Final PCB-Contaminated Soil Characterization Report at the Former Port Heiden Radio Relay Station

2012 Field Season

Port Heiden, Alaska

Prepared for:

611th Civil Engineer Squadron

August 2013

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The following information is provided in compliance with *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites*, prepared by the Alaska Department of Environmental Conservation, September 23, 2009.

Qualified person responsible for data interpretation

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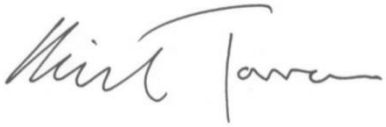
Qualified persons responsible for data reporting



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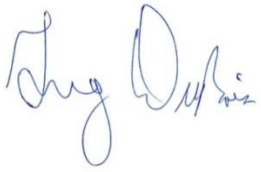

Greg DuBois, APC Services, LLC

Site name: Former Port Heiden Radio Relay Station

ADEC file number: 2637.38.002

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Acronyms and Abbreviations

AAC	Alaska Administrative Code
ACM	Asbestos Containing Material
ADEC	Alaska Department of Environmental Conservation
AOC	Area of Concern
APCS	APC Services, LLC
BLO	Black Lagoon Outfall
BTEX	Benzene, Toluene, Ethyl-benzene, Xylene
CA	Cooperative Agreement
COC	Contaminants of Concern
DEW	Distant Early Warning
DOD	Department of Defense
DRO	Diesel Range Organics
DSA	Drum Storage Area
EPA	Environmental Protection Agency
FPC	Former Pipeline Corridor
GLO	Gray Lagoon Outfall
GPS	Global Positioning System
GRO	Gasoline Range Organics
HSE	Health Safety and Environment
LOD	Limit of Detection
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/kg	Milligrams per Kilograms
mg/l	Milligrams per Liter
ND	Not Detected
NRA	North of Road Area
NVPH	Native Village of Port Heiden

OTF	On The Fly
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene (tetrachloroethene/tetrachloroethylene))
PID	Photo Ionization Detector
POL	Petroleum Oils Lubricants
PPE	Personal Protective Equipment
PPM	Parts Per Million
PQL	Practical Quantification Limit
PVC	Polyvinylchloride
QA/QC	Quality Assurance / Quality Control
QP	Qualified Person
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRO	Residual Range Organics
RRS	Radio Relay Station
TAH	Total aromatic hydrocarbons
TAqH	Total aqueous hydrocarbons
TB	Trip Blank
TSCA	Toxic Substances Control Act
µg/kg	micrograms per Kilogram
µg/l	micrograms per Liter
USACE	United States Army Corp of Engineers
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WACS	White Alice Communication Sites

Executive Summary

The Native Village of Port Heiden (NVPH) and APC Services, LLC (APCS) conducted investigation and contaminated soil removal activities at the former Port Heiden Radio Relay Station (RRS), Port Heiden Alaska. The work was conducted in accordance with the US Army Corps of Engineers (USACE) Alaska District Cooperative Agreement (CA) "Remediate Former Port Heiden RRS." The scope of work for this project has been derived from two CA's, numbers 11AF-09-0100 and 11AF-10-0100.

Site characterization and remediation work was undertaken in 2012 to delineate and remove polychlorinated biphenyls (PCB) contaminated soil and to treat water contaminated by petroleum, oils and lubricants (POLs) and PCBs at the Port Heiden Community Landfill.

Three Areas of Concern (AOC's) at the former Port Heiden RRS were sampled for PCB concentrations by collecting composite samples within 15' x 15' grid squares and analyzing in the laboratory using Method SW8082A. Soil with PCB analytical results above 1 milligrams per kilogram (mg/kg) and less than 50 mg/kg was excavated. After excavation the grid was re-sampled and additional soil lifts were made until the grid square tested below 1 mg/kg or field conditions prevented additional excavation. Soil with PCB content in excess of 50 mg/kg was left in-situ.

The excavated PCB contaminated soil was placed into long term stockpiles. Three lined and bermed cells of approximately 8,100 ft^2 area were constructed and filled with PCB-contaminated soil from the AOC's. The AOC's included Contaminated Soil Removal Area 2 (CSR2), Water Tank Hill (WTH), and the Black Lagoon Outfall (BLO) area.

At CSR2, over 150,000 ft^2 was sampled and approximately 2,569 yds^3 of PCB-contaminated soil was excavated and transported to Cells, 1, 2 or 3. Almost 18,000 ft^2 was determined to have PCB contamination above 50 mg/kg and was left in-situ for future remediation. At the BLO an area of over 27,000 ft^2 was screened and 208 $yrds^3$ of PCB-contaminated soil excavated and transported to Cells 1, 2 or 3. At WTH, an area of over 15,000 ft^2 was screened and 200 $yrds^3$ excavated and removed to the stockpile cells. The areal extent of PCB contamination was not defined and future investigations will require additional characterization to the east, west, and south. In addition, based on a Weston 2009 investigation, there may be soil above the clean-up level buried underneath clean fill material in sections of CSR2.

Table 1 below provides an estimated volume of Toxic Substances Control Act (TSCA) and non-TSCA PCB contaminated soil remaining above the clean-up level at AOCs at the RRS.

Table 1. Estimated volumes of PCB-contaminated soil at Port Heiden RRS.

AOC	TSCA Volume	Non-TSCA	Tight Volume (cubic yards)	Loose Volume (cubic yards)
BLO/SSO	400	192	592	740
CSR1	0	0	0	0
CSR2	1860	756	2,616	3,270
DSA	0	0	0	0
DSA – debris pile	Unknown	Unknown	1,167	1,458
FCS/PG1	Unknown	Unknown	889	1,111
WTH	-	28	28	35
Location 5	0	0	0	0
NLF	Unknown	Unknown	1,333	1,667
Stockpiles	0	5,650	5,650	7,062
Totals:			**12,275**	**15,343**

Over 40,000 gallons of contaminated water was the landfill holding ponds and was treated using a MYCLEX filtration system. Water samples were collected and laboratory analysis confirmed that the treated water met Alaska Department of Environmental Conservation (ADEC) clean-up levels. Permission was obtained from ADEC to discharge the water on site. The holding ponds were dismantled. Confirmation soil samples collected from beneath the holding ponds met clean-up levels, and the site was re-graded with regulatory approval.

1 Introduction.

The Native Village of Port Heiden (NVPH) and APC Services, LLC (APCS) conducted investigation and contaminated soil removal activities at the former Port Heiden Radio Relay Station (RRS), Port Heiden Alaska (Figure 1). The work was conducted in accordance with the US Army Corps of Engineers (USACE) Alaska District Cooperative Agreement (CA) "Remediate Former Port Heiden RRS." The scope of work for this project has been derived from two CA's, numbers 11AF-09-0100 and 11AF-10-0100.

This report consists of the following sections.

Section 1 provides the introduction and summarizes the report organization; outlines the project objectives, clean-up levels and the scope of the investigation
Section 2 provides the project background.
Section 3 describes the 2012 field activities. Stockpile cell construction, water treatment, soil sampling methodologies and removal procedures are presented.
Section 4 presents analytical results for soil sampling within CSR2, BLO and WTC areas.
Section 5 shows estimated volumes of PCB-contaminated soil remaining at the site.
Section 6 covers quality assurance.
Section 7 provides a summary of the work completed in 2012.
Section 8 provides reference information for all works cited.

Appendix A is a work log.
Appendix B is a record of field notes.
Appendix C includes laboratory reports on soil and water samples.
Appendix D contains laboratory quality control information.
Appendix E contains copies of Chain of Custody (COC) reports
Appendix F contains reviewer comments.

Plate 1 – Grids with analytical data of grids exceeding the clean-up level
Plate 2 – Grids with an overlay of 2009 data from a Weston report

Figure 1. Map showing the location of Port Heiden, Alaska and RRS.

1.1 Project Objectives.

The project objectives in 2012 were to characterize and remove PCB contaminated soil from Areas of Concern (AOCs) at Port Heiden RRS, treat PCB and POL contaminated water in holding ponds at the Port Heiden Landfill, landfarm POL contaminated soil that had been placed into Landspreading Areas (LSA's) in 2011; and install and sample groundwater monitoring wells at the RRS and sample pre-existing wells at the RRS and other sites along a former pipeline corridor. The POL Landfarm and groundwater monitoring activities and results are presented under separate covers.

1.2 Scope of the 2012 field activities.

The following field work was conducted in 2012:

1. Survey and construct three lined cells for use as PCB-contaminated soil stockpiles.
2. Survey a 15' a 15' grid over the Black Lagoon Outfall (BLO), Water Tank Hill (WTH) and Contaminated Soil Removal Area Two (CSR2) areas and collect composite soil samples from each grid square for analysis.
3. Excavate lifts from each square if sample results were above 1 milligram per kilogram (mg/kg) and less than 50 mg/kg, based on soil PCB laboratory analyses.
4. Transfer PCB-contaminated soil above 1 mg/kg and below 50 mg/kg to the newly-constructed soil cells.
5. Identify areas with PCB contamination in excess of 50 mg/kg and leave that soil in place.
6. Treat PCB and POL contaminated water from holding ponds at the Port Heiden landfill using a Myclex filtration system, collect confirmation samples, discharge water, remove liners, collect confirmation soil samples, and re-grade.

1.3 Clean-up Levels.

The PCB soil clean-up level is 1 milligram/kilogram (mg/kg) sometimes also denoted as 1,000 micrograms per kilogram which is consistent with US EPA and ADEC PCB regulations. During the 2012 work program, samples were collected from soil used as fill and from treated water.

The backfill soil sample analytical program included volatile organic compounds (VOCs) by USEPA Method 8260b, gasoline range organics (GRO) by Method AK101, diesel range organics (DRO) by Method AK102, residual range organics by Method AK103, Polyaromatic hydrocarbons (PAHs) by USEPA Method 8270 SIMS, and metals by USEPA method series 6020 and mercury by USEPA Method 7471B. Table 2 presents the soil analytical clean-up levels for the analytical program required for fill materials at the Port Heiden RRS. In addition, these soil clean-up levels are applicable to all soil samples collected on the project.

Table 2. Soil Clean-up Levels.

Analyte	Analytical	ADEC clean-up level mg/kg
POLs		
Gasoline Range Organics	AK101	300
Diesel Range Organics	AK102	250
Residual Range Organics	AK102	11,000
PCBs		
Aroclor-1016	SW8082A	1.0
Aroclor-1221	SW8082A	1.0
Aroclor-1232	SW8082A	1.0
Aroclor-1242	SW8082A	1.0
Aroclor-1248	SW8082A	1.0
Aroclor-1254	SW8082A	1.0
Aroclor-1260	SW8082A	1.0

Surface water samples were collected from treated water that had potential impacts from POLs and PCBs. The surface water sample analytical program and associated water quality standards are provided below:

- POLs – No visible sheen; Total Aqueous Hydrocarbons (TAqH) may not exceed 15 µg/l, and Total Aromatic Hydrocarbons (TAH), must not exceed 10 µg/l.
- PCBs – 0.5 µg/l

2 Project Background.

Twelve affected soil areas of concern (AOCs) are under investigation at the Former Port Heiden RRS:

- The Black Lagoon Outfall/Septic System Outfall (BLO/SSO) includes a POL area and a PCB area
- Contaminated Soil Removal Area 1 (CSR1)
- Contaminated Soil Removal Area 2 (CSR2)
- North of Road Area (NRA)
- The Drum Storage Area (DSA)
- The Foundation Cover Soil/Pad Grid 1 Area (FCS/PG1)
- Water Tank Hill (WTH)

- Location 5
- The North Landfill Area (NLF)
- The Landspreading Area (formerly three POL Stockpiles) Landspread Area (LSA) 1, LSA 2, LSA 3, LSA 4, and LSA 5
- The Road between the Former RRS and the Airport
- Proposed Biopile area

The locations of these 12 soil AOCs are shown in Figure 2. The Former Port Heiden RRS is described below, and an overview of the community and local resources is provided.

2.1 Site History.

The Native Village of Port Heiden (NVPH) is a traditional Alutiiq community located 424 miles southwest of Anchorage, at the mouth of the Meshik River on the north side of the Alaska Peninsula, as shown Figure 1. In 1942 the War Department acquired over a million acres for Fort Morrow, which consisted of several hundred buildings over several square miles and housed as many as 5,000 personnel. The site was abandoned following WWII.

In the 1950s the Air Force acquired 172 acres within the former Fort Morrow and constructed the White Alice site. Port Heiden was also one of 12 Distant Early Warning (DEW) line radar stations constructed throughout Alaska. From 1950 through 1959, 18 Aircraft Control and Warning and 12 Distant Early Warning (DEW) line radar stations were constructed throughout Alaska to detect possible attacks from the Soviet Union. These numbers include an Aleutian segment of DEW line stations consisting of the main station at Cold Bay and auxiliary stations at Port Heiden, Port Moller, Cape Sarichef, Driftwood Bay, and Nikolski. The White Alice Communication Sites (WACS) formed a U.S. Air Force telecommunication link system in Alaska during the cold war for military and civilian purposes. Each site had large parabolic, tropospheric scatter antennas (Weston Solutions, 2006). The Air Force operated the WACS in Port Heiden until 1969 when it was converted to a RRS, which became obsolete in the 1970s and was abandoned in November 1978.

The original native village of Meshik was located along the shoreline, but residents have been moving from the old village site to higher ground near the airport and the former White Alice site. Approximately 100 people live at Port Heiden.

The site had consisted of the RRS, the Marine Terminal Area (a former location a POL tank farm and pump house), and a former pipeline corridor (FPC) connecting the Marine Terminal Area to the RRS, as shown in Figure 2.

There are approximately 18 source areas at this site. No buildings or structures are left at the site. The site is located in Section 27, Township 37 South, Range 59 West Meridian. Port Heiden is in the Kvichak Recording District.

