Inorganics

Sixteen metals were detected at concentrations that exceeded background levels. The most frequently reported metals were the common soil-forming minerals, aluminum, sodium, and magnesium. An elevated arsenic occurrence of 18.1 µg/kg was reported from 8 ft bgs at Boring 400-011.

Radionuclides

Low activities of several radiological isotopes were reported from the surface soils in Sector 3. The surface sample collected at Boring 400-046 contained the most radioisotopes and the highest activities for all of the detected isotopes. Among the highest detections were ^{99}Tc at 3.5 pCi/g, ^{230}Th at 4.2 pCi/g, ^{234}U at 7.1 pCi/g, and ^{238}U at 9.1 pCi/g. Several radionuclides with activities below 2 pCi/g were reported from the subsurface. Figure 4.8 shows the distribution for detected activities of ^{238}U and ^{137}Cs, two of the COCs identified for Sector 3 soils.

4.2.4 Sector 4 [Trichloroethene Leak Site (SWMU 11)]

4.2.4.1 Site History

The Trichloroethene Leak Site (SWMU 11) is located at the southeast corner of the C-400 Building, along 11th Street and Tennessee Avenue. It contains an area of known contamination that was caused by release of effluent from a leaking subsurface pipe carrying discharge from a sump in the C-400 Building to the storm sewer. A previously unidentified TCE spill source was discovered in Sector 4 during the WAG 6 RI. Apparently, a pump station (and associated piping) used to off-load TCE from tank cars into the aboveground storage tank had broken several times in the past and released an unknown, yet significant quantity of TCE into the subsurface soils. Based on the distribution and concentration of TCE in the soils, the off-loading pump station is now suspected to have been the primary source for TCE introduction into the WAG 6 subsurface.

Practices and Release Description

A sump in the TCE degreaser pit basement (SWMU 98) inside the C-400 Building inadvertently released TCE, along with wastewater, to the storm sewer line east of the C-400 Building. Before discovery of the leak, it was not known that the basement sump discharged directly to the storm sewer. The sump was thought to discharge to the C-403 Neutralization Tank (SWMU 40). The leak was discovered during construction of a discharge line from the truck unloading dock containment sump to the 11th Street storm sewer line. During excavation, TCE was discovered leaking from the joints of the storm sewer line. Although the actual duration of the leak is unknown, it is believed that TCE may have been discharged to the storm sewer as early as the 1950s. Once the leak was discovered, the discharge line from the basement sump was disconnected from the storm sewer, material from the sump was routed to 55-gal drums, and TCE-contaminated soil was excavated from the area of the leak.

The main excavation area measured approximately 20 ft wide (east to west) by 40 ft long (north to south). A 10-ft-wide trench, centered on the storm sewer, was dug 16 ft deep to expose the pipe, which lay 13 ft below original grade. The remainder of the excavation was 7 ft deep. Concern for the stability of nearby structures limited the extent and depth of the excavation. Not all contaminated soil could be removed. Forty 55-gal drums were used to containerize excavated contaminated soil.

In Sector 4, a TCE off-loading pump station was located southwest of SWMU 11 adjacent to the railroad track. The pump station was used to transfer TCE from tank cars into a day holding tank. According to employees, the pump and associated pipes leading into the subsurface to the TCE tank underwent numerous repairs in past years due to releases.

Location and Results of Previous Sampling

TCE concentrations as high as 700,000 µg/kg were reported in soil samples collected adjacent to and below the storm sewer line during removal of the contaminated soil in 1986 (EDGe 1989). Approximately 9200 ft^3 of contaminated soil and bedding material were excavated, containerized, and stored as hazardous waste for future treatment and disposal. Some of the contaminated soil is known to have been left in place because of concerns about the structural integrity of 11th Street and the TCE Tank Pad, located to the west between the spill site and the C-400 Building (CH2M HILL 1992). The excavated area was backfilled with clean fill material and capped with a layer of clay after excavation activities were completed.

Four borings were drilled adjacent to the excavated area to better define the lateral and vertical extent of soil contamination. A boring was drilled north and south (storm sewer downgradient) and two were completed east of the excavated area. TCE contamination was detected at depths of 22 to 28 ft bgs in the soils from the borings drilled north and south of the excavated area at 11.3 and 47.6 µg/kg, respectively. TCE concentrations were below detection limits (<2 µg/kg) in the 22- to 28-ft bgs interval in the two borings east of the excavation.

The Trichlorethylene Leak Site (SWMU 11) was investigated under the Phase I and Phase II SIs completed between 1989 and 1991 (CH2M HILL 1991, 1992). The field activities for Phase I consisted of drilling a deep boring within the leak area and collecting groundwater samples from MW-68 through MW-71. All samples were analyzed for TCL VOA, SVOA, pesticides/PCBs, TAL metals, and selected radionuclides, including ^{238}U, ^{235}U, ^{99}Tc, ^{230}Th, ^{239}Pu, as well as gross alpha activity and gross beta activity. The analytical results for the soil samples collected from the deep boring showed that TCE was detected in the soils at concentrations throughout the interval sampled (4 to 93 ft bgs) and that the highest concentration was from the sample collected at approximately 55 to 60 ft bgs. Technetium-99 was detected at 10 to 15 ft bgs (at 6.6 pCi/g). No other compounds or analytes were detected in any of the samples analyzed.

During the Phase II SI field activities, a well cluster consisting of MW-155, MW-156, and MW-157 was installed in the area of the leak to assess groundwater quality in the lower RGA, upper RGA, and UCRS, respectively. Two deep borings were drilled north of the leak site to evaluate soil contamination near the C-400 Building Basement Sump (SWMU 98).

4.2.4.2 Nature and Extent of Contaminants

To assess the nature and extent of the contamination within Sector 4, three surface soil samples were analyzed for SVOAs and inorganic constituents, and two surface samples were collected to assess the PCB content and radionuclide activity. Thirty-four borings were drilled (Fig. 4.9). A total of 169 subsurface samples (with 5 duplicates) were analyzed for VOAs, 150 (with three duplicates) for SVOAs, 21 (with one duplicate) for PCBs, 131 (with 2 duplicates) for metals, and 142 (with 5 duplicates) for radionuclides. The analytical results above PGDP background levels are summarized in Tables 4.18 through 4.21. Table 4.22 provides additional information about the frequency of detection.

Summary of Findings

Sector 4 contains a widespread TCE-impacted area located between the C-400 Building and 11th Street and north of Tennessee Ave. In that area, a large zone of shallow soil contains greater than 225,000 µg/kg TCE, indicating that the chlorinated solvent is present as a DNAPL. Figs. 4.10a, b, and c show horizontal slices through a computer-generated three-dimensional representation of the vertical and horizontal extent of the TCE-impacted soil in Sectors 4 and 5.

TCE and its degradation products were found in the vadose zone from the surface down to the water table. The highest concentrations were 8,208,600 µg/kg from a sample collected immediately below the excavated area and 11,055,000 µg/kg from a sample collected to the southwest of the excavation, adjacent to the TCE off-loading pump. Vertical migration of TCE to the groundwater in this area is a continuing threat to groundwater quality.

A shallow zone of soil containing high TCE concentrations that extends south of the off-loading pump station is probably due to TCE that has been transported along bedding material of a nearby sanitary sewer line (see North-South cross-section in Fig. 4.11a).

In deeper soils, TCE and associated contaminants extend northeast across 11th Street into Boring 011-006 (see East-West cross-section in Fig. 4.11b). TCE in this boring is found only in small quantities down to 40 ft bgs, but reaches 7800 µg/kg at 48 ft bgs. On the western edge of the sector (south of the C-400 Building) subsurface soil contains almost 2000 µg/kg of TCE, suggesting that the margin of the TCE contamination in Sector 4 extends into Sector 5.

Soil samples from borings drilled northwest of the area of maximum TCE impact (along the southeast corner of the C-400 Building) also exhibit high TCE concentrations (>100,000 µg/kg) at depths of 40 ft or more bgs. This suggests that the TCE is primarily migrating to the northwest in the deep subsurface.

SVOA analytical results show that PAHs are found at low concentrations in the same area as the TCE, but that the SVOAs are confined to the very shallow subsurface soils.

Analytical Results–Surface and Subsurface Soils

Organics

VOAs. Nineteen VOA compounds were documented in the samples collected from Sector 4. Several compounds were detected only once, including 1,2-dichloroethene, 2-hexanone, bromodichloromethane, chloromethane, iodomethane, trichlorofluoromethane, and vinyl acetate. TCE and its associated degradation products, cis- and trans-1,2-dichloroethene and vinyl chloride, were not only the most common VOAs found with 69%, 46%, 12%, and 15% frequency of detects, respectively (see Table 4.18), but also were detected at the highest concentrations. The maximum TCE content, 11,055,000 µg/kg, was detected at Boring 400-200 at 9 ft bgs. This boring is located adjacent to the TCE off-loading pump station and transfer/feeder line that was used to off-load TCE from tank cars into the day holding tank. Soil from Boring 011-005, which is located approximately 70 ft northeast of 400-200, contained TCE at a concentration of 8,208,600 µg/kg at 31.5 ft bgs. This sample was collected below the base of the SWMU 11 excavation backfill material. As shown in Fig 4.12, all soil samples collected

from borings between the two locations that contained the highest TCE concentrations and the southeast corner of the C-400 Building exhibited TCE levels above 100,000 µg/kg.

In addition to the heavily impacted area adjacent to (and below) the excavated area at SWMU 11, concentrations of 67,000, 40,500, and 17,200 µg/kg TCE were found in soil samples between 9 and 20 ft bgs in Borings 400-103, 400-163, and 400-092, respectively. All three of the samples were collected along the sanitary sewer line south of the excavation. Based on the soil samples taken between 12 and 48 ft bgs from Boring 400-163, high TCE concentrations probably occur from the near surface to a depth of at least 44 ft bgs all along this line.

Two borings, 400-134 and 011-006, that were drilled northeast of the center of the highly impacted area, contained elevated TCE concentrations of 8200 µg/kg (at 16 ft bgs) and 7800 µg/kg (at 48 ft bgs), respectively. Boring 400-016, located south of the C-400 Building and adjacent to Sector 5 to the west, contained TCE at concentrations between 1500 and 1900 µg/kg from 20 to 34 ft bgs. No samples were collected below 34 ft bgs from this boring.

SVOAs. Two of the 3 surface samples and 41 of the 150 subsurface samples collected within Sector 4 that were analyzed for SVOAs were found to contain between 1 and 19 constituents. Most of the detected SVOAs, primarily PAHs, were below the SQL. Those PAH results above the SQL were found only in shallow subsurface soils between 0 and 4 ft bgs in borings located between the utility corridor and the C-400 Building (400-016, 400-202, 400-014, 400-211, 011-003, and 400-163) (Fig. 4.13). The maximum reported PAH concentrations in Sector 4 were from Boring 400-211 and were as follows: benz(a)anthracene at 2300 µg/kg, benzo(a)pyrene at 2400 µg/kg, benzo(b)fluoranthene at 2900 µg/kg, and dibenz(a,h)anthracene at 460 µg/kg.

PCBs. Only one surface sample and one shallow subsurface sample of the 23 soil samples analyzed for PCB within Sector 4 contained this contaminant. PCB-1262 (Aroclor-1262) was reported at 38 µg/kg for surface soil collected from Boring 400-038, and PCB-1254 (Aroclor-1254) was found at 730 µg/kg from 5 ft bgs in Boring 400-200.

Inorganics

Nineteen metals were detected at concentrations above PGDP background levels in Sector 4 soils. Although several inorganics were frequently detected, many of these, including calcium and sodium, are common rock-forming minerals that were detected only slightly above the background screening levels. Several metals were detected at higher concentrations. Cobalt was detected in a soil sample collected from 40 ft bgs in Boring 011-006 at 126 mg/kg, or at almost 10 times its PGDP background screening level. The same sample contained 82.5 mg/kg of lead, which is 3.6 times background. The maximum concentration for magnesium was 27,200 mg/kg (3.5 times the background level) from the surface soil from Boring 400-016.

Although antimony was found frequently (in 37 of 134 samples analyzed) and at concentrations up to 20 times the PGDP background value, the analytical results were all below the SQL.

Radionuclides

Americium-241, ^{137}Cs, ^{237}Np, ^{239}Pu, ^{99}Tc, ^{230}Th, and the three uranium isotopes were detected in the soil samples collected from 27 soil borings. Activity for the isotopes ^{241}Am, ^{137}Cs, ^{237}Np, and ^{239}Pu remained less than 0.7 pCi/g, which is slightly above screening levels.

