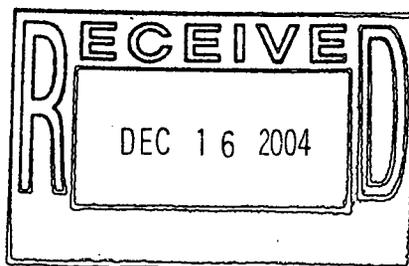


**Draft Closeout Report
for IHSS Group 600-4
IHSS 600-160 – Radioactive Site,
Building 444 Parking Lot**

Approval received from the Colorado Department of Public Health and Environment
()
Approval letter contained in the Administrative Record.



December 2004

ADMIN RECORD

IA-A-002464

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ENCLOSURE

Complete Data Set Compact Disc – Accelerated Action Data

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ACRONYMS

AAESE	Accelerated Action Ecological Screening Process
AL	action level
AR	Administrative Record
ASD	Analytical Services Division
B	validation code - possible laboratory contamination
B1	verification code - possible laboratory contamination
bgs	below ground surface
BMP	best management practices
CAD/ROD	Corrective Action Decision/Record of Decision
CD	compact disc
CAS	Chemical Abstracts Service
CDPHE	Colorado Department of Public Health and Environment
CEARP	Comprehensive Environmental Assessment and Response Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS/FS	Corrective Measures Study/Feasibility Study
COC	contaminant of concern
cpm	counts per minute
CRA	Comprehensive Risk Assessment
DOE	U.S. Department of Energy
DQA	Data Quality Assessment
DQO	data quality objective
EMC	Elevated Measurements Comparison
EPA	U.S. Environmental Protection Agency (same as USEPA)
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation
ft	feet
HPGe	high-purity germanium
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
IP	Industrial Package
J	validation code - estimated
J1	verification code - estimated
K-H	Kaiser-Hill Company, L.L.C.
LCS	laboratory control sample
µg/kg	micrograms per kilogram (may be found as ug/kg)
MDL	method detection limit
mg/kg	milligrams per kilogram
MS	matrix spike

MSD	matrix spike duplicate
NA	not applicable
nCi/g	nanocuries per gram
NFAA	No Further Accelerated Action
NLR	no longer representative
OPWL	Original Process Waste Lines
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCB	polychlorinated biphenyl
pCi/g	picocuries per gram
QC	quality control
R	validation code - rejected
R1	verification code - rejected
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS or Site	Rocky Flats Environmental Technology Site
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RFP	Rocky Flats Plant
RIN	report identification number
RL	reporting limit
RPD	relative percent difference
RSOP	RFCA Standard Operating Protocol
SAP	Sampling and Analysis Plan
SOR	sum of ratios
SSRS	Subsurface Soil Risk Screen
SWD	Soil Water Database
U	validation code - below laboratory detection limit
U1	verification code - below laboratory detection limit
USEPA	U.S. Environmental Protection Agency (same as EPA)
V	volts
V&V	verification and validation
VOC	volatile organic compound
WEMS	Waste and Environmental Management System
WRW	wildlife refuge worker

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EXECUTIVE SUMMARY

This Closeout Report summarizes accelerated action activities conducted at Individual Hazardous Substance Site (IHSS) Group 600-4, which consists of IHSS 600-160 – Radioactive Site, Building 444 Parking Lot. Accelerated action activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001), the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation Modification 2 (ER RSOP) (DOE 2004), IASAP Addendum #IA-03-09 (DOE 2003b), and ER RSOP Notification #04-20 (DOE 2004a).

Accelerated action activities were conducted between July 8 and December 8, 2004, and included soil characterization and removal activities. Historical and accelerated action characterization data indicated that contaminant activities and concentrations in soil greater than wildlife refuge worker (WRW) action levels (ALs) were limited to plutonium-239/240 in surface soil at two locations and arsenic in subsurface soil at two other locations.

Based on application of the hot spot methodology (DOE 2001) and Subsurface Soil Risk Screen (SSRS) (DOE et al. 2003), only the plutonium exceedances required remediation. Soil was excavated at sampling locations CA37-013 and SS441294 and the associated confirmation results were all below the WRW for plutonium-239/240.

Residual contamination exceeding WRW ALs is limited to arsenic in subsurface soil at sampling locations CB37-000 and CB38-003. Based on application of the hot spot methodology and the SSRS, soil at these locations does not require accelerated action. Residual contamination less than the WRW ALs (but greater than reporting limits [RLs] or background means plus two standard deviations) remains in surface and subsurface soil located throughout IHSS Group 600-4.

No Further Accelerated Action (NFAA) is warranted for soil at IHSS Group 600-4. All ER RSOP remedial action objectives (RAOs) (DOE 2003a) and accelerated action goals established for remediation of IHSS Group 600-4 soil were achieved. The soil removal activities conducted at IHSS Group 600-4 contributed to the protection of human health and the environment by removing potential sources of contamination. Best management practices (BMPs) were used during removal activities to minimize the potential spread of contamination. The removal activities minimized the need for short- and long-term management actions. The post-remediation SSRS and stewardship evaluation presented in this document indicate no additional accelerated action is required and NFAA status is warranted for IHSS Group 600-4. Long-term stewardship actions include restricting site access, controlling soil excavation, and prohibiting groundwater pumping.

1.0 INTRODUCTION

This Closeout Report documents the accelerated action activities conducted at Individual Hazardous Substance Site (IHSS) Group 600-4, located at the U.S. Department of Energy's (DOE's) Rocky Flats Environmental Technology Site (RFETS or Site) near Golden, Colorado, and demonstrates attainment of the cleanup goals stipulated for IHSS Group 600-4. Figure 1 shows the location of IHSS Group 600-4 at RFETS. IHSS Group 600-4 consists of IHSS 600-160 – Radioactive Site, Building 444 Parking Lot.

The accelerated action activities conducted at IHSS Group 600-4 were planned and conducted in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) Modification 2 (DOE 2004). Accelerated action characterization activities were conducted in accordance with IASAP Addendum #IA-03-09 (DOE 2003b). Accelerated action soil removal activities were conducted in accordance with ER RSOP Notification #04-20 (DOE 2004a).

This IHSS Group 600-4 Closeout Report includes the following:

- Historical information;
- Deviations from IASAP Addendum #IA-03-09 (DOE 2003b) sampling specifications;
- Characterization data presented in tables and shown on maps;
- Sums of ratios (SORs) and summary statistics for the accelerated action data;
- Evaluation of historical and accelerated action data greater than wildlife refuge worker (WRW) action levels (ALs);
- Remedial action objectives (RAOs) and accelerated action goals;
- Description of accelerated action activities;
- Confirmation sampling results;
- Map of the remediated areas including boundaries and confirmation sampling results;
- Subsurface Soil Risk Screen (SSRS);
- Stewardship evaluation;
- Deviations from the ER RSOP;

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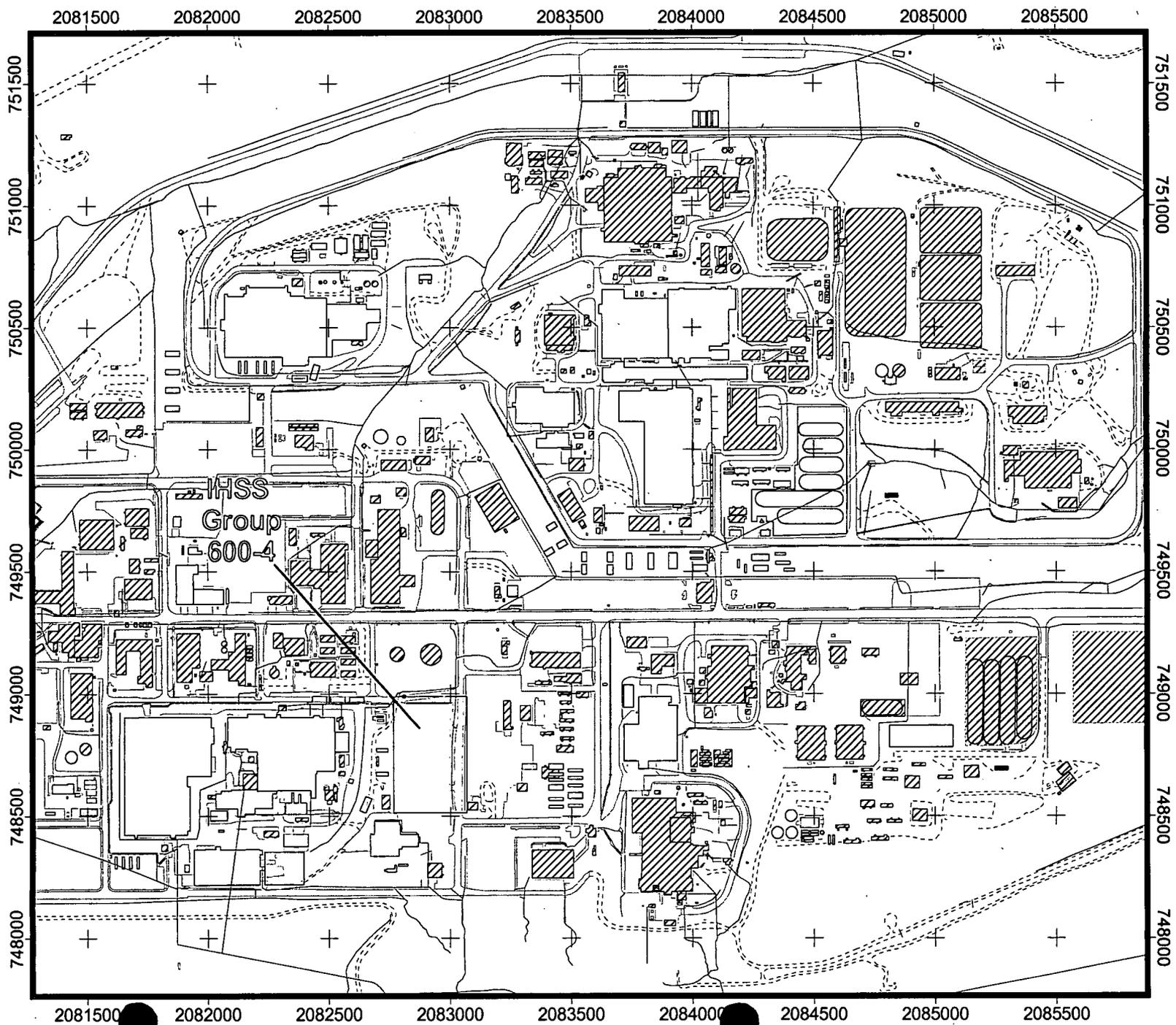
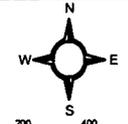


Figure 1
IHSS Group 600-4
Location

KEY

-  IHSS Group 600-4 (IHSS 160)
- Building**
-  Demolished
-  Standing
-  Paved Road
-  Dirt Road
-  Ditch or Stream

DRAFT



200 0 200 400 600 800 Feet

Scale 1:7000
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: **RADMS**

Prepared for: **KAISER HILL COMPANY**

- Map of residual soil contamination exceeding WRW ALs;
- Disposition of waste and site reclamation;
- Table of sampling locations that are no longer representative (NLR) because of being remediated;
- Data Quality Assessment (DQA);
- Conclusions;
- References;
- Contact records;
- A compact disc (CD) containing the accelerated action data set for the project with real and QC data in separate files.

Approval of this Closeout Report constitutes regulatory agency concurrence that IHSS Group 600-4 is an NFAA site. This information and NFAA determination will be documented in the 2005 Annual Update of the Historical Release Report (HRR). This Closeout Report and associated documentation will be retained in the RFETS Administrative Record (AR).

2.0 SITE CHARACTERIZATION

The IHSS Group 600-4 site characterization is based on site history, historical data, and accelerated action characterization soil data.

2.1 Site History and Historical Data

The following historical information on IHSS Group 600-4 is summarized from the HRRs (DOE 1992-2003), IASAP (DOE 2001), and IA Data Summary Report (DOE 2000).

IHSS 600-160 contains the Building 444 parking lot and a section of Seventh Avenue located east of Building 444. According to the 1992 HRR, the Building 444 parking lot was paved at that time (1992), but had been unpaved when it was used for storage. The actual date of paving is not stated, but it is likely that the area was paved when it became a parking lot. Aerial photographs taken in June 1965 and June 1969 show drums and boxes being stored in the unpaved area that is associated with this IHSS. These included wastes resulting from the Building 776/777 fire in May 1969. Uranium- and plutonium-contaminated oils and coolants were reportedly stored here in great quantity.

On May 24, 1971, two boxes leaked an undocumented quantity of an unknown contaminated liquid onto the ground at the waste box storage yard. Approximately 1,000 square feet of ground were contaminated with radioactivity ranging from 1,000 counts per minute (cpm) to greater than 100,000 cpm. The leaks were reportedly due to rain or melting snow entering the boxes. The boxes were returned to Building 777. Decontamination activities (likely associated with the May 24, 1971 incident) were completed at the waste box storage yard on June 16, 1971.

An alpha probe survey was conducted during February 1973 on the storage yard east of Building 444 after all the boxes had been removed. No contamination was detected.

In the early 1970s, surface soil was removed from this area; however, plant personnel interviewed for the Comprehensive Environmental Assessment and Response Program (CEARP) Phase I mentioned that small amounts of plutonium may have remained. At Building 668, immediately west of the southern end of IHSS Group 600-4, soil samples collected around a concrete pad used to store unused or unusable transformers. The samples were analyzed for PCBs, and Aroclor-1260 was detected at concentrations ranging from 170 to 1,600 micrograms per kilogram ($\mu\text{g}/\text{kg}$) (EG&G 1991).

As part of the Operable Unit (OU) 14 Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI), 56 surface soil samples were collected within the boundaries of IHSS 600-160 on a grid with 50-ft spacing. Subsurface soil samples were also collected at four boreholes ranging from 4.6 to 27.5 feet (ft) below ground surface (bgs) in the southern portion of IHSS 600-160 and one 24-ft borehole in the northeastern portion of the IHSS along its eastern border. Surface soil samples were analyzed for metals and radionuclides, and subsurface soil samples were analyzed for volatile organic compounds (VOCs) and metals. Plutonium was detected above background means plus two standard deviations in 75% of the surface soil samples. Although 38% of all plutonium results in surface soil had "B" laboratory result qualifiers (suggesting laboratory cross-contamination), only 27% of the results above background mean plus two standard deviations had "B" qualifiers. Plutonium was detected at three times the WRW AL at one location, SS441294. This is the only historical exceedance identified in IHSS Group 600-4. Copper, lead, and zinc concentrations exceeded background means plus two standard deviations in approximately 20% of the surface soil samples. Chlorinated solvents, including 1,1,1-trichloroethane, 1,2-dichloroethane, and tetrachloroethene, were detected in subsurface soil samples from P313489, in the northeastern portion of IHSS 600-160. There were sporadic detections of VOCs in subsurface soil in the southern part of IHSS Group 600-4, chiefly methylene chloride and carbon disulfide. All detections of VOCs were four to eight orders of magnitude below the WRW ALs (DOE 2000).

High-purity germanium (HPGe) surveys conducted during the OU 14 Phase I RFI/RI indicated elevated activities of americium-241 and plutonium-239 in the northwestern part of the IHSS. In the southwestern corner of the IHSS between Buildings 664 and 668, all radionuclide activities were above background. Sodium iodide surveys indicated the same trends (DOE 2000). Several organic constituents were previously detected in groundwater at downgradient monitoring well 0187, including trichloroethene, tetrachloroethene, and trans-1,2-dichloroethene.

Figure 2 presents historical soil data results greater than method detection limits (MDLs) or background means plus two standard deviations.

2.2 Accelerated Action Characterization Data

Table 1 presents a summary of planned versus actual sampling and analyses. All planned samples are characterization samples. Actual samples include both characterization and confirmation samples.

THIS TARGET SHEET REPRESENTS AN
OVER-SIZED MAP / PLATE FOR THIS DOCUMENT:
(Ref: 04-RF-01270; KLV-055-04)

**Draft Closeout Report for IHSS Group 600-4
IHSS 600-160 – Radioactive Site, Building 444
Parking Lot**

December 2004

Figure 3:

**IHSS Group 600-4 Pre-Accelerated
Action Soil Sampling Results Greater
than RLs or Background Means Plus
Two Standard Deviations**

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December 6, 2004

CERCLA Administrative Record Document, IA-A-002464

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

GOLDEN, COLORADO

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Table 1
IHSS Group 600-4 Sampling and Analysis Summary

IHSS Group 600-4	Number Planned	Actual Number
Sampling Locations	126	137
Surface Soil Samples	126	126
Subsurface Soil Samples	171	193
Number of Samples	298	319
Number of Metals Analyses	210	204
Number of Radionuclide Analyses	210	225
Number of VOC Analyses	126	128
Number of PCB Analyses	18	18

Table 2 presents a comparison of planned to actual accelerated action characterization sampling specifications, and includes explanations for deviations from IASAP Addendum #IA-03-09 (DOE 2003b). All characterization sampling locations were statistical locations. All planned samples were collected. With the exception of VOCs in surface soil, all planned analyses were performed. IASAP Addendum #IA-03-09 called for VOC analyses for all 126 proposed surface soil samples, but only two surface soil VOC samples were collected because the remainder of the locations were paved with asphalt and VOC samples are not collected in surface soil beneath asphalt.

IHSS Group 600-4 accelerated action characterization soil results greater than reporting limits (RLs) or background means plus two standard deviations are presented in Table 3. WRW AL exceedances are bold in Table 3. Plutonium-239/240 and uranium-234 activities based on high-purity germanium (HPGe) gamma spectroscopy results for americium-241 and uranium-238 are italicized in Table 3. Figures 3 and 4 present surface soil data, and Figure 5 presents subsurface soil data. WRW AL exceedances are shown in red on Figures 3, 4, and 5.

The summary statistics for the IHSS Group 600-4 surface and subsurface soil samples are presented in Tables 4 and 5, respectively. For inorganics, only those detections greater than the background means plus two standard deviations are included in the detection frequency and average calculations.

2.3 Sums of Ratios

RFCA SORs were calculated for soil at sampling locations in IHSS Group 600-4 using accelerated action soil data. Radionuclide SOR calculations for soil up to 3 ft bgs include americium-241, plutonium-239/240, uranium-234, uranium-235, and uranium-238, and are calculated where any radionuclide result is greater than background means plus two standard deviations. Where high-purity germanium detection (gamma spectroscopy) is used for the analysis, the plutonium-239/240 activity is calculated as 5.7 times the measured americium-241

**Table 2
IHSS Group 600-4 Sampling and Analysis Specifications and Deviations from the IASAP Addendum**

Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CA35-000	748553.861	2082849.787	748553.762	2082849.774	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA35-001	748540.087	2082883.136	748540.085	2082883.075	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA35-002	748526.314	2082916.454	748526.408	2082916.376	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA35-003	748545.409	2082787.977	748545.438	2082787.979	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA35-004	748527.353	2082818.273	748531.761	2082821.279	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	5.3 SW	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA35-005	748518.028	2082865.597	748518.084	2082854.580	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	11.0 E	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA36-000	748754.313	2082858.024	748754.152	2082854.241	Surface Soil	0-0.5	Radionuclides, Metals	3.8 E	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-001	748740.428	2082887.559	748740.475	2082887.541	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-002	748726.825	2082920.875	748726.798	2082920.842	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CA36-003	748745.817	2082792.372	748745.828	2082792.445	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-004	748732.263	2082825.662	748732.151	2082825.746	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-005	748718.522	2082859.041	748718.474	2082859.046	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-006	748704.845	2082892.281	748704.797	2082892.347	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-007	748691.137	2082925.579	748691.120	2082925.648	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-008	748710.179	2082797.274	748710.150	2082797.251	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-009	748696.540	2082830.568	748696.473	2082830.551	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-010	748682.744	2082863.919	748682.796	2082863.852	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-011	748669.165	2082897.308	748669.119	2082897.153	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-012	748655.459	2082930.521	748655.442	2082930.454	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-013	748688.229	2082768.884	748688.150	2082768.756	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		

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Draft Closeout Report for IHSS Group 600-4

Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CA36-014	748674.544	2082802.167	748674.473	2082802.056	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-015	748660.865	2082835.361	748660.796	2082835.357	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-016	748647.056	2082868.672	748647.119	2082868.658	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-017	748633.387	2082901.990	748633.442	2082901.959	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-018	748619.857	2082935.279	748619.765	2082935.259	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-019	748655.820	2082773.142	748652.472	2082773.561	Surface Soil	0-0.5	Radionuclides, Metals	3.4 N	Relocated because of utilities.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-020	748638.779	2082806.842	748638.795	2082806.862	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-021	748625.174	2082840.168	748625.118	2082840.163	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-022	748611.364	2082873.478	748611.441	2082873.464	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-023	748597.751	2082906.839	748597.764	2082906.764	Surface Soil	0-0.5	Radionuclides, Metals	<1	Relocated 1' N because of steam lines.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-024	748616.724	2082778.394	748616.794	2082778.367	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		

Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CA36-025	748603.106	2082811.736	748603.117	2082811.668	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA36-026	748591.662	2082845.067	748589.440	2082844.969	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	2.2 N	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA36-027	748572.261	2082878.507	748575.763	2082878.269	Surface Soil	0-0.5	Radionuclides, Metals	3.5 S	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-028	748562.178	2082911.610	748562.086	2082911.570	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA36-029	748585.960	2082784.516	748581.116	2082783.173	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	5.0 NE	Relocated because of utilities.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA36-030	748567.328	2082816.609	748567.439	2082816.474	Surface Soil	0-0.5	Radionuclides, Metals, PCBs	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs, PCBs		
CA37-000	748954.469	2082858.695	748954.542	2082858.707	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-001	748940.872	2082892.017	748940.865	2082892.008	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA37-002	748927.177	2082925.349	748927.188	2082925.309	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		

Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA37-003	748946.241	2082796.893	748946.218	2082796.911	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-004	748932.455	2082830.194	748932.541	2082830.212	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-005	748918.924	2082863.459	748918.864	2082863.513	Surface Soil	0.3-0.8	Radionuclides, Metals	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.8-2.8	VOCs		
CA37-006	748909.064	2082896.798	748905.187	2082896.814	Surface Soil	0.3-0.8	Radionuclides, Metals	3.9 N	Relocated because of 480 V electric line. Asphalt 0-0.3 ft.
					Subsurface Soil	0.8-2.8	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.8-4.8	Radionuclides, Metals		
					Subsurface Soil	4.8-6.8	Radionuclides, Metals		
CA37-007	748891.522	2082930.079	748891.510	2082930.114	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA37-008	748924.126	2082768.384	748924.217	2082768.416	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-009	748910.563	2082801.665	748910.540	2082801.717	Surface Soil	0.3-0.8	Radionuclides, Metals	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.8-2.8	VOCs		

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CA37-010	748892.052	2082834.837	748896.863	2082835.018	Surface Soil	0.3-0.8	Radionuclides, Metals	4.8 S	Relocated because of 480 V electric line. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.8-2.8	VOCs		
CA37-011	748883.177	2082868.287	748883.186	2082868.319	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-012	748869.524	2082901.608	748869.509	2082901.619	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA37-013	748855.793	2082934.905	748855.832	2082934.920	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA37-014	748888.496	2082773.158	748888.539	2082773.222	Surface Soil	0.3-0.8	Radionuclides, Metals	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.8-2.8	VOCs		
CA37-015	748874.866	2082806.495	748874.862	2082806.523	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-016	748861.212	2082839.784	748861.185	2082839.824	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-017	748847.513	2082873.113	748847.508	2082873.124	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-018	748833.793	2082906.429	748833.831	2082906.425	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft-bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
					Subsurface Soil	0.5-2.5	VOCs		
CA37-019	748852.880	2082778.062	748852.862	2082778.028	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-020	748839.167	2082811.284	748839.185	2082811.329	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-021	748825.625	2082840.955	748825.508	2082844.629	Surface Soil	0-0.5	Radionuclides, Metals	3.7 W	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-022	748811.670	2082877.831	748811.831	2082877.930	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-023	748798.304	2082911.274	748798.154	2082911.231	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-024	748817.254	2082782.878	748817.184	2082782.834	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-025	748803.517	2082816.067	748803.507	2082816.134	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-026	748789.443	2082843.004	748789.830	2082849.435	Surface Soil	0-0.5	Radionuclides, Metals	6.4	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-027	748776.234	2082882.703	748776.153	2082882.736	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-028	748762.501	2082916.034	748762.476	2082916.037	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-029	748781.528	2082787.643	748781.506	2082787.639	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft. bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
					Subsurface Soil	0.5-2.5	VOCs		
CA37-030	748767.736	2082820.968	748767.829	2082820.940	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA37-031	748856.220	2082935.000	NA	NA	Surface Soil	2-2.1	Radionuclides	NA	Confirmation sample for excavated hot spot (CA37-013).
CA37-032	748858.634	2082934.842	NA	NA	Surface Soil	0-2	Radionuclides	NA	Confirmation sample for excavated hot spot (CA37-013).
CA37-033	748853.762	2082934.983	NA	NA	Surface Soil	0-0.5	Radionuclides	NA	Confirmation sample for excavated hot spot (CA37-013).
CA37-034	748856.068	2082937.416	NA	NA	Surface Soil	0-0.5	Radionuclides	NA	Confirmation sample for excavated hot spot (CA37-013).
CA37-035	748856.154	2082932.328	NA	NA	Surface Soil	0-0.5	Radionuclides	NA	Confirmation sample for excavated hot spot (CA37-013).
CA37-036	748860.200	2082935.000	NA	NA	Surface Soil	2-2.1	Radionuclides	NA	Confirmation sample for excavated hot spot (CA37-013).
CA38-002-01	748976.599	2082887.192	748976.543	2082887.202	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA38-003-01	748962.873	2082920.612	748962.865	2082920.503	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		