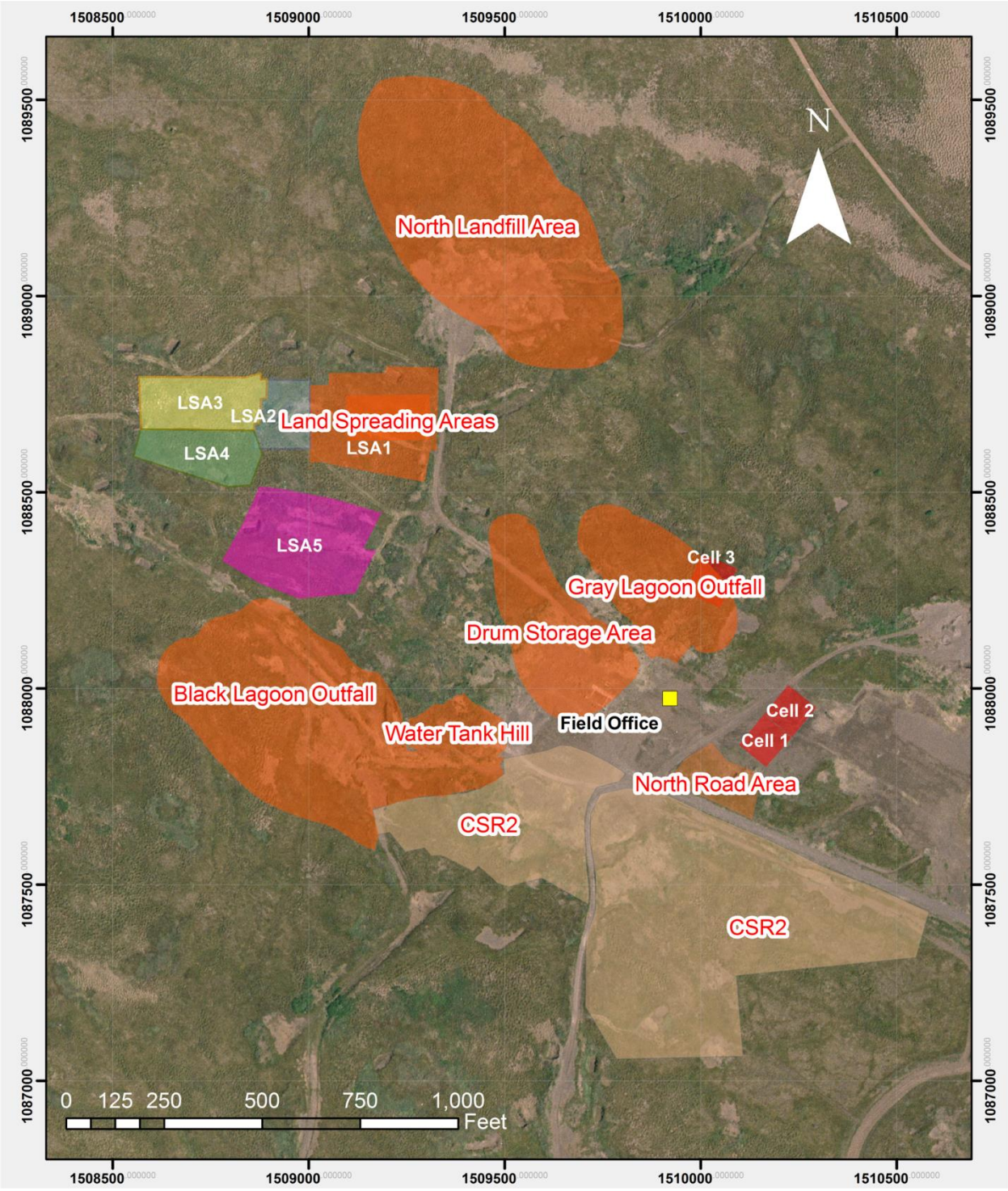


Figure 2. Areas of Concern at the Former Port Heiden RRS

2.2 Previous Work.

The Department of Defense (DOD) has arranged for an Administrative Record (Adminrec) to be posted online. The Adminrec summarizes various Environmental Restoration projects conducted under DOD oversight. The Adminrec website identifying 611 CES projects in Alaska is listed below:

http://www.adminrec.com/PACAF.asp?Location=Alaska

At this website, the user can select the "Port Heiden" link for access to a list of historical Former Port Heiden RRS documents. Note that not all of the historical Port Heiden RRS documents are available at this link.

2.3 Regional Setting.

2.3.1 Site Description.

Port Heiden RRS is located approximately 3,000 feet north of the NNW/SSE airstrip at Port Heiden airport and seven miles north of the village of Port Heiden, on the north side of the Alaska Peninsula, Alaska.

The Former Port Heiden RRS is situated on a low glacial moraine at an elevation of 95 feet above mean sea level. The topography of the site slopes gently to the west and southwest. Additional information about the environmental setting at Port Heiden is presented below. Much of this information is excerpted from the State of Alaska, Division of Community and Regional Affairs.

2.3.2 Latitude and longitude datum.

Latitude: 56.9676950

Longitude: -158.650724 (WGS84)

2.3.3 Climate.

Port Heiden has a maritime climate, with cool summers, relatively warm winters, and rain. Snowfall averages 58 inches per year. January temperatures average 25 degrees Fahrenheit (^{o}F) and July temperatures average 50^{o}F.

2.3.4 Culture.

Port Heiden is a traditional Alutiiq community, with a commercial fishing and subsistence lifestyle (State of Alaska, 2010).

2.3.5 Economy.

Commercial fishing and government jobs provide the majority of cash income. In 2009, 12 residents held commercial fishing permits. Subsistence harvests of salmon, other fish, and marine mammals average 109 pounds per person. Game, birds, plants, and berries are also an important part of villagers' diets (State of Alaska, 2010).

2.3.6 Facilities.

Individual wells and septic tank systems are used by most homes in Port Heiden. The school operates its own well and treatment system. Thirty one of thirty seven occupied households are fully plumbed. The city provides septic pumping services and collects refuse three times a week. The permitted Class III Landfill is located 6.5 miles northeast of the community (State of Alaska, 2010).

2.3.7 Transportation.

The state-owned airport consists of a lighted, gravel, 5,000' long by 100' wide runway and a 4,000' long by 100' wide lighted gravel crosswind runway. It can accommodate up to Boeing 737 aircraft, and regular air services are provided. The airstrip serves as a point-of-transfer for flights to the Pacific side of the Alaska Peninsula. There is a natural boat harbor but no dock. A boat haul-out, a beach off-loading area, and marine storage facilities are available. Cargo from Seattle is periodically delivered via chartered barge and is lightered and offloaded on the beach. Autos, ATVs, and snow machines are the local means of transportation (State of Alaska, 2010).

2.3.8 Other Information.

Previous investigations are online as part of an Administrative Record by the DOD. The ADEC File Number is 2637.38.002.

3 2012 Fieldwork Activities.

PCB-contaminated soil sampling and excavation was carried out between May 30th 2012 and October 16, 2012 at CSR2, BLO, and WTH.

Three areas, named Cell 1, Cell 2 and Cell 3 (Figure 3) were selected as stockpile sites to store PCB-contaminated soil excavated from CSR2, BLO and WTH in 2012. There were also surface soil samples collected around the field office called the Worker Safe Zone (WSZ) and in a potential staging area (SS) at the RRS.

Appendix A is a summary of work carried out at Port Heiden during this timeframe. Detailed field notes are included in Appendix B.

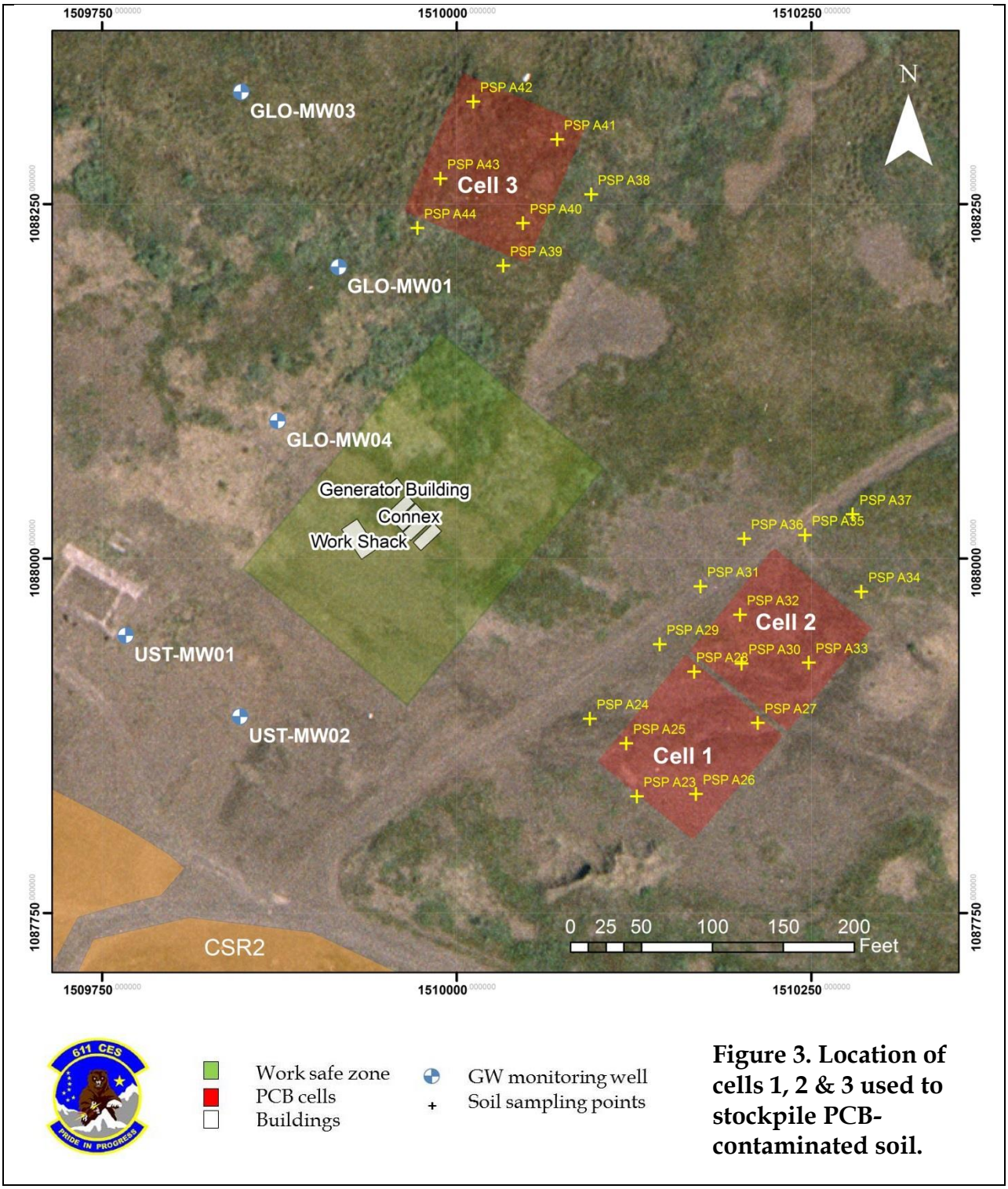


Figure 3. Location of cells 1, 2 & 3 used to stockpile PCB-contaminated soil.

3.1 Worker Safe Zone.

Soil was sampled at two areas adjacent to the work shack. A Worker Safe Zone (WSZ) was established around the work shack and soil samples analyzed for PCB. Results are shown in Table 3. One sample (WSZ-11D, a duplicate) had PCB levels detected above ADEC guidelines of 1.0 mg/kg at 1.048 mg/kg at sample location WSZ-11. The primary sample was below the clean-up level. The area was cordoned off and on August 16, 2012 a 6-inch lift of soil was removed from that area and it was resampled on August 16, 2012 with analytical results below the clean-up level at 0.278 mg/kg.

Table 3. Analytical results for soil samples collected within the WSZ.

Sample	Date	Aroclor 1260 mg/kg	Aroclor 1254 mg/kg	Aroclor 1248 mg/kg	Aroclor 1242 mg/kg	Aroclor 1232 mg/kg	Aroclor 1221 mg/kg	Aroclor 1016 mg/kg
WSZ-11	6/26/2012	0.983	<0.039	<0.039	<0.039	<0.039	<0.039	<0.039
WSZ-11D	6/26/2012	**1.048**	<0.0378	<0.0378	<0.0378	<0.0378	<0.0378	<0.0378
WSZ-11	6/26/2012	0.278	<0.0372	<0.0372	<0.0372	<0.0372	<0.0372	<0.0372
WSZ-12	6/26/2012	0.354	<0.037	<0.037	<0.037	<0.037	<0.037	<0.037
WSZ-14	6/26/2012	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044
WSZ-15	6/26/2012	0.0365	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041
WSZ-16	6/26/2012	0.15	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356
WSZ-17	6/26/2012	0.615	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036
WSZ-18	6/26/2012	0.578	<0.0392	<0.0392	<0.0392	<0.0392	<0.0392	<0.0392
WSZ-19	6/26/2012	<0.0384	<0.0384	<0.0384	<0.0384	<0.0384	<0.0384	<0.0384
WSZ-20	6/26/2012	0.0708	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398	<0.0398

Values in **bold** are above ADEC clean-up values of 1.0 mg/kg
D = duplicate

3.2 Staging Area.

In July 2012, an area just south of the WSZ was evaluated for use as a temporary staging area. Surface soil samples were collected from that area as pre-construction samples and analysed for PCB using Method SW8082A . All of the analytical results were below ADEC clean-up levels of 1.0 mg/kg. Ultimately it was decided not to use the SS area. However, the analytical results are presented for completeness in Table 4. Figure 4 shows the SS and WSZ sample locations in relation to the work shack and other site structures.

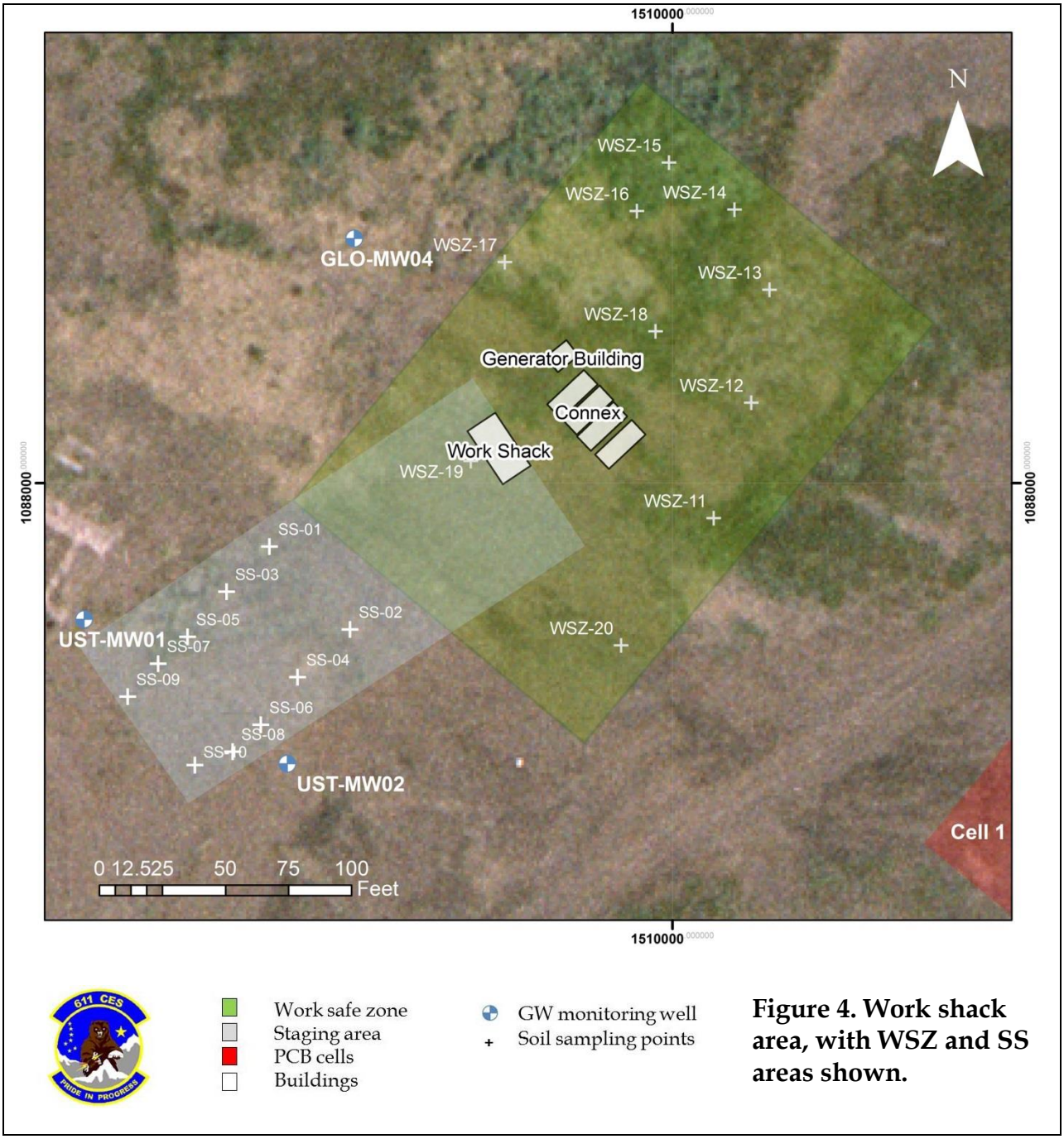


Figure 4. Work shack area, with WSZ and SS areas shown.

