
Quarter 3, 2009		*			*	*	*	*	*		*		*	*	*			*	*	*	*	*
Quarter 4, 2009		*				*	*	*	*		*		*	*	*			*	*	*	*	*
Quarter 1, 2010		*			*		*	*			*			*			*	*	*		*	
Quarter 2, 2010					*	*		*			*	*	*	*			*	*	*	*	*	*
Quarter 3, 2010		*			*	*	*	*	*		*	*		*	*	*		*	*	*	*	*
Quarter 4, 2010		*				*	*	*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 1, 2011						*		*			*	*	*	*	*	*		*	*	*	*	
Quarter 2, 2011		*			*	*	*	*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 3, 2011		*				*		*	*		*		*	*	*	*		*	*	*	*	*
Quarter 4, 2011		*				*		*	*		*	*	*	*	*	*		*	*	*		*
Quarter 1, 2012		*				*	*	*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 2, 2012	*	*		*	*	*	*	*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 3, 2012		*				*		*			*		*	*	*	*		*	*	*	*	*
Quarter 4, 2012		*				*		*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 1, 2013		*				*		*	*		*	*	*	*	*	*		*	*	*		*
Quarter 2, 2013		*						*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 3, 2013	*	*			*	*	*	*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 4, 2013		*				*		*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 1, 2014		*						*	*		*	*	*	*	*	*		*	*	*	*	*
Quarter 2, 2014	*	*			*	*	*	*	*		*	*	*	*	*	*		*	*	*	*	*

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
PCB, TOTAL																						
Quarter 4, 2003																		*				
Quarter 3, 2004													*									
Quarter 3, 2005							*															
Quarter 2, 2006							*															
Quarter 3, 2006							*															
Quarter 1, 2007							*															
Quarter 2, 2007							*															
Quarter 3, 2007							*															
Quarter 1, 2008							*															
Quarter 2, 2008							*															
Quarter 4, 2008							*															
Quarter 3, 2009							*															
Quarter 1, 2010							*															
Quarter 2, 2010							*															
Quarter 4, 2010							*															
PCB-1016																						
Quarter 3, 2004													*									
Quarter 2, 2006							*						*									
Quarter 1, 2007							*															
Quarter 2, 2007							*															
Quarter 3, 2007							*															
Quarter 2, 2008							*															
Quarter 4, 2008							*															
Quarter 3, 2009							*															
Quarter 1, 2010							*															
Quarter 2, 2010							*															
Quarter 4, 2010							*															
PCB-1242																						
Quarter 3, 2006							*						*									
Quarter 4, 2006											*											
Quarter 1, 2008							*															
Quarter 2, 2012							*															
PCB-1248																						
Quarter 2, 2008							*															
PCB-1260																						
Quarter 2, 2006							*															
pH																						
Quarter 3, 2002											*											
Quarter 4, 2002											*											
Quarter 1, 2003											*											
Quarter 2, 2003											*											
Quarter 3, 2003	*						*				*											
Quarter 4, 2003							*										*					
Quarter 1, 2004							*										*					
Quarter 3, 2005						*												*	*			
Quarter 4, 2005						*													*			

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 3, 2006																	*					
Quarter 2, 2011															*							
Quarter 3, 2011															*							
Quarter 4, 2011															*							
Quarter 1, 2012																	*	*				
Quarter 2, 2012													*									
Quarter 1, 2013											*		*				*					
POTASSIUM																						
Quarter 1, 2014																	*					
RADIUM-228																						
Quarter 2, 2005																■						
Quarter 4, 2005						■							■						■			
SELENIUM																						
Quarter 4, 2003									■													
SODIUM																						
Quarter 3, 2002											*	*		*								
Quarter 4, 2002											*	*			*							
Quarter 1, 2003											*											
Quarter 2, 2003											*	*										
Quarter 3, 2003												*										
Quarter 1, 2007												*										
Quarter 1, 2012															*							
Quarter 1, 2014																*						
STRONTIUM-90																						
Quarter 3, 2003							■															
SULFATE																						
Quarter 1, 2003							*															
Quarter 2, 2003						*	*															
Quarter 3, 2003	*					*																
Quarter 4, 2003					*		*															
Quarter 1, 2004					*	*	*															
Quarter 2, 2004					*	*	*															
Quarter 3, 2004					*	*	*															
Quarter 1, 2005					*	*			*													
Quarter 2, 2005					*		*		*							*						
Quarter 3, 2005					*	*	*															
Quarter 4, 2005																*						
Quarter 1, 2006					*				*													
Quarter 2, 2006						*	*		*							*						
Quarter 3, 2006							*															
Quarter 1, 2007							*															
Quarter 2, 2007							*															
Quarter 3, 2007							*															
Quarter 4, 2007		*																				
Quarter 1, 2008		*			*		*		*													
Quarter 2, 2008		*			*	*	*															
Quarter 3, 2008		*			*	*	*															
Quarter 4, 2008		*			*	*																