The highest activity for ^{99}Tc was 4.7 pCi/g in a shallow subsurface sample from Boring 400-211. Technetium-99 was detected in only 3 of the 144 samples. Thorium-230 (with 7 detections out of 144 analyses above background) was detected at a maximum activity of 1.8 pCi/g in soil collected from 20 ft bgs at Boring 400-009. The 8-ft-bgs sample from Boring 011-005 contained the highest ^{234}U (one detection) and ^{235}U (one detection) activities of 3.5 and 4.3 pCi/g, respectively. Uranium-238 was detected in 10 of 144 samples at a maximum activity of 4.3 pCi/g. Among the radioisotopes with the highest activities, no systematic distribution was detected.

4.2.5 Sector 5

4.2.5.1 Site History

Location and Physical Description

Sector 5 is located on the southwest corner of the C-400 Building and is bordered by Sector 4 to the east and Sector 6 to the north. It extends 450 ft west of the building, to include three borings west of 10th Street, and continues south of the building. Most borings are located north of Tennessee Avenue and east of 10th Street, with the highest density located along utility lines and the two sets of railroad tracks.

Several utility lines (recirculated water and stormwater) extending north-south are located east of and parallel to 10th Street; another set of utilities extending east-west is located north of Tennessee Avenue. One sanitary line exits the C-400 Building and extends due west between Borings 400-010 and 400-172, and a second sanitary line exits the building and extends south between Borings 400-142 and 400-089 to the main line. Two parallel sets of railroad tracks are located immediately south of the C-400 Building. Aboveground structures include a high tower on a concrete pad west of the C-400 Building and aboveground steam lines.

Practice and Release Information

No practices or processes within Sector 5 are known to have led to past contamination of the soils. Migration of contamination from the adjoining Technetium Storage Tank (SWMU 47) in Sector 6 to the north and the Trichlorethylene Leak Site (SWMU 11) in Sector 4 was considered to have the largest impact potential. Therefore, utility corridors and other migration pathways were the target for the RI sampling activities within this sector. Sector 5 has not been sampled previously.

4.2.5.2 Nature and Extent of Contaminants

To evaluate the condition of the soil within Sector 5, seven surface soil samples were analyzed for SVOAs, three for PCBs, six for inorganic constituents, and four for radionuclides. Subsurface soil samples from several shallow and deep borings were collected to a depth of 48 ft bgs. One-hundred-six of these were analyzed for VOAs, 85 for SVOAs, 8 for PCBs, 54 for metal constituents, and 68 for radionuclides. Fig. 4.14 is a map of Sector 5 showing the position of the

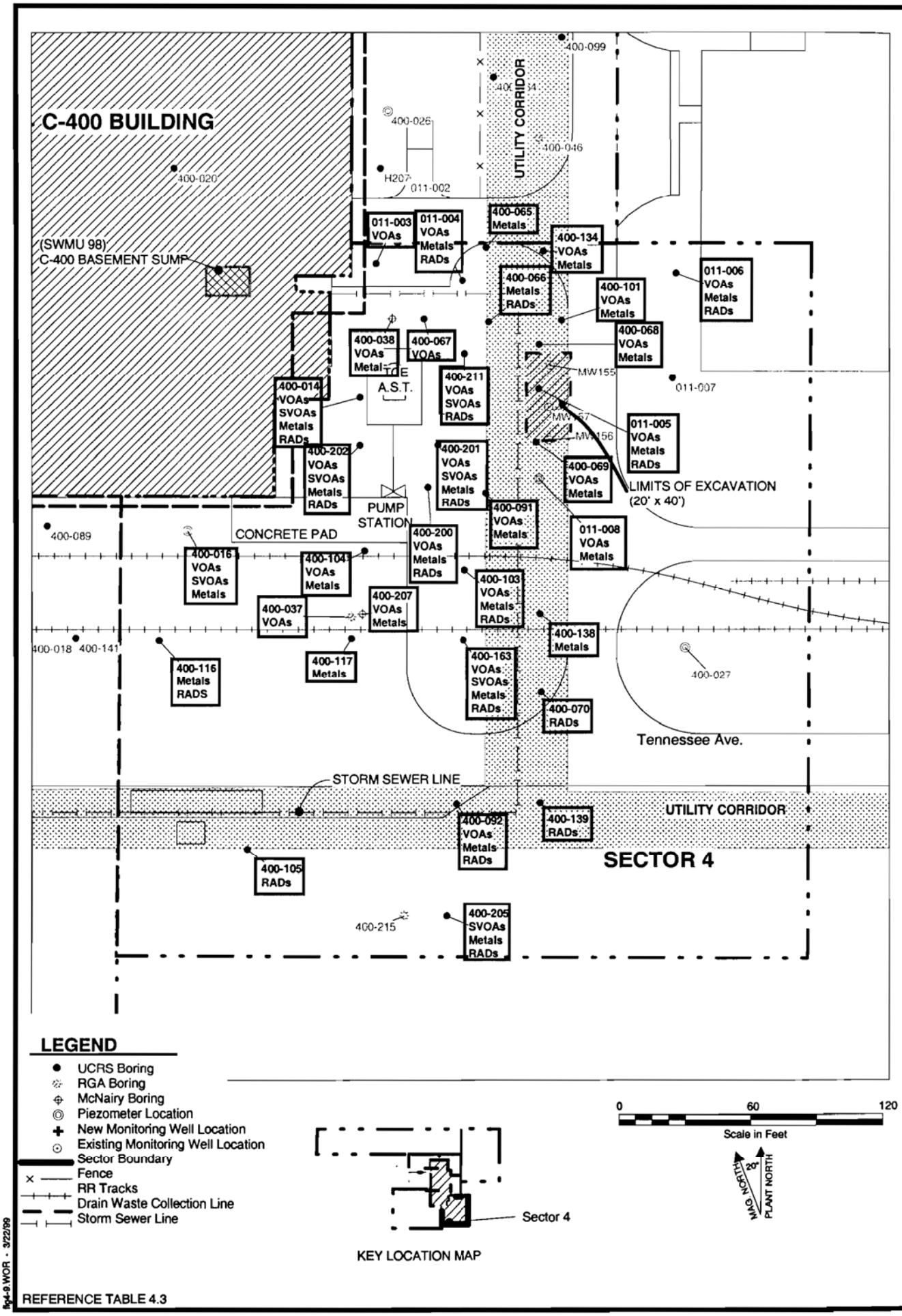
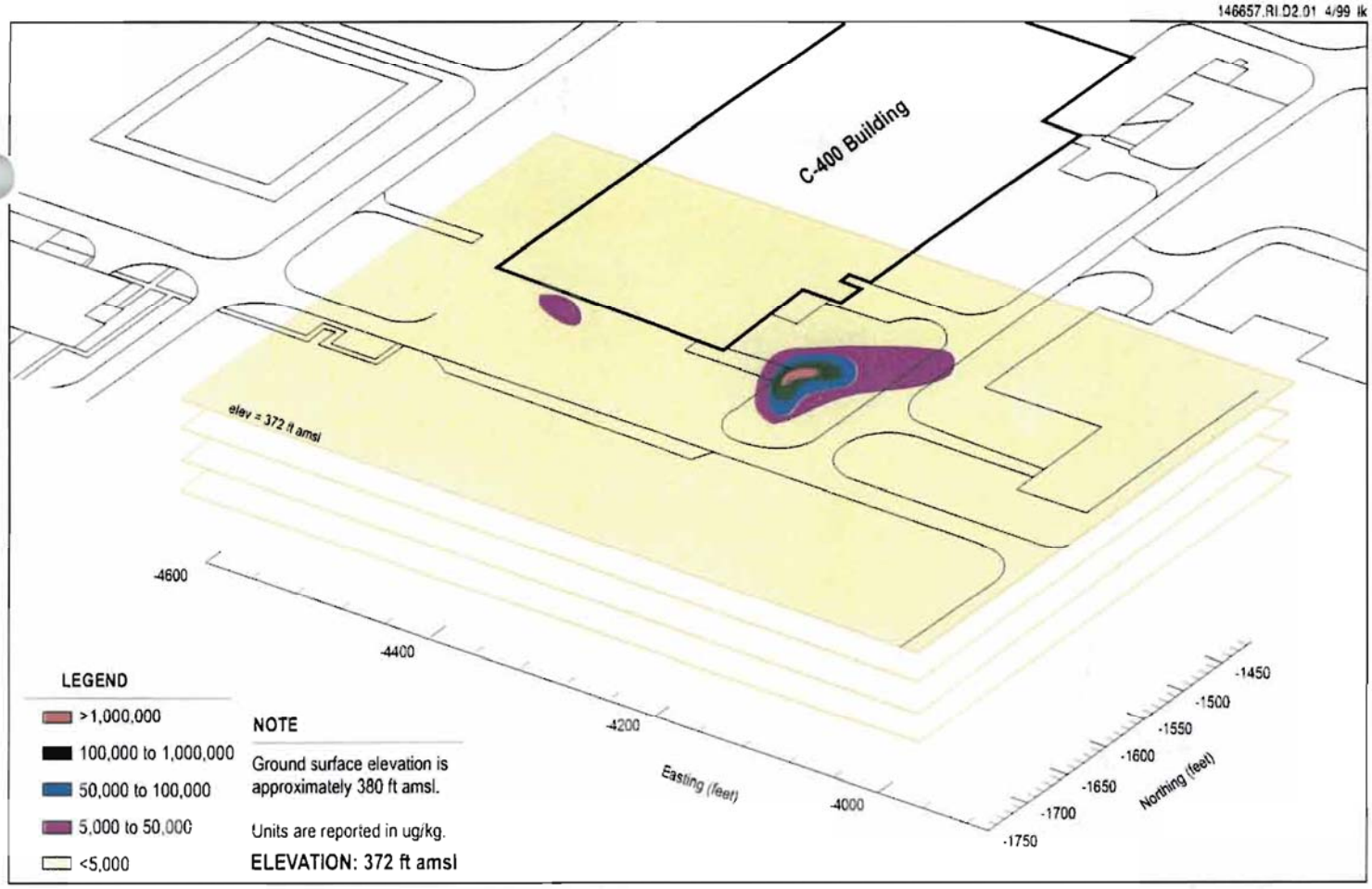


Fig. 4.9. Sector 4 site map showing contaminant groups detected in UCRS soil above SQL at each sample location.



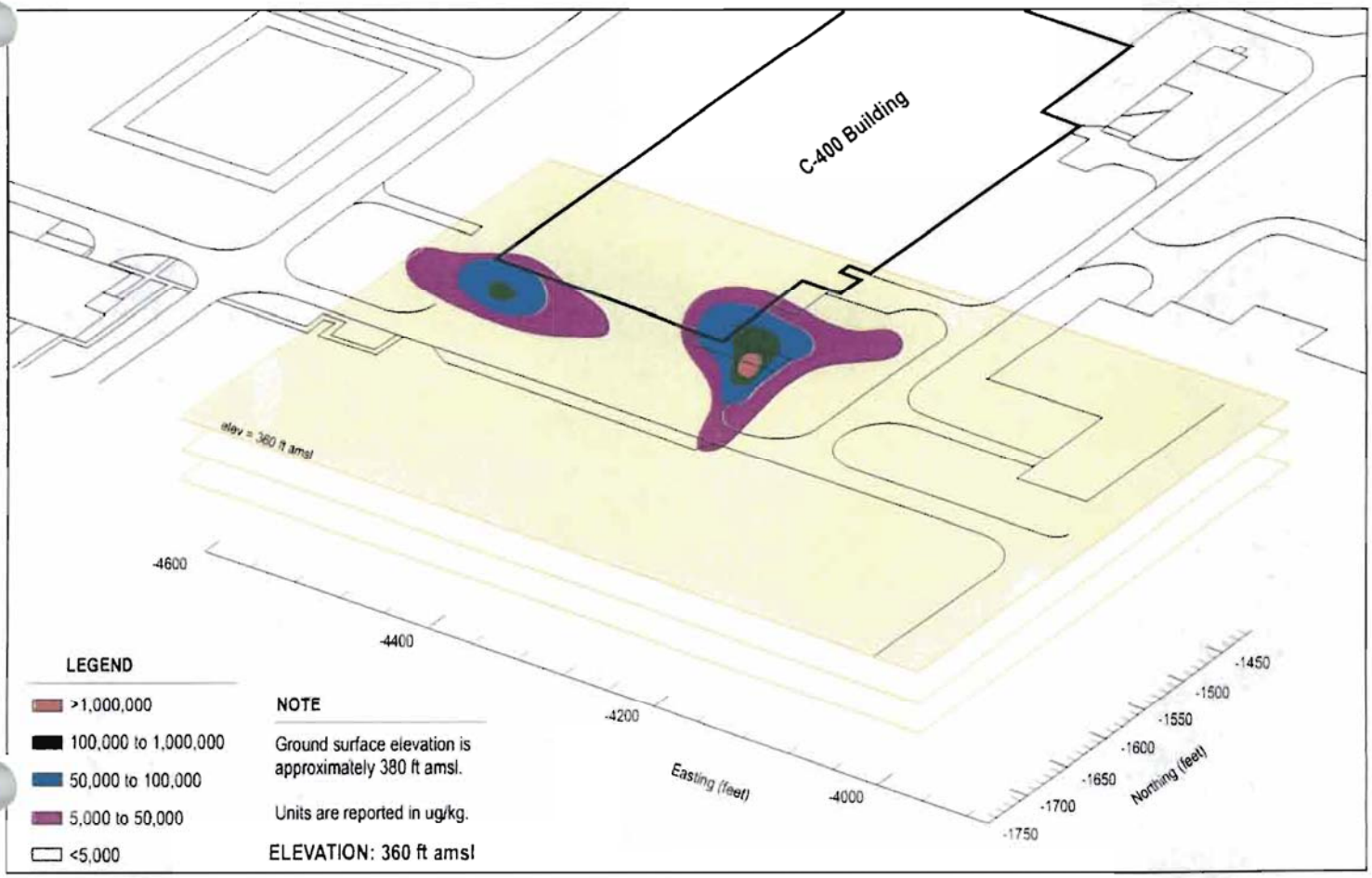


Fig. 4.10.b. 372 ft amsl and 360 ft amsl elevation slice through TCE distribution at sector 4 and 5 UCRS soil.