Table 4. Soil analytical values form samples in the staging area.

Sample ID	Date sampled	Aroclor 1260 mg/kg	Aroclor 1254 mg/kg	Aroclor 1248 mg/kg	Aroclor 1242 mg/kg	Aroclor 1232 mg/kg	Aroclor 1221 mg/kg
SS-01	7/9/2012	0.147	<0.0362	<0.0362	<0.0362	<0.0362	<0.0362
SS-02	7/9/2012	0.162	<0.037	<0.037	<0.037	<0.037	<0.037
SS-03	7/9/2012	0.189	<0.0374	<0.0374	<0.0374	<0.0374	<0.0374
SS-04	7/9/2012	0.059	<0.0382	<0.0382	<0.0382	<0.0382	<0.0382
SS-05	7/9/2012	0.166	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356
SS-06	7/9/2012	0.092	<0.0378	<0.0378	<0.0378	<0.0378	<0.0378
SS-07	7/9/2012	0.182	<0.0362	<0.0362	<0.0362	<0.0362	<0.0362
SS-08	7/9/2012	0.036	<0.0354	<0.0354	<0.0354	<0.0354	<0.0354
SS-09	7/9/2012	0.216	<0.0354	<0.0354	<0.0354	<0.0354	<0.0354
SS-10	7/9/2012	0.045	<0.0378	<0.0378	<0.0378	<0.0378	<0.0378
SS-04D	7/9/2012	0.043	<0.0384	<0.0384	<0.0384	<0.0384	<0.0384

D indicates duplicate.

3.3 Construction of PCB-contaminated soil stockpiles.

Cells 1, 2, and 3 were approximately square with sides 90′ x 90′. Prior to construction, soil samples were collected and analyzed by SW8082A to confirm that background levels of PCB contamination were below ADEC guidelines. The cells were constructed by building a 3′ high berm around the perimeter of the cell area with clean fill material and covering the interior and berm surface with a 20-mil impermeable reinforced liner. The ground was inspected and sticks and other debris that could potentially puncture the bottom liner was removed. Covering the 20-ml bottom liner was approximately 4 inches of clean beach sand. The beach sand was placed on top of the bottom liner to protect it when end dumps back into and dumped PCB contaminated soil into the cells and when the front end loader was used to pile the contaminated soil. Care was taken when equipment was in the cells to move straight in and out without turning the wheels while in the cells. Figure 3 also shows the cells and the pre-construction sample locations.

PCB soil samples collected from the cell sites were all below ADEC's clean-up level of 1.0 mg/kg as shown in Table 5.

Table 5. PCB Soil sample results from stockpile cells, pre-construction.

Sample	Date Sampled	Aroclor 1260 mg/kg	Aroclor 1254 mg/kg	Aroclor 1248 mg/kg	Aroclor 1242 mg/kg	Aroclor 1232 mg/kg	Aroclor 1221 mg/kg	Aroclor 1016 mg/kg
PSP-A23	6/25/2012	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
PSP-A24	6/25/2012	0.042	<0.034	<0.034	<0.034	<0.034	<0.034	<0.034
PSP-A25	6/25/2012	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348
PSP-A26	6/25/2012	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356	<0.0356
PSP-A27	6/25/2012	0.123	<0.034	<0.034	<0.034	<0.034	<0.034	<0.034
PSP-A28	6/25/2012	0.0748	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348
PSP-A29	6/25/2012	<33.8	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338
PSP-A30	6/25/2012	0.0709	<0.087	<0.087	<0.087	<0.087	<0.087	<0.087
PSP-A31	6/25/2012	0.189	<0.034	<0.034	<0.034	<0.034	<0.034	<0.034
PSP-A32	6/25/2012	0.0499	<0.0354	<0.0354	<0.0354	<0.0354	<0.0354	<0.0354
PSP-A32D	6/25/2012	0.049	<0.036	<0.036	<0.036	<0.036	<0.036	<0.036
PSP-A33	6/25/2012	0.0656	<0.034	<0.034	<0.034	<0.034	<0.034	<0.034
PSP-A34	6/25/2012	0.0275	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338
PSP-A35	6/25/2012	0.0282	<0.0346	<0.0346	<0.0346	<0.0346	<0.0346	<0.0346
PSP-A36	6/25/2012	<0.0346	<0.0346	<0.0346	<0.0346	<0.0346	<0.0346	<0.0346
PSP-A37	6/25/2012	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348
PSP-A38	6/25/2012	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338
PSP-A39	6/25/2012	<0.0388	<0.0388	<0.0388	<0.0388	<0.0388	<0.0388	<0.0388
PSP-A40	6/25/2012	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
PSP-A41	6/25/2012	<0.0344	<0.0344	<0.0344	<0.0344	<0.0344	<0.0344	<0.0344
PSP-A42	6/25/2012	<0.0336	<0.0336	<0.0336	<0.0336	<0.0336	<0.0336	<0.0336
PSP-A42D	6/25/2012	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338	<0.0338
PSP-A43	6/25/2012	<0.0342	<0.0342	<0.0342	<0.0342	<0.0342	<0.0342	<0.0342
PSP-A44	6/25/2012	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348	<0.0348

D = duplicate

Gravel fill material was transported from the Trapper Hill borrow pit and used to create a roadway for the truck access to the stockpile cells. Sample NVPH-THF-S001 and duplicate sample NVPH12-THF-S002 were collected from the Trapper Hill borrow pit on July 5, 2012. Analytical results were below the clean-up levels as shown in Section 1.3. ADEC approved the use of up to 1,000 cubic yards of soil from the sample area for project use. Approximately 920 cubic yards of soil from that location was transported to the RRS and used as fill for the roadways to the cells

PCB-contaminated soil was trucked to the cells from CSR2 and other areas, spread out in the cell and covered at the end of the work day with a 20-mil liner, which was kept in place using sandbags. The extent and volume of stockpiled soil in each cell are shown in Table 6.

Table 6. Summary of PCB-contaminated soil stockpile cells.

	Center point Easting	Center point Northing	Cell Area (ft^2)	Volume of PCB-contaminated soil stockpiled (yds^3)
Cell 1	1510161.13	1087863.89	8,248	2,580
Cell 2	1510228.35	1087942.97	8,045	1,720
Cell 3	1510026.94	1088275.32	9,621	350

3.4 Surveying.

Horizontal and vertical positions of sample and grid locations were established through global positioning system (GPS) survey techniques. Additional permanent and recognizable site features were also surveyed to facilitate quick generation of local swing-tie measurements if required at a later date. These were met using a Trimble R8 receiver and a Trimble R8 rover. Instruments positioning was determined in World Geodetic System 1984 (WGS84) geographic coordinates (latitude/longitude) and converted internally for output as Alaska State Plane Coordinate System, North America Datum 1983, Zone 6, U.S. Survey feet.

Points were surveyed by using kinematic (stop and go) survey methods. Kinematic surveying involves the establishment of "base" and "rover" units that are used in conjunction to acquire survey points. Survey control was established from a National Geodetic Survey monument and the rover unit was then used to collect the desired points.

Kinematic surveying uses GPS phase measurements from five or more satellites common to both the base receiver and the rover. To achieve centimeter-level precision, the surveys were first initialized. On-the-fly (OTF) surveying was the method chosen to survey points for the Former Port Heiden RRS. OTF surveying is the precise form of kinematic surveying that allows for the rapid collection of survey coordinates in the field.

All survey points collected were initialized, and the instruments were properly calibrated. The vertical accuracy for all GPS survey points is within 0.09 foot, and the horizontal accuracy is within 0.04 foot.

3.5 PCB Surface Soil Sampling and Excavation Determination.

PCB confirmation soil samples were collected based on the United States Protection Agency (USEPA) hexagonal grid sampling methodology (USEPA, 1986). Specifically, an excavated area was subdivided into 15 foot square girds. A 10-foot square polyvinyl chloride (PVC) pipe template was then centered within the grid and composite soil samples collected from the nine points of intersection created by these four 5-foot grids (Figure 5). One dedicated steel sampling spoon was used to collect soil from each of the nine locations, then composited in a clean 1-quart sized plastic bag or a decontaminated stainless steel mixing bowl. An 8-ounce glass sample container was then filled with this soil and prepared for shipment to the analytical laboratory.

Duplicate samples were collected at a 1 -10 ratio against soil field samples. All soil samples were collected in accordance with protocol presented in the *Draft Field Sampling Guidance* (ADEC).

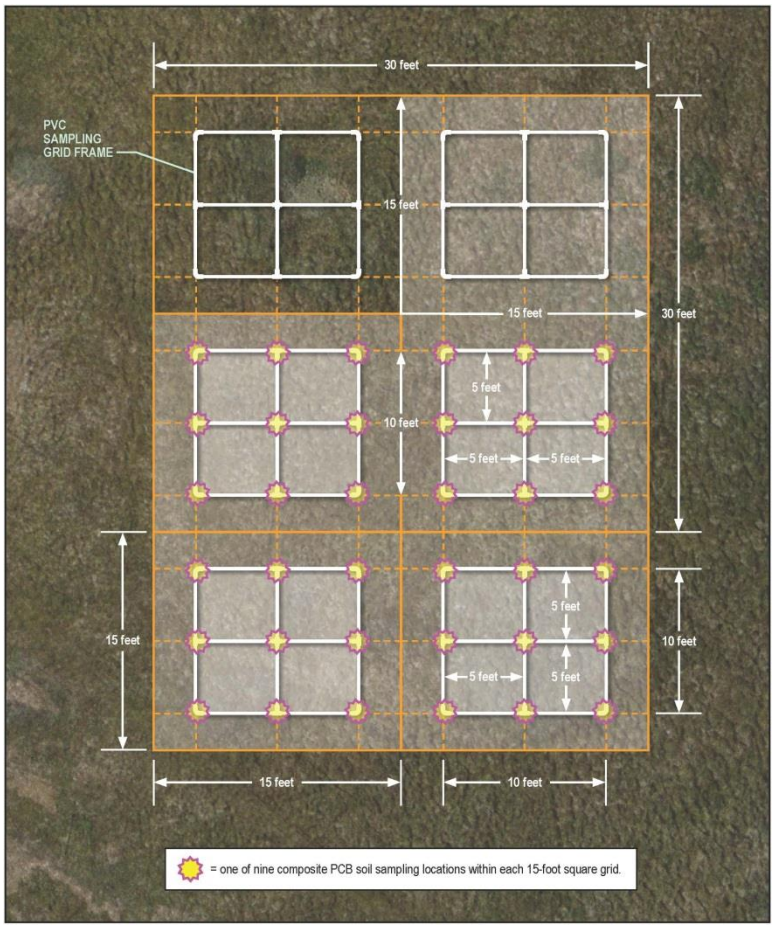


Figure 5. PVC sampling template used to collect composite soil samples from each 15′ x 15′ grid square.

Laboratory analytical results were used to determine how the soil was handled in the field:

- If PCB analytical results were <1 mg/kg the grid cell was not excavated.
- If PCB analytical results were >1 mg/kg < 10 mg/kg then excavate a 6" lift.
- If PCB analytical results were >10 mg/kg < 25 mg/kg then excavate a 12" lift.
- If PCB analytical results were >25 mg/kg < 50 mg/kg then excavate up to a 24" lift.
- If PCB analytical results were >50 mg/kg then the grid was not excavated.

Soil with PCB content in excess of 50 mg/kg is controlled under the Toxic Substances Control Act (TSCA) and is subject to additional restrictions on storage and transportation which was outside the scope of this project. Where the PCB laboratory analysis of a composited soil sample exceeded 50 mg/kg, the grid square was fenced off to limit access and labelled with caution warnings as shown in Figure 6. It is anticipated that future remediation work at Port Heiden RRS will address these PCB TSCA soils.

Figure 6. Section of CSR2 with soil containing in excess of 50 mg/kg PCB. The area was fenced off and a warning label posted to limit access.

Soil samples were sent to SGS for analysis. SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of their Quality Assurance Plan (QAP), which outlines this program, is available on request. Their laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103).

3.6 Treatment Water Sampling

In 2011, standing water was removed from the Port Heiden landfill and treated to remove PCB and POL contamination. Confirmation water samples were collected in accordance with the protocol presented in the *Draft Field Sampling Guidance* (ADEC) and prepared for shipment to the laboratory. Samples were analyzed for Total Aromatic Hydrocarbons (TAH) using EPA Method 602/604 for purgeable aromatics, for Total Aqueous Hydrocarbons (TAqH) using EPA Method 625 for polyaromatic hydrocarbons (PAH) and Method SW8082A for PCBs.

3.7 Field Documentation.

Notes collected during field activities were entered in the project logbook and/or into field data sheets. The portions of the logbook and field forms that were associated with the field events described in this report are presented in Appendix B, which is provided as an electronic attachment.

3.8 Field Modifications to Work Plan.

The NRD area was planned for excavation by the CA in 2012, however, that area was also part of the road corridor which was within a scope of work for Jacobs Engineering under a separate contract. Therefore the NRD area was sampled and excavated by Jacobs. The workplan included a tentative plan to excavate soil contaminated by POLs and PCE in the BLO/SSO area and place it into biopiles, however, the PCB soil characterization and excavation work continued until the end of the field season and the POL/PCE work was not started in 2012.