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 1, 2009		*					*															
Quarter 2, 2009		*			*	*	*															
Quarter 3, 2009		*			*	*	*									*						
Quarter 4, 2009		*			*	*										*						
Quarter 1, 2010		*			*	*	*									*						
Quarter 2, 2010		*			*	*	*									*						
Quarter 3, 2010		*			*	*	*									*						
Quarter 4, 2010		*				*	*									*						
Quarter 1, 2011		*																				
Quarter 2, 2011		*			*	*	*									*						
Quarter 3, 2011		*				*	*	*								*						
Quarter 4, 2011		*				*										*						
Quarter 1, 2012		*					*	*								*						
Quarter 2, 2012	*	*		*	*	*	*	*	*							*						
Quarter 3, 2012		*				*										*						
Quarter 4, 2012		*														*						
Quarter 1, 2013		*				*										*						
Quarter 2, 2013		*														*						
Quarter 3, 2013	*	*		*	*	*	*									*						
Quarter 4, 2013		*														*						
Quarter 1, 2014		*														*						
Quarter 2, 2014	*	*			*		*	*								*						
TECHNETIUM-99																						
Quarter 4, 2002																		*	*	*		
Quarter 2, 2003							*						*				*	*	*	*		*
Quarter 3, 2003																		*				
Quarter 4, 2003																		*				*
Quarter 1, 2004																*		*				*
Quarter 2, 2004																*						*
Quarter 3, 2004																*						*
Quarter 4, 2004																*	*					*
Quarter 3, 2005																	*					
Quarter 1, 2006																*						*
Quarter 2, 2006		*							*													*
Quarter 3, 2006																						*
Quarter 4, 2006																*						*
Quarter 1, 2007																						*
Quarter 2, 2007													*		*						*	
Quarter 3, 2007																*		*	*			
Quarter 4, 2007										*						*				*		*
Quarter 1, 2008																*					*	*
Quarter 2, 2008							*	*							*		*		*			
Quarter 3, 2008																*						
Quarter 4, 2008											*							*		*		
Quarter 1, 2009											*											
Quarter 2, 2009																			*			
Quarter 3, 2009								*			*					*						
Quarter 4, 2009											*					*			*	*		