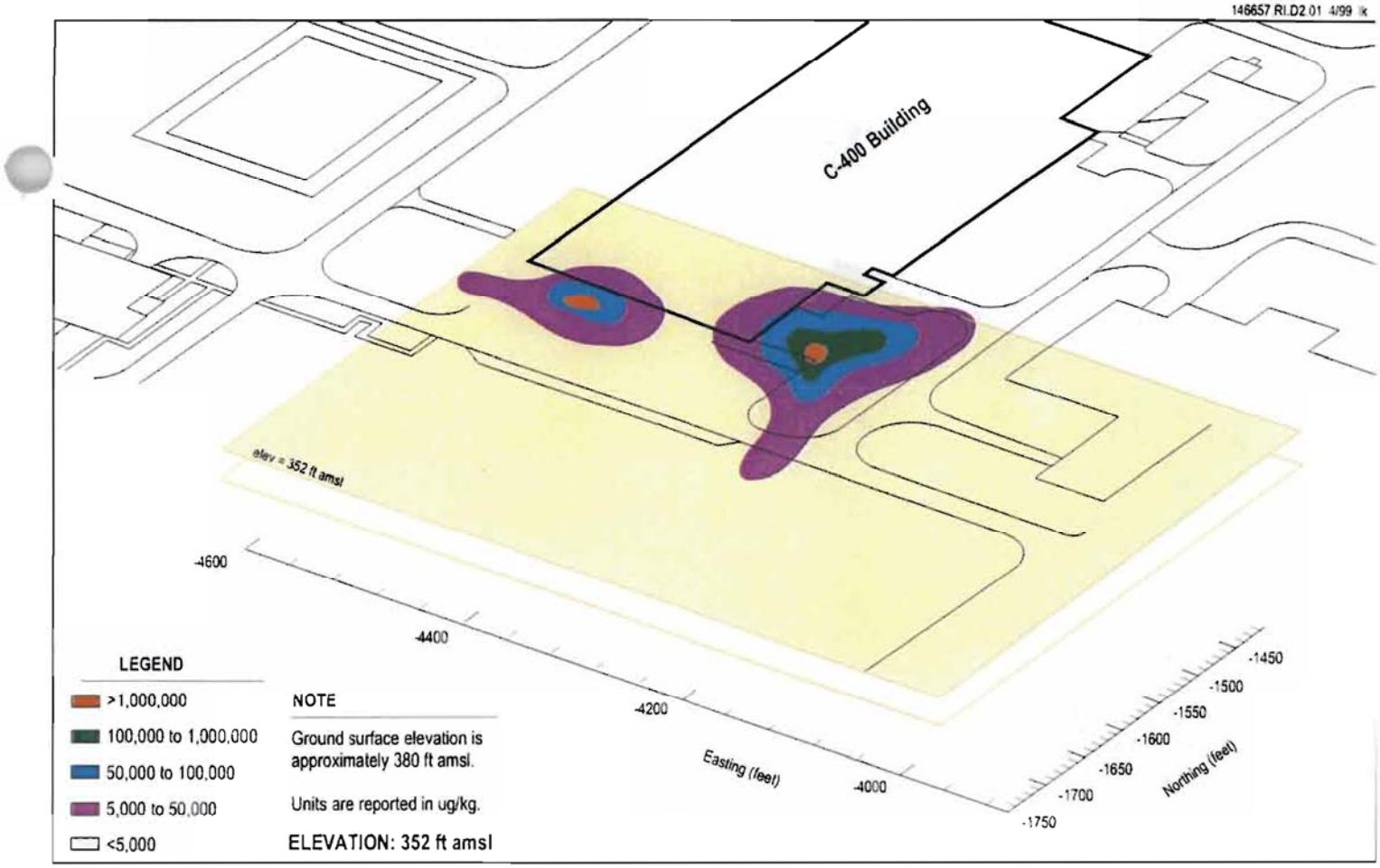


Fig. 4.10.c. 352 ft amsl and 340 ft amsl elevation slice through TCE distribution at sector 4 and 5 UCRS soil.

Fig. 4.10.a. Index map of elevation slices through TCE distribution and total concentration of sector 4 and 5 UCRS soil.

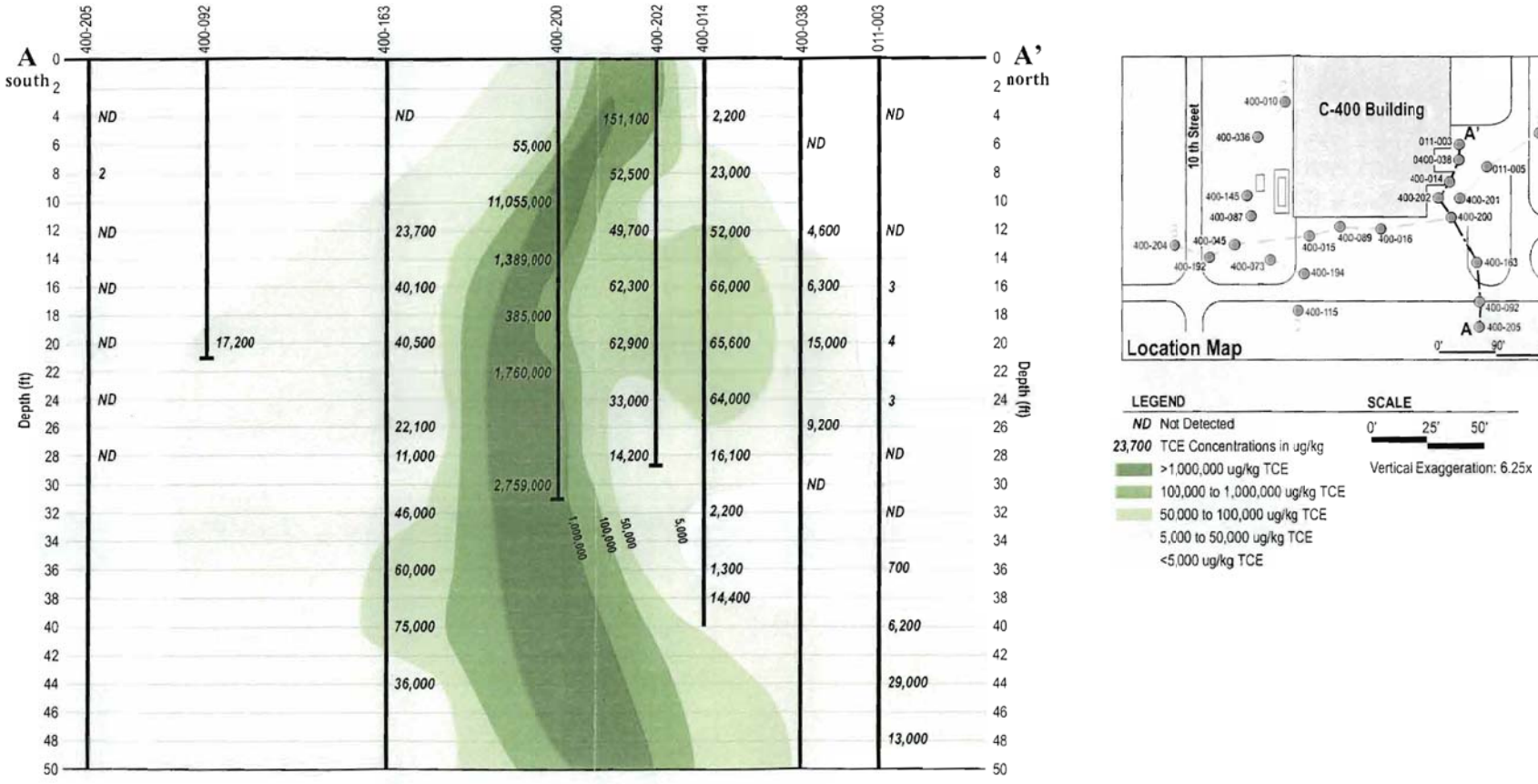


Fig. 4.11.a. North-south cross-section A-A' showing distribution of TCE in the UCRS soils at sector 4.

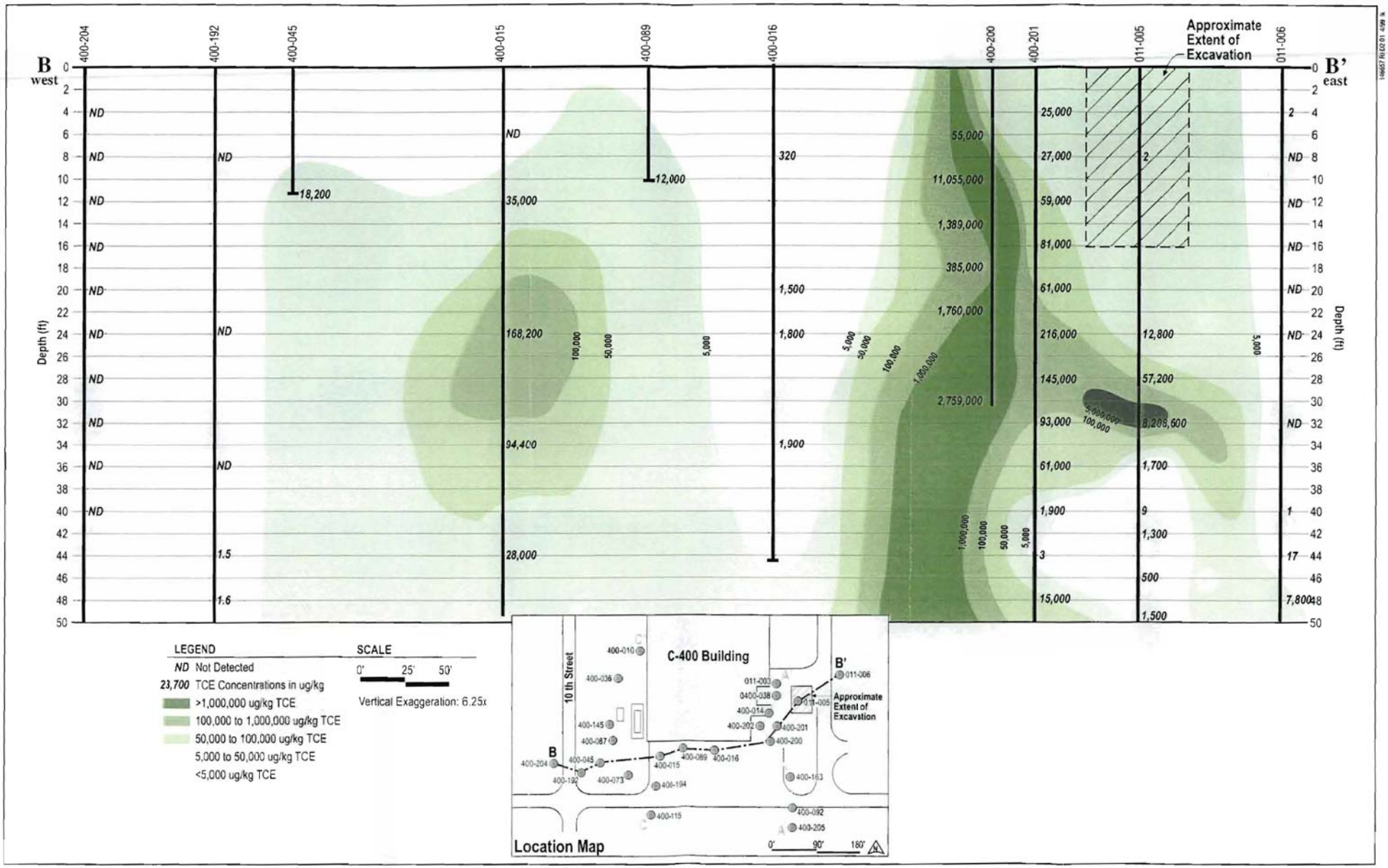


Fig. 4.11.b. East-west cross-section B-B' showing the distribution of TCE in the UCRS soils at sector 4 and sector 5.