Preliminary Review Draft for Interagency Discussion/Not Issued for Public Comment

Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CA38-004-01	748981.914	2082792.110	748981.896	2082792.106	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CA38-005-01	748968.215	2082825.399	748968.219	2082825.406	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB35-000	748556.838	2083001.148	748556.733	2083006.667	Surface Soil	0-0.5	Radionuclides, Metals	5.5 W	Relocated because of alarm line.
					Subsurface Soil	0.5-2.5	VOCs		
CB35-001	748538.977	2083039.814	748543.056	2083039.967	Surface Soil	0.3-0.8	Radionuclides, Metals	4.1 S	Relocated because of water line. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.8-2.8	VOCs		
CB35-002	748548.409	2082944.926	748548.409	2082944.871	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB35-003	748534.656	2082978.180	748534.732	2082978.172	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB35-004	748526.233	2083011.613	748521.055	2083011.472	Surface Soil	0-0.5	Radionuclides, Metals	5.2 N	Relocated because of alarm line.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-000	748757.080	2083015.828	748757.122	2083011.133	Surface Soil	0-0.5	Radionuclides, Metals	4.7 E	Relocated because of alarm line.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-001	748743.490	2083044.358	748743.445	2083044.434	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-002	748740.964	2082949.158	748748.799	2082949.337	Surface Soil	0-0.5	Radionuclides, Metals	7.8 S	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-003	748735.123	2082982.605	748735.122	2082982.638	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
					Subsurface Soil	0.5-2.5	VOCs		
CB36-004	748721.455	2083015.859	748721.445	2083015.939	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-005	748707.761	2083049.142	748707.768	2083049.239	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-006	748713.085	2082954.065	748713.121	2082954.143	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-007	748699.278	2082991.278	748699.444	2082987.444	Surface Soil	0-0.5	Radionuclides, Metals	3.8 E	Relocated because of 480 V electric line.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-008	748685.891	2083020.724	748685.767	2083020.744	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-009	748672.135	2083053.992	748672.090	2083054.045	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Surface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
CB36-010	748677.454	2082958.963	748677.443	2082958.949	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-011	748663.822	2082992.214	748663.766	2082992.249	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB36-012	748650.116	2083025.637	748650.089	2083025.550	Surface Soil	0.3-0.8	Radionuclides, Metals	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Subsurface Soil	0.8-2.8	VOCs		
CB36-013	748636.343	2083058.925	748636.412	2083058.851	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
CB36-014	748642.291	2082954.446	748641.765	2082963.754	Surface Soil	0-0.5	Radionuclides, Metals, VOCs	9.3 W	Relocated because of 480 V electric line.

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft.bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CB36-015	748628.024	2082997.046	748628.088	2082997.055	Subsurface Soil	0.5-2.5	VOCs	<1	No significant change in location.
					Surface Soil	0-0.5	Radionuclides, Metals		
CB36-016	748614.363	2083030.361	748614.411	2083030.356	Subsurface Soil	0.5-2.5	VOCs	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Surface Soil	0.3-0.8	Radionuclides, Metals		
CB36-017	748600.676	2083063.655	748600.734	2083063.657	Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs	<1	No significant change in location.
					Surface Soil	0-0.5	Radionuclides, Metals		
CB36-018	748606.079	2082968.612	748606.088	2082968.560	Subsurface Soil	0.5-2.5	VOCs	<1	No significant change in location.
					Surface Soil	0-0.5	Radionuclides, Metals		
CB36-019	748592.396	2083001.877	748592.411	2083001.861	Subsurface Soil	0.5-2.5	VOCs	<1	No significant change in location.
					Surface Soil	0-0.5	Radionuclides, Metals		
CB36-020	748578.773	2083035.261	748578.733	2083035.162	Subsurface Soil	0.8-2.8	VOCs	<1	No significant change in location. Asphalt 0 to 0.3 ft.
					Surface Soil	0.3-0.8	Radionuclides, Metals		
CB36-021	748589.871	2082939.703	748584.087	2082940.065	Subsurface Soil	0.5-2.5	Radionuclides, VOCs	5.8 N	Relocated because of 480 V electric line.
					Surface Soil	0-0.5	Radionuclides, Metals		
CB36-022	748570.392	2082973.393	748570.410	2082973.366	Subsurface Soil	0.5-2.5	VOCs	<1	No significant change in location.
					Surface Soil	0-0.5	Radionuclides, Metals, VOCs		
CB37-000	748957.404	2083015.559	748957.512	2083015.599	Subsurface Soil	2.5-4.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Surface Soil	0-0.5	Radionuclides, Metals		

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CB37-001-01	748943.861	2083048.897	748943.835	2083048.900	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-002-01	748949.205	2082953.811	748949.188	2082953.804	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-003-01	748935.513	2082987.071	748935.511	2082987.104	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-004-01	748921.726	2083023.945	748921.834	2083020.405	Surface Soil	0-0.5	Radionuclides, Metals	3.5 E	Relocated because of alarm line.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-005-01	748908.159	2083053.668	748908.157	2083053.706	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CB37-006-01	748913.462	2082958.635	748913.511	2082958.609	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-007-01	748899.771	2082991.912	748899.834	2082991.910	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-008-01	748886.217	2083025.223	748886.157	2083025.211	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-009-01	748872.470	2083058.510	748872.480	2083058.512	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-010-01	748877.776	2082963.435	748877.833	2082963.415	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CB37-011-01	748864.203	2082996.637	748864.156	2082996.716	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-012-01	748850.494	2083029.953	748850.479	2083030.017	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-013	748835.437	2083063.284	748836.802	2083063.317	Surface Soil	0-0.5	Radionuclides, Metals	1.4 S	Relocated because of utilities.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-014	748842.213	2082968.215	748842.155	2082968.221	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-015	748828.537	2083001.473	748828.478	2083001.522	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CB37-016	748814.791	2083034.743	748814.801	2083034.822	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB37-017	748820.199	2082939.715	748820.154	2082939.726	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB37-018	748806.569	2082973.050	748806.477	2082973.027	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB37-019	748792.854	2083006.314	748792.800	2083006.327	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB37-020	748779.048	2083039.613	748779.123	2083039.628	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB37-021	748784.428	2082944.489	748784.477	2082944.532	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB37-022	748770.756	2082977.750	748770.799	2082977.832	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	VOCs		
CB37-023	748924.688	2082963.155	NA	NA	Surface Soil	1.0-1.5	Radionuclides	NA	Confirmation sample for excavated hot spot (SS441294).
CB37-024	748928.099	2082963.686	NA	NA	Surface Soil	0.5-1.0	Radionuclides	NA	Confirmation sample for excavated hot spot (SS441294). Fill 0-0.5 ft.
CB37-025	748921.877	2082962.389	NA	NA	Surface Soil	0.5-1.0	Radionuclides	NA	Confirmation sample for excavated hot spot (SS441294). Fill 0-0.5 ft.

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Location Code	Actual Northing	Actual Easting	Proposed Northing	Proposed Easting	Media	Actual Depth Interval (ft bgs)	Actual Analytes	Relocation Distance and Direction (ft)	Comments
CB37-026	748925.605	2082959.834	NA	NA	Surface Soil	0-0.5	Radionuclides	NA	Confirmation sample for excavated hot spot (SS441294).
CB37-027	748924.550	2082966.229	NA	NA	Surface Soil	0.5-1.5	Radionuclides	NA	Confirmation sample for excavated hot spot (SS441294). Fill 0-0.5 ft.
CB38-003	748979.514	2083044.122	748979.513	2083044.094	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB38-004	748984.945	2082948.961	748984.866	2082948.998	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		
CB38-005	748971.270	2082982.302	748971.189	2082982.299	Surface Soil	0-0.5	Radionuclides, Metals	<1	No significant change in location.
					Subsurface Soil	0.5-2.5	Radionuclides, Metals, VOCs		
					Subsurface Soil	2.5-4.5	Radionuclides, Metals		
					Subsurface Soil	4.5-6.5	Radionuclides, Metals		

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Table 3
IHSS Group 600-4 Results Greater Than RLs or Background Means Plus Two Standard Deviations

Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA35-000	748553.861	2082849.787	0.0	0.5	Americium-241	0.095	NA	76	0.023	pCi/g
CA35-000	748553.861	2082849.787	0.0	0.5	Plutonium-239/240	0.257	NA	50	0.066	pCi/g
CA35-000	748553.861	2082849.787	0.5	2.5	Acetone	7.700	5.500	102000000	NA	µg/kg
CA35-000	748553.861	2082849.787	0.5	2.5	Trichloroethene	3.300	1.000	19600	NA	µg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Arsenic	22.000	NA	22.2	10.090	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Barium	754.000	NA	26400	141.260	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Chromium	30.000	NA	268	16.990	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Iron	33900.000	NA	307000	18037.000	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Manganese	521.000	NA	3480	365.080	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Nickel	43.400	NA	20400	14.910	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Strontium	200.000	NA	613000	48.940	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Uranium-235	0.111	NA	8	0.094	pCi/g
CA35-001	748540.087	2082883.136	0.0	0.5	Vanadium	80.700	NA	7150	45.590	mg/kg
CA35-001	748540.087	2082883.136	0.0	0.5	Zinc	200.000	NA	307000	73.760	mg/kg
CA35-002	748526.314	2082916.454	0.0	0.5	Uranium-235	0.109	NA	8	0.094	pCi/g
CA35-003	748545.409	2082787.977	0.0	0.5	Aroclor-1254	27.000	4.700	12400	NA	µg/kg
CA35-004	748527.353	2082818.273	0.0	0.5	Aroclor-1260	330.000	6.300	12400	NA	µg/kg
CA35-004	748527.353	2082818.273	0.0	0.5	Uranium-235	0.136	NA	8	0.094	pCi/g
CA35-004	748527.353	2082818.273	0.0	0.5	Zinc	99.000	NA	307000	73.760	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Aroclor-1260	160.000	6.300	12400	NA	µg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Arsenic	15.500	NA	22.2	10.090	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Barium	693.000	NA	26400	141.260	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Chromium	47.300	NA	268	16.990	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Iron	34800.000	NA	307000	18037.000	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Nickel	52.600	NA	20400	14.910	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Strontium	150.000	NA	613000	48.940	mg/kg

Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA35-005	748518.028	2082865.597	0.0	0.5	Uranium-235	0.133	NA	8	0.094	pCi/g
CA35-005	748518.028	2082865.597	0.0	0.5	Vanadium	111.000	NA	7150	45.590	mg/kg
CA35-005	748518.028	2082865.597	0.0	0.5	Zinc	138.000	NA	307000	73.760	mg/kg
CA35-005	748518.028	2082865.597	0.5	2.5	Toluene	23.100	6.110	31300000	NA	µg/kg
CA36-000	748754.313	2082858.024	0.0	0.5	Uranium-234	3.624	NA	300	2.253	pCi/g
CA36-000	748754.313	2082858.024	0.0	0.5	Uranium-235	0.190	NA	8	0.094	pCi/g
CA36-000	748754.313	2082858.024	0.0	0.5	Uranium-238	3.624	NA	351	2.000	pCi/g
CA36-001	748740.428	2082887.559	0.0	0.5	Aluminum	25000.000	NA	228000	16902.000	mg/kg
CA36-001	748740.428	2082887.559	0.0	0.5	Beryllium	1.700	NA	921	0.966	mg/kg
CA36-001	748740.428	2082887.559	0.0	0.5	Chromium	20.000	NA	268	16.990	mg/kg
CA36-001	748740.428	2082887.559	0.0	0.5	Nickel	21.000	NA	20400	14.910	mg/kg
CA36-001	748740.428	2082887.559	0.0	0.5	Uranium-234	2.612	NA	300	2.253	pCi/g
CA36-001	748740.428	2082887.559	0.0	0.5	Uranium-235	0.227	NA	8	0.094	pCi/g
CA36-001	748740.428	2082887.559	0.0	0.5	Uranium-238	2.612	NA	351	2.000	pCi/g
CA36-002	748726.825	2082920.875	0.0	0.5	Americium-241	0.210	NA	76	0.023	pCi/g
CA36-002	748726.825	2082920.875	0.0	0.5	Plutonium-239/240	1.198	NA	50	0.066	pCi/g
CA36-002	748726.825	2082920.875	0.0	0.5	Uranium-235	0.186	NA	8	0.094	pCi/g
CA36-004	748732.263	2082825.662	0.0	0.5	Uranium-235	0.254	NA	8	0.094	pCi/g
CA36-005	748718.522	2082859.041	0.0	0.5	Uranium-235	0.111	NA	8	0.094	pCi/g
CA36-007	748691.137	2082925.579	0.0	0.5	Antimony	0.540	NA	409	0.470	mg/kg
CA36-008	748710.179	2082797.274	0.0	0.5	Cadmium	21.000	NA	962	1.612	mg/kg
CA36-009	748696.540	2082830.568	0.0	0.5	Uranium-235	0.170	NA	8	0.094	pCi/g
CA36-010	748682.744	2082863.919	0.0	0.5	Uranium-234	4.462	NA	300	2.253	pCi/g
CA36-010	748682.744	2082863.919	0.0	0.5	Uranium-238	4.462	NA	351	2.000	pCi/g
CA36-011	748669.165	2082897.308	0.0	0.5	Aluminum	29000.000	NA	228000	16902.000	mg/kg
CA36-011	748669.165	2082897.308	0.0	0.5	Beryllium	1.900	NA	921	0.966	mg/kg
CA36-011	748669.165	2082897.308	0.0	0.5	Chromium	19.000	NA	268	16.990	mg/kg
CA36-011	748669.165	2082897.308	0.0	0.5	Cobalt	12.000	NA	1550	10.910	mg/kg
CA36-011	748669.165	2082897.308	0.0	0.5	Manganese	660.000	NA	3480	365.080	mg/kg
CA36-011	748669.165	2082897.308	0.0	0.5	Nickel	20.000	NA	20400	14.910	mg/kg

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Location	Code	Northing	Easting	Sample Starting Depth (ft-bgs)	Sample Ending Depth (ft-bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA36-011	748669.165	2082897.308	0.0	0.5	Uranium-235	0.219	NA	8	0.094	pCi/g	
CA36-011	748669.165	2082897.308	0.0	0.5	Uranium-238	3.195	NA	351	2.000	pCi/g	
CA36-013	748688.229	2082768.884	0.0	0.5	Copper	34.000	NA	40900	18.060	mg/kg	
CA36-013	748688.229	2082768.884	0.0	0.5	Iron	32000.000	NA	307000	18037.000	mg/kg	
CA36-013	748688.229	2082768.884	0.0	0.5	Manganese	1200.000	NA	3480	365.080	mg/kg	
CA36-013	748688.229	2082768.884	0.0	0.5	Zinc	140.000	NA	307000	73.760	mg/kg	
CA36-014	748674.544	2082802.167	0.5	2.5	Acetone	141.000	118.000	102000000	NA	µg/kg	
CA36-015	748660.865	2082835.361	0.0	0.5	Uranium-234	3.735	NA	300	2.253	pCi/g	
CA36-015	748660.865	2082835.361	0.0	0.5	Uranium-235	0.164	NA	8	0.094	pCi/g	
CA36-015	748660.865	2082835.361	0.0	0.5	Uranium-238	3.735	NA	351	2.000	pCi/g	
CA36-016	748647.056	2082868.672	0.0	0.5	Uranium-234	2.685	NA	300	2.253	pCi/g	
CA36-016	748647.056	2082868.672	0.0	0.5	Uranium-238	2.685	NA	351	2.000	pCi/g	
CA36-017	748633.387	2082901.990	0.0	0.5	Uranium-234	4.016	NA	300	2.253	pCi/g	
CA36-017	748633.387	2082901.990	0.0	0.5	Uranium-235	0.162	NA	8	0.094	pCi/g	
CA36-017	748633.387	2082901.990	0.0	0.5	Uranium-238	4.016	NA	351	2.000	pCi/g	
CA36-018	748619.857	2082935.279	0.0	0.5	Chromium	20.000	NA	268	16.990	mg/kg	
CA36-018	748619.857	2082935.279	0.0	0.5	Uranium-235	0.106	NA	8	0.094	pCi/g	
CA36-020	748638.779	2082806.842	0.5	2.5	2-Butanone	33.000	6.000	192000000	NA	µg/kg	
CA36-020	748638.779	2082806.842	0.5	2.5	Acetone	190.000	5.800	102000000	NA	µg/kg	
CA36-020	748638.779	2082806.842	0.5	2.5	Naphthalene	1.200	1.100	3090000	NA	µg/kg	
CA36-022	748611.364	2082873.478	0.0	0.5	Uranium-235	0.152	NA	8	0.094	pCi/g	
CA36-023	748597.751	2082906.839	0.0	0.5	Arsenic	10.700	NA	22.2	10.090	mg/kg	
CA36-023	748597.751	2082906.839	0.0	0.5	Barium	738.000	NA	26400	141.260	mg/kg	
CA36-023	748597.751	2082906.839	0.0	0.5	Chromium	32.300	NA	268	16.990	mg/kg	
CA36-023	748597.751	2082906.839	0.0	0.5	Iron	29800.000	NA	307000	18037.000	mg/kg	
CA36-023	748597.751	2082906.839	0.0	0.5	Manganese	492.000	NA	3480	365.080	mg/kg	
CA36-023	748597.751	2082906.839	0.0	0.5	Nickel	37.200	NA	20400	14.910	mg/kg	
CA36-023	748597.751	2082906.839	0.0	0.5	Strontium	180.000	NA	613000	48.940	mg/kg	

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Location	Code	Northng	Eastng	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Standard Deviations	Unit
CA36-023	748597.751	2082906.839	0.0	0.5	0.0	Uranium-235	0.133	NA	8	0.094	pCi/g
CA36-023	748597.751	2082906.839	0.0	0.5	0.0	Vanadium	83.700	NA	7150	45.590	mg/kg
CA36-023	748597.751	2082906.839	0.0	0.5	0.0	Zinc	79.500	NA	307000	73.760	mg/kg
CA36-024	748616.724	2082778.394	0.0	0.5	0.0	Copper	23.000	NA	40900	18.060	mg/kg
CA36-024	748616.724	2082778.394	0.0	0.5	0.0	Iron	28000.000	NA	307000	18037.000	mg/kg
CA36-024	748616.724	2082778.394	0.0	0.5	0.0	Manganese	580.000	NA	3480	365.080	mg/kg
CA36-024	748616.724	2082778.394	0.0	0.5	0.0	Uranium-234	3.897	NA	300	2.253	pCi/g
CA36-024	748616.724	2082778.394	0.0	0.5	0.0	Uranium-235	0.202	NA	8	0.094	pCi/g
CA36-024	748616.724	2082778.394	0.0	0.5	0.0	Uranium-238	3.897	NA	351	2.000	pCi/g
CA36-025	748603.106	2082811.736	0.0	0.5	0.0	Aroclor-1260	7.100	6.200	12400	NA	µg/kg
CA36-025	748603.106	2082811.736	0.0	0.5	0.0	Barium	160.000	NA	26400	141.260	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Arsenic	12.200	NA	22.2	10.090	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Barium	686.000	NA	26400	141.260	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Chromium	34.400	NA	268	16.990	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Copper	146.000	NA	40900	18.060	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Iron	35900.000	NA	307000	18037.000	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Manganese	595.000	NA	3480	365.080	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Nickel	44.400	NA	20400	14.910	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Strontium	203.000	NA	613000	48.940	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Uranium-234	3.173	NA	300	2.253	pCi/g
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Uranium-235	0.251	NA	8	0.094	pCi/g
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Uranium-238	3.173	NA	351	2.000	pCi/g
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Vanadium	107.000	NA	7150	45.590	mg/kg
CA36-026	748591.662	2082845.067	0.0	0.5	0.0	Zinc	101.000	NA	307000	73.760	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	0.0	Arsenic	17.900	NA	22.2	10.090	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	0.0	Barium	814.000	NA	26400	141.260	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	0.0	Chromium	31.500	NA	268	16.990	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	0.0	Iron	29500.000	NA	307000	18037.000	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	0.0	Manganese	583.000	NA	3480	365.080	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	0.0	Nickel	36.400	NA	20400	14.910	mg/kg

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Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA36-027	748572.261	2082878.507	0.0	0.5	Strontium	214.000	NA	613000	48.940	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	Uranium-234	4.365	NA	300	2.253	pCi/g
CA36-027	748572.261	2082878.507	0.0	0.5	Uranium-235	0.213	NA	8	0.094	pCi/g
CA36-027	748572.261	2082878.507	0.0	0.5	Uranium-238	4.365	NA	351	2.000	pCi/g
CA36-027	748572.261	2082878.507	0.0	0.5	Vanadium	65.000	NA	7150	45.590	mg/kg
CA36-027	748572.261	2082878.507	0.0	0.5	Zinc	183.000	NA	307000	73.760	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Barium	608.000	NA	26400	141.260	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Chromium	40.500	NA	268	16.990	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Copper	158.000	NA	40900	18.060	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Iron	25200.000	NA	307000	18037.000	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Manganese	484.000	NA	3480	365.080	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Nickel	30.700	NA	20400	14.910	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Strontium	158.000	NA	613000	48.940	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Uranium-234	2.617	NA	300	2.253	pCi/g
CA36-028	748562.178	2082911.610	0.0	0.5	Uranium-235	0.171	NA	8	0.094	pCi/g
CA36-028	748562.178	2082911.610	0.0	0.5	Uranium-238	2.617	NA	351	2.000	pCi/g
CA36-028	748562.178	2082911.610	0.0	0.5	Vanadium	55.800	NA	7150	45.590	mg/kg
CA36-028	748562.178	2082911.610	0.0	0.5	Zinc	81.200	NA	307000	73.760	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Antimony	0.670	NA	409	0.470	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Cobalt	11.000	NA	1550	10.910	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Copper	28.000	NA	40900	18.060	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Iron	29000.000	NA	307000	18037.000	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Lithium	13.000	NA	20400	11.550	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Manganese	680.000	NA	3480	365.080	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Uranium-234	3.825	NA	300	2.253	pCi/g
CA36-029	748585.960	2082784.516	0.0	0.5	Uranium-235	0.172	NA	8	0.094	pCi/g
CA36-029	748585.960	2082784.516	0.0	0.5	Uranium-238	3.825	NA	351	2.000	pCi/g
CA36-029	748585.960	2082784.516	0.0	0.5	Vanadium	46.000	NA	7150	45.590	mg/kg
CA36-029	748585.960	2082784.516	0.0	0.5	Zinc	90.000	NA	307000	73.760	mg/kg
CA36-030	748567.328	2082816.609	0.5	2.5	1,2,4-Trichlorobenzene	0.990	0.740	9230000	NA	µg/kg