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS										URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U		S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374		366	360	363	357	369	372	367	361	364	358	370	373
Quarter 2, 2010											*						*	*	*	*		
Quarter 3, 2010											*					*						
Quarter 4, 2010																			*			
Quarter 1, 2011		*									*							*				
Quarter 2, 2011																	*	*	*	*		
Quarter 1, 2012																		*	*			
Quarter 2, 2012								*											*			
Quarter 3, 2012																		*	*			
Quarter 4, 2012																*			*			*
Quarter 1, 2013																			*			*
Quarter 2, 2013																						*
Quarter 3, 2013											*											*
Quarter 4, 2013																*		*	*			*
Quarter 1, 2014																*		*	*			
Quarter 2, 2014																			*			
TOLUENE																						
Quarter 2, 2014											*					*						
TOTAL ORGANIC CARBON																						
Quarter 3, 2002											*	*	*			*						*
Quarter 4, 2002											*	*				*						
Quarter 1, 2003												*										
Quarter 3, 2003	*										*	*					*					
Quarter 4, 2003											*	*										
Quarter 1, 2004												*										
Quarter 3, 2005						*					*					*	*			*		
Quarter 4, 2005						*													*	*		
Quarter 1, 2006																				*		
TOTAL ORGANIC HALIDES																						
Quarter 4, 2002											*											
Quarter 1, 2003											*											
Quarter 2, 2003											*											
Quarter 1, 2004																	*					
TRICHLOROETHENE																						
Quarter 3, 2002																■					■	
Quarter 4, 2002																■					■	
Quarter 1, 2003																					■	■
Quarter 2, 2003																■					■	
Quarter 3, 2003								■													■	■
Quarter 4, 2003																■					■	■
Quarter 1, 2004																■					■	■
Quarter 2, 2004																■					■	■
Quarter 3, 2004																■					■	■
Quarter 4, 2004																■					■	■
Quarter 1, 2005																■					■	■
Quarter 2, 2005																■					■	■
Quarter 3, 2005																■					■	■

Chart of MCL Exceedances and Statistical Increases for C-746-U Contained Landfill

Groundwater Flow System	UCRS									URGA						LRGA					
Gradient	S	S	S	S	D	D	D	U	U	S	D	D	D	U	U	S	D	D	D	U	U
Monitoring Well	368	375	376	377	359	362	365	371	374	366	360	363	357	369	372	367	361	364	358	370	373
Quarter 4, 2005															■					■	■
Quarter 1, 2006															■					■	■
Quarter 2, 2006															■					■	■
Quarter 3, 2006															■					■	■
Quarter 4, 2006															■						■
Quarter 1, 2007															■					■	■
Quarter 2, 2007															■						■
Quarter 3, 2007															■						■
Quarter 4, 2007															■						■
Quarter 1, 2008															■						■
Quarter 2, 2008															■				■		■
Quarter 3, 2008															■						■
Quarter 4, 2008															■						■
Quarter 1, 2009															■						■
Quarter 2, 2009															■						■
Quarter 3, 2009															■						■
Quarter 4, 2009						■	■				■		■	■	■		■				■
Quarter 1, 2010													■		■						■
Quarter 2, 2010													■		■						■
Quarter 3, 2010													■		■						■
Quarter 4, 2010													■		■						■
Quarter 1, 2011													■		■						■
Quarter 2, 2011															■				■		■
Quarter 3, 2011													■		■				■		■
Quarter 4, 2011													■		■						■
Quarter 1, 2012													■		■		■		■		■
Quarter 2, 2012															■						■
Quarter 3, 2012															■						■
Quarter 4, 2012														■	■						■
Quarter 1, 2013													■		■						■
Quarter 2, 2013													■		■		■		■		■
Quarter 3, 2013													■		■						■
Quarter 4, 2013													■		■				■		■
Quarter 1, 2014													■		■				■		■
Quarter 2, 2014															■		■		■		
TURBIDITY																					
Quarter 1, 2003											*										
URANIUM																					
Quarter 4, 2002		*			*	*	*			*	*	*	*	*	*	*		*	*	*	*
Quarter 4, 2006																					*
ZINC																					
Quarter 3, 2005																			*		
* Statistical test results indicate an elevated concentration (i.e., a statistical exceedance)																					
■ MCL Exceedance																					
UCRS Upper Continental Recharge System																					
URGA Upper Regional Gravel Aquifer																					
LRGA Lower Regional Gravel Aquifer																					

APPENDIX H
METHANE MONITORING DATA

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C-746-U LANDFILL METHANE LOG

PADUCAH GASEOUS DIFFUSION PLANT

Permit #: 073-00045

McCracken County, Kentucky

Date: June 06, 2014

[illegible]