4 Results and Findings.

Plate 1 (provided on disc) shows the final grids at the end of 2012 for the CSR2, BLO/SSO, and WTH areas. The extent of the PCB contamination resulted in one large PCB contaminated area with no separation between grids for the AOCs. Each grid is numbered and the level of contamination designated by color. Yellow indicates the sample results were below 1 mg/kg, orange indicates the results were greater than 1 mg/kg and less than 50 mg/kg, and red grids indicate the results were 50 mg/kg or greater. In addition, there is a table on the figure showing the analytical results remaining above the clean-up level identified by AOC and grid number.

Plate 2 (provided on disc) shows the same grids as Plate 1 and includes an overlay from the Weston 2009 field effort that indicates areas that were considered to have high levels of PCBs based on field screening and sampling results. Those areas were covered with 1 foot of clean fill material at the end of the 2009 field season and therefore samples collected in those areas by the CA in 2012 were likely from the clean cover fill. The CA did not remove clean fill material in 2012 to test the soil underneath it. Future work should include testing of soil approximately 1 foot below the ground surface in those areas.

The following sections describe the work completed in each AOC.

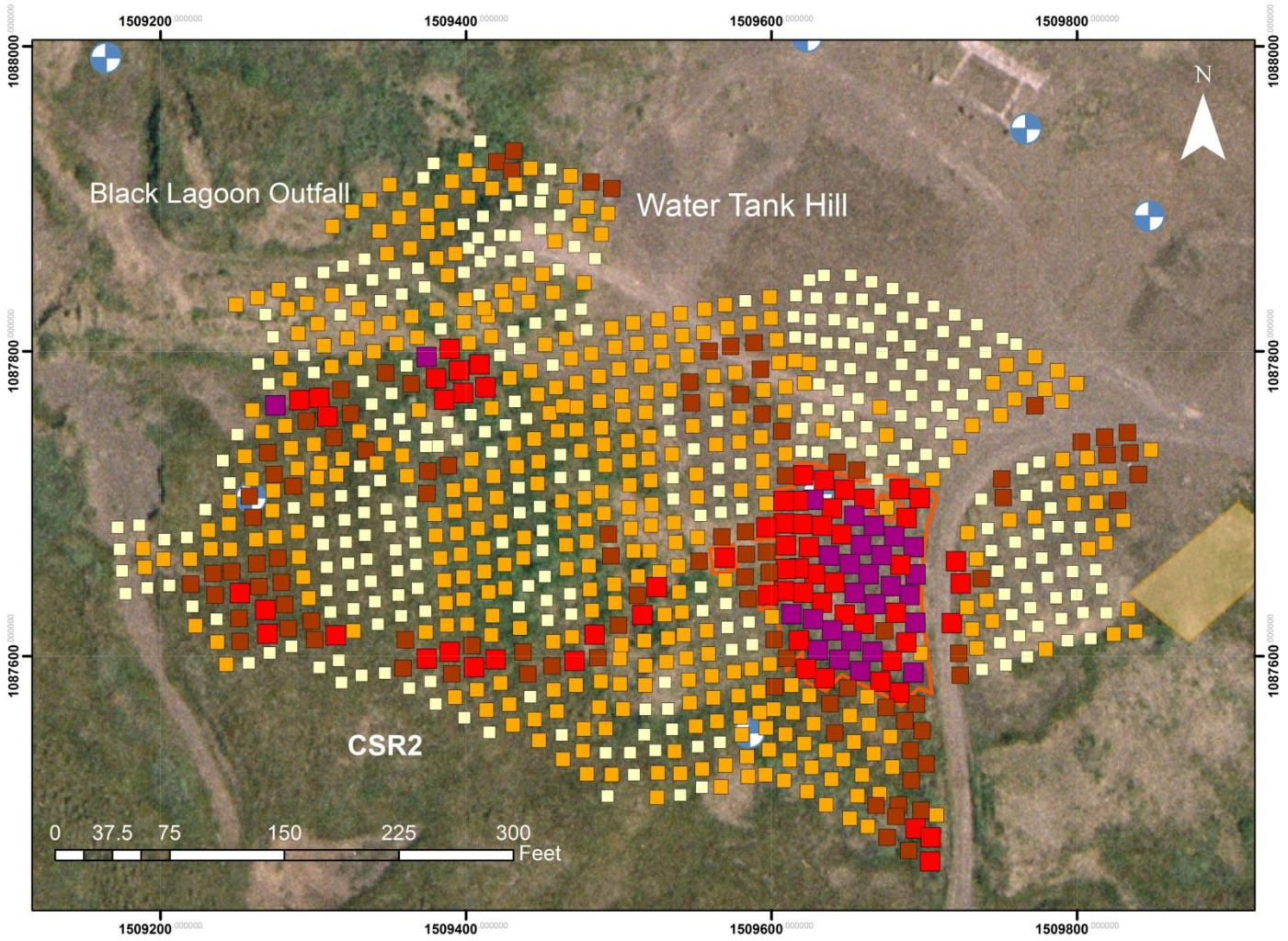
4.1 CSR2 Excavation Area.

The CSR2 area extends south and west of the access road, as shown in Figure 7 and was being extended as additional PCB-contaminated soil is characterized. It includes the area previously referred to as CSR1 and borders BLO and the WTH area to the north.

The surface of CSR2 was laid out with 15' x 15' grid squares beginning June 21st, 2012 and composite soil samples collected from each square as described in Section 3.5. Excavation of PCB-contaminated soil from a grid square was based on laboratory results.

Figure 7 through Figure 9 shows laboratory concentrations after each lift was excavated during the 2012 field season. Figure 10 shows the final disposition of CSR2 at the end of the field season. Red squares show grid squares that tested above 50 mg/kg PCB which were not excavated and were instead fenced off. There are several clusters of squares showing high concentrations of PCB's, which appear to continue westwards into part of the site that was not characterized. The northeast sector of CSR2 shows surface soil that is under 1mg/kg PCB.

Over the course of the 2012 season, 680 grid squares were surveyed and sampled. Analytical data for each grid square within the CSR2 excavation area is included in Table 7. Approximately 2,569 yds^3 of PCB contaminated soil were removed from CSR2 and transported to cells 1, 2 and 3.



Soil PCB Analysis

- < 1 mg/kg
- 1 – 10 mg/kg
- 10 – 50 mg/kg
- 50 – 500 mg/kg
- > 500 mg/kg

- GW monitoring well
- Fence
- PCB soil stockpiles

Figure 7. CSR2 excavation area showing initial grid PCB values.

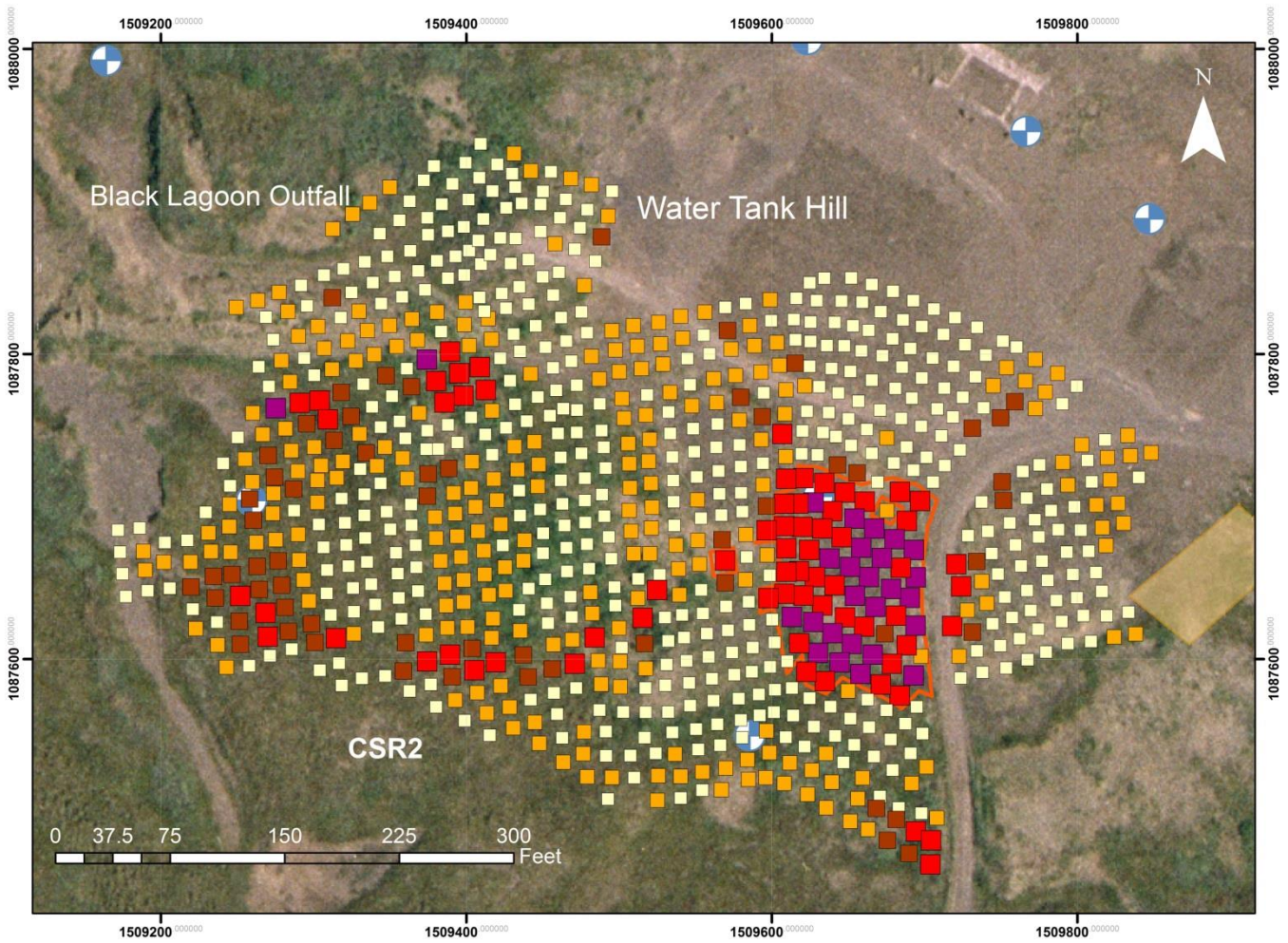
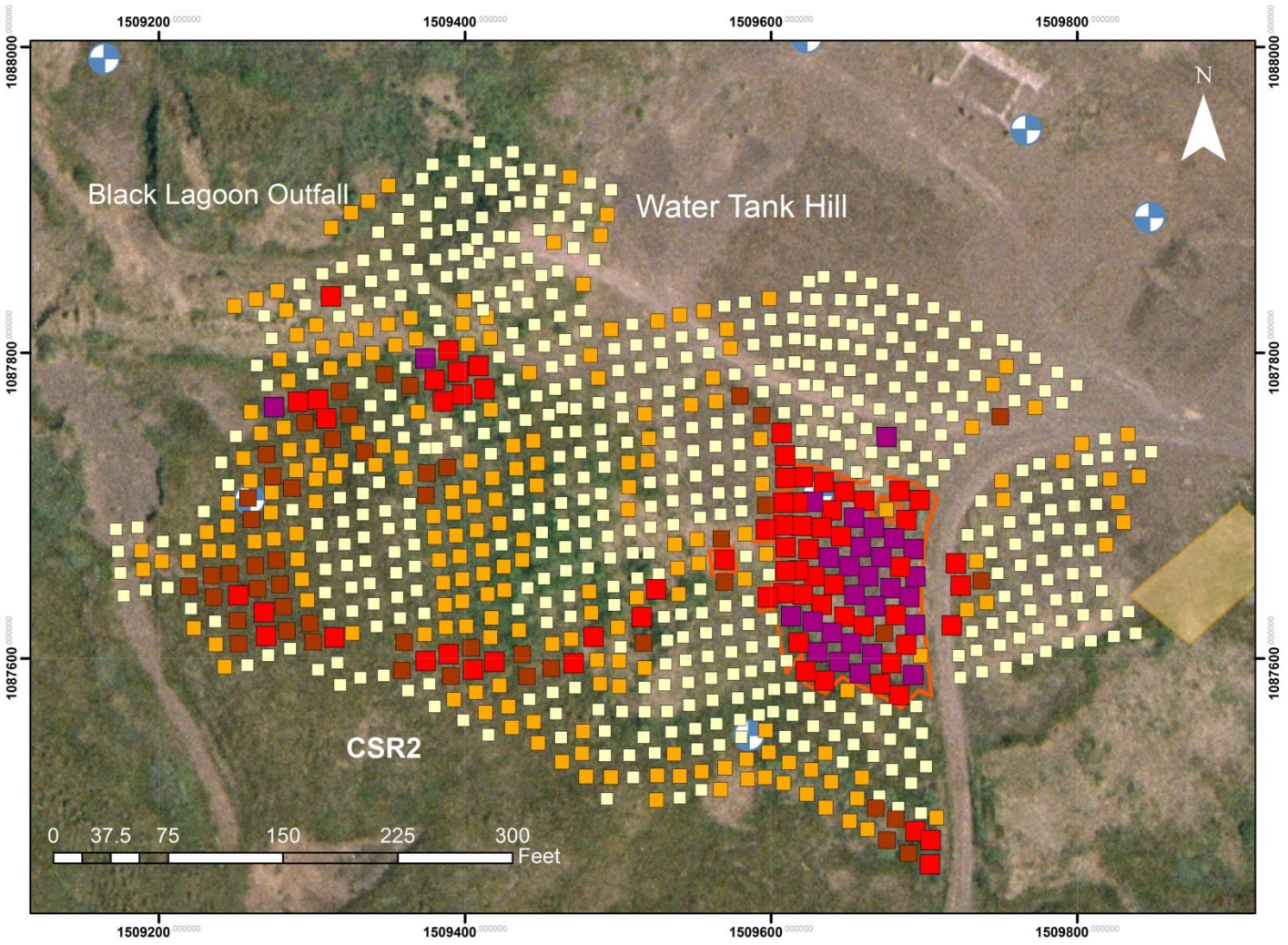


Figure 8. CSR2 excavation area showing grid PCB values after first excavation lift .