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Location Code	Northing	Easting	Sample Starting Depth (ft. bgs)	Sample Ending Depth (ft. bgs)	Analyte	Result	Reporting Limit	WRW-AL	Background Mean Plus Two Standard Deviations	Unit
CA36-030	748567.328	2082816.609	0.5	2.5	Naphthalene	1.700	0.890	3090000	NA	µg/kg
CA37-000	748954.469	2082858.695	0.0	0.5	Uranium-234	2.843	NA	300	2.253	pCi/g
CA37-000	748954.469	2082858.695	0.0	0.5	Uranium-235	0.210	NA	8	0.094	pCi/g
CA37-000	748954.469	2082858.695	0.0	0.5	Uranium-238	2.843	NA	351	2.000	pCi/g
CA37-000	748954.469	2082858.695	0.0	0.5	Zinc	78.000	NA	307000	73.760	mg/kg
CA37-000	748954.469	2082858.695	0.5	2.5	Acetone	123.000	115.000	102000000	NA	µg/kg
CA37-001	748940.872	2082892.017	4.5	6.5	Uranium-238	1.764	NA	351	1.490	pCi/g
CA37-002	748927.177	2082925.349	0.0	0.5	Americium-241	1.069	NA	76	0.023	pCi/g
CA37-002	748927.177	2082925.349	0.0	0.5	Antimony	0.520	NA	409	0.470	mg/kg
CA37-002	748927.177	2082925.349	0.0	0.5	Lead	57.000	NA	1000	54.620	mg/kg
CA37-002	748927.177	2082925.349	0.0	0.5	Plutonium-239/240	6.093	NA	50	0.066	pCi/g
CA37-002	748927.177	2082925.349	0.0	0.5	Zinc	86.000	NA	307000	73.760	mg/kg
CA37-002	748927.177	2082925.349	0.5	2.5	Uranium-238	1.730	NA	351	1.490	pCi/g
CA37-002	748927.177	2082925.349	2.5	4.5	Uranium-238	1.897	NA	351	1.490	pCi/g
CA37-003	748946.241	2082796.893	0.0	0.5	Copper	19.000	NA	40900	18.060	mg/kg
CA37-003	748946.241	2082796.893	0.0	0.5	Uranium-234	6.147	NA	300	2.253	pCi/g
CA37-003	748946.241	2082796.893	0.0	0.5	Uranium-235	0.177	NA	8	0.094	pCi/g
CA37-003	748946.241	2082796.893	0.0	0.5	Uranium-238	6.147	NA	351	2.000	pCi/g
CA37-004	748932.455	2082830.194	0.0	0.5	Uranium-234	3.437	NA	300	2.253	pCi/g
CA37-004	748932.455	2082830.194	0.0	0.5	Uranium-235	0.245	NA	8	0.094	pCi/g
CA37-004	748932.455	2082830.194	0.0	0.5	Uranium-238	3.437	NA	351	2.000	pCi/g
CA37-006	748909.064	2082896.798	4.8	6.8	Uranium-235	0.131	NA	8	0.120	pCi/g
CA37-007	748891.522	2082930.079	0.0	0.5	Americium-241	0.571	NA	76	0.023	pCi/g
CA37-007	748891.522	2082930.079	0.0	0.5	Plutonium-239/240	2.420	NA	50	0.066	pCi/g
CA37-007	748891.522	2082930.079	0.5	2.5	Arsenic	22.000	NA	22.2	13.140	mg/kg
CA37-007	748891.522	2082930.079	0.5	2.5	Cobalt	31.000	NA	1550	29.040	mg/kg
CA37-007	748891.522	2082930.079	0.5	2.5	Lead	31.000	NA	1000	24.970	mg/kg
CA37-007	748891.522	2082930.079	0.5	2.5	Vanadium	90.000	NA	7150	88.490	mg/kg
CA37-007	748891.522	2082930.079	2.5	4.5	Aluminum	37000.000	NA	228000	35373.170	mg/kg
CA37-007	748891.522	2082930.079	2.5	4.5	Plutonium-239/240	0.047	NA	50	0.020	pCi/g

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Location Code	Northing	Easting	Sample Starting Depth (ft. bgs)	Sample Ending Depth (ft. bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA37-007	748891.522	2082930.079	4.5	6.5	Americium-241	0.036	NA	76	0.020	pCi/g
CA37-007	748891.522	2082930.079	4.5	6.5	Plutonium-239/240	0.146	NA	50	0.020	pCi/g
CA37-008	748924.126	2082768.384	0.0	0.5	Beryllium	1.100	NA	921	0.966	mg/kg
CA37-008	748924.126	2082768.384	0.0	0.5	Iron	22000.000	NA	307000	18037.000	mg/kg
CA37-008	748924.126	2082768.384	0.0	0.5	Lithium	12.000	NA	20400	11.550	mg/kg
CA37-008	748924.126	2082768.384	0.0	0.5	Manganese	630.000	NA	3480	365.080	mg/kg
CA37-008	748924.126	2082768.384	0.0	0.5	Nickel	16.000	NA	20400	14.910	mg/kg
CA37-008	748924.126	2082768.384	0.0	0.5	Uranium-235	0.108	NA	8	0.094	pCi/g
CA37-010	748892.052	2082834.837	0.3	0.8	Lead	210.000	NA	1000	54.620	mg/kg
CA37-010	748892.052	2082834.837	0.3	0.8	Uranium-235	0.167	NA	8	0.094	pCi/g
CA37-012	748869.524	2082901.608	0.0	0.5	Aluminum	38000.000	NA	228000	16902.000	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Arsenic	15.000	NA	22.2	10.090	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Beryllium	1.900	NA	921	0.966	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Chromium	31.000	NA	268	16.990	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Iron	25000.000	NA	307000	18037.000	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Lithium	22.000	NA	20400	11.550	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Nickel	22.000	NA	20400	14.910	mg/kg
CA37-012	748869.524	2082901.608	0.0	0.5	Uranium-235	0.107	NA	8	0.094	pCi/g
CA37-012	748869.524	2082901.608	0.0	0.5	Vanadium	70.000	NA	7150	45.590	mg/kg
CA37-012	748869.524	2082901.608	0.5	2.5	Aluminum	48000.000	NA	228000	35373.170	mg/kg
CA37-012	748869.524	2082901.608	0.5	2.5	Arsenic	18.000	NA	22.2	13.140	mg/kg
CA37-012	748869.524	2082901.608	0.5	2.5	Uranium-235	0.143	NA	8	0.120	pCi/g
CA37-012	748869.524	2082901.608	4.5	6.5	Arsenic	17.000	NA	22.2	13.140	mg/kg
CA37-012	748869.524	2082901.608	4.5	6.5	Uranium-235	0.149	NA	8	0.120	pCi/g
CA37-012	748869.524	2082901.608	4.5	6.5	Uranium-238	1.628	NA	351	1.490	pCi/g
CA37-013	748855.793	2082934.905	0.0	0.5	Aluminum	17000.000	NA	228000	16902.000	mg/kg
CA37-013	748855.793	2082934.905	0.0	0.5	Americium-241	32.240	NA	76	0.023	pCi/g
CA37-013	748855.793	2082934.905	0.0	0.5	Cobalt	11.000	NA	1550	10.910	mg/kg
CA37-013	748855.793	2082934.905	0.0	0.5	Plutonium-239/240	183.768	NA	50	0.066	pCi/g
CA37-013	748855.793	2082934.905	0.0	0.5	Uranium-234	2.622	NA	300	2.253	pCi/g

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Location	Code	Nothing	Fasting	Sample Starting Depth (ft-dgs)	Sample Ending Depth (ft-dgs)	Analyte	Result	Reporting Limit	WRW AL	Standard Deviations	Unit
CA37-013	748855.793	2082934.905	0.0	0.5	0.5	Uranium-235	0.160	NA	8	0.094	pCi/g
CA37-013	748855.793	2082934.905	0.0	0.5	0.5	Uranium-238	2.622	NA	351	2.000	pCi/g
CA37-013	748855.793	2082934.905	0.5	2.5	2.5	Uranium-235	0.203	NA	8	0.120	pCi/g
CA37-013	748855.793	2082934.905	0.5	2.5	2.5	Uranium-238	2.150	NA	351	1.490	pCi/g
CA37-013	748855.793	2082934.905	2.5	4.5	4.5	Arsenic	14.000	NA	22.2	13.140	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Aluminum	26000.000	NA	228000	16902.000	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Barium	400.000	NA	26400	141.260	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Beryllium	1.200	NA	921	0.966	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Chromium	28.000	NA	268	16.990	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Iron	24000.000	NA	307000	18037.000	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Lithium	25.000	NA	20400	11.550	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Nickel	18.000	NA	20400	14.910	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Strontium	50.000	NA	613000	48.940	mg/kg
CA37-014	748888.496	2082773.158	0.3	0.8	0.8	Vanadium	47.000	NA	7150	45.590	mg/kg
CA37-015	748874.866	2082806.495	0.0	0.5	0.5	Uranium-234	4.830	NA	300	2.253	pCi/g
CA37-015	748874.866	2082806.495	0.0	0.5	0.5	Uranium-235	0.267	NA	8	0.094	pCi/g
CA37-015	748874.866	2082806.495	0.0	0.5	0.5	Uranium-238	4.830	NA	351	2.000	pCi/g
CA37-016	748861.212	2082839.784	0.0	0.5	0.5	Plutonium-239/240	0.130	NA	50	0.066	pCi/g
CA37-017	748847.513	2082873.113	0.0	0.5	0.5	Barium	180.000	NA	26400	141.260	mg/kg
CA37-017	748847.513	2082873.113	0.0	0.5	0.5	Uranium-234	2.866	NA	300	2.253	pCi/g
CA37-017	748847.513	2082873.113	0.0	0.5	0.5	Uranium-235	0.107	NA	8	0.094	pCi/g
CA37-017	748847.513	2082873.113	0.0	0.5	0.5	Uranium-238	2.866	NA	351	2.000	pCi/g
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Aluminum	29000.000	NA	228000	16902.000	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Antimony	0.510	NA	409	0.470	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Arsenic	11.000	NA	22.2	10.090	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Beryllium	1.500	NA	921	0.966	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Chromium	26.000	NA	268	16.990	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Iron	20000.000	NA	307000	18037.000	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Lithium	19.000	NA	20400	11.550	mg/kg
CA37-018	748833.793	2082906.429	0.0	0.5	0.5	Nickel	22.000	NA	20400	14.910	mg/kg

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Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA37-018	748833.793	2082906.429	0.0	0.5	Uranium-234	2.610	NA	300	2.253	pCi/g
CA37-018	748833.793	2082906.429	0.0	0.5	Uranium-238	2.610	NA	351	2.000	pCi/g
CA37-018	748833.793	2082906.429	0.0	0.5	Vanadium	53.000	NA	7150	45.590	mg/kg
CA37-019	748852.880	2082778.062	0.0	0.5	Aluminum	19000.000	NA	228000	16902.000	mg/kg
CA37-019	748852.880	2082778.062	0.0	0.5	Beryllium	1.000	NA	921	0.966	mg/kg
CA37-019	748852.880	2082778.062	0.0	0.5	Chromium	18.000	NA	268	16.990	mg/kg
CA37-019	748852.880	2082778.062	0.0	0.5	Lithium	13.000	NA	20400	11.550	mg/kg
CA37-019	748852.880	2082778.062	0.0	0.5	Nickel	15.000	NA	20400	14.910	mg/kg
CA37-019	748852.880	2082778.062	0.0	0.5	Uranium-235	0.172	NA	8	0.094	pCi/g
CA37-020	748839.167	2082811.284	0.0	0.5	Uranium-234	3.862	NA	300	2.253	pCi/g
CA37-020	748839.167	2082811.284	0.0	0.5	Uranium-235	0.257	NA	8	0.094	pCi/g
CA37-020	748839.167	2082811.284	0.0	0.5	Uranium-238	3.862	NA	351	2.000	pCi/g
CA37-022	748811.670	2082877.831	0.0	0.5	Uranium-234	3.037	NA	300	2.253	pCi/g
CA37-022	748811.670	2082877.831	0.0	0.5	Uranium-235	0.170	NA	8	0.094	pCi/g
CA37-022	748811.670	2082877.831	0.0	0.5	Uranium-238	3.037	NA	351	2.000	pCi/g
CA37-023	748798.304	2082911.274	0.0	0.5	Uranium-235	0.151	NA	8	0.094	pCi/g
CA37-024	748817.254	2082782.878	0.0	0.5	Aluminum	19000.000	NA	228000	16902.000	mg/kg
CA37-024	748817.254	2082782.878	0.0	0.5	Beryllium	0.980	NA	921	0.966	mg/kg
CA37-024	748817.254	2082782.878	0.0	0.5	Chromium	19.000	NA	268	16.990	mg/kg
CA37-024	748817.254	2082782.878	0.0	0.5	Lithium	14.000	NA	20400	11.550	mg/kg
CA37-024	748817.254	2082782.878	0.0	0.5	Uranium-235	0.150	NA	8	0.094	pCi/g
CA37-024	748817.254	2082782.878	0.0	0.5	Zinc	310.000	NA	307000	73.760	mg/kg
CA37-025	748803.517	2082816.067	0.0	0.5	Uranium-235	0.159	NA	8	0.094	pCi/g
CA37-027	748776.234	2082882.703	0.0	0.5	Uranium-234	2.941	NA	300	2.253	pCi/g
CA37-027	748776.234	2082882.703	0.0	0.5	Uranium-235	0.166	NA	8	0.094	pCi/g
CA37-027	748776.234	2082882.703	0.0	0.5	Uranium-238	2.941	NA	351	2.000	pCi/g
CA37-028	748762.501	2082916.034	0.0	0.5	Barium	210.000	NA	26400	141.260	mg/kg
CA37-029	748781.528	2082787.643	0.0	0.5	Iron	19000.000	NA	307000	18037.000	mg/kg
CA37-029	748781.528	2082787.643	0.0	0.5	Uranium-234	4.208	NA	300	2.253	pCi/g
CA37-029	748781.528	2082787.643	0.0	0.5	Uranium-238	4.208	NA	351	2.000	pCi/g

Location	Code	Nothing	Fasting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA37-030	748767.736	2082820.968	0.0	0.5	0.5	Lithium	12.000	NA	20400	11.550	mg/kg
CA37-030	748767.736	2082820.968	0.0	0.5	0.5	Antimony	0.750	NA	409	0.470	mg/kg
CA37-030	748767.736	2082820.968	0.0	0.5	0.5	Uranium-238	6.045	NA	351	2.000	pc/g
CA37-030	748767.736	2082820.968	0.0	0.5	0.5	Uranium-235	0.349	NA	8	0.094	pc/g
CA37-030	748767.736	2082820.968	0.0	0.5	0.5	Uranium-234	6.045	NA	300	2.253	pc/g
CA37-031	748856.220	2082935.000	2.0	2.1	2.1	Plutonium-239/240	0.376	NA	50	0.066	pc/g
CA37-032	748858.634	2082934.842	0.0	2.0	2.0	Americium-241	0.853	NA	76	0.023	pc/g
CA37-032	748858.634	2082934.842	0.0	2.0	2.0	Plutonium-239/240	2.870	NA	50	0.066	pc/g
CA37-033	748853.762	2082934.983	0.0	0.5	0.5	Americium-241	4.830	NA	76	0.023	pc/g
CA37-033	748853.762	2082934.983	0.0	0.5	0.5	Plutonium-239/240	20.900	NA	50	0.066	pc/g
CA37-034	748856.068	2082937.416	0.0	0.5	0.5	Americium-241	2.700	NA	76	0.023	pc/g
CA37-034	748856.068	2082937.416	0.0	0.5	0.5	Plutonium-239/240	14.800	NA	50	0.066	pc/g
CA37-035	748856.154	2082932.328	0.0	0.5	0.5	Americium-241	0.669	NA	76	0.023	pc/g
CA37-035	748856.154	2082932.328	0.0	0.5	0.5	Plutonium-239/240	3.830	NA	50	0.066	pc/g
CA37-036	748860.200	2082935.000	2.0	2.1	2.1	Americium-241	0.161	NA	76	0.023	pc/g
CA37-036	748860.200	2082935.000	2.0	2.1	2.1	Plutonium-239/240	1.410	NA	50	0.066	pc/g
CA38-002-01	748976.599	2082887.192	0.5	0.5	0.5	Uranium-235	0.104	NA	8	0.094	pc/g
CA38-002-01	748976.599	2082887.192	0.5	0.5	0.5	Uranium-238	1.579	NA	351	1.490	pc/g
CA38-002-01	748976.599	2082887.192	4.5	6.5	6.5	Uranium-234	3.212	NA	300	2.640	pc/g
CA38-002-01	748976.599	2082887.192	4.5	6.5	6.5	Uranium-238	3.212	NA	351	1.490	pc/g
CA38-003-01	748962.873	2082920.612	0.0	0.5	0.5	Uranium-235	0.154	NA	8	0.094	pc/g
CA38-003-01	748962.873	2082920.612	0.5	2.5	2.5	Aluminum	41000.000	NA	228000	35373.170	mg/kg
CA38-003-01	748962.873	2082920.612	0.5	2.5	2.5	Uranium-235	0.148	NA	8	0.120	pc/g
CA38-003-01	748962.873	2082920.612	2.5	4.5	4.5	Uranium-235	0.121	NA	8	0.120	pc/g
CA38-003-01	748962.873	2082920.612	4.5	6.5	6.5	Uranium-238	1.586	NA	351	1.490	pc/g
CA38-004-01	748981.914	2082792.110	0.0	0.5	0.5	Chromium	19.000	NA	268	16.990	mg/kg
CA38-004-01	748981.914	2082792.110	0.0	0.5	0.5	Uranium-234	3.980	NA	300	2.253	pc/g
CA38-004-01	748981.914	2082792.110	0.0	0.5	0.5	Uranium-235	0.233	NA	8	0.094	pc/g
CA38-004-01	748981.914	2082792.110	0.0	0.5	0.5	Uranium-238	3.980	NA	351	2.000	pc/g
CA38-005-01	748968.215	2082825.399	0.0	0.5	0.5	Uranium-235	0.119	NA	8	0.094	pc/g

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Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CA38-005-01	748968.215	2082825.399	0.5	2.5	Toluene	6.170	5.670	31300000	NA	µg/kg
CB35-000	748556.838	2083001.148	0.0	0.5	Uranium-235	0.202	NA	8	0.094	pCi/g
CB35-000	748556.838	2083001.148	0.0	0.5	Zinc	81.000	NA	307000	73.760	mg/kg
CB35-001	748538.977	2083039.814	0.3	0.8	Uranium-235	0.193	NA	8	0.094	pCi/g
CB35-001	748538.977	2083039.814	0.8	2.8	Naphthalene	5.850	5.290	3090000	NA	µg/kg
CB35-002	748548.409	2082944.926	0.0	0.5	Americium-241	0.324	NA	76	0.023	pCi/g
CB35-002	748548.409	2082944.926	0.0	0.5	Plutonium-239/240	1.230	NA	50	0.066	pCi/g
CB35-002	748548.409	2082944.926	0.0	0.5	Zinc	76.000	NA	307000	73.760	mg/kg
CB35-002	748548.409	2082944.926	0.5	2.5	Naphthalene	1.200	0.970	3090000	NA	µg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Barium	777.000	NA	26400	141.260	mg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Chromium	24.000	NA	268	16.990	mg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Iron	23600.000	NA	307000	18037.000	mg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Manganese	424.000	NA	3480	365.080	mg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Nickel	27.000	NA	20400	14.910	mg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Strontium	189.000	NA	613000	48.940	mg/kg
CB35-003	748534.656	2082978.180	0.0	0.5	Uranium-234	2.947	NA	300	2.253	pCi/g
CB35-003	748534.656	2082978.180	0.0	0.5	Uranium-235	0.247	NA	8	0.094	pCi/g
CB35-003	748534.656	2082978.180	0.0	0.5	Uranium-238	2.947	NA	351	2.000	pCi/g
CB35-004	748526.233	2083011.613	0.0	0.5	Uranium-235	0.124	NA	8	0.094	pCi/g
CB36-000	748757.080	2083015.828	0.0	0.5	Aluminum	20000.000	NA	228000	16902.000	mg/kg
CB36-000	748757.080	2083015.828	0.0	0.5	Americium-241	0.255	NA	76	0.023	pCi/g
CB36-000	748757.080	2083015.828	0.0	0.5	Chromium	19.000	NA	268	16.990	mg/kg
CB36-000	748757.080	2083015.828	0.0	0.5	Lithium	14.000	NA	20400	11.550	mg/kg
CB36-000	748757.080	2083015.828	0.0	0.5	Nickel	15.000	NA	20400	14.910	mg/kg
CB36-000	748757.080	2083015.828	0.0	0.5	Plutonium-239/240	1.730	NA	50	0.066	pCi/g
CB36-000	748757.080	2083015.828	0.0	0.5	Uranium-238	3.820	NA	351	2.000	pCi/g
CB36-001	748743.490	2083044.358	0.0	0.5	Uranium-234	4.841	NA	300	2.253	pCi/g
CB36-001	748743.490	2083044.358	0.0	0.5	Uranium-235	0.208	NA	8	0.094	pCi/g
CB36-001	748743.490	2083044.358	0.0	0.5	Uranium-238	4.841	NA	351	2.000	pCi/g
CB36-002	748740.964	2082949.158	0.0	0.5	Uranium-235	0.116	NA	8	0.094	pCi/g

Location Code	Northng	Eastng	Sample Starting Depth (ft-bgs)	Sample Ending Depth (ft-bgs)	Analyte	Result	Reporting Limit	WRW AL	Standard Mean Plus Two Deviations	Unit
CB36-003	748735.123	2082982.605	0.0	0.5	Cadmium	1.700	NA	962	1.612	mg/kg
CB36-003	748735.123	2082982.605	0.0	0.5	Uranium-235	0.162	NA	8	0.094	pCi/g
CB36-003	748735.123	2082982.605	0.0	0.5	Uranium-238	3.673	NA	351	2.000	pCi/g
CB36-004	748721.455	2083015.859	0.0	0.5	Aluminum	36000.000	NA	228000	16902.000	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Arsenic	12.000	NA	22.2	10.090	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Beryllium	1.700	NA	921	0.966	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Chromium	31.000	NA	268	16.990	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Iron	30000.000	NA	307000	18037.000	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Lithium	24.000	NA	20400	11.550	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Nickel	23.000	NA	20400	14.910	mg/kg
CB36-004	748721.455	2083015.859	0.0	0.5	Vanadium	58.000	NA	7150	45.590	mg/kg
CB36-005	748707.761	2083049.142	0.0	0.5	Uranium-235	0.125	NA	8	0.094	pCi/g
CB36-006	748713.085	2082954.065	0.0	0.5	Uranium-235	0.193	NA	8	0.094	pCi/g
CB36-006	748713.085	2082954.065	0.0	0.5	Uranium-238	2.105	NA	351	2.000	pCi/g
CB36-007	748699.278	2082991.278	0.0	0.5	Plutonium-239/240	0.187	NA	50	0.066	pCi/g
CB36-007	748699.278	2082991.278	0.5	2.5	2-Butanone	49.000	5.500	192000000	NA	µg/kg
CB36-007	748699.278	2082991.278	0.5	2.5	Acetone	280.000	5.400	102000000	NA	µg/kg
CB36-007	748699.278	2082991.278	0.5	2.5	Methylene chloride	3.900	0.940	2530000	NA	µg/kg
CB36-008	748685.891	2083020.724	0.0	0.5	Uranium-234	4.195	NA	300	2.253	pCi/g
CB36-008	748685.891	2083020.724	0.0	0.5	Uranium-235	0.179	NA	8	0.094	pCi/g
CB36-008	748685.891	2083020.724	0.0	0.5	Uranium-238	4.195	NA	351	2.000	pCi/g
CB36-009	748672.135	2083053.992	0.0	0.5	Lead	65.000	NA	1000	54.620	mg/kg
CB36-009	748672.135	2083053.992	0.0	0.5	Uranium-235	0.128	NA	8	0.094	pCi/g
CB36-009	748672.135	2083053.992	0.0	0.5	Uranium-238	2.210	NA	351	2.000	pCi/g
CB36-009	748672.135	2083053.992	0.5	2.5	Aluminum	47000.000	NA	228000	35373.170	mg/kg
CB36-009	748672.135	2083053.992	0.5	2.5	Chromium	71.000	NA	268	68.270	mg/kg
CB36-010	748677.454	2082958.963	0.0	0.5	Chromium	24.000	NA	268	16.990	mg/kg
CB36-010	748677.454	2082958.963	0.0	0.5	Uranium-235	0.141	NA	8	0.094	pCi/g
CB36-011	748663.822	2082992.214	0.0	0.5	Uranium-235	0.176	NA	8	0.094	pCi/g