Tommy Smith
Signature

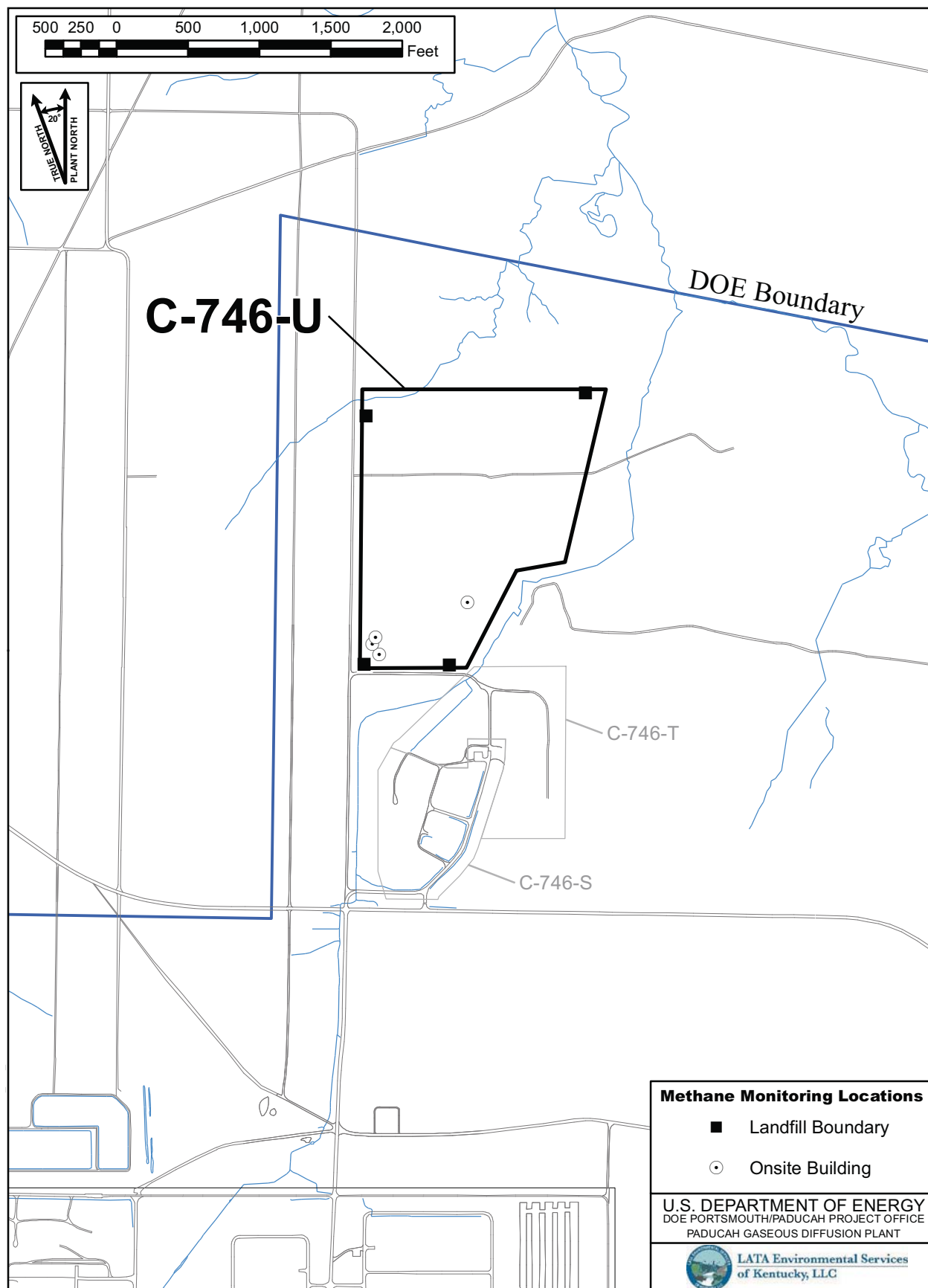


Figure H.1. C-746-U Methane Monitoring Locations

APPENDIX I

SURFACE WATER SAMPLE ANALYSES AND WRITTEN COMMENTS

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Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502)564-6716

RESIDENTIAL/CONTAINED-QUARTERLY
Facility: US DOE - Paducah Gaseous Diffusion Plant
Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

SURFACE WATER SAMPLE ANALYSIS (S)