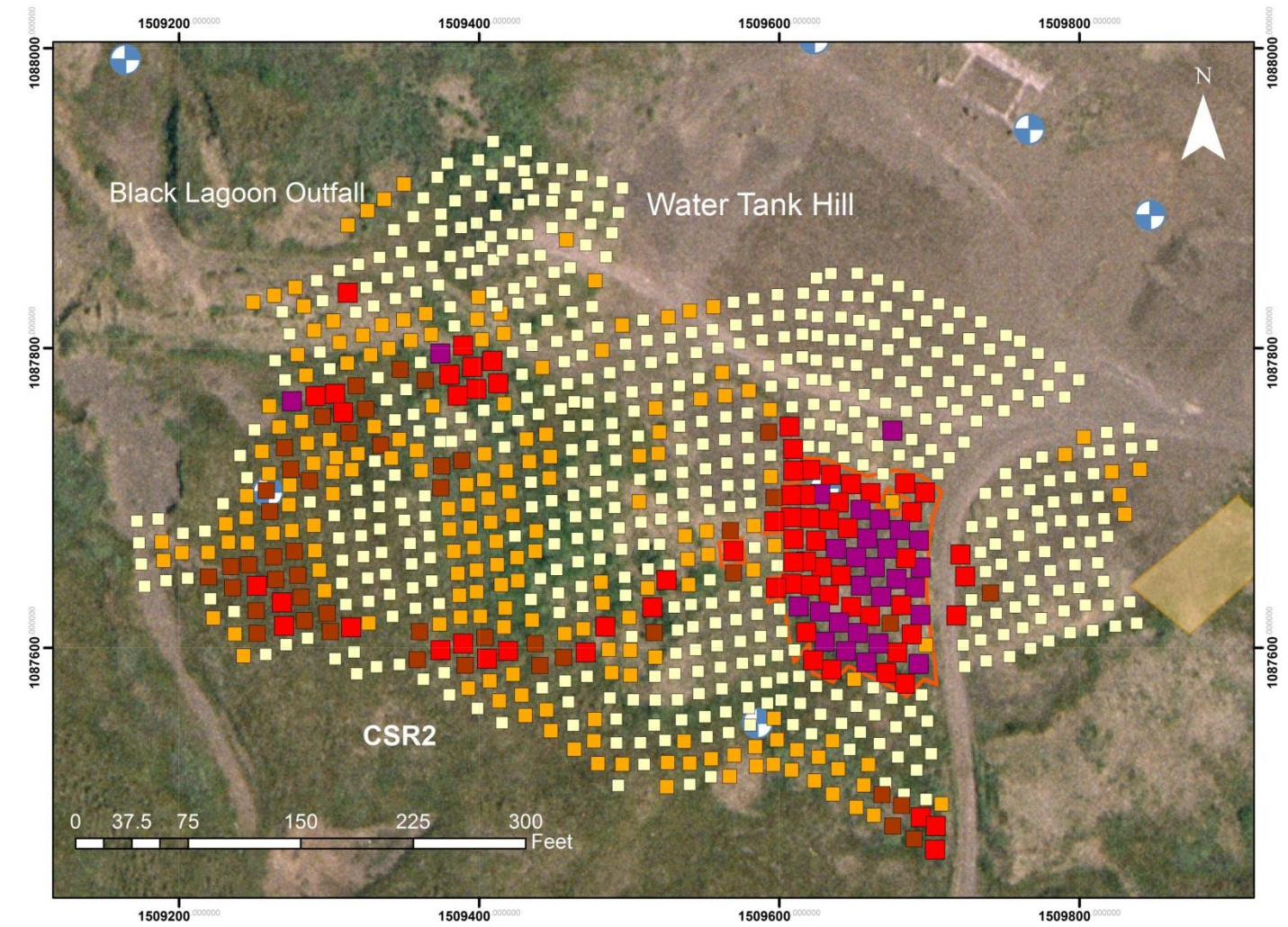


Soil PCB Analysis

- < 1 mg/kg
- 1 – 10 mg/kg
- 10 – 50 mg/kg
- 50 – 500 mg/kg
- > 500 mg/kg

- GW monitoring well
- Fence
- PCB soil stockpiles

Figure 9. CSR2 excavation area showing grid PCB values after second excavation lift.



Soil PCB Analysis

- < 1 mg/kg
- 1 – 10 mg/kg
- 10 – 50 mg/kg
- 50 – 500 mg/kg
- > 500 mg/kg

- GW monitoring well
- Fence
- PCB soil stockpiles

Figure 10. CSR2 excavation area showing final grid PCB values.

Table 7. Laboratory data showing PCB analysis for successive soil lifts within CSR2.

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G114	1087779	1509800	4.49	0.5	0.366						
CSR2-G115	1087787	1509787	3.55	0.5	1.46	0.5	0.12				
CSR2-G116	1087797	1509772	2.08	0.5	1.42	0.5	0.357				
CSR2-G117	1087805	1509760	0.683								
CSR2-G118	1087809	1509751	0.299								
CSR2-G119	1087818	1509734	0.0381J								
CSR2-G120	1087824	1509720	0.0558								
CSR2-G121	1087829	1509706	0.0614								
CSR2-G122	1087835	1509693	0.0319J								
CSR2-G123	1087841	1509679	0.0658								
CSR2-G124	1087846	1509665	0.0432J								
CSR2-G125	1087850	1509652	0.0433J								
CSR2-G126	1087850	1509634	.0562J								
CSR2-G127	1087847	1509625	0.0584								
CSR2-G128	1087767	1509790	9.24	0.5	0.329						
CSR2-G128A	1087775	1509779	4.45	0.5	1.77	0.5	0.364				
CSR2-G129	1087782	1509766	2.09	0.5	7.64	0.5	0.322				
CSR2-G130	1087791	1509754	2.39	0.5	5.71	0.5	2.3	0.5	1.27	0.5	.040 J
CSR2-G131	1087799	1509740	0.414								
CSR2-G132	1087806	1509727	0.0829								
CSR2-G133	1087813	1509712	0.0689								
CSR2-G134	1087818	1509698	0.0454J								
CSR2-G135	1087822	1509686	.0255J								
CSR2-G136	1087828	1509671	.0398J								
CSR2-G137	1087834	1509659	.0273J								
CSR2-G138	1087835	1509646	0.0656								
CSR2-G139	1087835	1509629	0.158								
CSR2-G140	1087837	1509616	0.07								
CSR2-G141	1087836	1509599	1.49	0.5	7.85	0.5	9.83	0.5	0.0326		

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G142	1087833	1509583	0.688								
CSR2-G143	1087831	1509570	1.44	0.5	0.968						
CSR2-G144	1087827	1509556	4.66	0.5	5.76	0.5	2.36	0.5			
CSR2-G145	1087825	1509540	5.96	0.5	2.66	0.5	1.07	0.5			
CSR2-G146	1087821	1509526	2.3	0.5	2.31	0.5	1.42	0.5			
CSR2-G147	1087819	1509509	2.16	0.5	2.32	0.5	0.73				
CSR2-G148	1087815	1509495	2.43	0.5	7.22	0.5	2.04	0.5	2.99		
CSR2-G149	1087764	1509773	22.4	1	5.81	0.5	3.45	0.5	4.31	0.5	0.153
CSR2-G150	1087769	1509759	4.74	0.5	36	2	0.725				
CSR2-G151	1087779	1509745	2.03	0.5	1.44	0.5	3.97	0.5	1.56	0.5	0.597
CSR2-G152	1087785	1509733	0.398								
CSR2-G153	1087792	1509719	0.163								
CSR2-G154	1087797	1509705	.0657J								
CSR2-G155	1087804	1509691	.0527J								
CSR2-G156	1087810	1509679	.0349J								
CSR2-G157	1087816	1509663	0.0845								
CSR2-G158	1087818	1509653	0.0638								
CSR2-G159	1087821	1509641	.0225J								
CSR2-G160	1087821	1509625	0.127								
CSR2-G161	1087823	1509615	0.198								
CSR2-G162	1087822	1509600	1.63	0.5	0.525						
CSR2-G163	1087819	1509586	4.46	0.5	4.32	0.5	0.629				
CSR2-G164	1087815	1509571	6.15	0.5	15.2	1	2.19	0.5	2.98	0.5	0.487
CSR2-G165	1087812	1509555	9.02	0.5	0.622						
CSR2-G166	1087810	1509542	6.69	0.5	1.54	0.5	0.289				
CSR2-G167	1087807	1509527	5.42	0.5	1.95	0.5	0.125				
CSR2-G168	1087805	1509512	7.05	0.5	1.7	0.5	0.141				
CSR2-G169	1087803	1509498	6.03	0.5	6.48	0.5	0.158				
CSR2-G170	1087758	1509750	2.18	0.5	12.7	1	20.7	1	0.0318U		
CSR2-G171	1087765	1509739	.0346U								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G172	1087772	1509725	0.0782								
CSR2-G173	1087778	1509713	0.112								
CSR2-G174	1087784	1509698	0.4								
CSR2-G175	1087791	1509685	.0361J								
CSR2-G176	1087799	1509672	0.0658								
CSR2-G177	1087802	1509659	0.542								
CSR2-G178	1087805	1509647	0.619								
CSR2-G179	1087806	1509636	0.649								
CSR2-G180	1087808	1509625	0.202								
CSR2-G181	1087809	1509616	.0275J								
CSR2-G182	1087808	1509603	2.36	0.5	1.96	0.5	0.178				
CSR2-G183	1087805	1509589	12.2	1	3.17	0.5	0.623				
CSR2-G184	1087803	1509573	14.2	1	1.99	0.5	2.27	0.5	<.0334 U		
CSR2-G185	1087800	1509559	15.7	1	0.402						
CSR2-G186	1087797	1509545	5.2	0.5	0.031						
CSR2-G187	1087793	1509529	5.48	0.5	1.35	0.5	0.0332				
CSR2-G188	1087790	1509515	6.05	0.5	1.63	0.5	0.245				
CSR2-G189	1087788	1509500	5.25	0.5	1.17	0.5	0.733				
CSR2-G190	1087751	1509731	7.11	0.5	40.7	2	2.78	0.5	0.0487J		
CSR2-G191	1087759	1509719	.033U								
CSR2-G192	1087764	1509708	.033U								
CSR2-G193	1087771	1509692	0.338								
CSR2-G194	1087778	1509681	.034U								
CSR2-G195	1087783	1509666	0.929								
CSR2-G196	1087789	1509651	0.239								
CSR2-G197	1087791	1509639	0.165								
CSR2-G198	1087792	1509625	3.65	0.5	0.34						
CSR2-G199	1087794	1509615	2.58	0.5	16.1	1	0.162				
CSR2-G200	1087793	1509605	4.48	0.5	3.75	0.5	0.0352				
CSR2-G201	1087788	1509593	31	2	8.93	0.5	0.0805				

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G202	1087786	1509576	5.52	0.5	1.64	0.5	0.698				
CSR2-G203	1087784	1509562	4.32	0.5	1.01	0.5	1.46				
CSR2-G204	1087780	1509546	18.9	1	0.179						
CSR2-G205	1087775	1509533	5.81	0.5	9.59	0.5	0.815				
CSR2-G206	1087773	1509518	8.31	0.5	0.892		0.996				
CSR2-G207	1087771	1509502	5.37	0.5	1.7	0.5	0.709				
CSR2-G208	1087737	1509723	2.11	0.5	0.284						
CSR2-G209	1087746	1509711	.033U								
CSR2-G210	1087753	1509698	.033U								
CSR2-G211	1087758	1509685	.033U								
CSR2-G212	1087763	1509671	1.03	0.5	.033U						
CSR2-G213	1087769	1509657	0.115								
CSR2-G214	1087774	1509644	0.12								
CSR2-G215	1087779	1509631	0.631								
CSR2-G216	1087779	1509622	1.07	0.5	4.88	0.5	0.156				
CSR2-G217	1087776	1509609	2.98	0.5	2.42	0.5	0.034				
CSR2-G218	1087775	1509595	7.11	0.5			0.0916				
CSR2-G219	1087772	1509580	27.8	2	20.9	1	18.1		5.21		
CSR2-G220	1087768	1509564	2.74	0.5	9.22	0.5	9.43				
CSR2-G221	1087766	1509548	13	1	1.18	0.5					
CSR2-G222	1087762	1509532	0.635								
CSR2-G223	1087760	1509518	6.05	0.5	4.43	0.5	4.06	0.5	1.69		
CSR2-G224	1087758	1509503	7.66	0.5	4.66	0.5	0.983				
CSR2-G225	1087727	1509713	0.0935		0.703						
CSR2-G226	1087732	1509701	.033U								
CSR2-G227	1087739	1509688	.033U								
CSR2-G228	1087745	1509675	2.23	0.5	2.01	0.5	634				
CSR2-G229	1087751	1509662	0.0171J								
CSR2-G230	1087758	1509650	0.0184J								
CSR2-G231	1087762	1509637	0.0696								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G232	1087763	1509623	0.101								
CSR2-G233	1087761	1509609	7.2	0.5	6.06	0.5	0.0795				
CSR2-G234	1087759	1509594	10.3	0.5	16.8	1	10.9	1	6.35		
CSR2-G235	1087757	1509579	1.35	0.5	1.86	0.5	0.274				
CSR2-G236	1087754	1509565	0.218								
CSR2-G237	1087751	1509549	1.11	0.5	0.0348U						
CSR2-G238	1087748	1509534	0.535								
CSR2-G239	1087744	1509520	2.13	0.5	2.17	0.5	1.92	0.5	2.25		
CSR2-G240	1087741	1509506	6	0.5	2.44	0.5	0.615				
CSR2-G241	1087716	1509706	6.64	0.5	0.234						
CSR2-G242	1087724	1509693	.0295J								
CSR2-G243	1087729	1509680	0.136								
CSR2-G244	1087735	1509665	0.243								
CSR2-G245	1087740	1509652	0.142								
CSR2-G246	1087746	1509642	0.286								
CSR2-G247	1087749	1509634	1.08	0.5	0.252						
CSR2-G248	1087750	1509620	0.0984								
CSR2-G249	1087748	1509607	11.2	1	52.4						
CSR2-G250	1087744	1509593	3.81	0.5	3.78	0.5	1.62	0.5	43.3		
CSR2-G251	1087740	1509579	1.27	0.5	0.315						
CSR2-G252	1087739	1509564	1.06	0.5	0.555						
CSR2-G253	1087736	1509549	0.581								
CSR2-G254	1087733	1509535	1.58	0.5	0.724						
CSR2-G255	1087730	1509519	2.71	0.5	4.38	0.5	1.38	0.5	4.88		
CSR2-G256	1087728	1509507	3.62	0.5	1.59	0.5	1.57	0.5			
CSR2-G257	1087704	1509697	**153**								
CSR2-G258	1087710	1509684	**101**								
CSR2-G259	1087716	1509669	.034U								
CSR2-G260	1087722	1509656	33	2	22.2	1	0.0396				
CSR2-G261	1087727	1509643	22.1	1	25	2	0.715				