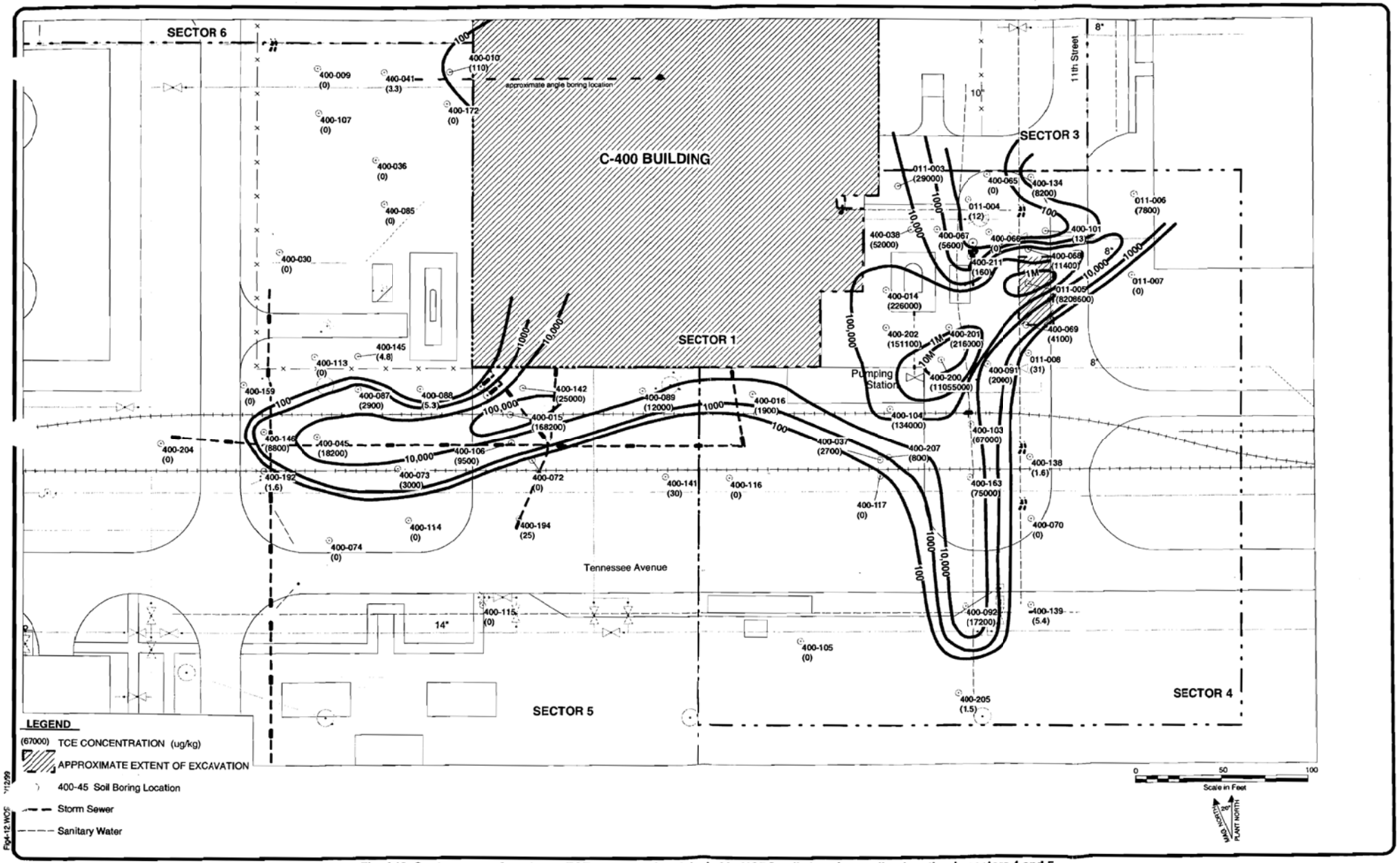


Fig. 4.12. Contour map of maximum TCE concentration detected in UCRS soil at each sampling location in sectors 4 and 5.

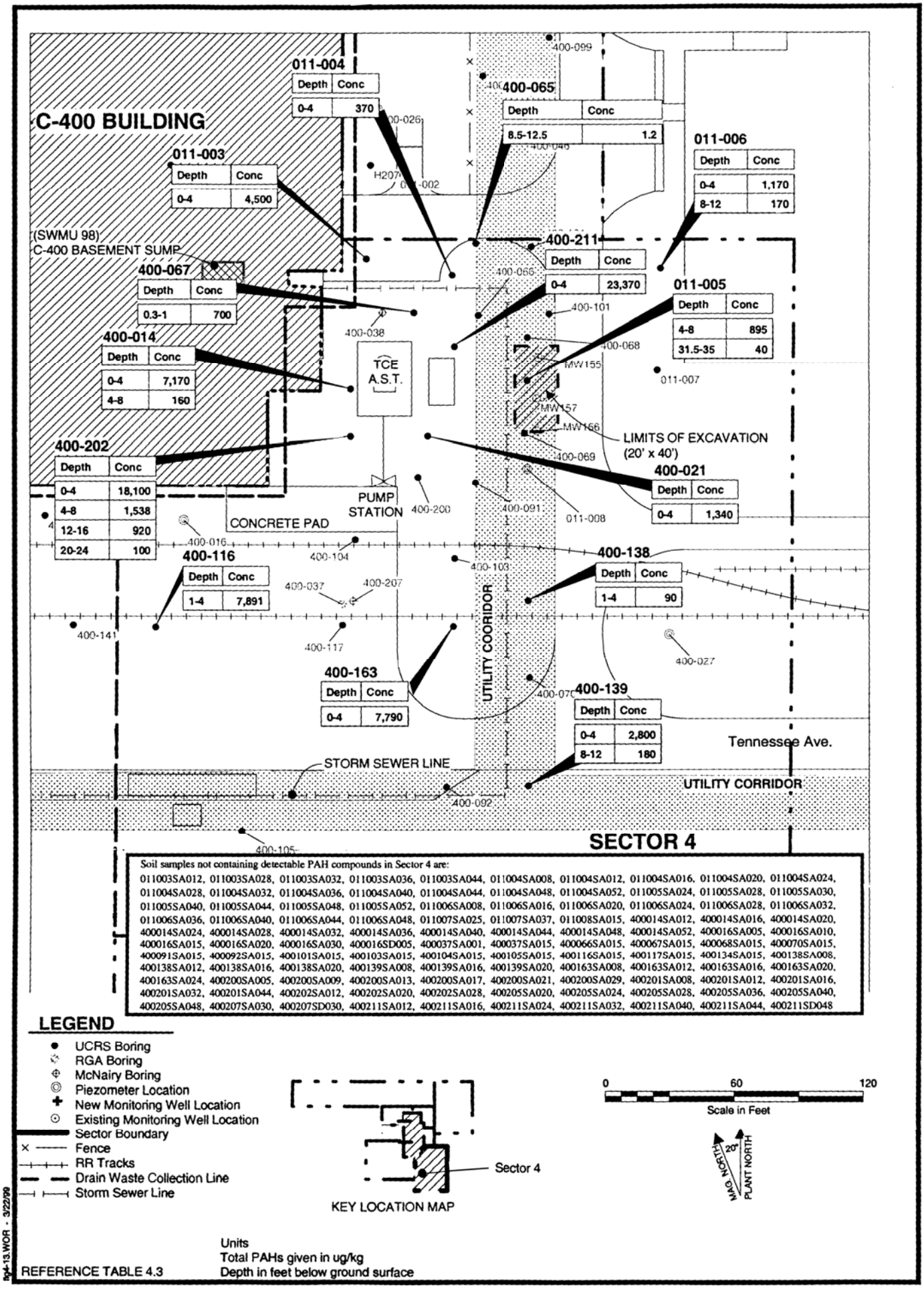


Fig. 4.13. Map showing distrubution and total concentration of PAHs detected in sector 4 UCRS soil.

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	011003SA016	13.5	17	cis-1,2-Dichloroethene	2.6	J	?	
		13.5	17	Trichloroethene	2.6	J	?	
	011003SA020	17	20	cis-1,2-Dichloroethene	2.5	J	?	
		17	20	Trichloroethene	4.1	J	?	
	011003SA024	20	24	Trichloroethene	3.3	J	?	
	011003SA036	32	36	Trichloroethene	700	J	?	BH-RB
	011003SA040	36	40	cis-1,2-Dichloroethene	4.9	J	?	
		36	40	Trichloroethene	6200		?	BH-RB
	011003SA044	40	44	cis-1,2-Dichloroethene	4.5	J	?	
		40	44	Trichloroethene	29000		?	BH-RB
	011003SA048	44	48	cis-1,2-Dichloroethene	11		?	
		44	48	Trichloroethene	13000		?	BH-RB
	011004SA008	4	8	cis-1,2-Dichloroethene	1.4	J	?	
		4	8	Trichloroethene	2.6	J	?	
	011004SA012	8	12	cis-1,2-Dichloroethene	3.7	J	?	
		8	12	Trichloroethene	12		?	
	011004SA016	12	16	cis-1,2-Dichloroethene	1.6	J	?	
		12	16	Trichloroethene	3.8	J	?	
	011004SA020	16	20	Trichloroethene	2.7	J	?	
	011004SA024	20	23.5	Trichloroethene	8.5		?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	011004SA028	23.5	27	Trichloroethene	1.6	J	?	
	011004SA044	37.5	41	Trichloroethene	1.8	J	?	
	011004SA048	41	44.5	Trichloroethene	3.2	J	?	
	011005SA008	4	8	Trichloroethene	2	J	?	
	011005SA024	20	24	cis-1,2-Dichloroethene	15		?	
		20	24	Trichloroethene	12800		?	
		20	24	Vinyl chloride	5.1	J	?	
	011005SA028	24	28	cis-1,2-Dichloroethene	57		?	
		24	28	Tetrachloroethene	4.7	J	?	
		24	28	Trichloroethene	57200		?	
		24	28	Vinyl chloride	14		?	
	011005SA030	28	31.5	cis-1,2-Dichloroethene	13		?	
		28	31.5	Tetrachloroethene	4	J	?	
		28	31.5	Trichloroethene	8208600		?	
		28	31.5	Vinyl chloride	5.6	J	?	
	011005SA036	31.5	35	Trichloroethene	1700		?	
	011005SA040	35	38.5	Trichloroethene	9.1		?	
	011005SA044	38.5	41.5	Trichloroethene	1300		?	
	011005SA048	41.5	45	Trichloroethene	500	J	?	
	011005SA052	45	48.5	Trichloroethene	1500		?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	011006SA004	0	4	Trichloroethene	2	J	?	
	011006SA028	24	28	2-Propanol	60		?	
	011006SA036	32	36	2-Propanol	60		?	
	011006SA040	36	40	Trichloroethene	1.237	J	?	BH-ER
	011006SA044	40	44	Trichloroethene	17		?	BH-ER
	011006SA048	44	48	Trichloroethene	7800		?	
	011008SA015	13	17	cis-1,2-Dichloroethene	36		?	
		13	17	Trichloroethene	31		?	
	400014SA004	0	4	cis-1,2-Dichloroethene	24		?	
		0	4	Trichloroethene	2200		?	
	400014SA008	4	8	cis-1,2-Dichloroethene	37		?	
		4	8	Trichloroethene	23000		?	
	400014SA012	8	12	cis-1,2-Dichloroethene	130		?	
		8	12	trans-1,2-Dichloroethene	2200		?	
		8	12	Trichloroethene	52000		?	
	400014SA016	12	16	cis-1,2-Dichloroethene	99		?	
		12	16	Trichloroethene	66000		?	
	400014SA020	16	20	cis-1,2-Dichloroethene	10		?	
		16	20	Trichloroethene	65600		?	
	400014SA024	20	24	Trichloroethene	64000		?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400014SA028	24	27.5	cis-1,2-Dichloroethene	14		?	
		24	27.5	Trichloroethene	16100		?	
	400014SA032	27.5	31	cis-1,2-Dichloroethene	2.7	J	?	
		27.5	31	Trichloroethene	2200		?	
	400014SA036	31	34.5	cis-1,2-Dichloroethene	1.8	J	?	
		31	34.5	Trichloroethene	1300		?	
	400014SA040	34.5	38	cis-1,2-Dichloroethene	2.5	J	?	
		34.5	38	Trichloroethene	14900		?	
	400014SA044	38	41.5	Trichloroethene	129000		?	
	400014SA048	41.5	45	Trichloroethene	42000		?	BH-RB
	400014SA052	45	49	Chloromethane	270	J	?	
		45	49	Iodomethane	430	J	?	
		45	49	Trichloroethene	226000		?	BH-RB
	400016SA005	5	8	Trichloroethene	320		EJ	
	400016SA015	16	20	Trichloroethene	1500		?	
	400016SA020	20	24	cis-1,2-Dichloroethene	3.2	J	?	
		20	24	Trichloroethene	1800		?	
	400016SA030	30	34	cis-1,2-Dichloroethene	3.8	J	=	
		30	34	Trichloroethene	1900		?	
	400016SD005	5	8	Trichloroethene	280		EJ	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs) Top	Bottom	Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
Soil	400037SA015	6	10	cis-1,2-Dichloroethene	11		?	
		6	10	Trichloroethene	2700		?	
	400038SA010	10	10.5	Trichloroethene	4600		?	
	400038SA015	15	15	Trichloroethene	6300		?	
	400038SA020	20	20	Trichloroethene	6300		?	
	400038SA025	25	25	cis-1,2-Dichloroethene	1300	J	?	BL-T
		25	25	Trichloroethene	15000		?	BL-T
	400038SA030	30	30	Trichloroethene	9200	J	?	BL-T
	400038SA040	49	49	cis-1,2-Dichloroethene	560	J	?	BL-T
		49	49	Trichloroethene	43000		?	BL-T
	400038SA045	46	48.5	cis-1,2-Dichloroethene	680	J	?	BL-T
		46	48.5	Trichloroethene	52000		?	BL-T
	400038SA050	49	49	Trichloroethene	44000		?	BL-T
	400066SA015	13	17	Toluene	1.6	J	=	
	400067SA015	8	12	1,1-Dichloroethene	1.5	J	?	BL-T
		8	12	cis-1,2-Dichloroethene	410		?	BL-T
		8	12	trans-1,2-Dichloroethene	2100		?	
		8	12	Trichloroethene	5600		?	
	400068SA015	13	17	cis-1,2-Dichloroethene	2.5	J	=	
		13	17	Toluene	2	J	=	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400068SA015	13	17	Trichloroethene	11400		?	
	400069SA015	13	17	cis-1,2-Dichloroethene	44		=	
		13	17	Tetrachloroethene	1.3	J	=	
		13	17	Toluene	2.5	J	=	
		13	17	Trichloroethene	4100		?	
	400091SA015	8	12	1,1-Dichloroethene	4	J	?	
		8	12	cis-1,2-Dichloroethene	1200		?	
		8	12	trans-1,2-Dichloroethene	3900		?	
		8	12	Trichloroethene	2000		?	
		8	12	Vinyl chloride	3.4	J	?	
	400092SA015	16	20	cis-1,2-Dichloroethene	5.5	J	?	
		16	20	Trichloroethene	17200		?	
	400101SA015	7	11	Trichloroethene	13		=	
	400103SA015	9	13	1,1-Dichloroethene	4.9	J	?	
		9	13	cis-1,2-Dichloroethene	940		?	
		9	13	trans-1,2-Dichloroethene	12500		?	
		9	13	Trichloroethene	67000	J	?	
		9	13	Vinyl chloride	110		?	
	400104SA015	15	19	1,1,2-Trichloroethane	2.8	J	=	
		15	19	1,1-Dichloroethene	17		=	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400104SA015	15	19	cis-1,2-Dichloroethene	200		=	
		15	19	Tetrachloroethene	1.9	J	=	
		15	19	Toluene	1.6	J	=	
		15	19	trans-1,2-Dichloroethene	7300		?	
		15	19	Trichloroethene	134000		?	
		15	19	Vinyl chloride	130		=	
	400134SA015	12	16	cis-1,2-Dichloroethene	4.3	J	?	
		12	16	Trichloroethene	8200		?	
		12	16	Vinyl acetate	1.7	J	?	BH-SS
	400138SA016	12	16	Trichloroethene	1.6	J	?	
	400139SA008	4	8	Trichloroethene	2.9	J	?	
	400139SA012	8	12	Trichloroethene	2.6	J	?	
	400139SA020	16	20	cis-1,2-Dichloroethene	1.8	J	?	
		16	20	Trichloroethene	5.4	J	?	
	400163SA008	4	8	cis-1,2-Dichloroethene	27		?	
		4	8	Vinyl chloride	4.5	J	?	
	400163SA012	8	12	cis-1,2-Dichloroethene	63		?	
		8	12	Trichloroethene	23700		?	
	400163SA016	12	16	cis-1,2-Dichloroethene	93		?	
		12	16	Trichloroethene	40100		?	