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Location	Code	Northng	Eastng	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB36-012	748650.116	2083025.637	0.3	0.8	0.5	Uranium-235	0.128	NA	8	0.094	pCi/g
CB36-013	748636.343	2083058.925	0.0	0.5	0.5	Lead	75.000	NA	1000	54.620	mg/kg
CB36-013	748636.343	2083058.925	0.0	0.5	0.5	Uranium-235	0.235	NA	8	0.094	pCi/g
CB36-013	748636.343	2083058.925	0.0	0.5	0.5	Zinc	80.000	NA	307000	73.760	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Aluminum	11000.000	NA	228000	35373.170	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Barium	1000.000	NA	26400	289.380	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Chromium	120.000	NA	268	68.270	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Cobalt	74.000	NA	1550	29.040	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Lithium	49.000	NA	20400	34.660	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Nickel	330.000	NA	20400	62.210	mg/kg
CB36-013	748636.343	2083058.925	0.5	2.5	2.5	Uranium-235	0.251	NA	8	0.120	pCi/g
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Arsenic	10.400	NA	22.2	10.090	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Barium	669.000	NA	26400	141.260	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Chromium	62.500	NA	268	16.990	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Iron	40200.000	NA	307000	18037.000	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Manganese	495.000	NA	3480	365.080	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Nickel	51.500	NA	20400	14.910	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Strontium	180.000	NA	613000	48.940	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Toluene	7.830	5.040	31300000	NA	µg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Vanadium	113.000	NA	7150	45.590	mg/kg
CB36-014	748642.291	2082954.446	0.0	0.5	0.5	Zinc	73.900	NA	307000	73.760	mg/kg
CB36-015	748628.024	2082997.046	0.0	0.5	0.5	Barium	350.000	NA	26400	141.260	mg/kg
CB36-015	748628.024	2082997.046	0.0	0.5	0.5	Uranium-235	0.126	NA	8	0.094	pCi/g
CB36-016	748614.363	2083030.361	0.3	0.8	0.8	Uranium-235	0.142	NA	8	0.094	pCi/g
CB36-016	748614.363	2083030.361	0.8	2.8	2.8	Acetone	126.000	119.000	102000000	NA	µg/kg
CB36-017	748600.676	2083063.655	0.0	0.5	0.5	Uranium-235	0.118	NA	8	0.094	pCi/g
CB36-017	748600.676	2083063.655	0.5	2.5	2.5	Aluminum	44000.000	NA	228000	35373.170	mg/kg
CB36-017	748600.676	2083063.655	0.5	2.5	2.5	Arsenic	21.000	NA	22.2	13.140	mg/kg
CB36-017	748600.676	2083063.655	0.5	2.5	2.5	Lithium	35.000	NA	20400	34.660	mg/kg
CB36-018	748606.079	2082968.612	0.0	0.5	0.5	Uranium-234	4.482	NA	300	2.253	pCi/g

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Location Code	Northng	Fasting	Sample Starting Depth (ft. bgs)	Sample Ending Depth (ft. bgs)	Analyte	Result	Reporting Limit	WRW AL	Standard Mean Plus Two Deviations	Unit
CB36-018	748606.079	2082968.612	0.0	0.5	Uranium-235	0.208	NA	8	0.094	pCi/g
CB36-018	748606.079	2082968.612	0.0	0.5	Uranium-238	4.482	NA	351	2.000	pCi/g
CB36-019	748592.396	2083001.877	0.0	0.5	Uranium-235	0.195	NA	8	0.094	pCi/g
CB36-020	748578.773	2083035.261	0.8	2.8	Acetone	24.000	4.800	102000000	NA	µg/kg
CB36-020	748578.773	2083035.261	0.8	2.8	Trichloroethene	1.000	0.910	19600	NA	µg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Barium	595.000	NA	26400	141.260	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Chromium	35.500	NA	268	16.990	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Iron	26900.000	NA	307000	18037.000	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Manganese	656.000	NA	3480	365.080	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Naphthalene	49.100	5.370	3090000	NA	µg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Nickel	33.600	NA	20400	14.910	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Strontium	174.000	NA	613000	48.940	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Uranium-235	0.118	NA	8	0.094	pCi/g
CB36-022	748570.392	2082973.393	0.0	0.5	Vanadium	77.800	NA	7150	45.590	mg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Xylene	13.700	10.700	2040000	NA	µg/kg
CB36-022	748570.392	2082973.393	0.0	0.5	Zinc	92.900	NA	307000	73.760	mg/kg
CB37-000	748957.404	2083015.559	0.0	0.5	Uranium-234	3.422	NA	300	2.253	pCi/g
CB37-000	748957.404	2083015.559	0.0	0.5	Uranium-235	0.215	NA	8	0.094	pCi/g
CB37-000	748957.404	2083015.559	0.0	0.5	Uranium-238	3.422	NA	351	2.000	pCi/g
CB37-000	748957.404	2083015.559	0.5	2.5	Aluminum	43000.000	NA	228000	35373.170	mg/kg
CB37-000	748957.404	2083015.559	0.5	2.5	Arsenic	23.000	NA	22.2	13.140	mg/kg
CB37-000	748957.404	2083015.559	0.5	2.5	Cobalt	32.000	NA	1550	29.040	mg/kg
CB37-000	748957.404	2083015.559	0.5	2.5	Uranium-238	1.845	NA	351	1.490	pCi/g
CB37-000	748957.404	2083015.559	0.5	2.5	Vanadium	94.000	NA	7150	88.490	mg/kg
CB37-000	748957.404	2083015.559	2.5	4.5	Uranium-234	3.231	NA	300	2.640	pCi/g
CB37-000	748957.404	2083015.559	2.5	4.5	Uranium-235	0.213	NA	8	0.120	pCi/g
CB37-000	748957.404	2083015.559	2.5	4.5	Uranium-238	3.231	NA	351	1.490	pCi/g
CB37-001-01	748943.861	2083048.897	0.0	0.5	Uranium-235	0.230	NA	8	0.094	pCi/g

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Location Code	Northing	Easting	Sample Starting Depth (ft.bgs)	Sample Ending Depth (ft.bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean-Plus Two Standard Deviations	Unit
CB37-001-01	748943.861	2083048.897	0.5	2.5	Uranium-234	4.204	NA	300	2.640	pCi/g
CB37-001-01	748943.861	2083048.897	0.5	2.5	Uranium-235	0.270	NA	8	0.120	pCi/g
CB37-001-01	748943.861	2083048.897	0.5	2.5	Uranium-238	4.204	NA	351	1.490	pCi/g
CB37-001-01	748943.861	2083048.897	4.5	6.5	Uranium-235	0.140	NA	8	0.120	pCi/g
CB37-002-01	748949.205	2082953.811	0.0	0.5	Americium-241	0.463	NA	76	0.023	pCi/g
CB37-002-01	748949.205	2082953.811	0.0	0.5	Plutonium-239/240	2.641	NA	50	0.066	pCi/g
CB37-002-01	748949.205	2082953.811	0.0	0.5	Uranium-235	0.123	NA	8	0.094	pCi/g
CB37-002-01	748949.205	2082953.811	0.5	2.5	Uranium-235	0.128	NA	8	0.120	pCi/g
CB37-002-01	748949.205	2082953.811	2.5	4.5	Uranium-235	0.164	NA	8	0.120	pCi/g
CB37-002-01	748949.205	2082953.811	4.5	6.5	Uranium-234	2.684	NA	300	2.640	pCi/g
CB37-002-01	748949.205	2082953.811	4.5	6.5	Uranium-235	0.227	NA	8	0.120	pCi/g
CB37-002-01	748949.205	2082953.811	4.5	6.5	Uranium-238	2.684	NA	351	1.490	pCi/g
CB37-003-01	748935.513	2082987.071	0.0	0.5	Uranium-234	2.427	NA	300	2.253	pCi/g
CB37-003-01	748935.513	2082987.071	0.0	0.5	Uranium-235	0.231	NA	8	0.094	pCi/g
CB37-003-01	748935.513	2082987.071	0.0	0.5	Uranium-238	2.427	NA	351	2.000	pCi/g
CB37-003-01	748935.513	2082987.071	0.5	2.5	Uranium-234	3.937	NA	300	2.640	pCi/g
CB37-003-01	748935.513	2082987.071	0.5	2.5	Uranium-235	0.128	NA	8	0.120	pCi/g
CB37-003-01	748935.513	2082987.071	0.5	2.5	Uranium-238	3.937	NA	351	1.490	pCi/g
CB37-004-01	748921.726	2083023.945	0.0	0.5	Americium-241	0.217	NA	76	0.023	pCi/g
CB37-004-01	748921.726	2083023.945	0.0	0.5	Plutonium-239/240	1.237	NA	50	0.066	pCi/g
CB37-005-01	748908.159	2083053.668	0.0	0.5	Copper	19.000	NA	40900	18.060	mg/kg
CB37-005-01	748908.159	2083053.668	0.0	0.5	Uranium-235	0.160	NA	8	0.094	pCi/g
CB37-005-01	748908.159	2083053.668	0.5	2.5	Aluminum	45000.000	NA	228000	35373.170	mg/kg
CB37-005-01	748908.159	2083053.668	0.5	2.5	Arsenic	15.000	NA	22.2	13.140	mg/kg
CB37-005-01	748908.159	2083053.668	0.5	2.5	Uranium-235	0.198	NA	8	0.120	pCi/g
CB37-005-01	748908.159	2083053.668	2.5	4.5	Uranium-234	3.070	NA	300	2.640	pCi/g
CB37-005-01	748908.159	2083053.668	2.5	4.5	Uranium-238	3.070	NA	351	1.490	pCi/g
CB37-006-01	748913.462	2082958.635	0.0	0.5	Americium-241	0.414	NA	76	0.023	pCi/g
CB37-006-01	748913.462	2082958.635	0.0	0.5	Plutonium-239/240	2.362	NA	50	0.066	pCi/g
CB37-006-01	748913.462	2082958.635	0.0	0.5	Uranium-235	0.099	NA	8	0.094	pCi/g

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Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB37-006-01	748913.462	2082958.635	0.5	2.5	Aluminum	37000.000	NA	228000	35373.170	mg/kg
CB37-006-01	748913.462	2082958.635	0.5	2.5	Uranium-234	4.414	NA	300	2.640	pCi/g
CB37-006-01	748913.462	2082958.635	0.5	2.5	Uranium-235	0.190	NA	8	0.120	pCi/g
CB37-006-01	748913.462	2082958.635	0.5	2.5	Uranium-238	4.414	NA	351	1.490	pCi/g
CB37-007-01	748899.771	2082991.912	0.0	0.5	Aluminum	27000.000	NA	228000	16902.000	mg/kg
CB37-007-01	748899.771	2082991.912	0.0	0.5	Americium-241	0.859	NA	76	0.023	pCi/g
CB37-007-01	748899.771	2082991.912	0.0	0.5	Beryllium	1.400	NA	921	0.966	mg/kg
CB37-007-01	748899.771	2082991.912	0.0	0.5	Chromium	24.000	NA	268	16.990	mg/kg
CB37-007-01	748899.771	2082991.912	0.0	0.5	Iron	21000.000	NA	307000	18037.000	mg/kg
CB37-007-01	748899.771	2082991.912	0.0	0.5	Lithium	19.000	NA	20400	11.550	mg/kg
CB37-007-01	748899.771	2082991.912	0.0	0.5	Nickel	19.000	NA	20400	14.910	mg/kg
CB37-007-01	748899.771	2082991.912	0.0	0.5	Plutonium-239/240	3.450	NA	50	0.066	pCi/g
CB37-007-01	748899.771	2082991.912	0.0	0.5	Uranium-235	0.128	NA	8	0.094	pCi/g
CB37-007-01	748899.771	2082991.912	0.0	0.5	Vanadium	50.000	NA	7150	45.590	mg/kg
CB37-007-01	748899.771	2082991.912	0.5	2.5	Aluminum	41000.000	NA	228000	35373.170	mg/kg
CB37-007-01	748899.771	2082991.912	0.5	2.5	Cobalt	37.000	NA	1550	29.040	mg/kg
CB37-007-01	748899.771	2082991.912	0.5	2.5	Manganese	1300.000	NA	3480	901.620	mg/kg
CB37-007-01	748899.771	2082991.912	0.5	2.5	Vanadium	110.000	NA	7150	88.490	mg/kg
CB37-008-01	748886.217	2083025.223	0.0	0.5	Americium-241	0.993	NA	76	0.023	pCi/g
CB37-008-01	748886.217	2083025.223	0.0	0.5	Plutonium-239/240	5.658	NA	50	0.066	pCi/g
CB37-008-01	748886.217	2083025.223	0.0	0.5	Uranium-235	0.188	NA	8	0.094	pCi/g
CB37-008-01	748886.217	2083025.223	0.5	2.5	Uranium-234	4.377	NA	300	2.640	pCi/g
CB37-008-01	748886.217	2083025.223	0.5	2.5	Uranium-235	0.190	NA	8	0.120	pCi/g
CB37-008-01	748886.217	2083025.223	0.5	2.5	Uranium-238	4.377	NA	351	1.490	pCi/g
CB37-008-01	748886.217	2083025.223	0.5	2.5	Zinc	1300.000	NA	307000	139.100	mg/kg
CB37-008-01	748886.217	2083025.223	4.5	6.5	Barium	690.000	NA	26400	289.380	mg/kg
CB37-008-01	748886.217	2083025.223	4.5	6.5	Cobalt	38.000	NA	1550	29.040	mg/kg
CB37-008-01	748886.217	2083025.223	4.5	6.5	Manganese	2800.000	NA	3480	901.620	mg/kg
CB37-009-01	748872.470	2083058.510	0.0	0.5	Uranium-234	4.725	NA	300	2.253	pCi/g
CB37-009-01	748872.470	2083058.510	0.0	0.5	Uranium-235	0.242	NA	8	0.094	pCi/g

Location	Code	Northmg	Lastmg	Sample Starting Depth (ft dgs)	Sample Ending Depth (ft dgs)	Analyte	Result	Reporting Limit	WRW AL	Standard Deviations	Unit
CB37-009-01	748872.470	2083058.510	0.0	0.5	Uranium-238	4.725	NA	351	2.000	2.000	pCi/g
CB37-009-01	748872.470	2083058.510	0.5	2.5	Aluminum	5000.000	NA	228000	35373.170	mg/kg	
CB37-009-01	748872.470	2083058.510	0.5	2.5	Arsenic	14.000	NA	22.2	13.140	mg/kg	
CB37-009-01	748872.470	2083058.510	0.5	2.5	Lithium	38.000	NA	20400	34.660	mg/kg	
CB37-009-01	748872.470	2083058.510	0.5	2.5	Uranium-234	5.217	NA	300	2.640	pCi/g	
CB37-009-01	748872.470	2083058.510	0.5	2.5	Uranium-235	0.279	NA	8	0.120	pCi/g	
CB37-009-01	748872.470	2083058.510	0.5	2.5	Uranium-238	5.217	NA	351	1.490	pCi/g	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Aluminum	19000.000	NA	228000	16902.000	mg/kg	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Beryllium	1.100	NA	921	0.966	mg/kg	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Chromium	19.000	NA	268	16.990	mg/kg	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Lithium	15.000	NA	20400	11.550	mg/kg	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Manganese	410.000	NA	3480	365.080	mg/kg	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Uranium-235	0.209	NA	8	0.094	pCi/g	
CB37-010-01	748877.776	2082963.435	0.0	0.5	Uranium-238	2.179	NA	351	2.000	pCi/g	
CB37-010-01	748877.776	2082963.435	0.5	2.5	Aluminum	42000.000	NA	228000	35373.170	mg/kg	
CB37-010-01	748877.776	2082963.435	0.5	2.5	Uranium-234	5.141	NA	300	2.640	pCi/g	
CB37-010-01	748877.776	2082963.435	0.5	2.5	Uranium-235	0.435	NA	8	0.120	pCi/g	
CB37-010-01	748877.776	2082963.435	0.5	2.5	Uranium-238	5.141	NA	351	1.490	pCi/g	
CB37-010-01	748877.776	2082963.435	4.5	6.5	Arsenic	19.000	NA	22.2	13.140	mg/kg	
CB37-010-01	748877.776	2082963.435	4.5	6.5	Uranium-235	0.124	NA	8	0.120	pCi/g	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Aluminum	36000.000	NA	228000	16902.000	mg/kg	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Beryllium	2.000	NA	921	0.966	mg/kg	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Chromium	28.000	NA	268	16.990	mg/kg	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Iron	23000.000	NA	307000	18037.000	mg/kg	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Lithium	19.000	NA	20400	11.550	mg/kg	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Nickel	26.000	NA	20400	14.910	mg/kg	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Uranium-234	3.148	NA	300	2.253	pCi/g	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Uranium-235	0.109	NA	8	0.094	pCi/g	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Uranium-238	3.148	NA	351	2.000	pCi/g	
CB37-011-01	748864.203	2082996.637	0.0	0.5	Vanadium	51.000	NA	7150	45.590	mg/kg	

Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB37-011-01	748864.203	2082996.637	0.5	2.5	Aluminum	40000.000	NA	228000	35373.170	mg/kg
CB37-011-01	748864.203	2082996.637	0.5	2.5	Uranium-235	0.129	NA	8	0.120	pCi/g
CB37-011-01	748864.203	2082996.637	0.5	2.5	Uranium-238	2.619	NA	351	1.490	pCi/g
CB37-011-01	748864.203	2082996.637	2.5	4.5	Uranium-238	1.620	NA	351	1.490	pCi/g
CB37-011-01	748864.203	2082996.637	4.5	6.5	Uranium-234	4.108	NA	300	2.640	pCi/g
CB37-011-01	748864.203	2082996.637	4.5	6.5	Uranium-238	4.108	NA	351	1.490	pCi/g
CB37-012-01	748850.494	2083029.953	0.0	0.5	Aluminum	20000.000	NA	228000	16902.000	mg/kg
CB37-012-01	748850.494	2083029.953	0.0	0.5	Beryllium	1.000	NA	921	0.966	mg/kg
CB37-012-01	748850.494	2083029.953	0.0	0.5	Chromium	17.000	NA	268	16.990	mg/kg
CB37-012-01	748850.494	2083029.953	0.0	0.5	Lithium	15.000	NA	20400	11.550	mg/kg
CB37-012-01	748850.494	2083029.953	0.0	0.5	Uranium-235	0.168	NA	8	0.094	pCi/g
CB37-012-01	748850.494	2083029.953	0.5	2.5	Uranium-235	0.155	NA	8	0.120	pCi/g
CB37-012-01	748850.494	2083029.953	2.5	4.5	Uranium-234	4.193	NA	300	2.640	pCi/g
CB37-012-01	748850.494	2083029.953	2.5	4.5	Uranium-235	0.175	NA	8	0.120	pCi/g
CB37-012-01	748850.494	2083029.953	2.5	4.5	Uranium-238	4.193	NA	351	1.490	pCi/g
CB37-012-01	748850.494	2083029.953	4.5	6.5	Arsenic	18.000	NA	22.2	13.140	mg/kg
CB37-013	748835.437	2083063.284	0.0	0.5	Aluminum	28000.000	NA	228000	16902.000	mg/kg
CB37-013	748835.437	2083063.284	0.0	0.5	Americium-241	0.313	NA	76	0.023	pCi/g
CB37-013	748835.437	2083063.284	0.0	0.5	Beryllium	1.200	NA	921	0.966	mg/kg
CB37-013	748835.437	2083063.284	0.0	0.5	Chromium	21.000	NA	268	16.990	mg/kg
CB37-013	748835.437	2083063.284	0.0	0.5	Lithium	22.000	NA	20400	11.550	mg/kg
CB37-013	748835.437	2083063.284	0.0	0.5	Nickel	23.000	NA	20400	14.910	mg/kg
CB37-013	748835.437	2083063.284	0.0	0.5	Plutonium-239/240	1.870	NA	50	0.066	pCi/g
CB37-013	748835.437	2083063.284	0.5	2.5	1,2,4-Trichlorobenzene	1.300	0.860	9230000	NA	µg/kg
CB37-013	748835.437	2083063.284	0.5	2.5	Acetone	17.000	5.600	102000000	NA	µg/kg
CB37-013	748835.437	2083063.284	0.5	2.5	Naphthalene	2.000	1.000	3090000	NA	µg/kg
CB37-014	748842.213	2082968.215	0.0	0.5	Uranium-234	3.683	NA	300	2.253	pCi/g
CB37-014	748842.213	2082968.215	0.0	0.5	Uranium-235	0.185	NA	8	0.094	pCi/g
CB37-014	748842.213	2082968.215	0.0	0.5	Uranium-238	3.683	NA	351	2.000	pCi/g
CB37-014	748842.213	2082968.215	0.5	2.5	Uranium-235	0.146	NA	8	0.120	pCi/g

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Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB37-014	748842.213	2082968.215	2.5	4.5	Uranium-234	3.721	NA	300	2.640	pCi/g
CB37-014	748842.213	2082968.215	2.5	4.5	Uranium-235	0.145	NA	8	0.120	pCi/g
CB37-014	748842.213	2082968.215	2.5	4.5	Uranium-238	3.721	NA	351	1.490	pCi/g
CB37-014	748842.213	2082968.215	4.5	6.5	Uranium-234	3.314	NA	300	2.640	pCi/g
CB37-014	748842.213	2082968.215	4.5	6.5	Uranium-235	0.148	NA	8	0.120	pCi/g
CB37-014	748842.213	2082968.215	4.5	6.5	Uranium-238	3.314	NA	351	1.490	pCi/g
CB37-015	748828.537	2083001.473	0.0	0.5	Americium-241	2.765	NA	76	0.023	pCi/g
CB37-015	748828.537	2083001.473	0.0	0.5	Plutonium-239/240	15.761	NA	50	0.066	pCi/g
CB37-015	748828.537	2083001.473	0.0	0.5	Uranium-234	3.800	NA	300	2.253	pCi/g
CB37-015	748828.537	2083001.473	0.0	0.5	Uranium-235	0.180	NA	8	0.094	pCi/g
CB37-015	748828.537	2083001.473	0.0	0.5	Uranium-238	3.800	NA	351	2.000	pCi/g
CB37-015	748828.537	2083001.473	0.5	2.5	Aluminum	44000.000	NA	228000	35373.170	mg/kg
CB37-015	748828.537	2083001.473	0.5	2.5	Americium-241	1.728	NA	76	0.020	pCi/g
CB37-015	748828.537	2083001.473	0.5	-2.5	Plutonium-239/240	9.850	NA	50	0.020	pCi/g
CB37-015	748828.537	2083001.473	2.5	4.5	Aluminum	45000.000	NA	228000	35373.170	mg/kg
CB37-015	748828.537	2083001.473	2.5	4.5	Arsenic	15.000	NA	22.2	13.140	mg/kg
CB37-015	748828.537	2083001.473	4.5	6.5	Uranium-238	1.658	NA	351	1.490	pCi/g
CB37-016	748814.791	2083034.743	0.0	0.5	Uranium-234	4.631	NA	300	2.253	pCi/g
CB37-016	748814.791	2083034.743	0.0	0.5	Uranium-235	0.183	NA	8	0.094	pCi/g
CB37-016	748814.791	2083034.743	0.0	0.5	Uranium-238	4.631	NA	351	2.000	pCi/g
CB37-016	748814.791	2083034.743	0.5	2.5	Aluminum	44000.000	NA	228000	35373.170	mg/kg
CB37-016	748814.791	2083034.743	0.5	2.5	Arsenic	18.000	NA	22.2	13.140	mg/kg
CB37-016	748814.791	2083034.743	0.5	2.5	Uranium-234	4.783	NA	300	2.640	pCi/g
CB37-016	748814.791	2083034.743	0.5	2.5	Uranium-235	0.299	NA	8	0.120	pCi/g
CB37-016	748814.791	2083034.743	0.5	2.5	Uranium-238	4.783	NA	351	1.490	pCi/g
CB37-016	748814.791	2083034.743	2.5	4.5	Uranium-234	4.903	NA	300	2.640	pCi/g
CB37-016	748814.791	2083034.743	2.5	4.5	Uranium-235	0.208	NA	8	0.120	pCi/g
CB37-016	748814.791	2083034.743	2.5	4.5	Uranium-238	4.903	NA	351	1.490	pCi/g
CB37-016	748814.791	2083034.743	4.5	6.5	Uranium-234	3.009	NA	300	2.640	pCi/g
CB37-016	748814.791	2083034.743	4.5	6.5	Uranium-235	0.238	NA	8	0.120	pCi/g