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G262	1087734	1509630	0.773								
CSR2-G263	1087735	1509620	0.495								
CSR2-G264	1087733	1509609	2.62	0.5	7.99	0.5	**113**				
CSR2-G265	1087729	1509594	2.1	0.5	0.595						
CSR2-G266	1087726	1509580	0.611								
CSR2-G267	1087723	1509565	0.219								
CSR2-G268	1087719	1509551	2.69	0.5	0.473						
CSR2-G269	1087717	1509535	1	0.5	0.347						
CSR2-G270	1087715	1509521	3.93	0.5	4.29		0.992				
CSR2-G271	1087712	1509507	7.48	1	4.93		2.67	0.5	0.868		
CSR2-G272	1087691	1509688	**188**								
CSR2-G273	1087697	1509675	2.47								
CSR2-G274	1087703	1509661	**63.9**								
CSR2-G275	1087709	1509648	**160**								
CSR2-G276	1087716	1509634	**132**								
CSR2-G277	1087719	1509621	**115**								
CSR2-G278	1087718	1509609	48.2	2	**284**						
CSR2-G279	1087714	1509594	1.38	0.5	4.77						
CSR2-G280	1087709	1509580	1.89	0.5	0.382						
CSR2-G281	1087708	1509566	0.534								
CSR2-G282	1087704	1509551	1.15	0.5	1.01	0.5	0.524				
CSR2-G283	1087703	1509536	0.262								
CSR2-G284	1087700	1509522	1.81	0.5	4.22	0.5	0.69				
CSR2-G285	1087698	1509507	2.1	0.5	2.49	0.5	2.8	0.5	1.98		
CSR2-G286	1087672	1509693	**1,610**								
CSR2-G287	1087679	1509680	**2,070**								
CSR2-G288	1087686	1509667	**1,080**								
CSR2-G289	1087692	1509654	**1,170**								
CSR2-G290	1087697	1509640	**211**								
CSR2-G291	1087703	1509627	**940**								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G292	1087702	1509617	**195**								
CSR2-G293	1087702	1509608	**137**								
CSR2-G294	1087700	1509597	5	0.5	33.5						
CSR2-G295	1087697	1509581	0.466								
CSR2-G296	1087694	1509567	0.28								
CSR2-G297	1087692	1509554	0.722								
CSR2-G298	1087688	1509536	1.3		0.4						
CSR2-G299	1087686	1509521	1.49	0.5	9.09	0.5	0.175				
CSR2-G300	1087684	1509508	7.74	0.5	6.01	0.5	0.273				
CSR2-G301	1087654	1509694	**4,880**								
CSR2-G302	1087660	1509684	**312**								
CSR2-G303	1087666	1509672	**1,570**								
CSR2-G304	1087673	1509658	**609**								
CSR2-G305	1087680	1509646	**128**								
CSR2-G306	1087686	1509633	**424**								
CSR2-G307	1087687	1509620	**74.8**								
CSR2-G308	1087687	1509608	**93.7**								
CSR2-G309	1087685	1509597	**84.4**								
CSR2-G310	1087682	1509583	33.2	2	5.78						
CSR2-G311	1087678	1509568	13.2	1	12.4						
CSR2-G312	1087678	1509552	3.23	0.5	1.92						
CSR2-G313	1087675	1509537	2.42	0.5	2.3						
CSR2-G314	1087669	1509520	9.06	0.5	1.02	0.5	0.18				
CSR2-G315	1087640	1509690	**5,340**								
CSR2-G316	1087646	1509678	**8,170**								
CSR2-G317	1087654	1509663	**13,600**								
CSR2-G318	1087660	1509651	**3,530**								
CSR2-G319	1087666	1509638	**1,300**								
CSR2-G320	1087672	1509624	**244**								
CSR2-G321	1087673	1509609	**73.1**								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G322	1087668	1509597	47.6	2	1.33						
CSR2-G323	1087667	1509584	10.9	1	0.13						
CSR2-G324	1087665	1509569	**467**								
CSR2-G325	1087662	1509553	11.7	1	1.8						
CSR2-G326	1087659	1509539	5.31	0.5	1.7						
CSR2-G327	1087655	1509527	1.97	0.5	0.285						
CSR2-G328	1087622	1509694	**631**								
CSR2-G329	1087628	1509681	**489**								
CSR2-G330	1087634	1509668	**681**								
CSR2-G331	1087642	1509654	**518**								
CSR2-G332	1087648	1509641	**236**								
CSR2-G333	1087654	1509628	**298**								
CSR2-G334	1087658	1509618	**52.5**								
CSR2-G335	1087657	1509610	**52.4**								
CSR2-G336			11.9	1	0.29						
CSR2-G337			23.1	2	2.84						
CSR2-G338			2.17	0.5	20.4						
CSR2-G339			0.83								
CSR2-G340			6.97								
CSR2-G341	1087602	1509698	7.32								
CSR2-G342	1087609	1509688	**69.7**								
CSR2-G343	1087617	1509674	27.8								
CSR2-G344	1087621	1509660	**320**								
CSR2-G345	1087627	1509648	**262**								
CSR2-G346	1087635	1509633	**318**								
CSR2-G347	1087642	1509621	**129**								
CSR2-G348	1087643	1509608	**155**								
CSR2-G349	1087640	1509598	**110**								
CSR2-G350			31.7	2	0.042						
CSR2-G351			0.268								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G352			.0352J								
CSR2-G353			4.33	0.5	0.179						
CSR2-G354	1087589	1509693	**595**								
CSR2-G355	1087597	1509678	**460**								
CSR2-G356	1087603	1509666	**1,120**								
CSR2-G357	1087610	1509652	**2,120**								
CSR2-G358	1087617	1509640	**1,440**								
CSR2-G359	1087624	1509627	**1,480**								
CSR2-G360	1087628	1509613	**1,310**								
CSR2-G361			6.85	0.5	0.074						
CSR2-G362			0.523								
CSR2-G363			0.621								
CSR2-G364			1.13	0.5	.0320J						
CSR2-G365			1.92	0.5	0.0338U						
CSR2-G366	1087569	1509695	42.3	2	0.424						
CSR2-G367	1087576	1509684	**76.3**								
CSR2-G368	1087583	1509671	**75.9**								
CSR2-G369	1087590	1509658	**685**								
CSR2-G370	1087598	1509644	**732**								
CSR2-G371	1087604	1509630	**732**								
CSR2-G372	1087610	1509618	**79.1**								
CSR2-G373	1087611	1509602	43.9	2	0.0378U						
CSR2-G374	1087608	1509588	0.601								
CSR2-G375	1087604	1509574	0.283								
CSR2-G376	1087601	1509559	1.81	0.5	0.069						
CSR2-G377	1087599	1509544	2.01	0.5	0.143						
CSR2-G378	1087551	1509699	36	2	0.864						
CSR2-G379	1087558	1509687	27.1	2	.0366 U						
CSR2-G380	1087566	1509675	22.5	1	.0366 U						
CSR2-G381	1087573	1509663	5.55	0.5	0.168						

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G382	1087579	1509650	14.5	1	7.87	0.5					
CSR2-G383	1087586	1509635	**131**								
CSR2-G384	1087592	1509623	**268**								
CSR2-G385	1087599	1509610	23.3	2	.042 U						
CSR2-G386	1087595	1509599	9.51	0.5	0.312						
CSR2-G387	1087592	1509587	1.65	0.5	0.884						
CSR2-G388	1087590	1509575	3.2	0.5	0.246						
CSR2-G389	1087587	1509561	1.62	0.5	0.066						
CSR2-G390	1087584	1509546	2.04	0.5	0.275						
CSR2-G391	1087529	1509701	45.8	2	2.43	0.5	0.111				
CSR2-G392	1087538	1509691	21.4	1	0.108						
CSR2-G393	1087547	1509678	7.91	0.5	0.088						
CSR2-G394	1087555	1509664	1.2	0.5	0.217						
CSR2-G395	1087561	1509651	2.15	0.5	0.615						
CSR2-G396	1087569	1509638	11.1	1	.0418J						
CSR2-G397	1087574	1509625	9.74	0.5	0.065						
CSR2-G398	1087581	1509613	2.46	0.5	0.077						
CSR2-G399	1087580	1509602	10.1	1	0.062						
CSR2-G400	1087577	1509592	2.04	0.5	0.285						
CSR2-G401	1087574	1509578	5.43	0.5	0.153						
CSR2-G402	1087573	1509562	2.14	0.5	0.106						
CSR2-G403	1087569	1509547	1.42	0.5	.0460J						
CSR2-G404	1087519	1509692	31.5	2	9.6	0.5	0.307				
CSR2-G405	1087527	1509679	6.66	0.5	0.088						
CSR2-G406	1087536	1509667	5.61	0.5	0.129						
CSR2-G407	1087544	1509654	3.31	0.5	0.442						
CSR2-G408	1087550	1509641	10.3	1	0.779						
CSR2-G409	1087556	1509628	2.16	0.5	0.104						
CSR2-G410	1087563	1509614	6.1	0.5	.0475J						
CSR2-G411	1087565	1509601	1.58	0.5	.0569J						

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G412	1087563	1509592	4.08	0.5	0.206						
CSR2-G413	1087560	1509580	3.58	0.5	.0513J						
CSR2-G414	1087557	1509564	3.62	0.5	.0258J						
CSR2-G415	1087554	1509550	2.24	0.5	.0514J						
CSR2-G416	1087588	1509724	16.7	1	0.549						
CSR2-G417	1087602	1509723	16.2	1	1.89	0.5	0.845				
CSR2-G418	1087622	1509718	**71.4**								
CSR2-G419	1087591	1509738	0.959								
CSR2-G420	1087605	1509734	4.34	0.5	0.057						
CSR2-G421	1087618	1509731	1.88	0.5	11.6	0.5	0.47				
CSR2-G422	1087632	1509728	7.3	0.5	6.57	0.5	1.81	0.5	0.772		
CSR2-G423	1087648	1509724	**108**								
CSR2-G424	1087662	1509721	**137**								
CSR2-G425	1087594	1509753	0.587								
CSR2-G426	1087609	1509750	0.674								
CSR2-G427	1087623	1509745	2.4	0.5	0.132						
CSR2-G428	1087637	1509741	1.25	0.5	7.9	0.5	3.63	0.5	19		
CSR2-G429	1087651	1509738	11	1	7.65	1	31.5	2	0.232		
CSR2-G430	1087664	1509734	6.99	0.5	14.1	0.5	7.92	0.5	0.384		
CSR2-G431	1087681	1509728	9.36	0.5	0.069						
CSR2-G432	1087600	1509767	0.303								
CSR2-G433	1087613	1509762	0.0891								
CSR2-G434	1087627	1509757	0.302								
CSR2-G435	1087641	1509753	0.231								
CSR2-G436	1087656	1509748	0.232								
CSR2-G437	1087669	1509744	0.703								
CSR2-G438	1087684	1509742	.0337J								
CSR2-G439	1087703	1509737	0.162								
CSR2-G440	1087605	1509779	9.97	0.5	0.026						
CSR2-G441	1087619	1509774	0.144								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G442	1087632	1509770	0.547								
CSR2-G443	1087645	1509767	0.255								
CSR2-G444	1087661	1509763	0.12								
CSR2-G445	1087675	1509760	0.368								
CSR2-G446	1087689	1509756	1.02	0.5	0.25						
CSR2-G447	1087704	1509752	24.4	2	15.2	1	3.14	0.5	2.67	0.5	0.664
CSR2-G448	1087716	1509751	28.9	2	36.9	2	3.97	0.5	0.0372		
CSR2-G449	1087610	1509794	0.0764								
CSR2-G450	1087625	1509790	0.0316J								
CSR2-G451	1087638	1509786	0.0371J								
CSR2-G452	1087651	1509781	0.0662								
CSR2-G453	1087664	1509777	0.0638								
CSR2-G454	1087680	1509775	0.51								
CSR2-G455	1087691	1509772	1.8	0.5	0.132						
CSR2-G456	1087706	1509767	0.22								
CSR2-G457	1087723	1509764	0.334								
CSR2-G458	1087612	1509809	0.227								
CSR2-G459	1087629	1509804	.0310J								
CSR2-G460	1087640	1509800	.0532J								
CSR2-G461	1087655	1509797	0.372								
CSR2-G462	1087670	1509793	0.182								
CSR2-G463	1087685	1509788	0.85								
CSR2-G464	1087697	1509783	0.76								
CSR2-G465	1087712	1509780	1	0.5	0.793						
CSR2-G466	1087645	1509525	**90.5**								
CSR2-G467	1087627	1509530	4.73	0.5	0.226						
CSR2-G468	1087612	1509532	1.03	0.5	0.068						
CSR2-G469	1087596	1509531	1.33	0.5	.0504J						
CSR2-G470	1087583	1509530	0.68								
CSR2-G471	1087565	1509532	0.751								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G472	1087552	1509535	0.554								
CSR2-G473	1087548	1509517	0.692								
CSR2-G474	1087565	1509517	0.899								
CSR2-G475	1087581	1509517	1.43	0.5	0.169						
CSR2-G476	1087594	1509517	1.85	0.5	1.51						
CSR2-G477	1087610	1509517	3.72	0.5	18.3						
CSR2-G478	1087627	1509515	**71.9**								
CSR2-G479	1087640	1509512	19.2	1	2.64						
CSR2-G480	1087653	1509513	3.83	0.5	0.468						
CSR2-G481	1087669	1509510	6.88	0.5	1.56	0.5	0.112				
CSR2-G482	1087565	1509503	1.5	0.5	0.35						
CSR2-G483	1087582	1509501	1.64	0.5	1.61						
CSR2-G484	1087598	1509501	3.27	0.5	1.21						
CSR2-G485	1087607	1509502	1.97	0.5	0.77						
CSR2-G486	1087620	1509500	45.8	2	4.08						
CSR2-G487	1087635	1509498	1.77	0.5	0.193						
CSR2-G488	1087647	1509497	3.55	0.5	0.596						
CSR2-G489	1087666	1509495	12.9	1	0.307						
CSR2-G490	1087680	1509493	13.4	0.5	0.56						
CSR2-G491	1087694	1509490	3.33	0.5	0.311						
CSR2-G492	1087708	1509489	3.63	0.5	0.112						
CSR2-G493	1087725	1509491	1.15	0.5	0.107						
CSR2-G494	1087739	1509490	2	0.5	0.164						
CSR2-G495	1087750	1509489	3.5	0.5	0.215						
CSR2-G495A	1087767	1509487	3.08	0.5	0.938						
CSR2-G496	1087749	1509472	3.37	0.5	0.474						
CSR2-G496A	1087763	1509473	3.75	0.5	0.572						
CSR2-G497	1087735	1509475	2.57	0.5	0.196						
CSR2-G498	1087719	1509478	0.835								
CSR2-G499	1087704	1509478	1.1	0.5	0.15						