Table 4.18. VOA compounds detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400163SA020	16	20	cis-1,2-Dichloroethene	49		?	
		16	20	Trichloroethene	40500		?	
	400163SA024	21	25	cis-1,2-Dichloroethene	5.3	J	?	
		21	25	Trichloroethene	22100		?	
	400163SA028	24	28	cis-1,2-Dichloroethene	1.5	J	?	
		24	28	Trichloroethene	11000		?	
	400163SA032	28	32	cis-1,2-Dichloroethene	14		?	
		28	32	Trichloroethene	46000		?	
	400163SA036	32	36	cis-1,2-Dichloroethene	4.4	J	?	
		32	36	Trichloroethene	15000		?	
	400163SA040	36	40	cis-1,2-Dichloroethene	5.1	J	?	
		36	40	Trichloroethene	60000		?	
	400163SA044	40	44	cis-1,2-Dichloroethene	9.5		?	
		40	44	Trichloroethene	75000		?	
	400163SA048	44	48	cis-1,2-Dichloroethene	13		?	
		44	48	Trichloroethene	36000		?	
	400200SA005	1	5	1,1,1-Trichloroethane	12		=	
		1	5	1,1-Dichloroethene	22		=	
		1	5	Carbon tetrachloride	2	J	=	
		1	5	cis-1,2-Dichloroethene	1300		=	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400200SA005	1	5	Tetrachloroethene	19		DJ	
		1	5	Toluene	5.4	J	=	
		1	5	trans-1,2-Dichloroethene	8700		?	
		1	5	Trichloroethene	55000		?	
		1	5	Vinyl chloride	470		=	
	400200SA009	5	9	1,1,1-Trichloroethane	2400		=	
		5	9	1,1,2-Trichloroethane	530		=	
		5	9	1,1-Dichloroethene	950		=	
		5	9	Benzene	17		=	
		5	9	Carbon tetrachloride	710		=	
		5	9	Chloroform	18		=	
		5	9	cis-1,2-Dichloroethene	1100		=	
		5	9	Tetrachloroethene	690		=	
		5	9	Toluene	33		=	
		5	9	Trichloroethene	11055000		?	
		5	9	Trichlorofluoromethane	1.7	J	=	
		5	9	Vinyl chloride	120		=	
	400200SA013	9	13	1,1,1-Trichloroethane	19		=	
		9	13	1,1,2-Trichloroethane	20		=	
		9	13	1,1-Dichloroethene	4	J	=	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400200SA013	9	13	Carbon tetrachloride	13		=	
		9	13	Chloroform	2.4	J	=	
		9	13	cis-1,2-Dichloroethene	22		=	
		9	13	Tetrachloroethene	8.6		=	
		9	13	Trichloroethene	1389000		?	
		9	13	Vinyl chloride	21		=	
	400200SA017	13	17	1,1,2-Trichloroethane	8.6		=	
		13	17	Chloroform	1.5	J	=	
		13	17	cis-1,2-Dichloroethene	6		=	
		13	17	Toluene	1.5	J	=	
		13	17	Trichloroethene	385000		?	
		13	17	Vinyl chloride	6.8	J	=	
	400200SA021	17	21	1,1,1-Trichloroethane	3.3	J	=	
		17	21	1,1,2-Trichloroethane	22		=	
		17	21	1,1-Dichloroethene	3	J	=	
		17	21	Carbon tetrachloride	23		=	
		17	21	Chloroform	5.1	J	=	
		17	21	cis-1,2-Dichloroethene	7.7		=	
		17	21	Tetrachloroethene	15		=	
		17	21	Trichloroethene	1760000		?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400200SA021	17	21	Vinyl chloride	8.9	J	=	
	400200SA029	25	29	1,1,2-Trichloroethane	390		=	
		25	29	1,1-Dichloroethene	71		=	
		25	29	1,2-Dichloroethane	8.2		=	
		25	29	Benzene	30		=	
		25	29	Bromodichloromethane	190		=	
		25	29	Carbon tetrachloride	300		=	
		25	29	Chloroform	250		=	
		25	29	cis-1,2-Dichloroethene	33		=	
		25	29	Tetrachloroethene	460		=	
		25	29	Toluene	1.5	J	=	
		25	29	trans-1,2-Dichloroethene	2.3	J	=	
		25	29	Trichloroethene	2759000		?	
		25	29	Vinyl chloride	6.6	J	=	
	400201SA004	0	4	cis-1,2-Dichloroethene	200		?	
		0	4	trans-1,2-Dichloroethene	102000		?	BH-RB
		0	4	Trichloroethene	25000		?	BH-RB
		0	4	Vinyl chloride	29000		?	BH-RB
	400201SA008	4	8	cis-1,2-Dichloroethene	1300		?	
		4	8	trans-1,2-Dichloroethene	29000		?	BH-RB

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400201SA008	4	8	Trichloroethene	27000		?	BH-RB
		4	8	Vinyl chloride	3000		?	BH-RB
	400201SA012	8	12	cis-1,2-Dichloroethene	1500		?	
		8	12	trans-1,2-Dichloroethene	29000		?	BH-RB
		8	12	Trichloroethene	59000		?	BH-RB
		8	12	Vinyl chloride	37	J	?	
	400201SA016	12	16	cis-1,2-Dichloroethene	1000		?	
		12	16	trans-1,2-Dichloroethene	24000		?	BH-RB
		12	16	Trichloroethene	81000		?	BH-RB
		12	16	Vinyl chloride	13		?	
	400201SA020	16	20	cis-1,2-Dichloroethene	190		?	
		16	20	trans-1,2-Dichloroethene	16000		?	BH-RB
		16	20	Trichloroethene	61000		?	BH-RB
		16	20	Vinyl chloride	4.7	J	?	
	400201SA024	20	24	1,1,2-Trichloroethane	8.3		?	
		20	24	2-Hexanone	8.4	J	?	
		20	24	Chloroform	3	J	?	
		20	24	cis-1,2-Dichloroethene	650	J	?	
		20	24	Trichloroethene	216000		?	BH-RB
		20	24	Vinyl chloride	32		?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400201SA028	24	28	1,1,2-Trichloroethane	3.1	J	?	
		24	28	cis-1,2-Dichloroethene	340		?	
		24	28	Trichloroethene	145000		?	BH-RB
		24	28	Vinyl chloride	14		?	
	400201SA032	28	32	1,1,2-Trichloroethane	3.2	J	?	
		28	32	Chloroform	1.2	J	?	
		28	32	cis-1,2-Dichloroethene	670		?	
		28	32	trans-1,2-Dichloroethene	6800		?	BH-RB
		28	32	Trichloroethene	93000		?	BH-RB
		28	32	Vinyl chloride	5.5	J	?	
	400201SA036	32	36	cis-1,2-Dichloroethene	110		?	
		32	36	trans-1,2-Dichloroethene	2000		?	BH-RB
		32	36	Trichloroethene	61000		?	BH-RB
		32	36	Vinyl chloride	3.5	J	?	
	400201SA040	36	40	cis-1,2-Dichloroethene	2.6	J	?	
		36	40	Trichloroethene	1900		?	BH-RB
	400201SA044	40	44	Trichloroethene	2.8	J	?	
	400201SA048	44	48	cis-1,2-Dichloroethene	13		?	
		44	48	Trichloroethene	15000		?	BH-RB
	400202SA004	0	4	1,1-Dichloroethene	1.2	J	?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400202SA004	0	4	cis-1,2-Dichloroethene	63		?	
		0	4	Tetrachloroethene	5.2	J	?	
		0	4	trans-1,2-Dichloroethene	1400		?	
		0	4	Trichloroethene	151100		?	
	400202SA008	4	8	1,1-Dichloroethene	1.3	J	?	
		4	8	cis-1,2-Dichloroethene	380		?	
		4	8	trans-1,2-Dichloroethene	34000		?	
		4	8	Trichloroethene	52500		?	
		4	8	Vinyl chloride	3.4	J	?	
	400202SA012	8	12	1,1-Dichloroethene	3	J	?	
		8	12	cis-1,2-Dichloroethene	2400		?	
		8	12	trans-1,2-Dichloroethene	15000		?	
		8	12	Trichloroethene	49700		?	
		8	12	Vinyl chloride	3.9	J	?	
	400202SA016	12	16	Chloroform	1.7	J	?	
		12	16	cis-1,2-Dichloroethene	980		?	
		12	16	trans-1,2-Dichloroethene	9900		?	
		12	16	Trichloroethene	62300		?	
		12	16	Vinyl chloride	1.9	J	?	
	400202SA020	16	20	1,1-Dichloroethene	1.4	J	?	