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Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB37-016	748814.791	2083034.743	4.5	6.5	Uranium-238	3.009	NA	351	1.490	pCi/g
CB37-017	748820.199	2082939.715	0.0	0.5	Americium-241	1.227	NA	76	0.023	pCi/g
CB37-017	748820.199	2082939.715	0.0	0.5	Plutonium-239/240	6.994	NA	50	0.066	pCi/g
CB37-017	748820.199	2082939.715	0.0	0.5	Uranium-234	3.021	NA	300	2.253	pCi/g
CB37-017	748820.199	2082939.715	0.0	0.5	Uranium-238	3.021	NA	351	2.000	pCi/g
CB37-018	748806.569	2082973.050	0.0	0.5	Nickel	20.000	NA	20400	14.910	mg/kg
CB37-018	748806.569	2082973.050	0.0	0.5	Uranium-234	4.979	NA	300	2.253	pCi/g
CB37-018	748806.569	2082973.050	0.0	0.5	Uranium-235	0.242	NA	8	0.094	pCi/g
CB37-018	748806.569	2082973.050	0.0	0.5	Uranium-238	4.979	NA	351	2.000	pCi/g
CB37-019	748792.854	2083006.314	0.0	0.5	Americium-241	0.875	NA	76	0.023	pCi/g
CB37-019	748792.854	2083006.314	0.0	0.5	Chromium	21.000	NA	268	16.990	mg/kg
CB37-019	748792.854	2083006.314	0.0	0.5	Copper	23.000	NA	40900	18.060	mg/kg
CB37-019	748792.854	2083006.314	0.0	0.5	Lithium	14.000	NA	20400	11.550	mg/kg
CB37-019	748792.854	2083006.314	0.0	0.5	Manganese	550.000	NA	3480	365.080	mg/kg
CB37-019	748792.854	2083006.314	0.0	0.5	Nickel	19.000	NA	20400	14.910	mg/kg
CB37-019	748792.854	2083006.314	0.0	0.5	Plutonium-239/240	4.990	NA	50	0.066	pCi/g
CB37-019	748792.854	2083006.314	0.0	0.5	Uranium-234	4.727	NA	300	2.253	pCi/g
CB37-019	748792.854	2083006.314	0.0	0.5	Uranium-235	0.310	NA	8	0.094	pCi/g
CB37-019	748792.854	2083006.314	0.0	0.5	Uranium-238	4.727	NA	351	2.000	pCi/g
CB37-020	748779.048	2083039.613	0.5	2.5	2-Butanone	42.000	5.100	192000000	NA	µg/kg
CB37-020	748779.048	2083039.613	0.5	2.5	Acetone	220.000	5.000	102000000	NA	µg/kg
CB37-020	748779.048	2083039.613	0.5	2.5	Naphthalene	1.100	0.940	3090000	NA	µg/kg
CB37-020	748779.048	2083039.613	0.5	2.5	Trichloroethene	1.600	0.950	19600	NA	µg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Aluminum	27000.000	NA	228000	16902.000	mg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Beryllium	1.900	NA	921	0.966	mg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Chromium	19.000	NA	268	16.990	mg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Lithium	14.000	NA	20400	11.550	mg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Mercury	0.680	NA	25200	0.134	mg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Nickel	22.000	NA	20400	14.910	mg/kg
CB37-021	748784.428	2082944.489	0.0	0.5	Uranium-235	0.120	NA	8	0.094	pCi/g

Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB37-022	748770.756	2082977.750	0.0	0.5	Americium-241	0.336	NA	76	0.023	pCi/g
CB37-022	748770.756	2082977.750	0.0	0.5	Plutonium-239/240	1.180	NA	50	0.066	pCi/g
CB37-022	748770.756	2082977.750	0.5	2.5	2-Butanone	8.100	5.200	192000000	NA	µg/kg
CB37-022	748770.756	2082977.750	0.5	2.5	Acetone	45.000	5.100	102000000	NA	µg/kg
CB37-022	748770.756	2082977.750	0.5	2.5	Methylene chloride	4.100	0.890	2530000	NA	µg/kg
CB37-023	748924.688	2082963.155	1.0	1.5	Americium-241	2.010	NA	76	0.020	pCi/g
CB37-023	748924.688	2082963.155	1.0	1.5	Plutonium-239/240	12.400	NA	50	0.020	pCi/g
CB37-024	748928.099	2082963.686	0.5	1.0	Americium-241	0.600	NA	76	0.020	pCi/g
CB37-024	748928.099	2082963.686	0.5	1.0	Plutonium-239/240	3.550	NA	50	0.020	pCi/g
CB37-025	748921.877	2082962.389	0.5	1.0	Americium-241	3.890	NA	76	0.020	pCi/g
CB37-025	748921.877	2082962.389	0.5	1.0	Plutonium-239/240	24.100	NA	50	0.020	pCi/g
CB37-026	748925.605	2082959.834	0.0	0.5	Americium-241	1.680	NA	76	0.023	pCi/g
CB37-026	748925.605	2082959.834	0.0	0.5	Plutonium-239/240	9.440	NA	50	0.066	pCi/g
CB37-027	748924.550	2082966.229	0.5	1.5	Americium-241	1.830	NA	76	0.020	pCi/g
CB37-027	748924.550	2082966.229	0.5	1.5	Plutonium-239/240	7.050	NA	50	0.020	pCi/g
CB38-003	748979.514	2083044.122	0.0	0.5	Uranium-234	5.322	NA	300	2.253	pCi/g
CB38-003	748979.514	2083044.122	0.0	0.5	Uranium-235	0.213	NA	8	0.094	pCi/g
CB38-003	748979.514	2083044.122	0.0	0.5	Uranium-238	5.322	NA	351	2.000	pCi/g
CB38-003	748979.514	2083044.122	0.5	2.5	Aluminum	39000.000	NA	228000	35373.170	mg/kg
CB38-003	748979.514	2083044.122	2.5	4.5	Aluminum	46000.000	NA	228000	35373.170	mg/kg
CB38-003	748979.514	2083044.122	2.5	4.5	Arsenic	26.000	NA	22.2	13.140	mg/kg
CB38-003	748979.514	2083044.122	2.5	4.5	Iron	46000.000	NA	307000	41046.520	mg/kg
CB38-003	748979.514	2083044.122	2.5	4.5	Vanadium	130.000	NA	7150	88.490	mg/kg
CB38-003	748979.514	2083044.122	4.5	6.5	Uranium-238	1.541	NA	351	1.490	pCi/g
CB38-004	748984.945	2082948.961	0.0	0.5	Uranium-235	0.177	NA	8	0.094	pCi/g
CB38-004	748984.945	2082948.961	0.5	2.5	Uranium-235	0.138	NA	8	0.120	pCi/g
CB38-004	748984.945	2082948.961	0.5	2.5	Uranium-238	1.841	NA	351	1.490	pCi/g
CB38-004	748984.945	2082948.961	2.5	4.5	Uranium-235	0.141	NA	8	0.120	pCi/g
CB38-004	748984.945	2082948.961	2.5	4.5	Uranium-238	2.286	NA	351	1.490	pCi/g
CB38-005	748971.270	2082982.302	0.0	0.5	Uranium-235	0.155	NA	8	0.094	pCi/g

Location Code	Northing	Easting	Sample Starting Depth (ft bgs)	Sample Ending Depth (ft bgs)	Analyte	Result	Reporting Limit	WRW AL	Background Mean Plus Two Standard Deviations	Unit
CB38-005	748971.270	2082982.302	2.5	4.5	<i>Uranium-234</i>	2.925	NA	300	2.640	pCi/g
CB38-005	748971.270	2082982.302	2.5	4.5	Uranium-235	0.161	NA	8	0.120	pCi/g
CB38-005	748971.270	2082982.302	2.5	4.5	Uranium-238	2.925	NA	351	1.490	pCi/g
CB38-005	748971.270	2082982.302	4.5	6.5	Barium	330.000	NA	26400	289.380	mg/kg
CB38-005	748971.270	2082982.302	4.5	6.5	Manganese	1600.000	NA	3480	901.620	mg/kg
CB38-005	748971.270	2082982.302	4.5	6.5	<i>Uranium-234</i>	3.450	NA	300	2.640	pCi/g
CB38-005	748971.270	2082982.302	4.5	6.5	Uranium-235	0.188	NA	8	0.120	pCi/g
CB38-005	748971.270	2082982.302	4.5	6.5	Uranium-238	3.450	NA	351	1.490	pCi/g

Results exceeding the WRW AL are indicated in bold.

Italics indicate results for plutonium-239/240 and uranium-234 that were calculated based on gamma spectroscopy (HPGe) results for other analytes.

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(Ref: 04-RF-01270; KLW-055-04)

**Draft Closeout Report for IHSS Group 600-4
IHSS 600-160 – Radioactive Site, Building 444
Parking Lot**

December 2004

Figure 3:

**IHSS Group 600-4 Surface Soil
Results Greater than RLs or
Background Means Plus Two
Standard Deviations – North Area**

File: w:\projects\Fy2004\600-4\600-4_closeout_draft.apr

December 6, 2004

CERCLA Administrative Record Document, IA-A-002464

U.S. DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

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**Draft Closeout Report for IHSS Group 600-4
IHSS 600-160 – Radioactive Site, Building 444
Parking Lot**

December 2004

Figure 4:

**IHSS Group 600-4 Surface Soil
Results Greater than RLs or
Background Means Plus Two
Standard Deviations – South Area**

File: w:\projects\Fy2004\600-4\600-4_closeout_draft.apr

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**Draft Closeout Report for IHSS Group 600-4
IHSS 600-160 – Radioactive Site, Building 444
Parking Lot**

December 2004

Figure 5:

**IHSS Group 600-4 Subsurface Soil
Results Greater than RLs or
Background Means Plus Two
Standard Deviations**

File: w:\projects\Fy2004\600-4\600-4_closeout_draft.apr

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Table 4
IHSS Group 600-4 Surface Soil Summary Statistics

Analyte	Total Number Samples Analyzed	Detection Frequency	Average Result	Maximum Result	Reporting Limit	Background Mean Plus Two Standard Deviations	WRW AL	Unit
Aluminum	117	13.68%	25937.500	38000.000	NA	16902.000	228000	mg/kg
Americium-241	126	13.49%	2.543	32.240	NA	0.023	76	pCi/g
Antimony	125	4.00%	0.598	0.750	NA	0.470	409	mg/kg
Aroclor-1254	9	11.11%	27.000	27.000	4.700	NA	12400	µg/kg
Aroclor-1260	9	33.33%	165.700	330.000	6.267	NA	12400	µg/kg
Arsenic	126	7.94%	13.730	22.000	NA	10.090	22.2	mg/kg
Barium	126	11.11%	545.286	814.000	NA	141.260	26400	mg/kg
Beryllium	117	12.82%	1.439	2.000	NA	0.966	921	mg/kg
Cadmium	126	1.59%	11.350	21.000	NA	1.612	962	mg/kg
Chromium	126	22.22%	27.179	62.500	NA	16.990	268	mg/kg
Cobalt	126	2.38%	11.333	12.000	NA	10.910	1550	mg/kg
Copper	126	6.35%	56.250	158.000	NA	18.060	40900	mg/kg
Iron	126	15.87%	27640.000	40200.000	NA	18037.000	307000	mg/kg
Lead	126	3.17%	101.750	210.000	NA	54.620	1000	mg/kg
Lithium	117	14.53%	16.824	25.000	NA	11.550	20400	mg/kg
Manganese	126	11.90%	597.333	1200.000	NA	365.080	3480	mg/kg
Mercury	126	0.79%	0.680	0.680	NA	0.134	25200	mg/kg
Naphthalene	2	50.00%	49.100	49.100	5.370	NA	3090000	µg/kg
Nickel	126	19.05%	27.408	52.600	NA	14.910	20400	mg/kg
Plutonium-239/240	126	15.08%	12.798	183.768	NA	0.066	50	pCi/g
Strontium	126	7.94%	169.800	214.000	NA	48.940	613000	mg/kg
Toluene	2	50.00%	7.830	7.830	5.040	NA	31300000	µg/kg
Uranium-234	126	32.54%	3.797	6.147	NA	2.253	300	pCi/g
Uranium-235	126	67.46%	0.174	0.349	NA	0.094	8	pCi/g
Uranium-238	126	35.71%	3.688	6.147	NA	2.000	351	pCi/g
Vanadium	126	11.90%	71.267	113.000	NA	45.590	7150	mg/kg
Xylene	2	50.00%	13.700	13.700	10.700	NA	2040000	µg/kg
Zinc	126	14.29%	124.972	310.000	NA	73.760	307000	mg/kg

Table 5
IHSS Group 600-4 Subsurface Soil Summary Statistics

Analyte	Total Number Samples Analyzed	Detection Frequency	Average Result	Maximum Result	Reporting Limit	Background Mean Plus Two Standard Deviations	Wildlife Refuge Worker Action Level	Unit
1,2,4-Trichlorobenzene	126	1.59%	1.145	1.300	0.800	NA	9230000	µg/kg
2-Butanone	126	3.17%	33.025	49.000	5.450	NA	192000000	µg/kg
Acetone	126	7.94%	117.370	280.000	38.920	NA	102000000	µg/kg

Analyte	Total Number Samples Analyzed	Detection Frequency	Average Result	Maximum Result	Reporting Limit	Background Mean Plus Two Standard Deviations	Wildlife Refuge Worker Action Level	Unit
Aluminum	87	20.69%	46833.333	110000.000	NA	35373.170	228000	mg/kg
Americium-241	99	12.12%	1.749	4.830	NA	0.020	76	pCi/g
Arsenic	87	14.94%	18.462	26.000	NA	13.140	22.2	mg/kg
Barium	87	3.45%	673.333	1000.000	NA	289.380	26400	mg/kg
Chromium	87	2.30%	95.500	120.000	NA	68.270	268	mg/kg
Cobalt	87	5.75%	42.400	74.000	NA	29.040	1550	mg/kg
Iron	87	1.15%	46000.000	46000.000	NA	41046.520	307000	mg/kg
Lead	87	1.15%	31.000	31.000	NA	24.970	1000	mg/kg
Lithium	87	3.45%	40.667	49.000	NA	34.660	20400	mg/kg
Manganese	87	3.45%	1900.000	2800.000	NA	901.620	3480	mg/kg
Methylene chloride	126	1.59%	4.000	4.100	0.915	NA	2530000	µg/kg
Naphthalene	126	4.76%	2.175	5.850	1.698	NA	3090000	µg/kg
Nickel	87	1.15%	330.000	330.000	NA	62.210	20400	mg/kg
Plutonium-239/240	99	14.14%	7.912	24.100	NA	0.020	50	pCi/g
Toluene	126	1.59%	14.635	23.100	5.890	NA	31300000	µg/kg
Trichloroethene	126	2.38%	1.967	3.300	0.953	NA	19600	µg/kg
Uranium-234	99	19.19%	3.889	5.217	NA	2.640	300	pCi/g
Uranium-235	99	33.33%	0.185	0.435	NA	0.120	8	pCi/g
Uranium-238	99	33.33%	3.019	5.217	NA	1.490	351	pCi/g
Vanadium	87	4.60%	106.000	130.000	NA	88.490	7150	mg/kg
Zinc	87	1.15%	1300.000	1300.000	NA	139.100	307000	mg/kg

activity. The radionuclide SORs are presented in Table 6. All radionuclide SORs were less than 1 except for the 0- to 0.5-ft bgs sample from CA37-013, which had a radionuclide SOR of 2.045.

Nonradionuclide SORs were calculated for surface (0 to 0.5 ft bgs) soil samples. Only analytes detected above 10% of their WRW AL are included in the summation, and aluminum, arsenic, iron, manganese, and polynuclear aromatic hydrocarbons (PAHs) are never included. Nonradionuclide SORs are presented in Table 7. All are less than 1.

Nonradionuclide SORs for historical sampling locations were qualitatively considered. None of the historic sampling locations would have a nonradionuclide SOR greater than 1.

3.0 ACCELERATED ACTION

The accelerated action soil removal is discussed below. The discussion includes identification of potential sources of contamination, remediation goals, and soil removal.

Table 6
IHSS Group 600-4 Radionuclide SORs

Location Code	Start Depth	End Depth	SOR
CA35-000	0	0.5	0.0035
CA35-001	0	0.5	0.0138
CA35-002	0	0.5	0.0136
CA35-004	0	0.5	0.0170
CA35-005	0	0.5	0.0167
CA36-000	0	0.5	0.0462
CA36-001	0	0.5	0.0445
CA36-002	0	0.5	0.0363
CA36-004	0	0.5	0.0317
CA36-005	0	0.5	0.0139
CA36-009	0	0.5	0.0213
CA36-010	0	0.5	0.0276
CA36-011	0	0.5	0.0471
CA36-013	0	0.5	0.0176
CA36-015	0	0.5	0.0436
CA36-016	0	0.5	0.0166
CA36-017	0	0.5	0.0451
CA36-018	0	0.5	0.0132
CA36-022	0	0.5	0.0189
CA36-023	0	0.5	0.0167
CA36-024	0	0.5	0.0494
CA36-026	0	0.5	0.0510
CA36-027	0	0.5	0.0536
CA36-028	0	0.5	0.0375
CA36-029	0	0.5	0.0451
CA37-000	0	0.5	0.0438
CA37-002	0	0.5	0.0666
CA37-003	0	0.5	0.0601
CA37-004	0	0.5	0.0519
CA37-007	0	0.5	0.0284
CA37-008	0	0.5	0.0135
CA37-010	0.3	0.8	0.0209
CA37-012	0	0.5	0.0133
CA37-013	0	0.5	2.0446
CA37-015	0	0.5	0.0632
CA37-016	0	0.5	0.0011
CA37-017	0	0.5	0.0311
CA37-018	0	0.5	0.0161
CA37-019	0	0.5	0.0215
CA37-020	0	0.5	0.0561
CA37-022	0	0.5	0.0400
CA37-023	0	0.5	0.0189
CA37-024	0	0.5	0.0188

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Location Code	Start Depth	End Depth	SOR
CA37-025	0	0.5	0.0199
CA37-027	0	0.5	0.0390
CA37-029	0	0.5	0.0260
CA37-030	0	0.5	0.0809
CA38-002-01	0	0.5	0.0130
CA38-003-01	0	0.5	0.0193
CA38-004-01	0	0.5	0.0537
CA38-005-01	0	0.5	0.0149
CB35-000	0	0.5	0.0252
CB35-001	0.3	0.8	0.0241
CB35-002	0	0.5	0.0149
CB35-003	0	0.5	0.0491
CB35-004	0	0.5	0.0155
CB36-000	0	0.5	0.0292
CB36-001	0	0.5	0.0559
CB36-002	0	0.5	0.0144
CB36-003	0	0.5	0.0429
CB36-005	0	0.5	0.0157
CB36-006	0	0.5	0.0302
CB36-007	0	0.5	0.0016
CB36-008	0	0.5	0.0483
CB36-009	0	0.5	0.0223
CB36-010	0	0.5	0.0176
CB36-011	0	0.5	0.0219
CB36-012	0.3	0.8	0.0160
CB36-013	0	0.5	0.0294
CB36-015	0	0.5	0.0158
CB36-016	0.3	0.8	0.0178
CB36-017	0	0.5	0.0147
CB36-018	0	0.5	0.0537
CB36-019	0	0.5	0.0244
CB36-022	0	0.5	0.0147
CB37-000	0	0.5	0.0480
CB37-001-01	0	0.5	0.0288
CB37-002-01	0	0.5	0.0442
CB37-003-01	0	0.5	0.0439
CB37-004-01	0	0.5	0.0135
CB37-005-01	0	0.5	0.0200
CB37-006-01	0	0.5	0.0382
CB37-007-01	0	0.5	0.0570
CB37-008-01	0	0.5	0.0853
CB37-009-01	0	0.5	0.0595
CB37-010-01	0	0.5	0.0323
CB37-011-01	0	0.5	0.0331
CB37-012-01	0	0.5	0.0210
CB37-013	0	0.5	0.0202
CB37-014	0	0.5	0.0459

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Location Code	Start Depth	End Depth	SOR
CB37-015	0	0.5	0.2183
CB37-016	0	0.5	0.0515
CB37-017	0	0.5	0.0951
CB37-018	0	0.5	0.0610
CB37-019	0	0.5	0.1225
CB37-021	0	0.5	0.0150
CB37-022	0	0.5	0.0146
CB38-003	0	0.5	0.0596
CB38-004	0	0.5	0.0221
CB38-005	0	0.5	0.0193

Table 7
IHSS Group 600-4 Nonradionuclide SORs For Surface Soil Samples

Location Code	Starting Depth	Ending Depth	SOR
CA35-001	0.0	0.5	0.1119
CA35-005	0.0	0.5	0.1765
CA36-023	0.0	0.5	0.1205
CA36-026	0.0	0.5	0.1284
CA36-027	0.0	0.5	0.1175
CA36-028	0.0	0.5	0.1511
CA37-010	0.3	0.8	0.2100
CA37-012	0.0	0.5	0.1157
CA37-014	0.3	0.8	0.1045
CB36-004	0.0	0.5	0.1157
CB36-014	0.0	0.5	0.2332
CB36-022	0.0	0.5	0.1325
CB37-011-01	0.0	0.5	0.1045

3.1 Evaluation of WRW AL Exceedances

IHSS Group 600-4 historical and accelerated action results that exceeded WRW ALs at IHSS Group 600-4 are presented in Table 8.

Table 8
IHSS Group 600-4 Historical and Accelerated Action WRW AL Exceedances in Soil

Sampling Location	Sample Interval (ft bgs)	Analyte	Result	WRW AL	Units
CA37-013	0.0 - 0.5	Plutonium-239/240	183.770	50	pCi/g
CB37-000	0.5 - 2.5	Arsenic	23.000	22.2	mg/kg
CB38-003	2.5 - 4.5	Arsenic	26.000	22.2	mg/kg
SS441294	0.0 - 0.5	Plutonium-239/240	150.000	50	pCi/g

Contaminant concentrations in soil greater than WRW ALs at IHSS Group 600-4 were limited to plutonium in surface soil at two sampling locations (CA37-013 and SS441294) and arsenic in subsurface soil at two sampling locations (CB37-000 and CB38-003).

Based on the SSRS and the hot spot methodology (DOE 2001), the subsurface soil exceedances of arsenic at sampling locations CB37-000 and CB38-003 do not require remediation. The results of the Elevated Measurements Comparison (EMC) were less than 1, and analytical results were less than three times the WRW ALs.

Based on the hot spot methodology, surface soil at sampling locations CA37-013 and SS441294 required remediation. Plutonium-239/240 activities in subsurface soil collected at these locations were more than three times the WRW AL.

3.2 Remedial Action Objectives and Accelerated Action Goals

ER RSOP RAOs (DOE 2002) and accelerated action goals were established for the remediation of soil at IHSS Group 600-4 sites. The RAOs stated in ER RSOP Notification #04-20 (DOE 2004a) are as follows:

- Provide a remedy consistent with the RFETS goal of protection of human health and the environment;
- Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls; and,
- Minimize the spread of contaminants during implementation of accelerated actions.

In order to accomplish the RAOs, specific accelerated action goals had to be achieved. The goals for remediation at the IHSS Group 600-4 sites were as follows:

- At Sampling Location CA37-013, remove soil hotspot, with plutonium-239/240 or americium-241 activities greater than the RFCA WRW AL. Excavate until contamination is less than the applicable AL or to 3 ft, whichever comes first. Collect confirmation samples from the bottom of the excavation and in the excavation sidewalls and analyze for radionuclides by alpha spectroscopy.
- Additional accelerated actions may be conducted in the future at other sites in the IHSS Group 600-4 if accelerated action characterization sampling results indicate such actions are warranted. A Regulatory Contact Record will document additional remediation areas.

3.3 Accelerated Action Soil Removal Activities

At sampling locations CA37-013 and SS441294, accelerated action soil removal activities were conducted in accordance with ER RSOP Notification #04-20 (DOE 2004a). Removal activities at CA37-013 were initiated on October 14, 2004 and completed on October 15, 2004. Initial removal activities at SS441294 were initiated on November 15, 2004 and completed on November 16, 2004, and additional removal

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activities at this location took place on December 8, 2004. Starting and ending dates of significant IHSS Group 600-4 accelerated action activities are listed in Table 9. At sampling location CA37-013, soil was excavated to a depth of approximately 2 ft bgs and approximately 2.5 ft laterally to the east, west, and south, and approximately 5 ft to the north. At historical sampling location SS441294, soil was excavated to a depth of approximately 1 ft bgs and approximately 6 ft laterally in a north-south direction and 8 ft laterally in an east-west direction.