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G500	1087690	1509478	3.22	0.5	0.091						
CSR2-G501	1087675	1509479	2.48	0.5	0.0405 U						
CSR2-G502	1087659	1509480	3.37	0.5	0.882						
CSR2-G503	1087644	1509481	3.61	0.5	1.66						
CSR2-G504	1087630	1509482	1.71	0.5	2.36						
CSR2-G505	1087614	1509484	**109**								
CSR2-G506	1087599	1509486	14.9	1	1.04						
CSR2-G507	1087584	1509488	3.92	0.5	1.33						
CSR2-G508	1087567	1509487	4.8	0.5	0.317						
CSR2-G509	1087581	1509472	3.67	0.5	0.503						
CSR2-G510	1087597	1509471	**74.7**								
CSR2-G511	1087613	1509470	4.09								
CSR2-G512	1087628	1509469	0.963								
CSR2-G513	1087641	1509468	0.991								
CSR2-G514	1087657	1509466	1.93	0.5	0.558						
CSR2-G515	1087673	1509466	1.05	0.5	0.166						
CSR2-G516	1087688	1509464	1.11	0.5	0.044						
CSR2-G517	1087702	1509463	1.06	0.5	0.066						
CSR2-G518	1087717	1509462	0.549								
CSR2-G519	1087732	1509462	0.83								
CSR2-G520	1087748	1509460	1.9	0.5	0.363						
CSR2-G520A	1087764	1509464	1.21	0.5	0.263						
CSR2-G521	1087743	1509445	2.4								
CSR2-G522	1087728	1509447	4.3								
CSR2-G523	1087713	1509447	1.08								
CSR2-G524	1087698	1509448	0.606								
CSR2-G525	1087682	1509450	0.751								
CSR2-G526	1087669	1509450	0.716								
CSR2-G527	1087652	1509452	0.833								
CSR2-G528	1087637	1509453	0.3								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G529	1087624	1509454	0.52								
CSR2-G530	1087609	1509457	1.53								
CSR2-G531	1087593	1509456	19.4								
CSR2-G532	1087578	1509457	3.6	0.5	0.665						
CSR2-G533	1087603	1509437	46.2								
CSR2-G534	1087618	1509435	1.39								
CSR2-G535	1087632	1509435	0.63								
CSR2-G536	1087646	1509441	0.815								
CSR2-G537	1087665	1509437	1.34								
CSR2-G538	1087678	1509438	1.06								
CSR2-G539	1087694	1509435	0.861								
CSR2-G540	1087711	1509435	0.893								
CSR2-G541	1087724	1509433	1.21								
CSR2-G542	1087739	1509432	3.89								
CSR2-G543	1087734	1509417	0.565								
CSR2-G544	1087718	1509418	1.12								
CSR2-G545	1087704	1509420	1.04								
CSR2-G546	1087689	1509423	2.09								
CSR2-G547	1087675	1509424	0.995								
CSR2-G548	1087660	1509425	2.89								
CSR2-G549	1087645	1509426	1.43								
CSR2-G550	1087614	1509417	1.81								
CSR2-G551	1087627	1509417	2.57								
CSR2-G552	1087642	1509415	1.45								
CSR2-G553	1087655	1509412	1.4								
CSR2-G554	1087671	1509411	1.89								
CSR2-G555	1087684	1509408	2.5								
CSR2-G556	1087700	1509406	3.3								
CSR2-G557	1087712	1509403	2.66								
CSR2-G558	1087730	1509404	2.61								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G559	1087725	1509389	16.3								
CSR2-G560	1087709	1509392	6.52								
CSR2-G561	1087695	1509393	1.64								
CSR2-G562	1087681	1509394	2.1								
CSR2-G563	1087667	1509397	3.05								
CSR2-G564	1087652	1509398	1.35								
CSR2-G565	1087637	1509398	1.12								
CSR2-G566	1087621	1509401	5.31								
CSR2-G567	1087607	1509404	11.4								
CSR2-G568	1087603	1509389	**111**								
CSR2-G569	1087620	1509388	4.55								
CSR2-G570	1087635	1509387	1.11								
CSR2-G571	1087650	1509386	1.16								
CSR2-G572	1087664	1509383	2.08								
CSR2-G573	1087679	1509380	3.91								
CSR2-G574	1087693	1509379	2.9								
CSR2-G575	1087707	1509375	41.7								
CSR2-G576	1087721	1509375	14.3								
CSR2-G577	1087738	1509374	0.262								
CSR2-G578	1087732	1509358	4.12								
CSR2-G579	1087718	1509361	2.68								
CSR2-G580	1087701	1509364	0.714								
CSR2-G581	1087688	1509364	0.807								
CSR2-G582	1087675	1509367	0.587								
CSR2-G583	1087660	1509367	0.558								
CSR2-G584	1087645	1509369	0.763								
CSR2-G585	1087629	1509374	0.698								
CSR2-G586	1087616	1509374	9.3								
CSR2-G587	1087598	1509374	**54.9**								
CSR2-G588	1087592	1509359	10.8								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G589	1087611	1509360	16.7								
CSR2-G590	1087626	1509358	0.927								
CSR2-G591	1087640	1509356	0.679								
CSR2-G592	1087656	1509355	0.713								
CSR2-G593	1087670	1509354	0.691								
CSR2-G594	1087685	1509350	0.171								
CSR2-G595	1087697	1509348	0.232								
CSR2-G596	1087715	1509344	0.721								
CSR2-G596A	1087727	1509342	3.26								
CSR2-G597	1087725	1509331	0.704								
CSR2-G598	1087708	1509333	0.602								
CSR2-G599	1087694	1509333	0.184								
CSR2-G600	1087679	1509334	0.0925								
CSR2-G601	1087664	1509335	0.211								
CSR2-G602	1087649	1509338	0.285								
CSR2-G603	1087636	1509340	0.154								
CSR2-G604	1087621	1509342	0.871								
CSR2-G605	1087617	1509326	8.53								
CSR2-G606	1087631	1509326	0.0968								
CSR2-G607	1087647	1509326	0.166								
CSR2-G608	1087661	1509323	0.17								
CSR2-G609	1087675	1509321	0.506								
CSR2-G610	1087690	1509321	0.74								
CSR2-G611	1087705	1509318	0.382								
CSR2-G612	1087719	1509315	2.8								
CSR2-G613	1087703	1509303	1.99								
CSR2-G614	1087688	1509304	0.949								
CSR2-G615	1087673	1509307	0.298								
CSR2-G616	1087658	1509309	0.134								
CSR2-G617	1087643	1509309	0.457								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G618	1087629	1509311	0.897								
CSR2-G619	1087614	1509315	**54.7**								
CSR2-G620	1087623	1509299	26.6								
CSR2-G621	1087638	1509297	4.87								
CSR2-G622	1087652	1509293	1.63								
CSR2-G623	1087665	1509291	1.76								
CSR2-G624	1087682	1509290	1.2								
CSR2-G625	1087697	1509287	0.781								
CSR2-G626	1087696	1509273	5.67								
CSR2-G627	1087678	1509275	6.72								
CSR2-G628	1087664	1509277	13.6								
CSR2-G629	1087648	1509279	27.3								
CSR2-G630	1087634	1509281	19.8								
CSR2-G631	1087618	1509284	18.5								
CSR2-G632	1087630	1509269	102								
CSR2-G633	1087646	1509264	22.5								
CSR2-G634	1087661	1509263	21.5								
CSR2-G635	1087677	1509262	8.98								
CSR2-G636	1087691	1509261	19.2								
CSR2-G637	1087687	1509245	2.75								
CSR2-G638	1087670	1509246	8.11								
CSR2-G639	1087655	1509247	42.9								
CSR2-G640	1087641	1509252	**87.5**								
CSR2-G641	1087625	1509251	25.2								
CSR2-G642	1087640	1509236	14.4								
CSR2-G643	1087654	1509235	27.8								
CSR2-G644	1087671	1509233	1.1								
CSR2-G645	1087664	1509219	4.5								
CSR2-G646	1087647	1509220	11.2								
CSR2-G647	1087663	1509202	2.16								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G648	1087717	1509302	3.24								
CSR2-G649	1087712	1509287	10.3								
CSR2-G650	1087709	1509274	6.52								
CSR2-G651	1087705	1509258	14.3								
CSR2-G652	1087702	1509245	1.87								
CSR2-G653	1087683	1509231	1.3								
CSR2-G654	1087678	1509217	0.275								
CSR2-G655	1087677	1509203	0.654								
CSR2-G656	1087671	1509189	1.63								
CSR2-G657	1087658	1509190	2.09								
CSR2-G658	1087727	1509775	0.751								
CSR2-G659	1087729	1509790	5.29	0.5	1.82	0.5					
CSR2-G660	1087714	1509794	1.12	0.5	1.84	0.5	0.385				
CSR2-G661	1087700	1509798	4.92	0.5	0.857						
CSR2-G662	1087685	1509802	0.737								
CSR2-G663	1087671	1509807	3.03	0.5	0.471						
CSR2-G664	1087657	1509812	0.864								
CSR2-G665	1087644	1509816	0.141								
CSR2-G666	1087628	1509819	0.029								
CSR2-G667	1087614	1509824	1.98	0.5	1.65	0.5	0.347				
CSR2-G668	1087616	1509838	4.35	0.5	1.32	0.5	0.12				
CSR2-G669	1087631	1509834	1.46	0.5	0.804						
CSR2-G670	1087675	1509819	2.3	0.5	5.76	0.5	2.55	0.5	0.0501		
CSR2-G671	1087686	1509816	3.44	0.5	1.88	0.5	0.329				
CSR2-G672	1087701	1509812	3.71	0.5	4.37	0.5	0.501				
CSR2-G673	1087716	1509810	5.28	0.5	0.681	0.5					
CSR2-G674	1087730	1509807	7.66	0.5	0.664						
CSR2-G675	1087741	1509803	14.3	1	4.04	1					
CSR2-G676	1087744	1509818	18.4	1	0.055						
CSR2-G677	1087732	1509820	11.5	1	4.14	1	0.306				

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G678	1087717	1509822	8.6	0.5	1.97						
CSR2-G679	1087702	1509827	10.5	1	4.35						
CSR2-G680	1087689	1509830	7.99	1	1.25						
CSR2-G681	1087747	1509833	15.5	1	5.62	1	4.91	0.5	0.614		
CSR2-G682	1087733	1509835	20.9	1	2.12	1	0.799				
CSR2-G683	1087719	1509840	10.5			1	4.69				
CSR2-G684	1087735	1509848	4.74	0.5	3.33	0.5	0.299				
CSR2-G685	1087499	1509698	17.8	1.5	0.245						
CSR2-G686	1087502	1509683	17.5	1.5	0.233						
CSR2-G687	1087510	1509671	9.15	1	.0564 J						
CSR2-G688	1087522	1509659	7.16	0.5	1.59						
CSR2-G689	1087532	1509647	5.73	0.5	0.424						
CSR2-G690	1087538	1509636	4.1	0.5	1.22						
CSR2-G691	1087543	1509622	1.72	0.5	0.885						
CSR2-G692	1087549	1509609	2	0.5	0.312						
CSR2-G693	1087553	1509597	1.93	0.5	1.69						
CSR2-G694	1087549	1509581	1.3	0.5	< .0396 U						
CSR2-G695	1087543	1509566	1	0.5	0.077						
CSR2-G696	1087541	1509552	0.75								
CSR2-G697	1087538	1509537	2.29	0.5	1.16						
CSR2-G698	1087538	1509524	0.846								
CSR2-G699	1087537	1509508	1	0.5	0.618						
CSR2-G700	1087537	1509492	0.831								
CSR2-G701	1087552	1509491	1.8	0.5	0.146						
CSR2-G702	1087552	1509477	1.88	0.5	.0693J						
CSR2-G702	1087552	1509477	4.18	0.5	1.17						
CSR2-G703	1087548	1509463	0.544								
CSR2-G704	1087564	1509460	1.33	0.5	0.464						
CSR2-G705	1087573	1509442	0.909								
CSR2-G706	1087588	1509441	49.9								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G707	1087582	1509423	2.54								
CSR2-G708	1087598	1509419	**60.2**								
CSR2-G709	1087593	1509405	**129**								
CSR2-G710	1087578	1509407	1.49								
CSR2-G711	1087573	1509393	1.32								
CSR2-G712	1087588	1509391	46								
CSR2-G713	1087583	1509377	0.949								
CSR2-G714	1087569	1509380	0.292								
CSR2-G715	1087579	1509363	0.729								
CSR2-G716	1087589	1509347	0.635								
CSR2-G717	1087587	1509332	0.372								
CSR2-G718	1087583	1509319	0.76								
CSR2-G719	1087597	1509317	0.777								
CSR2-G720	1087593	1509304	0.495								
CSR2-G721	1087611	1509301	30.8								
CSR2-G722	1087606	1509286	0.739								
CSR2-G723	1087602	1509271	0.212								
CSR2-G724	1087615	1509270	**69.6**								
CSR2-G725	1087610	1509252	28.9								
CSR2-G726	1087624	1509237	0.806								
CSR2-G727	1087633	1509221	0.152								
CSR2-G728	1087646	1509206	0.852								
CSR2-G729	1087645	1509191	0.0797								
CSR2-G730	1087487	1509694	**54.7**								
CSR2-G731	1087495	1509682	15.5								
CSR2-G732	1087502	1509669	14.6								
CSR2-G733	1087508	1509656	2.87								
CSR2-G734	1087519	1509639	8.75								
CSR2-G735	1087527	1509626	5.95								
CSR2-G736	1087532	1509612	4.63								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G737	1087539	1509598	5.27								
CSR2-G738	1087534	1509584	5.07								
CSR2-G739	1087529	1509570	2.05								
CSR2-G740	1087526	1509555	2.66								
CSR2-G741	1087523	1509540	1.57								
CSR2-G742	1087524	1509526	1.78								
CSR2-G743	1087522	1509510	0.952								
CSR2-G744	1087522	1509496	0.762								
CSR2-G745	1087538	1509477	1.02								
CSR2-G746	1087559	1509445	3.7								
CSR2-G747	1087569	1509428	1.61								
CSR2-G748	1087565	1509413	3.14								
CSR2-G749	1087560	1509399	0.982								
CSR2-G750	1087596	1509258	0.544								
CSR2-G751	1087609	1509237	9.15								
CSR2-G752	1087696	1509229	0.238								
CSR2-G753	1087686	1509186	> .036 U								
CSR2-G754	1087685	1509172	0.0626								
CSR2-G755	1087670	1509173	0.264								
CSR2-G756	1087656	1509175	0.0570J								
CSR2-G757	1087641	1509177	> .0352 U								
CSR2-G758	1087496	1509708	4.52								
CSR2-G759	1087481	1509704	**66.6**								
CSR2-G760	1087465	1509704	**101**								
CSR2-G761	1087472	1509690	49.2								
CSR2-G762	1087481	1509676	42.9								
CSR2-G763	1087488	1509663	7.82								
CSR2-G764	1087494	1509651	6.8								
CSR2-G765	1087502	1509636	5.59								
CSR2-G766	1087511	1509624	2.74								

Grid sample	Eastings	Northings	Initial PCB1 mg/kg	Excavation depth	1st lift PCB2 mg/kg	Soil removed (ft)	2nd lift PCB3 mg/kg	Soil removed (ft)	3rd lift PCB4 mg/kg	Soil removed (ft)	4th lift PCB5 mg/kg
CSR2-G767	1087519	1509608	3.16								
CSR2-G768	1087522	1509596	2.81								
CSR2-G769	1087521	1509585	1.89								
CSR2-G770	1087514	1509567	1.8								
CSR2-G771	1087514	1509555	0.886								
CSR2-G772	1087509	1509540	0.737								
CSR2-G773	1087507	1509525	2.11								
CSR2-G774	1087522	1509495	1.36								
CSR2-G775	1087508	1509493	0.392								
CSR2-G776	1087523	1509479	1.35								
CSR2-G777	1087532	1509463	1.83								
CSR2-G778	1087545	1509448	1.58								
CSR2-G779	1087555	1509431	1.18								
CSR2-G780	1087550	1509415	0.224								
CSR2-G781	1087595	1509243	1.32								
CSR2-G782	1087620	1509223	1.83								

Values in **bold** exceed TSCA threshold of 50 mg/kg. J= above MDL, but estimated; U = under MDL

4.1.1 Backfilling.

Because the grids adjacent to the access road that were excavated posed a vehicle hazard, those cells were backfilled with soil from LSA5 after approval was granted by ADEC.