Table 4.18. VOA compounds detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400202SA020	16	20	Chloroform	1.8	J	?	
		16	20	cis-1,2-Dichloroethene	190		?	
		16	20	trans-1,2-Dichloroethene	6600		?	
		16	20	Trichloroethene	62900		?	
	400202SA024	20	24	Chloroform	2	J	?	
		20	24	cis-1,2-Dichloroethene	230		?	
		20	24	trans-1,2-Dichloroethene	3900		?	
		20	24	Trichloroethene	33000		?	
	400202SA028	24	28	cis-1,2-Dichloroethene	8.6		?	
		24	28	trans-1,2-Dichloroethene	1600		?	
		24	28	Trichloroethene	14200		?	
	400205SA008	4	8	Trichloroethene	1.5	J	?	
	400207SA030	28	30	cis-1,2-Dichloroethene	1.4	J	?	
		28	30	Trichloroethene	3.2	J	?	
	400207SA045	43	44	Trichloroethene	700	J	?	
	400207SD045	43	44	Trichloroethene	800		?	
	400211SA004	0	4	cis-1,2-Dichloroethene	3.1	J	?	
		0	4	Trichloroethene	31		?	
	400211SA008	4	8	cis-1,2-Dichloroethene	2.4	J	?	
		4	8	Trichloroethene	20		?	

Table 4.18. VOA compounds detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
		Top	Bottom					
Soil	400211SA012	8	12	Trichloroethene	1.5	J	?	
	400211SA016	12	16	cis-1,2-Dichloroethene	2.1	J	?	
		12	16	Trichloroethene	9.6		?	
	400211SA020	16	20	cis-1,2-Dichloroethene	1.5	J	?	
		16	20	Trichloroethene	9.7		?	
	400211SA024	20	24	cis-1,2-Dichloroethene	3.1	J	?	
		20	24	Trichloroethene	23		?	
	400211SA028	24	28	cis-1,2-Dichloroethene	1.7	J	?	
		24	28	Trichloroethene	16		?	
	400211SA032	28	32	Trichloroethene	4.7	J	?	
	400211SA048	44	48	Trichloroethene	160	J	?	BL-T

Note: Soil boring samples not containing any detectable VOA compounds in Sector 4 are:

011003SA004, 011003SA012, 011003SA028, 011003SA032, 011004SA004, 011004SA032, 011004SA036, 011004SA040, 011004SA052, 011006SA008, 011006SA012, 011006SA016, 011006SA020, 011006SA024, 011006SA032, 011007SA025, 011007SA037, 400016SA010, 400038SA005, 400038SA035, 400065SA015, 400070SA015, 400105SA015, 400116SA015, 400117SA015, 400138SA004, 400138SA008, 400138SA012, 400138SA020, 400139SA004, 400139SA016, 400163SA004, 400205SA004, 400205SA012, 400205SA016, 400205SA020, 400205SA024, 400205SA028, 400205SA036, 400205SA040, 400205SA044, 400205SA048, 400207SD030, 400211SA036, 400211SA040, 400211SA044, 400211SD032, 400211SD048

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	011003SA004	0	4	Acenaphthene	90	J	?	
			0	4	Anthracene	130	J	?	
			0	4	Benz(a)anthracene	350	J	?	
			0	4	Benzo(a)pyrene	320	J	?	
			0	4	Benzo(b)fluoranthene	230	J	?	
			0	4	Benzo(ghi)perylene	250	J	?	
			0	4	Benzo(k)fluoranthene	280	J	?	
			0	4	Chrysene	350	J	?	
			0	4	Fluoranthene	860		?	
			0	4	Fluorene	60	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	220	J	?	
			0	4	Phenanthrene	640		?	
			0	4	Pyrene	720		?	
		011003SA016	13.5	17	Diethyl phthalate	1500		?	
		011003SA020	17	20	Diethyl phthalate	1800		?	
		011003SA024	20	24	Diethyl phthalate	2800		?	
		011003SA040	36	40	Diethyl phthalate	1600		?	
		011003SA048	44	48	Diethyl phthalate	1700		?	
		011004SA004	0	4	Benz(a)anthracene	50	J	?	
			0	4	Benzo(a)pyrene	50	J	?	
			0	4	Benzo(k)fluoranthene	50	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	011004SA004	0	4	Chrysene	50	J	?	
			0	4	Fluoranthene	90	J	?	
			0	4	Pyrene	80	J	?	
		011005SA008	4	8	Benz(a)anthracene	80	J	?	
			4	8	Benzo(a)pyrene	90	J	?	
			4	8	Benzo(b)fluoranthene	80	J	?	
			4	8	Benzo(ghi)perylene	65	J	?	
			4	8	Benzo(k)fluoranthene	80	J	?	
			4	8	Chrysene	90	J	?	
			4	8	Fluoranthene	170	J	?	
			4	8	Phenanthrene	90	J	?	
			4	8	Pyrene	150	J	?	
		011005SA036	31.5	35	Fluoranthene	40	J	?	
		011006SA004	0	4	Benz(a)anthracene	120	J	?	
			0	4	Benzo(a)pyrene	100	J	?	
			0	4	Benzo(b)fluoranthene	90	J	?	
			0	4	Benzo(k)fluoranthene	90	J	?	
			0	4	Chrysene	120	J	?	
			0	4	Fluoranthene	250	J	?	
			0	4	Phenanthrene	190	J	?	
			0	4	Pyrene	210	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	011006SA012	8	12	Fluoranthene	70	J	?	
			8	12	Phenanthrene	40	J	?	
			8	12	Pyrene	60	J	?	
		400014SA004	0	4	Acenaphthene	100	J	?	
			0	4	Anthracene	190	J	?	
			0	4	Benz(a)anthracene	570	J	?	
			0	4	Benzo(a)pyrene	560	J	?	
			0	4	Benzo(b)fluoranthene	600	J	?	
			0	4	Benzo(ghi)perylene	370	J	?	
			0	4	Benzo(k)fluoranthene	400	J	?	
			0	4	Chrysene	700	J	?	
			0	4	Fluoranthene	1300		?	
			0	4	Fluorene	70	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	350	J	?	
			0	4	Phenanthrene	860		?	
			0	4	Pyrene	1100		?	
		400014SA008	4	8	Naphthalene	160	J	?	
		400016SA001	1	4	Anthracene	70	J	=	
			1	4	Benz(a)anthracene	873		?	
			1	4	Benzo(a)pyrene	746		?	
			1	4	Benzo(b)fluoranthene	735		?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	400016SA001	1	4	Benzo(ghi)perylene	388	J	?	
			1	4	Benzo(k)fluoranthene	469	J	?	
			1	4	Chrysene	1012		?	
			1	4	Fluoranthene	1497		?	
			1	4	Indeno(1,2,3-cd)pyrene	300	J	=	
			1	4	Phenanthrene	120	J	=	
			1	4	Pyrene	1771		?	
		400038SA001	0.3	1	Benz(a)anthracene	70	J	?	
			0.3	1	Benzo(a)pyrene	80	J	?	
			0.3	1	Benzo(b)fluoranthene	70	J	?	
			0.3	1	Benzo(k)fluoranthene	60	J	?	
			0.3	1	Chrysene	80	J	?	
			0.3	1	Fluoranthene	150	J	?	
			0.3	1	Phenanthrene	70	J	?	
			0.3	1	Pyrene	120	J	?	
		400065SA015	8.5	12.5	Fluoranthene	1.2	J	?	
		400069SA015	13	17	N-Nitroso-di-n-propylamin	447	J	?	
		400138SA004	1	4	Fluoranthene	40	J	?	
			1	4	Pyrene	50	J	?	
		400139SA004	0	4	Anthracene	40	J	?	
			0	4	Benz(a)anthracene	240	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	400139SA004	0	4	Benzo(a)pyrene	250	J	?	
			0	4	Benzo(b)fluoranthene	250	J	?	
			0	4	Benzo(ghi)perylene	150	J	?	
			0	4	Benzo(k)fluoranthene	250	J	?	
			0	4	Chrysene	270	J	?	
			0	4	Di-n-octylphthalate	60	J	?	
			0	4	Fluoranthene	530	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	140	J	?	
			0	4	Phenanthrene	250	J	?	
			0	4	Pyrene	430	J	?	
		400139SA012	8	12	Fluoranthene	70	J	?	
			8	12	Phenanthrene	60	J	?	
			8	12	Pyrene	50	J	?	
		400163SA004	0	4	Acenaphthene	50	J	?	
			0	4	Anthracene	210	J	?	
			0	4	Benz(a)anthracene	700	J	?	
			0	4	Benzo(a)pyrene	730	J	?	
			0	4	Benzo(b)fluoranthene	800		?	
			0	4	Benzo(ghi)perylene	260	J	?	
			0	4	Benzo(k)fluoranthene	680	J	?	
			0	4	Chrysene	710	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	400163SA004	0	4	Fluoranthene	1400		?	
			0	4	Fluorene	50	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	260	J	?	
			0	4	Phenanthrene	640	J	?	
			0	4	Pyrene	1300		?	
		400201SA004	0	4	Benz(a)anthracene	110	J	?	
			0	4	Benzo(a)pyrene	150	J	?	
			0	4	Benzo(b)fluoranthene	140	J	?	
			0	4	Benzo(ghi)perylene	150	J	?	
			0	4	Benzo(k)fluoranthene	130	J	?	
			0	4	Chrysene	120	J	?	
			0	4	Fluoranthene	180	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	130	J	?	
			0	4	Phenanthrene	40	J	?	
			0	4	Pyrene	190	J	?	
		400201SA020	16	20	Diethyl phthalate	4900		?	
		400201SA024	20	24	Diethyl phthalate	1400		?	
		400201SA028	24	28	Diethyl phthalate	1500		?	
		400201SA036	32	36	Diethyl phthalate	4400		?	
		400201SA040	36	40	Diethyl phthalate	5700		?	
		400201SA048	44	48	Diethyl phthalate	4400		?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	400202SA004	0	4	Acenaphthene	330	J	?	
			0	4	Anthracene	610	J	?	
			0	4	Benz(a)anthracene	1400		?	
			0	4	Benzo(a)pyrene	1200		?	
			0	4	Benzo(b)fluoranthene	1400		?	
			0	4	Benzo(ghi)perylene	720	J	?	
			0	4	Benzo(k)fluoranthene	940		?	
			0	4	Chrysene	1500		?	
			0	4	Dibenzofuran	180	J	?	
			0	4	Fluoranthene	3500		?	
			0	4	Fluorene	200	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	700	J	?	
			0	4	Naphthalene	100	J	?	
			0	4	Phenanthrene	2800		?	
			0	4	Pyrene	2700		?	
		400202SA008	4	8	Anthracene	60	J	?	
			4	8	Benz(a)anthracene	120	J	?	
			4	8	Benzo(a)pyrene	110	J	?	
			4	8	Benzo(b)fluoranthene	80	J	?	
			4	8	Benzo(ghi)perylene	86	J	?	
			4	8	Benzo(k)fluoranthene	90	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	400202SA008	4	8	Chrysene	120	J	?	
			4	8	Fluoranthene	300	J	?	
			4	8	Indeno(1,2,3-cd)pyrene	72	J	?	
			4	8	Phenanthrene	250	J	?	
			4	8	Pyrene	250	J	?	
		400202SA016	12	16	Anthracene	40	J	?	
			12	16	Benz(a)anthracene	80	J	?	
			12	16	Benzo(a)pyrene	70	J	?	
			12	16	Benzo(b)fluoranthene	60	J	?	
			12	16	Benzo(k)fluoranthene	70	J	?	
			12	16	Chrysene	80	J	?	
			12	16	Fluoranthene	200	J	?	
			12	16	Phenanthrene	160	J	?	
			12	16	Pyrene	160	J	?	
		400202SA024	20	24	Fluoranthene	50	J	?	
			20	24	Phenanthrene	50	J	?	
		400205SA004	0	4	Diethyl phthalate	2500		?	
		400205SA008	4	8	Diethyl phthalate	3400		?	
		400205SA012	8	12	Diethyl phthalate	6100		?	
		400205SA016	12	16	Diethyl phthalate	3600		?	
		400205SA044	40	44	Diethyl phthalate	50	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4 UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	SVOA	400211SA004	0	4	Acenaphthene	140	J	?	
			0	4	Anthracene	290	J	?	
			0	4	Benz(a)anthracene	2300		?	
			0	4	Benzo(a)pyrene	2400		?	
			0	4	Benzo(b)fluoranthene	2900		?	
			0	4	Benzo(ghi)perylene	1000		?	
			0	4	Benzo(k)fluoranthene	1200		?	
			0	4	Chrysene	2600		?	
			0	4	Dibenz(a,h)anthracene	460	J	?	
			0	4	Dibenzofuran	40	J	?	
			0	4	Diethyl phthalate	50	J	?	
			0	4	Fluoranthene	4000		?	
			0	4	Fluorene	90	J	?	
			0	4	Indeno(1,2,3-cd)pyrene	1100		?	
			0	4	Phenanthrene	1500		?	
			0	4	Pyrene	3300		?	
		400211SA020	16	20	Diethyl phthalate	50	J	?	
		400211SA028	24	28	Diethyl phthalate	70	J	?	
		400211SA036	32	36	Diethyl phthalate	60	J	?	
		400211SA048	44	48	Diethyl phthalate	60	J	?	
		400211SD032	28	32	Diethyl phthalate	150	J	?	