Table 9
IHSS Group 600-4 Accelerated Action Activities

Activity	Starting Date	Ending Date	Duration
Characterization Sampling	7/8/2004	8/24/2004	47 days
Excavating/Confirmation Sampling at CA37-013	10/14/2004	10/15/2004	1 day
Backfilling Excavation at CA37-013	10/18/2004	10/18/2004	<1 day
Excavating/Confirmation Sampling at SS441294	11/15/2004	11/16/2004	1 day
Additional Excavating/Confirmation Sampling at SS441294	12/8/04	12/8/04	<1 day
Backfilling Excavation at SS441294	11/16/2004 and 12/8/04	11/16/2004 and 12/8/04	2 days

Figure 6 shows the excavation boundaries resulting from soil removal activities at CA37-013 and SS441294.

4.0 CONFIRMATION SAMPLING

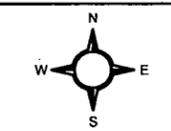
Six confirmation samples were collected from the CA37-013 excavation, and five confirmation samples were collected from the SS441294 excavation. Sampling and analysis were conducted in accordance with the IASAP (DOE 2001). Confirmation samples are included in the sampling totals presented in Table 1 and in the sampling and analysis specifications in Table 2. Confirmation sampling results are incorporated in the summary statistics presented in Tables 4 and 5. All confirmation samples were analyzed for radionuclides by alpha spectroscopy. Because plutonium-239/240 was the only contaminant above ALs at these locations prior to remediation, confirmation samples were not analyzed for other analyte groups. Confirmation samples were collected from the centers of the excavation sidewalls and bottoms. Analytical results greater than background means plus two standard deviations are presented in Table 10 and shown on Figure 6. All radionuclide activities in these samples were less than the WRW AL.

Figure 6
 IHSS Group 600-4
 Excavation Boundaries and
 Confirmation Sampling Data Greater
 Than Background Means Plus
 Two Standard Deviations

KEY

-  Confirmation sample location with results above background plus two standard deviations
-  IHSS Group 600-4 (IHSS 160)
-  Paved areas
-  Ditch or stream
-  IHSS Group 600-4 remediation excavation boundary

DRAFT



20 0 20 Feet

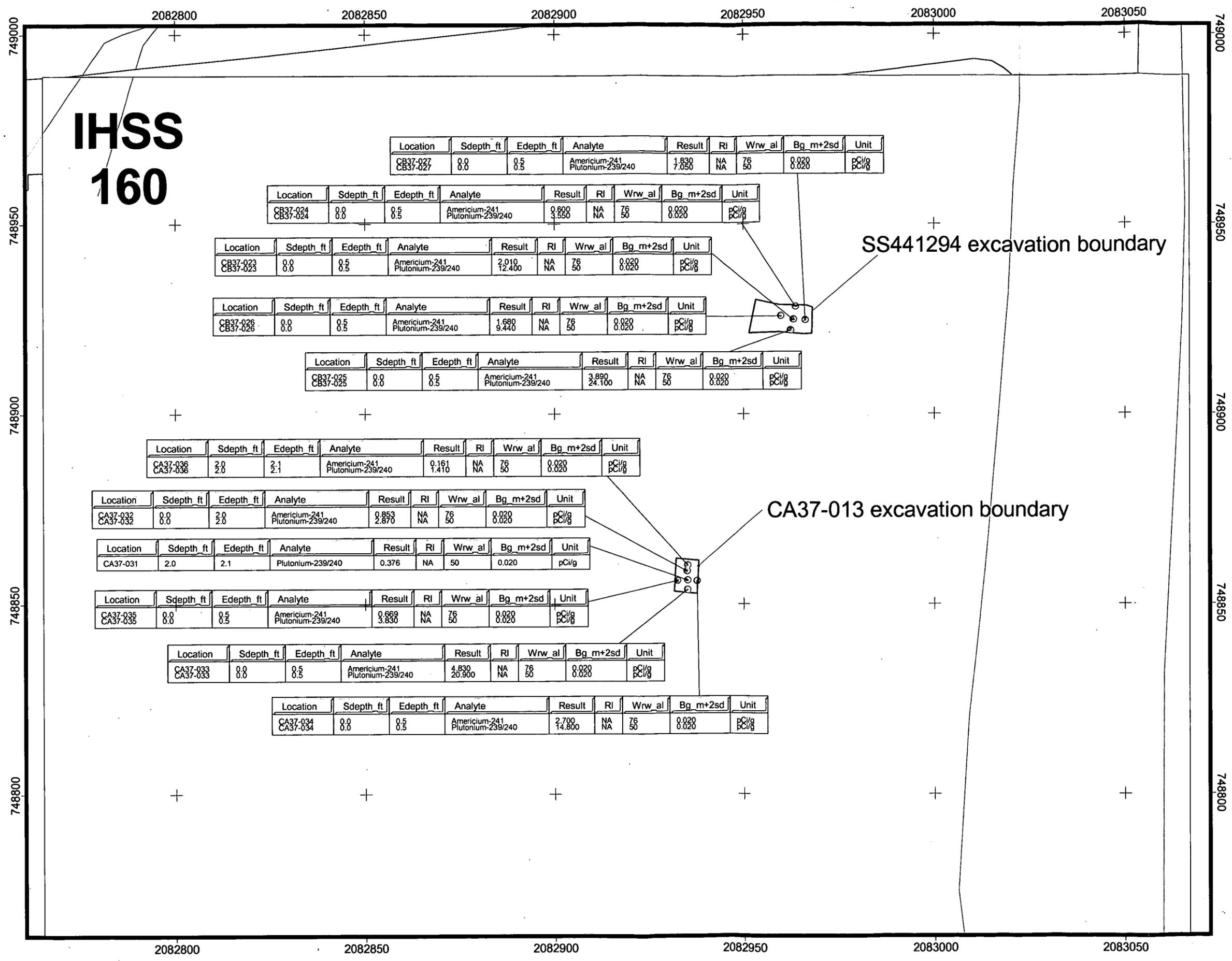
Scale = 1:300

State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD 27

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Prepared for: 
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Table 10
IHSS Group 600-4 Confirmation Sampling Results Greater Than RLs or
Background Means Plus Two Standard Deviations:

Confirmation Sample Location	Location Description	Sample Depth (ft bgs)	Analyte	Result	WRW AL	Background Mean Plus Two Standard Deviations	Result Unit
CA37-013 Excavation							
CA37-031	Bottom of Excavation	2.0-2.1	Plutonium-239/240	0.376	50	0.020	pCi/g
CA37-032	Northern Side	0-2.0	Americium-241	0.853	76	0.020	pCi/g
			Plutonium-239/240	2.870	50	0.020	pCi/g
CA37-033	Southern Side	0-0.5	Americium-241	4.830	76	0.023	pCi/g
			Plutonium-239/240	20.900	50	0.066	pCi/g
CA37-034	Eastern Side	0-0.5	Americium-241	2.700	76	0.023	pCi/g
			Plutonium-239/240	14.800	50	0.066	pCi/g
CA37-035	Western Side	0-0.5	Americium-241	0.669	76	0.023	pCi/g
			Plutonium-239/240	3.830	50	0.066	pCi/g
CA37-036	Bottom of Excavation	2.0-2.1	Americium-241	0.161	76	0.023	pCi/g
			Plutonium-239/240	1.410	50	0.066	pCi/g
SS441294 Excavation							
CB37-023	Bottom of Excavation	1.0-1.5	Americium-241	2.010	76	0.020	pCi/g
			Plutonium-239/240	12.400	50	0.020	pCi/g
CB37-024	Northern Side	0.5-1.0	Americium-241	0.600	76	0.020	pCi/g
			Plutonium-239/240	3.550	50	0.020	pCi/g
CB37-025	Southern Side	0.5-1.0	Americium-241	3.890	76	0.020	pCi/g
			Plutonium-239/240	24.100	50	0.020	pCi/g
CB37-026	Western Side	0-0.5	Americium-241	1.680	76	0.023	pCi/g
			Plutonium-239/240	9.440	50	0.066	pCi/g
CB37-027	Eastern Side	0.5-1.5	Americium-241	1.830	76	0.020	pCi/g
			Plutonium-239/240	7.050	50	0.020	pCi/g

Table 11
Confirmation Sample Radionuclide SORs

Location Code	Start Depth	End Depth	SOR
CA37-031	2	2.1	0.0032
CA37-032	0	2	0.0360
CA37-033	0	0.5	0.2437
CA37-034	0	0.5	0.1631
CA37-035	0	0.5	0.0418
CA37-036	2	2.1	0.0143
CB37-023	0	0.5	0.1333
CB37-024	0	0.5	0.0385

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Location Code	Start Depth	End Depth	SOR
CB37-025	0	0.5	0.2589
CB37-026	0	0.5	0.1035
CB37-027	0	0.5	0.0849
CB37-026	0	0.5	0.1035

Plutonium was the only analyte detected in the confirmation samples at activities greater than 10 percent of the WRW AL. Radionuclide SORs for confirmation samples, presented in Table 11, are all less than one.

5.0 RCRA UNIT CLOSURE

Not applicable. No RCRA units have ever been located in IHSS Group 600-4.

6.0 SUBSURFACE SOIL RISK SCREEN

The SSRS follows the steps identified in Figure 3 of Attachment 5 of RFCA (DOE et al. 2003).

Screen 1 – Are the COC concentrations below RFCA Table 3 Soil ALs for the WRW?

No. Contaminant concentrations are less than WRW ALs with two exceptions. Arsenic concentrations exceed the WRW AL at two subsurface soil sampling locations, CB37-000 and CB38-003.

Screen 2 – Is there a potential for subsurface soil to become surface soil (landslides and erosion areas identified on Figure 1 of RFCA (DOE et al. 2003).

No. IHSS Group 600-4 is not located in an area prone to landslides or high erosion, as identified on Attachment 5, Figure 1 of RFCA (DOE et al. 2003).

Screen 3 – Does subsurface soil contamination for radionuclides exceed criteria defined in RFCA Modification Section 5.3 and Attachment 14?

No. Residual contamination data (Figure 7) indicate that radionuclide activities in IHSS Group 600-4 do not exceed RFCA criteria as defined in Section 5.3. Attachment 14 is not applicable to this IHSS Group because original process waste lines (OPWL) are not present (DOE et al. 2003).

Screen 4 – Is there an environmental pathway and sufficient quantity of COCs that would cause an exceedance of the surface water standards?

Yes. Residual subsurface soil contamination in IHSS Group 600-4 is limited to two detections of arsenic that are slightly above the WRW AL. Therefore the quantity of COCs present is small, and the potential impact to surface water is correspondingly small. IHSS Group 600-4 is not located in an area prone to landslides or high erosion (RFCA Attachment 5, Figure 1). Nevertheless, possible environmental pathways by

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which this contamination could impact surface water are discussed in the remainder of this section.

Surface runoff from IHSS Group 600-4 is conveyed via ditches and culverts into Walnut Creek. The nearest downstream POE is GS10. Water samples collected at GS10 have a history of exceeding both the 0.15 picocurie per liter (pCi/L) RFCA surface water standard for plutonium-239/240 and the 0.15 pCi/L RFCA surface water standard for americium-241. Source evaluations conducted from 1997 through 2001 and in 2004 did not identify a single source of the plutonium and americium detected at GS10, but concluded that a majority of the plutonium and americium loading to South Walnut Creek occurs between surface water stations GS40 and GS10, which is the area along Walnut Creek east of the 750 Pad to approximately 150 ft east of the former protected area (PA) fence (DOE 2003c). IHSS Group 600-4 is not located in this area.

The possibility of a groundwater pathway for 600-4 contaminants to migrate into surface water can be examined by evaluating data from 11 nearby wells. Based on recent potentiometric surface maps, six of these wells are upgradient from IHSS Group 600-4, three are within IHSS Group 600-4, and two are downgradient. The overall direction of groundwater flow is toward the east and east-southeast. There are no exceedances for arsenic in any of the IHSS Group 600-4 wells or in any of the up- or down- gradient wells. Arsenic is the only residual contaminant present at concentrations exceeding WRW ALs in IHSS Group 600-4 and arsenic exceedances in soil are also present in other IA IHSS Groups. Arsenic does not appear to be mobile in IA groundwater despite its presence in soil; therefore, a groundwater pathway for arsenic from soil to surface water apparently does not exist.

There are several historical exceedances of RFCA Tier 2 groundwater ALs for plutonium-239/240 and americium-241 in samples collected from monitoring well P313489, located along the eastern (downgradient) boundary of IHSS Group 600-4. Results for radionuclides in these samples include analyses of both "dissolved" and "total" sample fractions, corresponding to filtered and unfiltered samples, respectively. All of the radionuclide exceedances were in the unfiltered samples, indicating that the plutonium and americium were present as suspended solids that could be removed by filtering. When constituents are found in groundwater in a solid phase but not in the dissolved phase, this is a strong indication that those constituents are insoluble in the prevailing Eh-pH environment of the aquifer, and therefore they are not very mobile in groundwater. In fact, there are no exceedances for radionuclides in the wells downgradient from IHSS Group 600-4. This is corroborated by the RFETS Actinide Migration Pathway study (DOE 2002) which found that the mobility of actinides in the vadose zone and groundwater at RFETS is minimal.

Chlorinated solvents were frequently detected in the upgradient wells at concentrations exceeding WRW ALs, and were also detected above WRW ALs in monitoring well 84002, which is located in IHSS Group 600-4. Chlorinated solvents are highly mobile in groundwater and the chlorinated solvents detected in IHSS Group 600-4 groundwater are part of a plume originating upgradient. Although a groundwater pathway for chlorinated solvents originating IHSS Group 600-4 is possible, the possibility is moot because there is no source of chlorinated solvents in IHSS Group 600-4.

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7.0 STEWARDSHIP EVALUATION

The IHSS Group 600-4 stewardship evaluation was based on current site conditions.

7.1 Current Site Conditions

Based on the accelerated action characterization and remediation activities, the following conditions exist at the IHSS Group 600-4 sites:

- At sampling locations CA37-013 and SS441294, areas of surface soil containing plutonium-239/240 activities above the WRW AL were removed.
- As shown on Figure 7, residual contaminant concentrations greater than WRW ALs are limited to arsenic at two subsurface sampling locations in the northeast portion of IHSS Group 600-4. Based on application of the hot spot methodology and the SSRS, soil at these locations does not require remedial action. Residual contaminant concentrations below WRW ALs, but greater than RLs or background means plus two standard deviations remain in surface and subsurface soil located throughout IHSS Group 600-4.

7.2 Near-Term Management Recommendations

Contaminant concentrations in soil remaining at the IHSS Group 600-4 sites do not require additional accelerated action. Near-term management actions are recommended because residual contaminant concentrations greater than RLs or background means plus two standard deviations remain in surface and subsurface soil at the IHSS Group 600-4 sites. The following near-term management actions are recommended:

- Access to the sites will be restricted.
- Soil excavation will be controlled.
- Groundwater pumping will be prohibited.
- Restrictions on access to the sites, controls on soil excavation, and the prohibition on groundwater pumping will remain in force until long-term management actions are implemented.

7.3 Long-Term Stewardship Recommendations

Based on the remaining environmental conditions discussed above, the long-term stewardship actions recommended for the IHSS Group 600-4 sites are the same as the near-term management actions discussed above. Through the imposition of physical and institutional controls, site access and soil excavation will be restricted, and groundwater pumping will be prohibited. Additional environmental engineering or monitoring activities are not required or recommended for soil at IHSS Group 600-4.

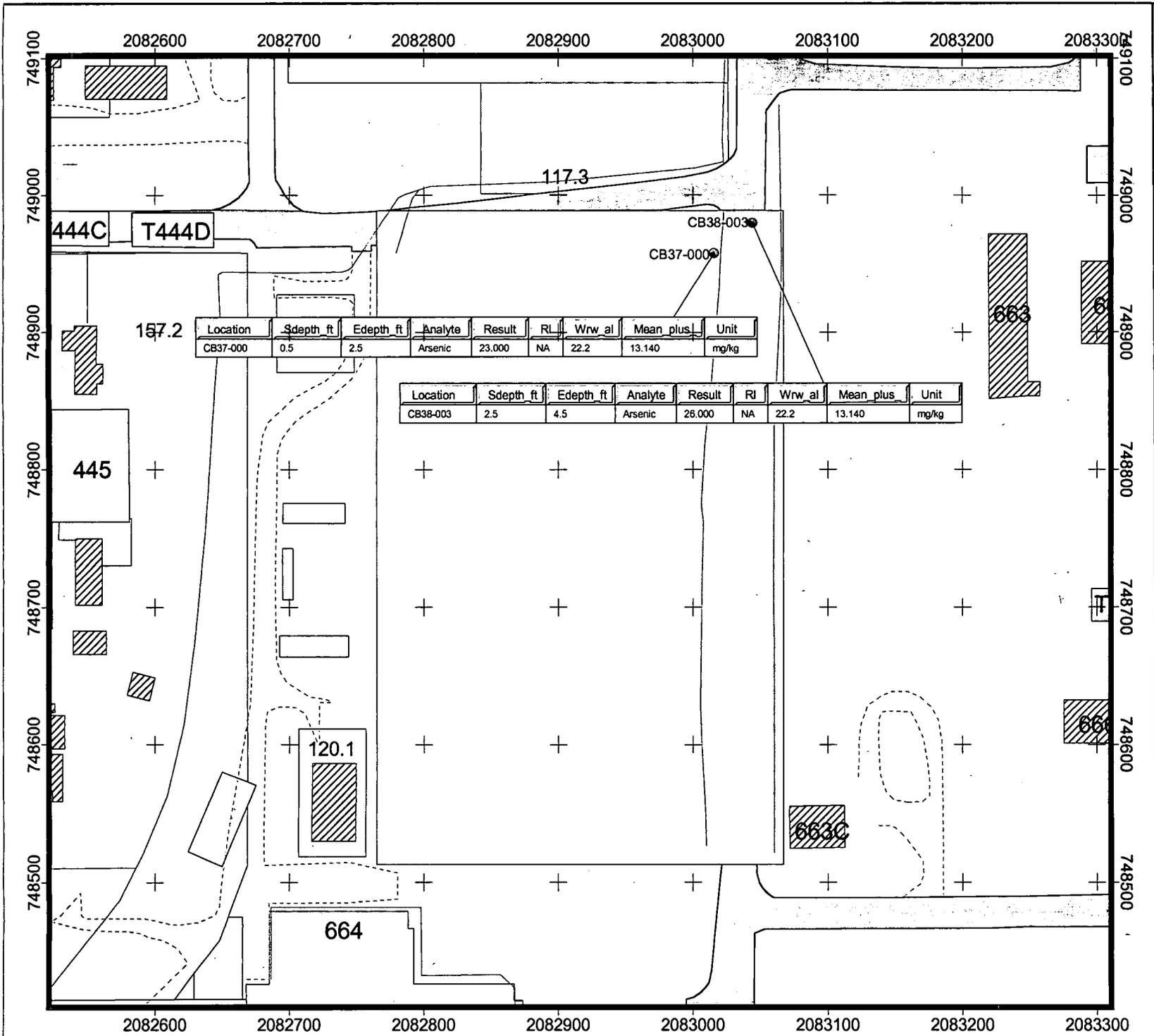


Figure 7
IHSS Group 600-4
Residual Contamination
Exceeding the WRW ALs

KEY

- Sampling location with residual contamination exceeding the WRW AL
- IHSS Group 600-4 (IHSS 160)
- Other IHSSs
- Buildings**
 - ▨ Demolished
 - Standing
 - Paved Area
- - - - - Dirt Road
- ~ ~ ~ ~ ~ Ditch or Stream

DRAFT



Scale 1:1200
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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Prepared by: **RADMS**

Prepared for: **KAISER HILL COMPANY**

IHSS Group 600-4 will be evaluated as part of the Accelerated Action Ecological Screening Evaluation (AAESE) and Sitewide Comprehensive Risk Assessment (CRA). The CRA is part of the RFI/RI and Corrective Measures Study/Feasibility Study (CMS/FS) that will be conducted for RFETS. If additional long-term stewardship actions are determined to be necessary, they will be included in the preferred alternative that will be presented in the Proposed Plan. The final long-term stewardship actions recommended for IHSS Group 600-4 will be summarized in the Rocky Flats Long-Term Stewardship Strategy and will be contained in the Corrective Action Decision/Record of Decision (CAD/ROD), any post-closure Colorado Hazardous Waste Act (CHWA) permit that may be required, and any post-RFCA agreement.

8.0 DEVIATIONS FROM THE ER RSOP

There were no deviations from the ER RSOP.

9.0 WASTE MANAGEMENT

Approximately 126 cubic feet of soil were removed from the CA37-013 excavation and stored in 2 Industrial Packaging (IP)-1 containers. At the SS441294 excavation, 71 cubic feet were excavated and placed in 2 IP-1 containers during the November 15-16, 2004 excavation. An additional 90 cubic feet were excavated at the SS441294 location on December 8, 2004 and placed in 1 IP-1 container. The 5 containers of excavated soil are being managed as low-level waste by the Material Stewardship group. All of the waste management activities associated with soil removed from the excavations at this site are recorded in the Waste and Environmental Management System (WEMS) database used to track and control the inventory, movement, and various waste management activities for waste packages on Site, and shipments to offsite facilities.

10.0 SITE RECLAMATION

The excavations were surveyed and backfilled with clean Site soil. Approximately 126 cubic feet of backfill from the 371 borrow area were used for the CA37-013 excavation. Approximately 161 cubic feet from the 371 borrow area and also from the railroad bed excavation immediately west of 600-4 were used to backfill the SS441294 excavation. Documentation regarding backfilling is provided in an ER Regulatory Contact Record dated December 2, 2004 (Appendix A). Both excavations were backfilled promptly because they are located in an area that is being used for waste staging and shipping.

11.0 POST-ACCELERATED ACTION CONDITIONS

The presence of residual contamination in soil at IHSS Group 600-4 is based on accelerated action characterization and confirmation sampling results as well as historical data. Small areas of surface soil at sampling locations CA37-013 and SS441294 were excavated because plutonium activities in surface soil were more than three times the

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WRW AL. The excavations were backfilled with clean Site soil. Analytical results of the confirmation sampling of the excavations indicate radionuclide activities are below WRW ALs.

Residual contaminant concentrations greater than WRW ALs are limited to arsenic in subsurface soil at two sampling locations, CB37-000 (0.5 to 2.5 ft bgs) and CB38-003 (2.5 to 4.5 ft bgs). Based on the SSRS, soil at these locations does not require further accelerated action.

12.0 NO LONGER REPRESENTATIVE SAMPLING LOCATIONS

The characterization surface soil data from two sampling locations are considered NLR because the soil was excavated and removed from the site during the remediation process. The NLR sampling locations are listed in Table 12.

Table 12
No Longer Representative Sampling Locations

Location	Northing	Easting
CA37-013	748855.793	2082934.905
SS441294	748925.000	2082963.000

13.0 DATA QUALITY ASSESSMENT

The data quality objectives (DQOs) for this project are described in the IASAP (DOE 2001). All DQOs for this project were achieved based on the following:

- Regulatory agency-approved sampling program design, specifically IASAP Addendum #IA-03-09 (approval letter dated August 22, 2003 [CDPHE 2003]) and ER RSOP Notification #04-20 (approval letter dated September 22 [CDPHE 2004]);
- Samples collected in accordance with the IASAP (DOE 2001); and
- DQA conducted as documented in the following sections.

13.1 Data Quality Assessment Process

The DQA process ensures that the type, quantity, and quality of environmental data used in decision making are defensible, and is based on the following guidance and requirements:

- EPA, 1994a, Guidance for the Data Quality Objective Process, QA/G-4;
- EPA, 1998, Guidance for the Data Quality Assessment Process; Practical Methods for Data Analysis, QA/G-9; and

- DOE, 1999, Quality Assurance, Order 414.1A.