Monitoring Point (KPDES Discharge Number, or "UPSTREAM", or "DOWNSTREAM")					L150 AT SITE		L154 UPSTREAM		L351 DOWNSTREAM		F. BLANK		
Sample Sequence #					1		1		1		1		
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment					NA		NA		NA		F		
Sample Date and Time (Month/Day/Year hour: minutes)					4/28/2014 08:00		4/28/2014 08:13		4/28/2014 07:36		4/28/2014 08:05		
Duplicate ("Y" or "N") ¹					N		N		N		N		
Split ('Y' or "N") ²					N		N		N		N		
Facility Sample ID Number (if applicable)					L150US3-14		L154US3-14		L351US3-14		FB1US3-14		
Laboratory Sample ID Number (if applicable)					347655001		347655003		347655004		347655005		
Date of Analysis (Month/Day/Year)					5/7/2014		5/7/2014		5/7/2014		5/20/2014		
CAS RN ³		CONSTITUENT	T D ⁴	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁵	F L A G S ⁷	DETECTED VALUE OR PQL ⁵	F L A G S ⁷	DETECTED VALUE OR PQL ⁵	F L A G S ⁷	DETECTED VALUE OR PQL ⁵	F L A G S ⁷
A200-00-0	0	Flow	T	MGD	Field	0.12		12.86		38.27			*
16887-00-6	2	Chloride(s)	T	MG/L	300.0	0.945		1.13		1.11		1.38	
14808-79-8	0	Sulfate	T	MG/L	300.0	6.75		3.35		3.87		0.156	J
7439-89-6	0	Iron	T	MG/L	200.8	0.779		1.46		1.74		<0.1	
7440-23-5	0	Sodium	T	MG/L	200.8	1.17		2.51		2.13		0.677	
S0268- -	0	Organic Carbon ⁶	T	MG/L	9060	18.6		14.6		14.2			*
S0097- -	0	BOD ⁶	T	MG/L	not applicable		*		*		*		*
S0130- -	0	Chemical Oxygen Demand	T	MG/L	410.4	54.7		47.2		72.2			*

¹Respond "Y" if the sample was a duplicate of another sample in this report

²Respond "Y" if the sample was split and analyzed by separate laboratories.

³Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.

⁴"T" = Total; "D" = Dissolved

⁵"<" indicates a non-detect; do not use "ND" or "BDL". Value then shown is Practical Quantification Limit

⁶Facility has either/or option on Organic Carbon and (BOD) Biochemical Oxygen Demand - both are not required

⁷Flags are as designated, do not use any other type. Use "*", " then describe on "Written Comments" page.

STANDARD FLAGS:

* = See Comments

J = Estimated Value

B = Analyte found in blank

A = Average value

N = Presumptive ID

D = Concentration from analysis of
a secondary dilution factor

I-4

Division of Waste Management
Solid Waste Branch
14 Reilly Road
Frankfort, KY 40601 (502) 564-6716

RESIDENTIAL/CONTAINED-QUARTERLY

Facility: US DOE - Paducah Gaseous Diffusion Plant

Permit Number: 073-00045

FINDS/UNIT: KY8-890-008-982 / 1

LAB ID: None
For Official Use Only

SURFACE WATER SAMPLE ANALYSIS (S)