Table 4.19. SVOA and PCB compounds detected in Sector 4
UCRS soil

Sample Type	Analytical Group	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results ug/kg	Lab Qualifier	Validation Qualifier	Data Assessment
			Top	Bottom					
Soil	PPCB	400038SA001	0.3	1	PCB-1262	38		?	
		400200SA005	1	5	PCB-1254	730		=	

Note: Soil boring samples not containing any detectable SVOA compounds in Sector 4 are:

011003SA012, 011003SA028, 011003SA032, 011003SA036, 011003SA044, 011004SA008, 011004SA012, 011004SA016, 011004SA020, 011004SA024, 011004SA028, 011004SA032, 011004SA036, 011004SA040, 011004SA044, 011004SA048, 011004SA052, 011005SA024, 011005SA028, 011005SA030, 011005SA040, 011005SA044, 011005SA048, 011005SA052, 011006SA008, 011006SA016, 011006SA020, 011006SA024, 011006SA028, 011006SA032, 011006SA036, 011006SA040, 011006SA044, 011006SA048, 011007SA025, 011007SA037, 011008SA015, 400014SA012, 400014SA016, 400014SA020, 400014SA024, 400014SA028, 400014SA032, 400014SA036, 400014SA040, 400014SA044, 400014SA048, 400014SA052, 400016SA005, 400016SA010, 400016SA015, 400016SA020, 400016SA030, 400016SD005, 400037SA001, 400037SA015, 400066SA015, 400067SA015, 400068SA015, 400070SA015, 400091SA015, 400092SA015, 400101SA015, 400103SA015, 400104SA015, 400105SA015, 400116SA015, 400117SA015, 400134SA015, 400138SA008, 400138SA012, 400138SA016, 400138SA020, 400139SA008, 400139SA016, 400139SA020, 400163SA008, 400163SA012, 400163SA016, 400163SA020, 400163SA024, 400200SA005, 400200SA009, 400200SA013, 400200SA017, 400200SA021, 400200SA029, 400201SA008, 400201SA012, 400201SA016, 400201SA032, 400201SA044, 400202SA012, 400202SA020, 400202SA028, 400205SA020, 400205SA024, 400205SA028, 400205SA036, 400205SA040, 400205SA048, 400207SA030, 400207SD030, 400211SA012, 400211SA016, 400211SA024, 400211SA032, 400211SA040, 400211SA044, 400211SD048

Soil boring samples not containing any detectable PCB compounds in Sector 4 are:

011008SA015, 400016SA001, 400016SA005, 400016SA030, 400016SD005, 400066SA015, 400067SA015, 400068SA015, 400069SA015, 400091SA015, 400092SA015, 400101SA015, 400103SA015, 400104SA015, 400105SA015, 400200SA009, 400200SA013, 400200SA017, 400200SA021, 400200SA029, 400205SA020

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	011003SA012	8	11	Antimony	0.8	B	?		0.21
		8	11	Beryllium	0.81		?		0.69
		8	11	Manganese	828		?		820
		8	11	Sodium	476		?		340
	011003SA016	13.5	17	Sodium	744		?		340
	011003SA020	17	20	Antimony	1.4	B	?		0.21
		17	20	Sodium	606		?		340
	011003SA024	20	24	Sodium	457		?		340
	011003SA032	28	32	Beryllium	0.85		?		0.69
	011003SA040	36	40	Sodium	425		?		340
	011003SA044	40	44	Sodium	354		?		340
	011003SA048	44	48	Sodium	571		?		340
	011004SA004	0	4	Antimony	0.6	B	?		0.21
		0	4	Calcium	7720		?		6100
		0	4	Sodium	695		?		340
	011004SA008	4	8	Aluminum	14000		?		12000
		4	8	Sodium	409		?		340
	011004SA012	8	12	Aluminum	14300		?		12000
		8	12	Sodium	712		?		340
	011004SA016	12	16	Aluminum	17200		?		12000
		12	16	Sodium	673		?		340

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	011004SA020	16	20	Aluminum	17000		?		12000
		16	20	Sodium	663		?		340
	011004SA024	20	23.5	Antimony	1.2	B	?		0.21
		20	23.5	Sodium	359		?		340
	011004SA028	23.5	27	Sodium	491		?		340
	011004SA032	27	30.5	Antimony	0.6	B	?		0.21
		27	30.5	Arsenic	10.9		?		7.9
		27	30.5	Beryllium	1.06		?		0.69
		27	30.5	Sodium	666		?		340
	011004SA036	30.5	34	Antimony	0.6	B	?		0.21
		30.5	34	Sodium	516		?		340
	011004SA040	34	37.5	Sodium	389		?		340
	011004SA044	37.5	41	Aluminum	14100		?		12000
		37.5	41	Sodium	492		?		340
	011004SA048	41	44.5	Calcium	11200		?		6100
	011004SA052	44.5	48	Sodium	522		?		340
	011005SA008	4	8	Aluminum	12800		?		12000
		4	8	Calcium	11100		?		6100
		4	8	Sodium	553		?		340
	011005SA024	20	24	Sodium	452		?		340
	011005SA028	24	28	Sodium	515		?		340

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	011005SA030	28	31.5	Antimony	0.8	B	?		0.21
		28	31.5	Beryllium	0.72		?		0.69
		28	31.5	Sodium	362		?		340
	011005SA044	38.5	41.5	Antimony	0.6	B	?		0.21
		38.5	41.5	Beryllium	0.85		?		0.69
	011006SA004	0	4	Aluminum	17100		?		12000
		0	4	Arsenic	9.93		?		7.9
		0	4	Sodium	629		?		340
	011006SA008	4	8	Aluminum	13500		?		12000
		4	8	Sodium	793		?		340
	011006SA012	8	12	Aluminum	12400		?		12000
		8	12	Magnesium	2150		?		2100
		8	12	Sodium	806		?		340
	011006SA016	12	16	Aluminum	13200		?		12000
		12	16	Sodium	751		?		340
		12	16	Thallium	0.7	B	?		0.34
	011006SA020	16	20	Aluminum	13300		?		12000
		16	20	Sodium	663		?		340
	011006SA024	20	24	Aluminum	12300		?		12000
		20	24	Antimony	0.8	B	?		0.21
		20	24	Sodium	625		?		340

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	011006SA028	24	28	Aluminum	12100		?		12000
		24	28	Sodium	573		?		340
	011006SA032	28	32	Sodium	341		?		340
	011006SA036	32	36	Sodium	413		?		340
	011006SA040	36	40	Cobalt	126		?		13
		36	40	Lead	82.5		?		23
		36	40	Sodium	415		?		340
	011006SA044	40	44	Sodium	351		?		340
	011006SA048	44	48	Antimony	1	B	?		0.21
		44	48	Beryllium	0.85		?		0.69
		44	48	Sodium	608		?		340
		44	48	Vanadium	38.9		?		37
	011007SA025	24	28	Sodium	469		?		340
	011007SA037	36	40	Sodium	374		?		340
	011008SA015	13	17	Aluminum	19300		?		12000
		13	17	Sodium	471		?		340
	400014SA004	0	4	Calcium	13400		?		6100
		0	4	Mercury	0.149		?		0.13
		0	4	Sodium	678		?		340
	400014SA008	4	8	Sodium	429		?		340
	400014SA012	8	12	Aluminum	12600		?		12000

Table 4.20. Metals detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400014SA012	8	12	Magnesium	2410		?		2100
		8	12	Sodium	420		?		340
	400014SA016	12	16	Sodium	379		?		340
	400014SA020	16	20	Sodium	357		?		340
	400014SA024	20	24	Sodium	571		?		340
	400014SA032	27.5	31	Antimony	1.1	B	?		0.21
		27.5	31	Beryllium	1.11		?		0.69
	400014SA052	45	49	Antimony	1	B	?		0.21
		45	49	Beryllium	1		?		0.69
	400016SA001	1	4	Antimony	0.8	B	=		0.21
		1	4	Cobalt	19.6		=		14
		1	4	Magnesium	27200		=		7700
	400016SA005	5	8	Aluminum	12200		=		12000
		5	8	Antimony	1.3	B	=		0.21
		5	8	Beryllium	0.77		=		0.69
		5	8	Sodium	389		=		340
	400016SA010	8	12	Aluminum	14500		=		12000
		8	12	Antimony	1.6	B	=		0.21
		8	12	Barium	185		=		170
		8	12	Beryllium	0.94		=		0.69
		8	12	Magnesium	2460		=		2100

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400016SA010	8	12	Sodium	487		=		340
	400016SA015	16	20	Cobalt	16.1		?		13
		16	20	Manganese	975		?		820
		16	20	Sodium	347		?		340
	400016SA020	20	24	Sodium	352		?		340
	400016SA030	30	34	Antimony	1.1	B	=		0.21
		30	34	Beryllium	0.75		=		0.69
	400016SD005	5	8	Aluminum	15700		=		12000
		5	8	Antimony	1.5	B	=		0.21
		5	8	Sodium	467		=		340
	400037SA001	1.2	1.7	Antimony	1	B	?		0.21
		1.2	1.7	Cadmium	0.37	B	?		0.21
		1.2	1.7	Calcium	279000		?		200000
		1.2	1.7	Magnesium	25200		?		7700
		1.2	1.7	Sodium	403		?		320
	400037SA015	6	10	Calcium	16600		?		6100
		6	10	Magnesium	2200		?		2100
		6	10	Sodium	526		?		340
	400038SA001	0.3	1	Aluminum	14200		?		13000
		0.3	1	Antimony	0.6	B	?		0.21
		0.3	1	Cadmium	0.35	B	?		0.21

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400038SA001	0.3	1	Chromium	23.6		?		16
		0.3	1	Sodium	400		?		320
	400038SA030	30	30	Sodium	342		?		340
	400065SA015	8.5	12.5	Aluminum	13300		?		12000
		8.5	12.5	Beryllium	0.72		?		0.69
		8.5	12.5	Cadmium	0.28	B	?		0.21
		8.5	12.5	Calcium	29400		?		6100
		8.5	12.5	Magnesium	2190		?		2100
		8.5	12.5	Sodium	537		?		340
		8.5	12.5	Vanadium	37.1		?		37
	400066SA015	13	17	Aluminum	20300		=		12000
		13	17	Antimony	0.6	B	=		0.21
		13	17	Thallium	0.9	B	=		0.34
	400067SA015	8	12	Sodium	405		?		340
	400068SA015	13	17	Aluminum	14500		=		12000
		13	17	Antimony	0.8	B	=		0.21
		13	17	Cobalt	14.2		=		13
	400069SA015	13	17	Aluminum	16600		=		12000
		13	17	Antimony	1.4	B	=		0.21
		13	17	Sodium	341		=		340
		13	17	Thallium	0.6	B	=		0.34

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400069SA015	13	17	Vanadium	38.3		=		37
	400070SA015	14	18	Sodium	405		?		340
	400091SA015	8	12	Aluminum	14700		?		12000
		8	12	Arsenic	8.24		?		7.9
		8	12	Barium	176		?		170
		8	12	Beryllium	0.84		?		0.69
		8	12	Cadmium	0.26	B	?		0.21
		8	12	Magnesium	2680		?		2100
		8	12	Nickel	23.1		?		22
		8	12	Sodium	532		?		340
	400092SA015	16	20	Aluminum	18200		?		12000
		16	20	Sodium	570		?		340
	400101SA015	7	11	Aluminum	14900		=		12000
		7	11	Sodium	442		=		340
	400103SA015	9	13	Beryllium	0.85		?		0.69
		9	13	Cadmium	0.33	B	?		0.21
		9	13	Sodium	406		?		340
		9	13	Vanadium	51.6		?		37
	400104SA015	15	19	Aluminum	13500		=		12000
		15	19	Antimony	0.7	B	=		0.21
		15	19	Sodium	454		=		340

Table 4.20. Metals detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400105SA015	7	11	Antimony	3.8	B	?		0.21
		7	11	Barium	209		?		170
		7	11	Beryllium	0.8		?		0.69
		7	11	Cadmium	0.23	B	?		0.21
		7	11	Sodium	341		?		340
	400116SA015	8	12	Barium	279		?		170
		8	12	Beryllium	0.89		?		0.69
		8	12	Manganese	1020		?		820
		8	12	Sodium	451		?		340
	400117SA015	7	11	Aluminum	16900		?		12000
		7	11	Barium	216		?		170
		7	11	Magnesium	2690		?		2100
		7	11	Nickel	23.3		?		22
		7	11	Sodium	458		?		340
	400134SA015	12	16	Aluminum	13400		?		12000
		12	16	Sodium	489		?		340
	400138SA008	4	8	Aluminum	13000		?		12000
		4	8	Antimony	1.6	B	?		0.21
		4	8	Arsenic	8.89		?		7.9
		4	8	Beryllium	0.91		?		0.69
		4	8	Lead	24.5		?		23