Verification and validation (V&V) of the data are the primary components of the DQA. The final data are compared with original project DQOs and evaluated with respect to project decisions; uncertainty within the decisions; and quality criteria required for the data, specifically precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). Validation criteria are consistent with the following RFETS-specific documents and industry guidelines:

- EPA, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, 540/R-94/012;
- EPA, 1994c, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, 540/R-94/013;
- Kaiser-Hill Company, L.L.C. (K-H) V&V Guidelines:
- General Guidelines for Data Verification and Validation, DA-GR01-v2, 2002a
- V&V Guidelines for Isotopic Determinations by Alpha Spectrometry, DA-RC01-v2, 2002b
- V&V Guidelines for Volatile Organics, DA-SS01-v3, 2002c
- V&V Guidelines for Semivolatile Organics, DA-SS02-v3, 2002d
- V&V Guidelines for Metals, DA-SS05-v3, 2002e;
- V&V Guidelines for Radiochemistry by Gamma Spectrometry DA-GAM-v1; and
- Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

This report will be submitted to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) AR for permanent storage within 30 days after being provided to the Colorado Department of Public Health and Environment (CDPHE) and the U.S. Environmental Protection Agency (EPA).

13.2 Verification and Validation of Results

Verification ensures that data produced and used by the project are documented and traceable in accordance with quality requirements. Validation consists of a technical review of all data that directly support the project decisions so that any limitations of the data relative to project goals are delineated and the associated data are qualified accordingly. The V&V process defines the criteria that constitute data quality, namely PARCCS parameters. Data traceability and archiving are also addressed. V&V criteria include the following:

- Chain-of-custody;
- Preservation and hold times;
- Instrument calibrations;
- Preparation blanks;
- Interference check samples (metals);
- Matrix spikes/matrix spike duplicates (MS/MSDs);
- Laboratory control samples (LCSs);
- Field duplicate measurements;
- Chemical yield (radiochemistry);
- Required quantitation limits/minimum detectable activities (sensitivity of chemical and radiochemical measurements, respectively); and
- Sample analysis and preparation methods.

Evaluation of V&V criteria ensures that PARCCS parameters are satisfactory (that is, within tolerances acceptable to the project). Satisfactory V&V of laboratory quality controls are captured through application of validation "flags" or qualifiers to individual records.

Raw, hard-copy data (for example, individual analytical data packages) are currently filed by report identification number (RIN) and maintained by K-H Analytical Services Division (ASD); older hard copies may reside in the Federal Center in Lakewood, Colorado. Electronic data are stored in the RFETS Soil Water Database (SWD).

The data sets addressed in this report are included on the enclosed CD in Microsoft Access 2000 format.

13.3 Accuracy

The following measures of accuracy were evaluated:

- LCSs;
- Surrogates;
- Field blanks; and
- Sample MSs.

Results are compared to method requirements and project goals. The results of these comparisons are summarized for RFCAs COCs where the result could impact project decisions. Particular attention is paid to those values near ALs when QC results could indicate unacceptable levels of uncertainty for decision-making purposes.

LCS Evaluation

The frequency of LCS measurements is presented in Table 13. As indicated, LCS analyses were run for all methods except gamma spectroscopy, which uses an internal standard approach instead of LCSs to evaluate accuracy.

**Table 13
LCS Summary**

Test Method	Lab Batch	LCS?
ALPHA SPEC	358198	Yes
ALPHA SPEC	358199	Yes
ALPHA SPEC	358203	Yes
ALPHA SPEC	359561	Yes
ALPHA SPEC	359563	Yes
ALPHA SPEC	359569	Yes
ALPHA SPEC	360848	Yes
ALPHA SPEC	360860	Yes
ALPHA SPEC	363834	Yes
ALPHA SPEC	4198424	Yes
ALPHA SPEC	4198431	Yes
ALPHA SPEC	4198454	Yes
ALPHA SPEC	4203100	Yes
ALPHA SPEC	4203106	Yes
ALPHA SPEC	4203107	Yes
ALPHA SPEC	4203462	Yes
ALPHA SPEC	4203463	Yes
ALPHA SPEC	4203468	Yes
ALPHA SPEC	4205498	Yes
ALPHA SPEC	4205499	Yes
ALPHA SPEC	4205501	Yes
ALPHA SPEC	4293485	Yes
ALPHA SPEC	4293486	Yes
ALPHA SPEC	4293487	Yes
ALPHA SPEC	4295694	Yes
ALPHA SPEC	4295696	Yes
ALPHA SPEC	4295697	Yes
ALPHA SPEC	4327138	Yes
ALPHA SPEC	4327141	Yes
ALPHA SPEC	4327142	Yes
ALPHA SPEC	4328194	Yes
ALPHA SPEC	4328196	Yes
ALPHA SPEC	4328197	Yes
SW-846 6010	4197280	Yes

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Test Method	Lab Batch	LCS?
SW-846 6010	4197285	Yes
SW-846 6010	4198514	Yes
SW-846 6010	4198515	Yes
SW-846 6010	4198516	Yes
SW-846 6010	4202517	Yes
SW-846 6010	4206067	Yes
SW-846 6010	4206068	Yes
SW-846 6010	4208460	Yes
SW-846 6010	4208461	Yes
SW-846 6010	4208462	Yes
SW-846 6010	4208463	Yes
SW-846 6010	4208471	Yes
SW-846 6010	4211438	Yes
SW-846 6010	4215249	Yes
SW-846 6010	4216584	Yes
SW-846 6010	4220115	Yes
SW-846 6010	4226523	Yes
SW-846 6010	4229300	Yes
SW-846 6010	4230508	Yes
SW-846 6010	4230509	Yes
SW-846 6010	4230510	Yes
SW-846 6010	4232444	Yes
SW-846 6010	4232446	Yes
SW-846 6010	4232449	Yes
SW-846 6010	4232455	Yes
SW-846 6010	4232615	Yes
SW-846 6010	4232619	Yes
SW-846 6010	4232623	Yes
SW-846 6010	4233181	Yes
SW-846 6010	4233189	Yes
SW-846 6010	4233195	Yes
SW-846 6010	4233203	Yes
SW-846 6010	4237647	Yes
SW-846 6010	4237649	Yes
SW-846 6010	4238316	Yes
SW-846 6010	4239620	Yes
SW-846 6010	4243165	Yes
SW-846 6010	4243197	Yes
SW-846 8082	4204502	Yes
SW-846 8082	4236580	Yes
SW-846 8082	4237621	Yes
SW-846 8082	4238340	Yes
SW-846 8260	4197374	Yes
SW-846 8260	4203529	Yes
SW-846 8260	4203605	Yes
SW-846 8260	4206029	Yes
SW-846 8260	4229384	Yes

Test Method	Lab Batch	LCS?
SW-846 8260	4233251	Yes
SW-846 8260	4240443	Yes
SW-846 8260	MS1 VOA 040712A	Yes
SW-846 8260	MS1 VOA 040713A	Yes
SW-846 8260	MS1 VOA 040715A	Yes
SW-846 8260	MS1 VOA 040719A	Yes
SW-846 8260	MS1 VOA 040720A	Yes
SW-846 8260	MS1 VOA 040810A	Yes
SW-846 8260	MS1 VOA 040811A	Yes
SW-846 8260	MS1 VOA 040812A	Yes
SW-846 8260	MS1 VOA 040813A	Yes
SW-846 8260	MS1 VOA 040816A	Yes
SW-846 8260	MS1 VOA 040817A	Yes
SW-846 8260	MS1 VOA 040818A	Yes
SW-846 8260	MS1 VOA 040823A	Yes
SW-846 8260	MS1 VOA 040824A	Yes
SW-846 8260	MS2 VOA 040712A	Yes
SW-846 8260	MS2 VOA 040714A	Yes
SW-846 8260	MS2 VOA 040720A	Yes
SW-846 8260	MS2 VOA 040729A	Yes
SW-846 8260	MS2 VOA 040823B	Yes
SW-846 8260	MS3 VOA 040708A	Yes
SW-846 8260	MS3 VOA 040713A	Yes
SW-846 8260	MS3 VOA 040811A	Yes
SW-846 8260	MS3 VOA 040813A	Yes
SW-846 8260	MS3 VOA 040817A	Yes
SW-846 8260	MS3 VOA 040818A	Yes
SW-846 8260	MS3 VOA 040818B	Yes
SW-846 8260	MS3 VOA 040819A	Yes
SW-846 8260	MS3 VOA 040820A	Yes

The minimum and maximum LCS recoveries are tabulated by chemical in Table 14. LCS results that were outside of tolerances were reviewed to determine whether a potential bias might be indicated. LCS recoveries are not indicative of matrix effects because they are not prepared using Site samples. LCS results do indicate whether the laboratory may be introducing a bias in the results. Recoveries reported above the upper limit may indicate the actual sample results are less than reported. Because this is environmentally conservative, decision making is not adversely affected.

The analytes with recoveries low enough to be potentially unacceptable were evaluated in the following manner. If the maximum sample result divided by the lowest LCS recovery for that analyte is less than the WRW AL, then the indicated bias is not great enough to affect project decisions. For this project, low LCS recoveries did not impact project decisions. Any qualification of individual results because of LCS performance exceeding upper or lower tolerance limits is captured in the V&V flags, described in Section 13.5.

Table 14
LCS Evaluation Summary

Test Method Name	CAS Number	Analyte	Minimum Percent Recovery	Maximum Percent Recovery
SW-846 8260	71-55-6	1,1,1-Trichloroethane	80.72	134
SW-846 8260	79-34-5	1,1,2,2-Tetrachloroethane	88.21	128.8
SW-846 8260	79-00-5	1,1,2-Trichloroethane	87.38	115.3
SW-846 8260	75-34-3	1,1-Dichloroethane	85.12	121
SW-846 8260	75-35-4	1,1-Dichloroethene	87.5	138.4
SW-846 8260	120-82-1	1,2,4-Trichlorobenzene	78	125.8
SW-846 8260	95-50-1	1,2-Dichlorobenzene	84	114.1
SW-846 8260	107-06-2	1,2-Dichloroethane	85.56	138
SW-846 8260	78-87-5	1,2-Dichloropropane	86.45	109
SW-846 8260	106-46-7	1,4-Dichlorobenzene	81	119
SW-846 8260	78-93-3	2-Butanone	70.65	133
SW-846 8260	108-10-1	4-Methyl-2-pentanone	83.4	133.1
SW-846 8260	67-64-1	Acetone	68.73	163.9
SW-846 6010	7429-90-5	Aluminum	91	109
SW-846 6010	7440-36-0	Antimony	85	100
SW-846 8082	12674-11-2	Aroclor-1016	88	94
SW-846 8082	11096-82-5	Aroclor-1260	102	113
SW-846 6010	7440-38-2	Arsenic	85	104
SW-846 6010	7440-39-3	Barium	94	102
SW-846 8260	71-43-2	Benzene	88.83	113
SW-846 6010	7440-41-7	Beryllium	94	109
SW-846 8260	75-27-4	Bromodichloromethane	85.15	129
SW-846 8260	75-25-2	Bromoform	80.18	117
SW-846 8260	74-83-9	Bromomethane	42.3	121
SW-846 6010	7440-43-9	Cadmium	87	100
SW-846 8260	75-15-0	Carbon Disulfide	61	141.4
SW-846 8260	56-23-5	Carbon Tetrachloride	82.64	138
SW-846 8260	108-90-7	Chlorobenzene	86.48	111.5
SW-846 8260	75-00-3	Chloroethane	76.83	132.4
SW-846 8260	67-66-3	Chloroform	84.56	129
SW-846 8260	74-87-3	Chloromethane	73.74	124
SW-846 6010	7440-47-3	Chromium	91	103
SW-846 8260	10061-01-5	cis-1,3-Dichloropropene	86.51	120
SW-846 6010	7440-48-4	Cobalt	88	101
SW-846 6010	7440-50-8	Copper	85	102
SW-846 8260	124-48-1	Dibromochloromethane	90.43	114
SW-846 8260	100-41-4	Ethylbenzene	86.73	120.5
SW-846 8260	87-68-3	Hexachlorobutadiene	71	129.7
SW-846 6010	7439-89-6	Iron	92	110
SW-846 6010	7439-92-1	Lead	90	103
SW-846 6010	7439-93-2	Lithium	92	109
SW-846 6010	7439-96-5	Manganese	91	103
SW-846 6010	7439-97-6	Mercury	90	113

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Test Method Name	CAS Number	Analyte	Minimum Percent Recovery	Maximum Percent Recovery
SW-846 8260	75-09-2	Methylene chloride	83.61	132.5
SW-846 6010	7439-98-7	Molybdenum	87	99
SW-846 8260	91-20-3	Naphthalene	83	112.4
SW-846 6010	7440-02-0	Nickel	90	102
SW-846 6010	7782-49-2	Selenium	85	111
SW-846 6010	7440-22-4	Silver	87	109
SW-846 6010	7440-24-6	Strontium	91	101
SW-846 8260	100-42-5	Styrene	86.78	114.4
SW-846 8260	127-18-4	Tetrachloroethene	80	121.3
SW-846 6010	7440-31-5	Tin	82	95
SW-846 8260	108-88-3	Toluene	89.13	120.2
SW-846 8260	10061-02-6	trans-1,3-Dichloropropene	90.5	123.5
SW-846 8260	79-01-6	Trichloroethene	86.7	111
SW-846 6010	11-09-6	Uranium, Total	90	103
SW-846 6010	7440-62-2	Vanadium	90	102
SW-846 8260	75-01-4	Vinyl chloride	79	137.1
SW-846 8260	1330-20-7	Xylene	84.22	117.7
SW-846 6010	7440-66-6	Zinc	82	101

Surrogate Evaluation

Surrogate recovery results are summarized in Table 15. Because surrogates are added to every sample for VOC analysis, surrogate recoveries only impact individual samples. Unacceptably low surrogate recoveries can indicate potential matrix effects. Surrogate recoveries reported above 100 percent may indicate the actual sample results are less than reported. Because this is environmentally conservative, sound project decisions can still be made. Therefore, only the lowest recoveries were evaluated. If the maximum sample result divided by the lowest surrogate recovery is less than the WRW AL for the COC, no further action is taken because the indicated bias is not great enough to affect project decisions.

**Table 15
Surrogate Recovery Summary**

Number of Samples	CAS Number	Analyte	Minimum Percent Recovery	Maximum Percent Recovery
VOC Surrogate Recoveries:				
128	460-00-4	4-Bromofluorobenzene	77.82	117.3
128	17060-07-0	Deuterated 1,2-dichloroethane	75	129.2
128	2037-26-5	Deuterated Toluene	87	115.1

All IHSS Group 600-4 VOC analyses passed this criterion, and thus project decisions were not impacted by VOC. Any qualification of the data due to surrogate results is captured in the V&V flags, described in Section 13.5.

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Field Blank Evaluation

Detections in field blanks are provided in Table 16. Contamination in field blanks can indicate cross-contamination of samples and must be evaluated if the same contaminant is detected in the associated real samples. If any of the field blank detections exceed 10% of the WRW AL, then further evaluation is needed (for purposes of the comparison, units of $\mu\text{g/L}$ are equated to $\mu\text{g/kg}$).

Table 16
Field Blank Summary

Laboratory	CAS Number	Analyte	Sample QC Code	Detected Result	Result Unit
URS	108-10-1	4-Methyl-2-pentanone	RNS	10.000	$\mu\text{g/L}$
URS	56-23-5	Carbon Tetrachloride	FB	36.200	$\mu\text{g/L}$
URS	56-23-5	Carbon Tetrachloride	TB	35.600	$\mu\text{g/L}$
URS	67-66-3	Chloroform	TB	1.700	$\mu\text{g/L}$
URS	67-66-3	Chloroform	FB	1.700	$\mu\text{g/L}$
URS	108-88-3	Toluene	TB	2.000	$\mu\text{g/L}$
URS	108-88-3	Toluene	FB	1.400	$\mu\text{g/L}$
URS	108-88-3	Toluene	RNS	2.000	$\mu\text{g/L}$
URS	15117-96-1	Uranium-235	RNS	0.223	pCi/g
URS	15117-96-1	Uranium-235	FB	0.186	pCi/g
URS	7440-61-1	Uranium-238	FB	2.900	pCi/g
URS	7440-61-1	Uranium-238	RNS	3.310	pCi/g

In the IHSS Group 600-4 data, none of the field blank detections exceeded 10% of the WRW ALs. Therefore, blank contamination did not adversely impact project decisions. Any qualification of the data due to field blank results are captured in the V&V flags, described in Section 13.5.

Sample MS Evaluation

Table 17 provides a summary of the minimum and maximum MS results by chemical for IHSS Group 600-4. According to the EPA data validation guidelines (EPA 1994b), if organic MS recoveries are low, the data reviewer may use the MS and MSD results in conjunction with other QC criteria for purposes of assessing data quality. In this case, low MS recoveries did not warrant further evaluation provided that LCS recovery was acceptable for the same analyte. For this project, all organic analytes with low MS recoveries had adequate LCS recoveries.

For inorganics with MS recoveries greater than zero, the maximum sample results were divided by the lowest percent recovery for each analyte. Because the results were less than the WRW AL in all cases, decisions were not impacted. Aluminum, Iron, Nickel, and Aroclor-1260 had minimum percent recoveries of zero. However, the maximum detected concentrations of these analytes were less than half of the applicable WRW ALs. Project decisions were not impacted by the 0% MS recoveries for these analytes.

Table 17
Sample MS Evaluation Summary

Test Method Name	CAS Number	Analyte	Minimum Percent Recovery	Maximum Percent Recovery
SW-846 8260	71-55-6	1,1,1-Trichloroethane	82.54	147
SW-846 8260	79-34-5	1,1,2,2-Tetrachloroethane	71.86	112.8
SW-846 8260	79-00-5	1,1,2-Trichloroethane	73.98	110
SW-846 8260	75-34-3	1,1-Dichloroethane	75.78	127
SW-846 8260	75-35-4	1,1-Dichloroethene	78.17	114
SW-846 8260	120-82-1	1,2,4-Trichlorobenzene	43.31	87
SW-846 8260	95-50-1	1,2-Dichlorobenzene	59.34	96
SW-846 8260	107-06-2	1,2-Dichloroethane	77.41	151
SW-846 8260	78-87-5	1,2-Dichloropropane	73.59	115
SW-846 8260	106-46-7	1,4-Dichlorobenzene	58.36	99
SW-846 8260	78-93-3	2-Butanone	66.98	104
SW-846 8260	108-10-1	4-Methyl-2-pentanone	80.07	109.6
SW-846 8260	67-64-1	Acetone	49.38	113
SW-846 6010	7429-90-5	Aluminum	0	5460
SW-846 6010	7440-36-0	Antimony	23	74
SW-846 8082	12674-11-2	Aroclor-1016	135	638
SW-846 8082	11096-82-5	Aroclor-1260	0	103
SW-846 6010	7440-38-2	Arsenic	84	99
SW-846 6010	7440-39-3	Barium	29	113
SW-846 8260	71-43-2	Benzene	73.46	121
SW-846 6010	7440-41-7	Beryllium	85	109
SW-846 8260	75-27-4	Bromodichloromethane	78.06	137
SW-846 8260	75-25-2	Bromoform	84.51	125
SW-846 8260	74-83-9	Bromomethane	78	128.3
SW-846 6010	7440-43-9	Cadmium	85	97
SW-846 8260	75-15-0	Carbon Disulfide	50	107
SW-846 8260	56-23-5	Carbon Tetrachloride	84.78	148
SW-846 8260	108-90-7	Chlorobenzene	68.85	112
SW-846 8260	75-00-3	Chloroethane	69.58	109.6
SW-846 8260	67-66-3	Chloroform	77.6	138
SW-846 8260	74-87-3	Chloromethane	64.64	115
SW-846 6010	7440-47-3	Chromium	51	143
SW-846 8260	10061-01-5	cis-1,3-Dichloropropene	73	126
SW-846 6010	7440-48-4	Cobalt	86	97
SW-846 6010	7440-50-8	Copper	87	111
SW-846 8260	124-48-1	Dibromochloromethane	74.52	122
SW-846 8260	100-41-4	Ethylbenzene	67.23	111
SW-846 8260	87-68-3	Hexachlorobutadiene	24.12	84
SW-846 6010	7439-89-6	Iron	0	6230
SW-846 6010	7439-92-1	Lead	66	110
SW-846 6010	7439-93-2	Lithium	98	113
SW-846 6010	7439-96-5	Manganese	12	240
SW-846 6010	7439-97-6	Mercury	60	110

Test Method Name	CAS Number	Analyte	Minimum Percent Recovery	Maximum Percent Recovery
SW-846 8260	75-09-2	Methylene chloride	73.87	121
SW-846 6010	7439-98-7	Molybdenum	83	106
SW-846 8260	91-20-3	Naphthalene	61.26	87.14
SW-846 6010	7440-02-0	Nickel	0	102
SW-846 6010	7782-49-2	Selenium	82	104
SW-846 6010	7440-22-4	Silver	82	109
SW-846 6010	7440-24-6	Strontium	92	106
SW-846 8260	100-42-5	Styrene	64.3	108
SW-846 8260	127-18-4	Tetrachloroethene	69.19	124
SW-846 6010	7440-31-5	Tin	78	98
SW-846 8260	108-88-3	Toluene	68.4	117
SW-846 8260	10061-02-6	trans-1,3-Dichloropropene	59.65	123
SW-846 8260	79-01-6	Trichloroethene	76.68	118
SW-846 6010	11-09-6	Uranium, Total	87	100
SW-846 6010	7440-62-2	Vanadium	72	123
SW-846 8260	75-01-4	Vinyl chloride	63.36	105.6
SW-846 8260	1330-20-7	Xylene	67.12	112
SW-846 6010	7440-66-6	Zinc	77	127

13.4 Precision

Precision is evaluated using both MSDs and field duplicates as described in the following sections.

Sample MSD Evaluation

Laboratory precision is measured through the use of MSDs, as summarized in Table 18. Analytes with the highest relative percent differences (RPDs) (greater than 35 percent) are reviewed by comparing the highest sample result to the WRW AL. For analytes with RPDs exceeding 35 percent, if the highest sample results are sufficiently below the ALs, no further action is needed.

The analytes acetone, Aroclor-1016, barium, chromium, iron, manganese, and zinc had maximum RPDs greater than 35 percent. Of these, Aroclor-1016 was not detected in real samples. The maximum real results for acetone barium, chromium, iron, and zinc were sufficiently below WRW ALs that project decisions were not adversely impacted by MSD RPD values greater than 35 percent.