Monitoring Point (KPDES Discharge Number, or "UPSTREAM", or "DOWNSTREAM")		L154 UPSTREAM											
Sample Sequence #		1											
If sample is a Blank, specify Type: (F)ield, (T)rip, (M)ethod, or (E)quipment		NA											
Sample Date and Time (Month/Day/Year hour: minutes)		4/28/2014 08:13											
Duplicate ("Y" or "N") ¹		Y											
Split ('Y' or "N") ²		N											
Facility Sample ID Number (if applicable)		L154DUS3-14											
Laboratory Sample ID Number (if applicable)		347655002											
Date of Analysis (Month/Day/Year)		5/7/2014											
CAS RN ³		CONSTITUENT	T D ⁴	Unit OF MEASURE	METHOD	DETECTED VALUE OR PQL ⁵	F L A G S ⁷	DETECTED VALUE OR PQL ⁵	F L A G S ⁷	DETECTED VALUE OR PQL ⁵	F L A G S ⁷	DETECTED VALUE OR PQL ⁵	F L A G S ⁷
A200-00-0	0	Flow	T	MGD	Field	12.86							
16887-00-6	2	Chloride(s)	T	MG/L	300.0	1.13							
14808-79-8	0	Sulfate	T	MG/L	300.0	3.35							
7439-89-6	0	Iron	T	MG/L	200.8	1.44							
7440-23-5	0	Sodium	T	MG/L	200.8	2.23							
S0268- -	0	Organic Carbon ⁶	T	MG/L	9060	14							
S0097- -	0	BOD ⁶	T	MG/L	not applicable		*						
S0130- -	0	Chemical Oxygen Demand	T	MG/L	410.4	24.7							

¹Respond "Y" if the sample was a duplicate of another sample in this report²Respond "Y" if the sample was split and analyzed by separate laboratories.³Chemical Abstracts Service Registry Number or unique identifier number assigned by agency.⁴"T" = Total; "D" = Dissolved⁵"<" indicates a non-detect; do not use "ND" or "BDL". Value then shown is Practical Quantification Limit⁶Facility has either/or option on Organic Carbon and (BOD) Biochemical Oxygen Demand - both are not required⁷Flags are as designated, do not use any other type. Use "*", then describe on "Written Comments" page.

STANDARD FLAGS:

* = See Comments

J = Estimated Value

B = Analyte found in blank

A = Average value

N = Presumptive ID

D = Concentration from analysis of
a secondary dilution factor

[illegible]

RESIDENTIAL/CONTAINED – QUARTERLY**Facility: US DOE - Paducah Gaseous Diffusion Plant****Permit Numbers: 073-00045****Finds/Unit: KY8-890-008-982 / 1****LAB ID: None****For Official Use Only**

SURFACE WATER WRITTEN COMMENTS

Monitoring Point	Facility Sample ID	Constituent	Flag	Description
L150	L150US3-14	Biochemical Oxygen Demand (BOD)		Analysis of constituent not required and not performed.
		Alpha activity		TPU is 4.1. Rad error is 3.97.
		Beta activity	U	Indicates analyte/nuclide was analyzed for, but not detected. TPU is 3.41. Rad error is 3.31.
L154	L154US3-14	Biochemical Oxygen Demand (BOD)		Analysis of constituent not required and not performed.
		Alpha activity		TPU is 1.15. Rad error is 1.07.
		Beta activity		TPU is 2.56. Rad error is 2.15.
L351	L351US3-14	Biochemical Oxygen Demand (BOD)		Analysis of constituent not required and not performed.
		Alpha activity		TPU is 1.76. Rad error is 1.61.
		Beta activity		TPU is 2.22. Rad error is 1.56.
QC	FB1US3-14	Flow Rate		Analysis of constituent not required and not performed.
		Total Organic Carbon (TOC)		Analysis of constituent not required and not performed.
		Biochemical Oxygen Demand (BOD)		Analysis of constituent not required and not performed.
		Chemical Oxygen Demand (COD)		Analysis of constituent not required and not performed.
		Conductivity		Analysis of constituent not required and not performed.
		Suspended Solids		Analysis of constituent not required and not performed.
		Dissolved Solids		Analysis of constituent not required and not performed.
		Total Solids		Analysis of constituent not required and not performed.
		pH		Analysis of constituent not required and not performed.
		Alpha activity	U	Indicates analyte/nuclide was analyzed for, but not detected. TPU is 0.88. Rad error is 0.879.
		Beta activity		TPU is 1.5. Rad error is 1.34.
L154	L154DUS3-14	Biochemical Oxygen Demand (BOD)		Analysis of constituent not required and not performed.
		Alpha activity	U	Indicates analyte/nuclide was analyzed for, but not detected. TPU is 1.43. Rad error is 1.35.
		Beta activity	U	Indicates analyte/nuclide was analyzed for, but not detected. TPU is 2.31. Rad error is 2.24.

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