Table 4.20. Metals detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400138SA008	4	8	Sodium	703		?		340
	400138SA012	8	12	Sodium	698		?		340
	400138SA016	12	16	Aluminum	12400		?		12000
		12	16	Antimony	0.8	B	?		0.21
		12	16	Sodium	688		?		340
	400138SA020	16	20	Sodium	442		?		340
	400139SA004	0	4	Antimony	1.4	B	?		0.21
		0	4	Cadmium	0.59		?		0.21
		0	4	Calcium	333000		?		6100
		0	4	Magnesium	5200		?		2100
		0	4	Nickel	22.7		?		22
		0	4	Sodium	506		?		340
		0	4	Zinc	65.2		?		60
	400139SA008	4	8	Sodium	638		?		340
		4	8	Thallium	1.1	B	?		0.34
	400139SA012	8	12	Cadmium	0.24	B	?		0.21
		8	12	Sodium	661		?		340
	400139SA016	12	16	Sodium	749		?		340
	400139SA020	16	20	Sodium	667		?		340
	400163SA004	0	4	Antimony	4.2	B	?		0.21
		0	4	Cadmium	0.46	B	?		0.21

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400163SA004	0	4	Calcium	196000		?		6100
		0	4	Magnesium	10100		?		2100
		0	4	Sodium	492		?		340
	400163SA008	4	8	Aluminum	13000		?		12000
		4	8	Arsenic	14.8		?		7.9
		4	8	Beryllium	0.73		?		0.69
		4	8	Sodium	674		?		340
	400163SA012	8	12	Aluminum	17400		?		12000
		8	12	Barium	177		?		170
		8	12	Beryllium	1		?		0.69
		8	12	Iron	30100		?		28000
		8	12	Magnesium	2760		?		2100
		8	12	Sodium	993		?		340
		8	12	Vanadium	38.5		?		37
	400163SA016	12	16	Sodium	697		?		340
	400163SA020	16	20	Aluminum	15500		?		12000
		16	20	Sodium	710		?		340
	400163SA024	21	25	Sodium	454		?		340
	400200SA005	1	5	Antimony	1.7	B	=		0.21
		1	5	Calcium	14100		=		6100
		1	5	Lead	23.4		=		23

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400200SA005	1	5	Thallium	1.1	B	=		0.34
	400200SA009	5	9	Aluminum	14800		=		12000
		5	9	Antimony	0.7	B	=		0.21
		5	9	Sodium	355		=		340
	400200SA013	9	13	Aluminum	13400		=		12000
		9	13	Antimony	1	B	=		0.21
		9	13	Magnesium	2300		=		2100
		9	13	Sodium	367		=		340
	400200SA017	13	17	Antimony	0.7	B	=		0.21
		13	17	Sodium	407		=		340
	400200SA021	17	21	Antimony	1	B	=		0.21
		17	21	Sodium	404		=		340
	400200SA029	25	29	Antimony	0.9	B	=		0.21
		25	29	Thallium	0.6	B	=		0.34
	400201SA004	0	4	Calcium	51700		?		6100
		0	4	Magnesium	2650		?		2100
	400201SA008	4	8	Aluminum	14800		?		12000
		4	8	Arsenic	10.6		?		7.9
		4	8	Beryllium	0.77		?		0.69
		4	8	Calcium	6210		?		6100
		4	8	Magnesium	2370		?		2100

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400201SA008	4	8	Sodium	445		?		340
	400201SA012	8	12	Magnesium	2170		?		2100
		8	12	Sodium	456		?		340
	400201SA016	12	16	Sodium	415		?		340
	400201SA020	16	20	Sodium	655		?		340
	400201SA024	20	24	Sodium	559		?		340
	400201SA028	24	28	Sodium	632		?		340
	400201SA036	32	36	Sodium	423		?		340
	400201SA040	36	40	Sodium	359		?		340
	400201SA048	44	48	Sodium	378		?		340
	400202SA004	0	4	Antimony	1.2	B	?		0.21
		0	4	Calcium	11900		?		6100
		0	4	Sodium	456		?		340
	400202SA008	4	8	Arsenic	11.7		?		7.9
		4	8	Sodium	508		?		340
	400202SA012	8	12	Aluminum	14600		?		12000
		8	12	Beryllium	0.91		?		0.69
		8	12	Chromium	51.6		?		43
		8	12	Iron	31200		?		28000
		8	12	Magnesium	2280		?		2100
		8	12	Sodium	1000		?		340

Table 4.20. Metals detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400202SA012	8	12	Vanadium	55		?		37
	400202SA016	12	16	Aluminum	15300		?		12000
		12	16	Sodium	725		?		340
	400202SA020	16	20	Sodium	474		?		340
		16	20	Thallium	0.6	B	?		0.34
	400202SA024	20	24	Sodium	591		?		340
	400202SA028	24	28	Beryllium	0.98		?		0.69
		24	28	Sodium	639		?		340
		24	28	Vanadium	37.7		?		37
	400205SA004	0	4	Calcium	25500		?		6100
		0	4	Magnesium	2180		?		2100
		0	4	Sodium	448		?		340
	400205SA008	4	8	Aluminum	15100		?		12000
		4	8	Beryllium	0.98		?		0.69
		4	8	Magnesium	2690		?		2100
		4	8	Sodium	937		?		340
	400205SA012	8	12	Aluminum	12200		?		12000
		8	12	Sodium	948		?		340
	400205SA016	12	16	Antimony	0.8	B	?		0.21
		12	16	Sodium	730		?		340
	400207SA030	28	30	Sodium	429		?		340

Table 4.20. Metals detected in Sector 4
UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results mg/kg	Lab Qualifier	Validation Qualifier	Data Assessment	Background mg/kg
		Top	Bottom						
Soil	400207SD030	28	30	Sodium	374		?		340
	400211SA004	0	4	Cadmium	0.23	B	?		0.21
		0	4	Calcium	55300		?		6100
	400211SA008	4	8	Antimony	0.7	B	?		0.21
		4	8	Calcium	11600		?		6100
		4	8	Magnesium	2140		?		2100
		4	8	Sodium	448		?		340

Note: Soil boring samples not containing any detectable metals at concentrations above background in Sector 4 are:

011003SA028, 011003SA036, 011005SA036, 011005SA040, 011005SA048, 011005SA052, 400014SA028, 400014SA036, 400014SA040, 400014SA044, 400014SA048, 400201SA032, 400201SA044

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Table 4.21. Radioactive isotopes detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results pCi/g	Lab Qualifier	Validation Qualifier	Data Assessment	Background pCi/g
		Top	Bottom						
Soil	011003SA004	0	4	Cesium-137	0.4		?		0.28
	011003SA016	13.5	17	Cesium-137	0.3		?		0.28
	011003SA036	32	36	Cesium-137	0.3		?		0.28
	011003SA040	36	40	Neptunium-237	0.2		?		0
	011003SA048	44	48	Americium-241	0.2		?		0
		44	48	Neptunium-237	0.3		?		0
	011004SA004	0	4	Neptunium-237	0.2		?		0
		0	4	Uranium-238	2.9		?		1.2
	011004SA008	4	8	Cesium-137	0.4		?		0.28
		4	8	Neptunium-237	0.2		?		0
	011004SA016	12	16	Neptunium-237	0.3		?		0
	011004SA020	16	20	Neptunium-237	0.3		?		0
	011004SA028	23.5	27	Neptunium-237	0.4		?		0
	011004SA032	27	30.5	Neptunium-237	0.3		?		0
	011004SA040	34	37.5	Neptunium-237	0.3		?		0
	011004SA048	41	44.5	Cesium-137	0.4		?		0.28
	011005SA008	4	8	Neptunium-237	0.2		?		0
		4	8	Thorium-230	1.6		?		1.4
		4	8	Uranium-234	3.5		?		2.4
		4	8	Uranium-238	4.3		?		1.2
	011005SA024	20	24	Neptunium-237	0.5		?		0

Table 4.21. Radioactive isotopes detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results pCi/g	Lab Qualifier	Validation Qualifier	Data Assessment	Background pCi/g
		Top	Bottom						
Soil	011005SA028	24	28	Neptunium-237	0.3		?		0
	011005SA044	38.5	41.5	Cesium-137	0.3		?		0.28
		38.5	41.5	Neptunium-237	0.2		?		0
	011005SA048	41.5	45	Cesium-137	0.3		?		0.28
		41.5	45	Neptunium-237	0.4		?		0
	011005SA052	45	48.5	Neptunium-237	0.3		?		0
	011006SA004	0	4	Americium-241	0.2		?		0
	011006SA008	4	8	Neptunium-237	0.3		?		0
	011006SA012	8	12	Neptunium-237	0.3		?		0
	011006SA016	12	16	Neptunium-237	0.5		?		0
	011006SA024	20	24	Neptunium-237	0.4		?		0
	011006SA028	24	28	Neptunium-237	0.4		?		0
	011006SA032	28	32	Neptunium-237	0.3		?		0
		28	32	Uranium-238	1.4		?		1.2
	011006SA036	32	36	Neptunium-237	0.4		?		0
	011006SA044	40	44	Americium-241	0.5		?		0
		40	44	Neptunium-237	0.2		?		0
	011006SA048	44	48	Neptunium-237	0.2		?		0
	011007SA025	24	28	Neptunium-237	0.3		?		0
	011007SA037	36	40	Neptunium-237	0.2		?		0
	400014SA004	0	4	Neptunium-237	0.3		?		0

Table 4.21. Radioactive isotopes detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results pCi/g	Lab Qualifier	Validation Qualifier	Data Assessment	Background pCi/g
		Top	Bottom						
Soil	400014SA004	0	4	Uranium-238	2.4		?		1.2
	400014SA008	4	8	Cesium-137	0.6		?		0.28
		4	8	Neptunium-237	0.4		?		0
	400014SA012	8	12	Neptunium-237	0.3		?		0
	400014SA016	12	16	Neptunium-237	0.3		?		0
	400014SA020	16	20	Cesium-137	0.3		?		0.28
	400014SA024	20	24	Neptunium-237	0.3		?		0
	400014SA044	38	41.5	Americium-241	0.2		?		0
	400014SA048	41.5	45	Cesium-137	0.3		?		0.28
		41.5	45	Plutonium-239	0.2		?		0
	400016SA001	1	4	Americium-241	0.2		=		0
		1	4	Neptunium-237	0.3		=		0.1
		1	4	Plutonium-239	0.2		=		0.025
	400016SA030	30	34	Americium-241	0.2		=		0
		30	34	Thorium-230	1.5		=		1.4
	400016SD005	5	8	Americium-241	0.2		=		0
		5	8	Neptunium-237	0.3		=		0
		5	8	Plutonium-239	0.2		=		0
	400066SA015	13	17	Cesium-137	0.5		=		0.28
	400092SA015	16	20	Neptunium-237	0.2		?		0
		16	20	Thorium-230	1.8		?		1.4

Table 4.21. Radioactive isotopes detected in Sector 4 UCRS soil

Sample Type	Sample ID	Sample Interval (ft bgs)		Analytical Compound	Results pCi/g	Lab Qualifier	Validation Qualifier	Data Assessment	Background pCi/g
		Top	Bottom						
Soil	400103SA015	9	13	Americium-241	0.2		?		0
		9	13	Neptunium-237	0.2		?		0
	400105SA015	7	11	Thorium-230	1.5		?		1.4
	400138SA004	1	4	Neptunium-237	0.3		?		0
		1	4	Uranium-238	1.3		?		1.2
	400138SA008	4	8	Neptunium-237	0.2		?		0
	400138SA012	8	12	Neptunium-237	0.3		?		0
	400138SA016	12	16	Neptunium-237	0.3		?		0
	400138SA020	16	20	Neptunium-237	0.2		?		0
	400139SA008	4	8	Neptunium-237	0.4		?		0
	400139SA012	8	12	Neptunium-237	0.2		?		0
	400139SA016	12	16	Neptunium-237	0.2		?		0
		12	16	Thorium-230	1.5		?		1.4
	400163SA004	0	4	Neptunium-237	0.6		?		0
		0	4	Technetium-99	3		?		2.8
		0	4	Uranium-238	2.8		?		1.2
	400163SA008	4	8	Neptunium-237	0.4		?		0
	400163SA012	8	12	Neptunium-237	0.5		?		0
	400163SA016	12	16	Neptunium-237	0.2		?		0
	400163SA020	16	20	Cesium-137	0.5		?		0.28
		16	20	Neptunium-237	0.2		?		0