Table 18
Sample MSD Evaluation Summary

Test Method Name	CAS	Analyte	Maximum Relative Percent Difference
SW-846 8260	71-55-6	1,1,1-Trichloroethane	12.87
SW-846 8260	79-34-5	1,1,2,2-Tetrachloroethane	14.15
SW-846 8260	79-00-5	1,1,2-Trichloroethane	10.53

Test Method Name	CAS	Analyte	Maximum Relative Percent Difference
SW-846 8260	75-34-3	1,1-Dichloroethane	14.05
SW-846 8260	75-35-4	1,1-Dichloroethene	12.72
SW-846 8260	120-82-1	1,2,4-Trichlorobenzene	20.61
SW-846 8260	95-50-1	1,2-Dichlorobenzene	16.20
SW-846 8260	107-06-2	1,2-Dichloroethane	15.38
SW-846 8260	78-87-5	1,2-Dichloropropane	15.22
SW-846 8260	106-46-7	1,4-Dichlorobenzene	16.45
SW-846 8260	78-93-3	2-Butanone	20.49
SW-846 8260	108-10-1	4-Methyl-2-pentanone	18.88
SW-846 8260	67-64-1	Acetone	56.84
SW-846 6010	7429-90-5	Aluminum	72.24
SW-846 6010	7440-36-0	Antimony	26.09
SW-846 8082	12674-11-2	Aroclor-1016	116.32
SW-846 8082	11096-82-5	Aroclor-1260	15.25
SW-846 6010	7440-38-2	Arsenic	9.63
SW-846 6010	7440-39-3	Barium	45.33
SW-846 8260	71-43-2	Benzene	12.15
SW-846 6010	7440-41-7	Beryllium	8.87
SW-846 8260	75-27-4	Bromodichloromethane	13.79
SW-846 8260	75-25-2	Bromoform	12.85
SW-846 8260	74-83-9	Bromomethane	15.20
SW-846 6010	7440-43-9	Cadmium	11.52
SW-846 8260	75-15-0	Carbon Disulfide	18.18
SW-846 8260	56-23-5	Carbon Tetrachloride	12.95
SW-846 8260	108-90-7	Chlorobenzene	14.06
SW-846 8260	75-00-3	Chloroethane	16.15
SW-846 8260	67-66-3	Chloroform	16.43
SW-846 8260	74-87-3	Chloromethane	21.95
SW-846 6010	7440-47-3	Chromium	97.22
SW-846 8260	10061-01-5	cis-1,3-Dichloropropene	14.14
SW-846 6010	7440-48-4	Cobalt	8.42
SW-846 6010	7440-50-8	Copper	19.35
SW-846 8260	124-48-1	Dibromochloromethane	11.76
SW-846 8260	100-41-4	Ethylbenzene	13.24
SW-846 8260	87-68-3	Hexachlorobutadiene	20.92
SW-846 6010	7439-89-6	Iron	187.25
SW-846 6010	7439-92-1	Lead	23.88
SW-846 6010	7439-93-2	Lithium	9.71
SW-846 6010	7439-96-5	Manganese	167.25
SW-846 6010	7439-97-6	Mercury	36.94
SW-846 8260	75-09-2	Methylene chloride	15.56
SW-846 6010	7439-98-7	Molybdenum	17.44
SW-846 8260	91-20-3	Naphthalene	20.00
SW-846 6010	7440-02-0	Nickel	8.00
SW-846 6010	7782-49-2	Selenium	7.73
SW-846 6010	7440-22-4	Silver	11.89
SW-846 6010	7440-24-6	Strontium	7.77
SW-846 8260	100-42-5	Styrene	12.95
SW-846 8260	127-18-4	Tetrachloroethene	14.75
SW-846 6010	7440-31-5	Tin	17.78
SW-846 8260	108-88-3	Toluene	13.03

Test Method Name	CAS	Analyte	Maximum Relative Percent Difference
SW-846 8260	10061-02-6	trans-1,3-Dichloropropene	10.00
SW-846 8260	79-01-6	Trichloroethene	15.38
SW-846 6010	11-09-6	Uranium, Total	10.42
SW-846 6010	7440-62-2	Vanadium	19.91
SW-846 8260	75-01-4	Vinyl chloride	17.34
SW-846 8260	1330-20-7	Xylene	13.39
SW-846 6010	7440-66-6	Zinc	81.74

Field Duplicate Evaluation

Field duplicate results reflect sampling precision, or overall repeatability of the sampling process. The frequency of field duplicate collection should exceed 1 field duplicate per 20 real samples, or 5 percent. This criterion is applied to the overall ER project and not to individual IHSS Groups. Table 19 presents duplicate sampling frequencies broken down by test method.

**Table 19
Field Duplicate Sample Frequency Summary**

Test Method Name	Sample Code	Number of Samples	% Duplicate Samples
ALPHA SPEC	REAL	36	13.89%
	DUP	5	
GAMMA SPECTROSCOPY	REAL	213	4.23%
	DUP	9	
SW-846 6010	REAL	204	4.41%
	DUP	9	
SW-846 6200	REAL	9	0.00%
	DUP	0	
SW-846 8082	REAL	18	11.11%
	DUP	2	
SW-846 8260	REAL	128	4.69%
	DUP	6	

Duplicate sample RPDs indicate how much variation exists in the field duplicate analyses; duplicate sample RPDs are provided in Table 20. The EPA data validation guidelines state that "there are no required review criteria for field duplicate analyses comparability" (EPA 1994b). For the DQA, the highest maximum RPDs (greater than 35 percent) are normally reviewed. All metal RPDs were greater than 35 percent except beryllium. However, arsenic was the only metal that approached the WRW AL, and the arsenic exceedances in this IHSS Group did not require remediation based on the SSRS. For VOCs all maximum RPD values were below 35 percent except for acetone, which was detected at maximum concentrations several orders of magnitude below the WRW AL.

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Table 20
Field Duplicate RPD Evaluation Summary

Lab Code	Test Method	Analyte	Maximum Relative Percent Difference
ESTLDEN	SW-846 8260	1,1,1-Trichloroethane	6.90
ESTLDEN	SW-846 8260	1,1-Dichloroethane	6.90
ESTLDEN	SW-846 8260	1,2,4-Trichlorobenzene	6.90
ESTLDEN	SW-846 8260	1,2-Dichloroethane	6.90
ESTLDEN	SW-846 8260	2-Butanone	13.04
ESTLDEN	SW-846 8260	4-Methyl-2-pentanone	8.70
ESTLDEN	SW-846 8260	Acetone	90.91
ESTLDEN	SW-846 6010	Aluminum	109.86
ESTLDEN	SW-846 8082	Aroclor-1016	7.79
ESTLDEN	SW-846 8082	Aroclor-1221	7.79
ESTLDEN	SW-846 8082	Aroclor-1232	7.79
ESTLDEN	SW-846 8082	Aroclor-1242	7.79
ESTLDEN	SW-846 8082	Aroclor-1254	7.79
ESTLDEN	SW-846 8082	Aroclor-1260	7.79
ESTLDEN	SW-846 6010	Arsenic	41.38
ESTLDEN	SW-846 6010	Barium	68.16
ESTLDEN	SW-846 8260	Benzene	6.90
ESTLDEN	SW-846 6010	Beryllium	12.77
ESTLDEN	SW-846 8260	Bromodichloromethane	6.90
ESTLDEN	SW-846 8260	Bromoform	6.90
ESTLDEN	SW-846 6010	Cadmium	42.11
ESTLDEN	SW-846 8260	Carbon Disulfide	6.90
ESTLDEN	SW-846 8260	Chlorobenzene	6.90
ESTLDEN	SW-846 8260	Chloroform	6.90
ESTLDEN	SW-846 6010	Chromium	63.96
ESTLDEN	SW-846 8260	cis-1,3-Dichloropropene	6.90
ESTLDEN	SW-846 6010	Cobalt	60.87
ESTLDEN	SW-846 6010	Copper	64.79
ESTLDEN	SW-846 8260	Dibromochloromethane	6.90
ESTLDEN	SW-846 6010	Iron	70.34
ESTLDEN	SW-846 6010	Lead	82.35
ESTLDEN	SW-846 6010	Lithium	87.50
ESTLDEN	SW-846 6010	Manganese	84.21
ESTLDEN	SW-846 8260	Methylene chloride	6.90
ESTLDEN	SW-846 8260	Naphthalene	6.90
ESTLDEN	SW-846 6010	Nickel	75.86
ESTLDEN	ALPHA SPEC	Plutonium-239/240	118.14
ESTLDEN	SW-846 6010	Strontium	37.58
ESTLDEN	SW-846 8260	Styrene	6.90
ESTLDEN	SW-846 8260	Tetrachloroethene	6.90
ESTLDEN	SW-846 8260	Toluene	6.90
ESTLDEN	SW-846 8260	trans-1,3-Dichloropropene	6.90

Lab Code	Test Method	Analyte	Maximum Relative Percent Difference
ESTLDEN	SW-846 8260	Trichloroethene	3.33
GEL	ALPHA SPEC	Uranium-234	43.36
GEL	ALPHA SPEC	Uranium-238	149.42
ESTLDEN	SW-846 6010	Vanadium	82.96
ESTLDEN	SW-846 6010	Zinc	70.83

13.5 Completeness

Based on original program DQOs, a minimum of 25 percent of ER Program analytical results must be formally validated. Of that percentage, no more than 10 percent of the results may be rejected, which ensures that analytical laboratory practices are consistent with quality requirements. These criteria are applied to the overall ER project and not on a specific IHSS Group basis. Table 21 presents the number and percentage of validated records (codes without "1"), verified records (codes with "1"), and rejected records (coded "R" or "R1") for each analyte group.

**Table 21
V&V Summary**

Validation Qualifier Code	Total Number of Records	Count of Records by Test Method					
		Alpha Spectroscopy	Gamma Spectroscopy	SW-846 6010	SW-846 6200	SW-846 8082	SW-846 8260
I	18	0	0	18	0	0	0
J	30	0	0	30	0	0	0
J1	860	2	0	820	27	0	11
JB1	7	0	0	0	0	0	7
R1	2	0	0	2	0	0	0
UJ	30	0	0	30	0	0	0
UJ1	397	0	0	336	7	0	54
V	504	0	36	216	0	0	252
V1	9072	178	603	3240	137	126	4788
Total	10920	180	639	4692	171	126	5112
#Validated	564	0	36	276	0	0	252
%Validated	5.16%	0.00%	5.63%	5.88%	0.00%	0.00%	4.93%
#Verified	10356	180	603	4416	171	126	4860
%Verified	94.84%	100.00%	94.37%	94.12%	100.00%	100.00%	95.07%
%Rejected	0.018%	0.000%	0.000%	0.043%	0.000%	0.000%	0.000%

I-estimated; B-detected in blank; U-below lab detection limit; V1-verified; V-validated.

13.6 Sensitivity

RLs in µg/kg for organics, milligram per kilogram (mg/kg) for metals, and picocuries per gram (pCi/g) for radionuclides, were compared with the project WRW ALs. Adequate sensitivities of analytical methods were attained for all COCs that affect project decisions. "Adequate" sensitivity is defined as an RL that is less than the associated WRW AL, typically less than one-half the WRW AL.

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13.7 Summary of Data Quality

Two records were rejected out of more than 10,000 that were either verified or validated. The two rejected records were for antimony in one surface and one subsurface soil sample from sampling location CB36-017. Both rejected records were nondetects. The remaining records are considered adequate for making project decisions.

14.0 CONCLUSIONS

Results of the accelerated action justify an NFAA determination for the IHSS Group 600-4. This justification is based on the following:

- No additional accelerated action is required based on surface soil characterization and confirmation sample data, because there are no longer any WRW AL exceedances in surface soil.
- No additional accelerated action is required based on the SSRS, as described in Section 6.0.
- No additional accelerated action is required based on the stewardship evaluation, as described in Section 7.0

15.0 REFERENCES

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K-H, 2002d, V&V Guidelines for Semivolatile Organics, DA-SS02-v3.

K-H, 2002e, V&V Guidelines for Metals, DA-SS05-v1.

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Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

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**APPENDIX A
CORRESPONDENCE**

86

**COMPACT DISC
ACCELERATED ACTION DATA**

DISK NOT INCLUDED

SS
SS

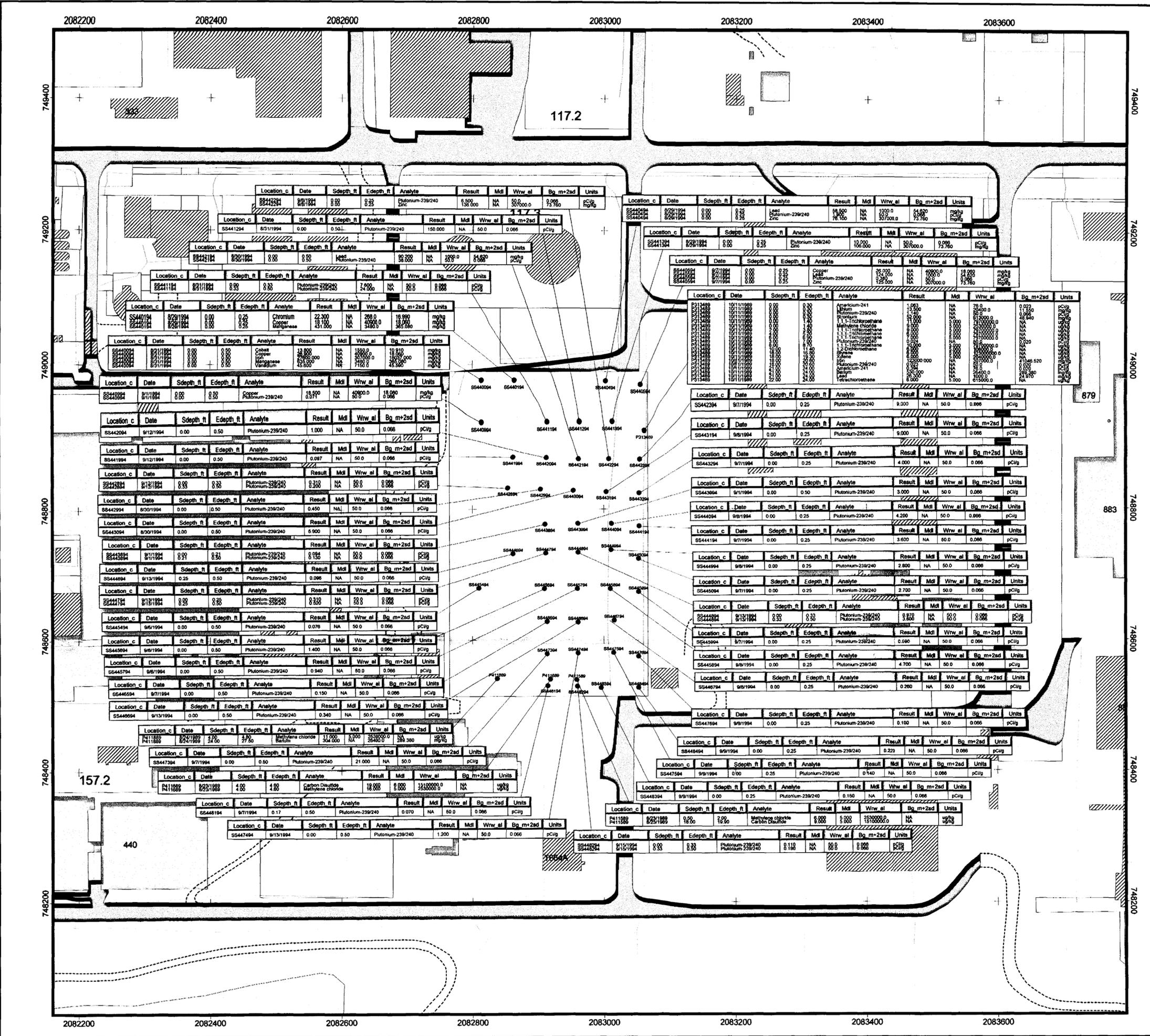


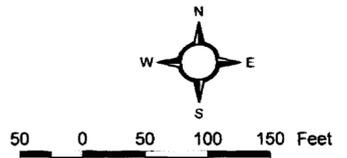
Figure 2
 IHSS Group 600-4
 Pre-Accelerated Action Soil Sampling
 Results Greater Than RLs Or
 Background Means Plus
 Two Standard Deviations

KEY

- Sampling location with results greater than RLs or background means plus two standard deviations.
- Sampling location with results greater than WRW AL

- IHSS Group 600-4 (IHSS 600-160)
- Other IHSSs
- ▨ Paved Area
- ▧ Building
- ▩ Demolished
- ▭ Standing
- ⋈ Dirt Road
- ⋈ Ditch or Stream

DRAFT



Scale 1:1200

State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD 27

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by: **RADMS**

Prepared for: **KAISER HILL COMPANY**

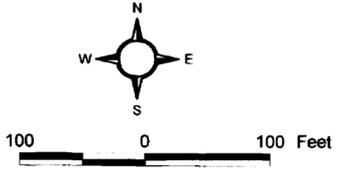
Figure 3
 IHSS Group 600-4 Surface Soil
 Results Greater than RLs or
 Background Means Plus Two
 Standard Deviations -- North Area

KEY

- Sampling location with results greater than RLs or background means plus two standard deviations.
- Sampling location with results greater than WRW AL

- IHSS Group 600-4 (IHSS 600-160)
- Other IHSSs
- ▒ Paved Area
- ▒ Building
- ▒ Demolished
- ▒ Standing
- - - Dirt Road
- - - Ditch or Stream

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Scale 1:1,200

State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD 27

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

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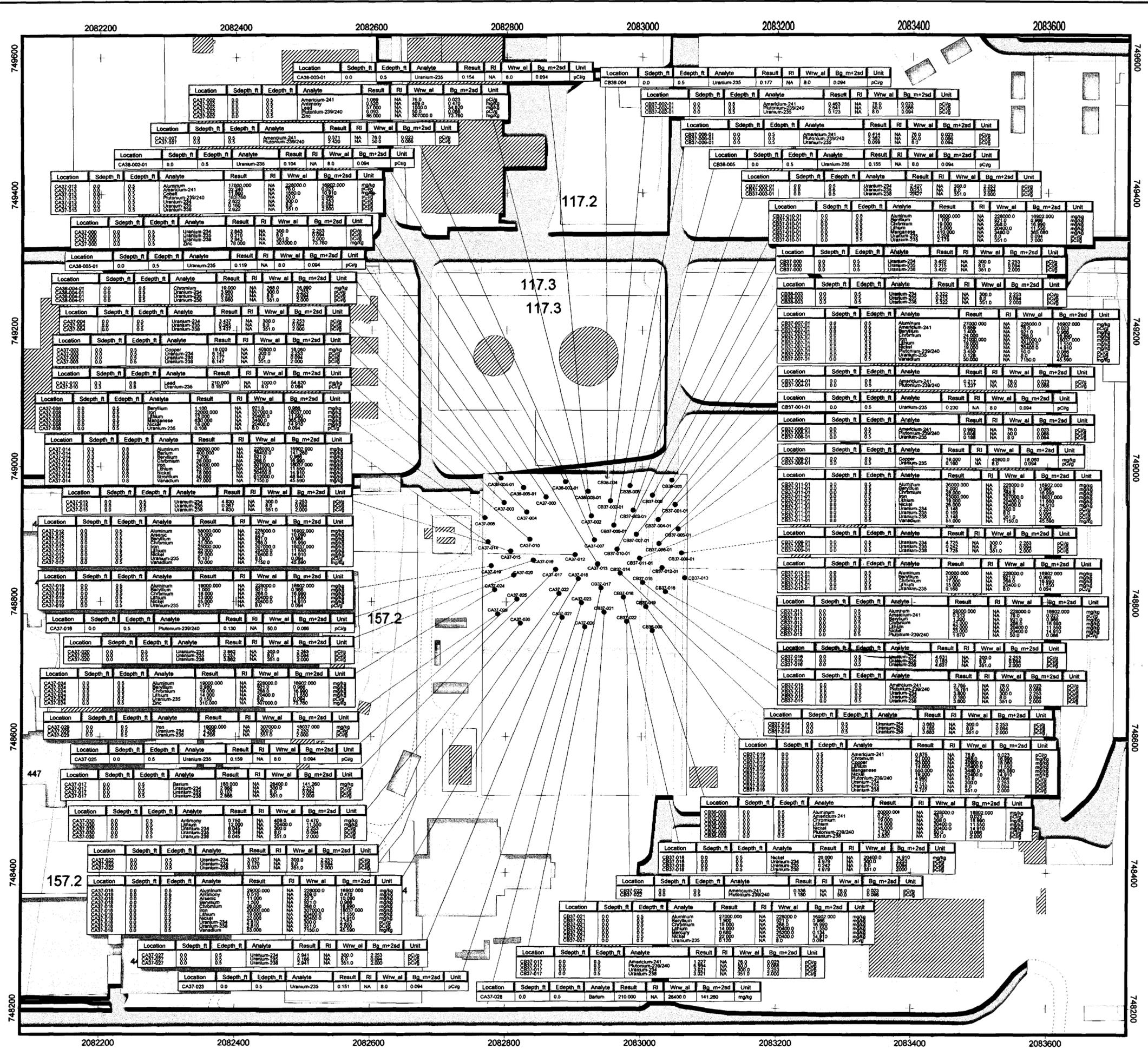


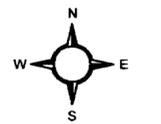
Figure 4
IHSS Group 600-4 Surface Soil
Results Greater than RLs or
Background Means Plus Two
Standard Deviations -- South Area

KEY

- Sampling location with results greater than RLs or background means plus two standard deviations.
- Sampling location with results greater than WRW AL

- IHSS Group 600-4 (IHSS 600-160)
- Other IHSSs
- ▒ Paved Area
- ▒ Building
- ▒ Demolished
- ▒ Standing
- - - - - Dirt Road
- - - - - Ditch or Stream

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100 0 100 Feet

Scale 1:1,200

State Plane Coordinate Projection
Colorado Central Zone
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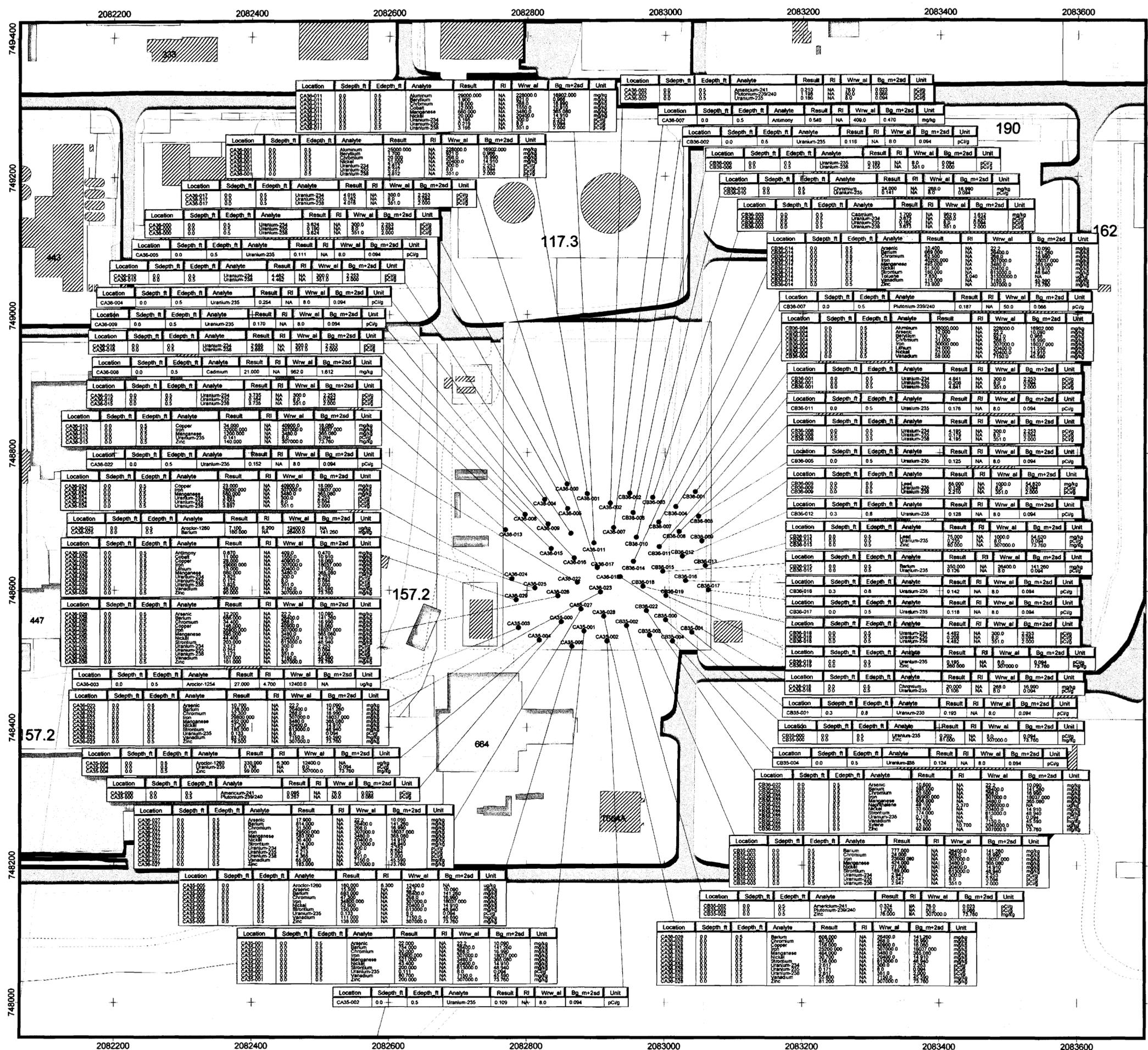


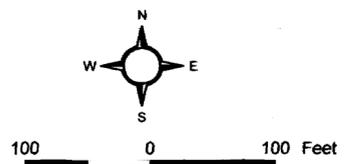
Figure 5
IHSS Group 600-4 Subsurface
Soil Results Greater than RLs
or Background Means Plus
Two Standard Deviations

KEY

- Sampling location with results greater than RLs or background means plus two standard deviations.
- Sampling location with results greater than WRW AL

- IHSS Group 600-4 (IHSS 600-160)
- Other IHSSs
- ▭ Paved Area
- ▭ Building
- ▨ Demolished
- ▭ Standing
- ⋯ Dirt Road
- ⋯ Ditch or Stream

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Scale 1:1,200

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Colorado Central Zone
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