4.1.2 Fiber Sample.

While excavating grid CSR2-G183 on September 14, 2012, fibrous materials were encountered. Excavation halted and a sample of the fibrous material was collected and sent for laboratory identification as potential asbestos containing material (ACM). Fibrous materials that had been excavated were removed from the soil and double-bagged and stored in Cell 2. The laboratory report indicated the sample was not ACM.

4.1.3 POLs and Solid Waste.

POL odors were observed in cell CSR2-G128a along with a wood pole and conduit during excavation for PCBs. The POL impacted soil was removed along with the PCB contaminated soil.

Potentially POL impacted soil was noted at grid CSR2-G233 on September 14, 2012 in a thin black sandy layer. In addition to PCBs, the black soil layer was sampled and analyzed for DRO and RRO by Method AK102 and AK103. The DRO analytical result was reported as 14.28 mg/kg and the RRO result reported as 7.62 mg/kg, which are well below ADEC's clean-up value of 250 mg/kg for DRO.

4.2 Black Lagoon Outfall/Septic System Outfall Excavation Area.

There are two areas designated as the BLO/SSO. One part of the BLO/SSO has POL and PCE contamination. Another area is designated as the BLO/SSO PCB contaminated area. In 2012, PCB contamination characterization and soil removal was done in the PCB area. In addition, a soil boring was advanced and a well completed in the BLO/SSO area with POL and PCE contamination. A surface sample from that soil boring as well as a soil cutting sample result contained PCE above clean-up levels. The BLO/SSO area with PCB contamination borders the north edge of CSR2 and the south and west edges of WTH, as shown in Figure 12. Soil was sampled for PCB's using the nine-point composite method as described in Section 3.5.

Table 8 shows laboratory results from each grid cell. Grid cells with analytical results above 1 mg/kg and less than 50 mg/kg were excavated and re-sampled. Table 3 shows analytical results from each grid including the initial sample results and the sample analytical result after each subsequent excavation and re-sampling, when applicable.

Figure 11 shows the initial contamination concentrations and the final contamination levels from the BLO/SSO PCB AOC. Approximately 208 yards^3 was removed from the BLO excavation area and trucked to cells 1, 2 and 3.

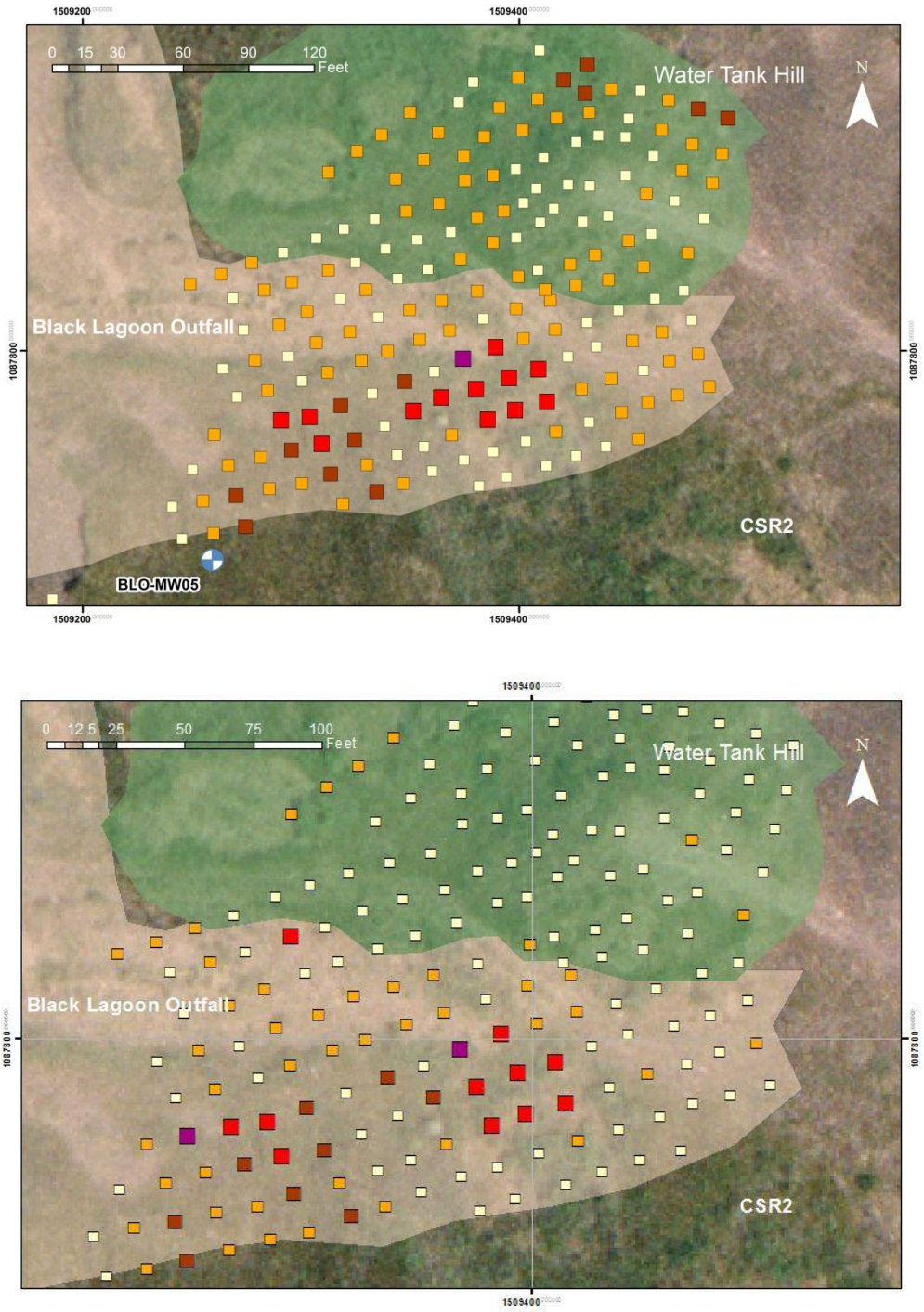


Figure 11. Initial and final PCB values after successive excavation lifts at BLO/WTH.

Table 8. Laboratory analytical results for PCB in BLO area.

Sample	Date excavated	Initial PCB1 mg/kg	Soil excavated	Date excavated	1st lift PCB2 mg/kg	Soil excavated	Date excavated	2nd lift PCB3 mg/kg
BLO-G004	7/6/12	5.82	0.5″	8/30/2012	4.24			
BLO-G006	7/6/12	**187**						
BLO-G007	7/6/12	**71.6**						
BLO-G008	7/6/12	**82.1**						
BLO-G009	7/6/12	1.12	0.5″					
BLO-G016	7/6/12	**75.9**						
BLO-G017	7/6/12	**130**						
BLO-G018	7/6/12	**167**						
BLO-G019	7/6/12	14.9						
BLO-G025	7/6/12	1.41	0.5	9/13/2012	1.21			
BLO-G026	7/6/12	10						
BLO-G027	7/6/12	**78.3**						
BLO-G028	7/6/12	**2,590**						
BLO-G030	7/6/12	48.1						
BLO-G031	7/6/12	1.84	0.5	9/13/2012	1.65			
BLO-G032	7/6/12	1.08						
BLO-G034	7/6/12	2.03						
BLO-G035	7/6/12	6.32						
BLO-G036	7/6/12	1.24						
BLO-G037	7/6/12	2.54	0.5	9/9/2012	1.02	0.5	9/21/2012	0.19
BLO-G038	7/6/12	1.4	0.5	9/9/2012	9.74	0.5	9/21/2012	9.29
BLO-G039	7/6/12	3.66	0.5	9/9/2012	1.29	0.5	9/21/2012	1.2
BLO-G040	7/6/12	1.19	0.5					
BLO-G065	8/3/12	3.33	0.5	8/30/2012	2.04			
BLO-G070	8/3/12	1.12						
BLO-G072	8/3/12	3.03						
BLO-G074	8/3/12	13.3						
BLO-G076	8/3/12	13.8						
BLO-G077	8/3/12	1.44						
BLO-G078	8/3/12	1.5						
BLO-G079	8/3/12	1.38						
BLO-G080	8/3/12	2.12						
BLO-G082	8/3/12	2.24						
BLO-G083	8/3/12	1.62	0.5	9/9/2012	21.6	0.5	9/21/2012	**57.8**
BLO-G087	9/6/12	1.13						
BLO-G088	9/6/12	1.51						
BLO-G089	9/6/12	1.28						
BLO-G092	9/6/12	**403**						
BLO-G093	9/6/12	**251**						

Sample	Date excavated	Initial PCB1 mg/kg	Soil excavated	Date excavated	1st lift PCB2 mg/kg	Soil excavated	Date excavated	2nd lift PCB3 mg/kg
BLO-G094	9/6/12	12.3						
BLO-G095	9/6/12	3.67						
BLO-G096	9/25/12	1.09						
BLO-G097	9/25/12	9.48						
BLO-G098	9/25/12	13.3						
BLO-G099	9/25/12	3.19						
BLO-G101	9/25/12	1.78						
BLO-G102	9/25/12	4.07						
BLO-G103	9/25/12	25.3						
BLO-G104	9/25/12	1.45						
BLO-G106	9/25/12	19.6						
BLO-G107	9/25/12	2.24						
BLO-G108	9/25/12	**480**						
BLO-G109	9/25/12	7.01						
BLO-G110	9/25/12	1.93						
BLO-G113	9/25/12	1.08						
BLO-G114	10/8/12	3.1						
BLO-G116	10/8/12	**13,400**						
BLO-G117	10/8/12	2.19						
BLO-G120	10/8/12	1.06						

Figures in **bold** exceed 50 mg/kg (TSCA threshold) and were not excavated.

The spatial variation of soil analyses is shown in Figure 12. Twelve grid squares, located in the southeast quadrant of the AOC had laboratory analytical results above the 50 mg/kg TSCA threshold and were not excavated.

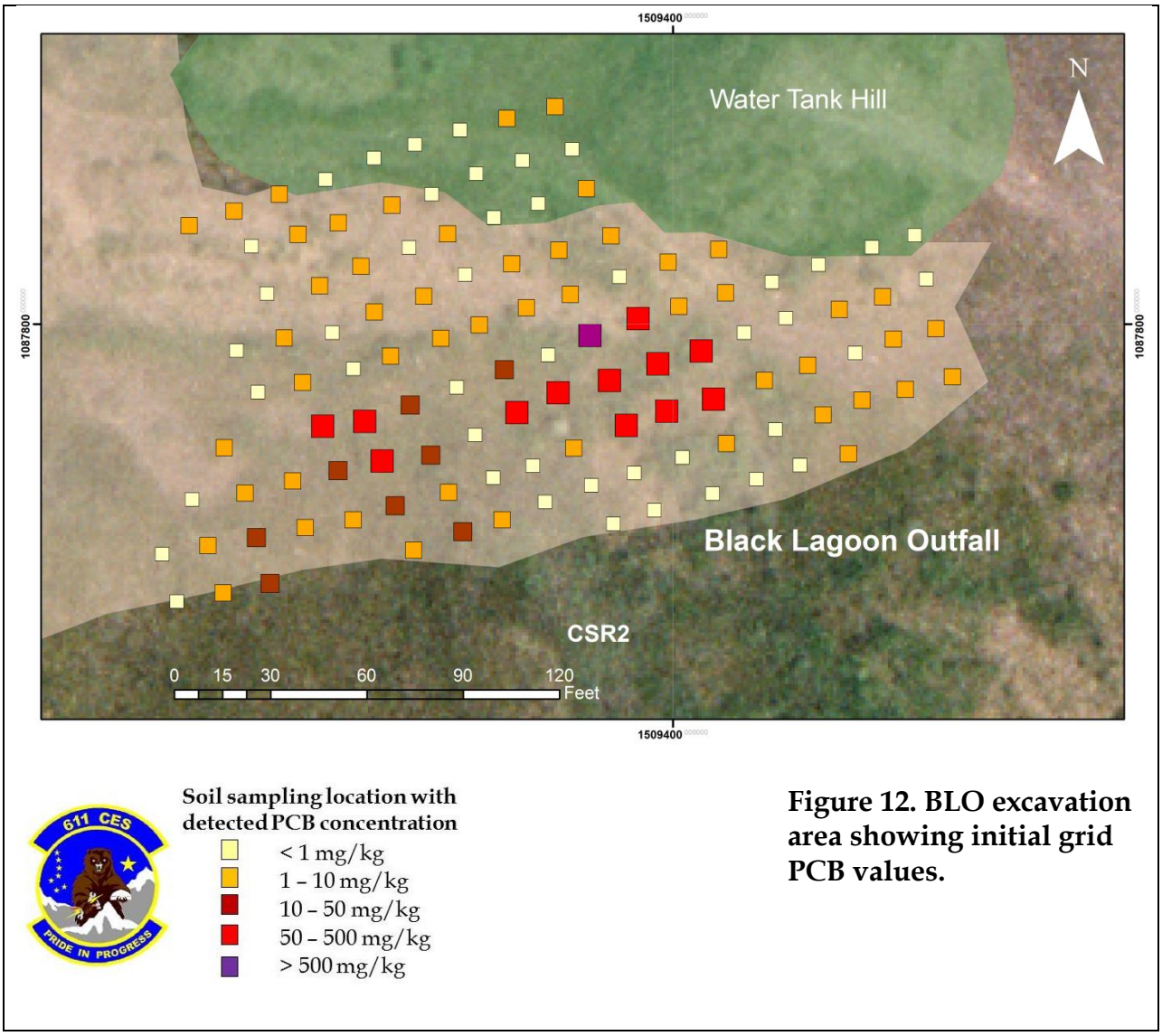


Figure 12. BLO excavation area showing initial grid PCB values.

At the end of the field season soil samples with elevated PCB levels were still being recorded as the grid was extended westwards. It is likely that PCB-contaminated soils at levels above 1 mg/kg extend beyond the boundaries sampled in 2012.

4.3 Water Tank Hill (WTH).

The WTH area is a conical mound of soil located northwest of BLO that is approximately 30 feet higher than the surrounding area and covers an area of less than 600 yds^2. The surface of WTH was laid out with 15′ x 15′ grid squares on July 10th, 2012 and composite soil samples collected from each square as described in Section 3.5. The geometry of the feature resulted in grids that were more distorted than on flat ground, but an equal sampling area was maintained.

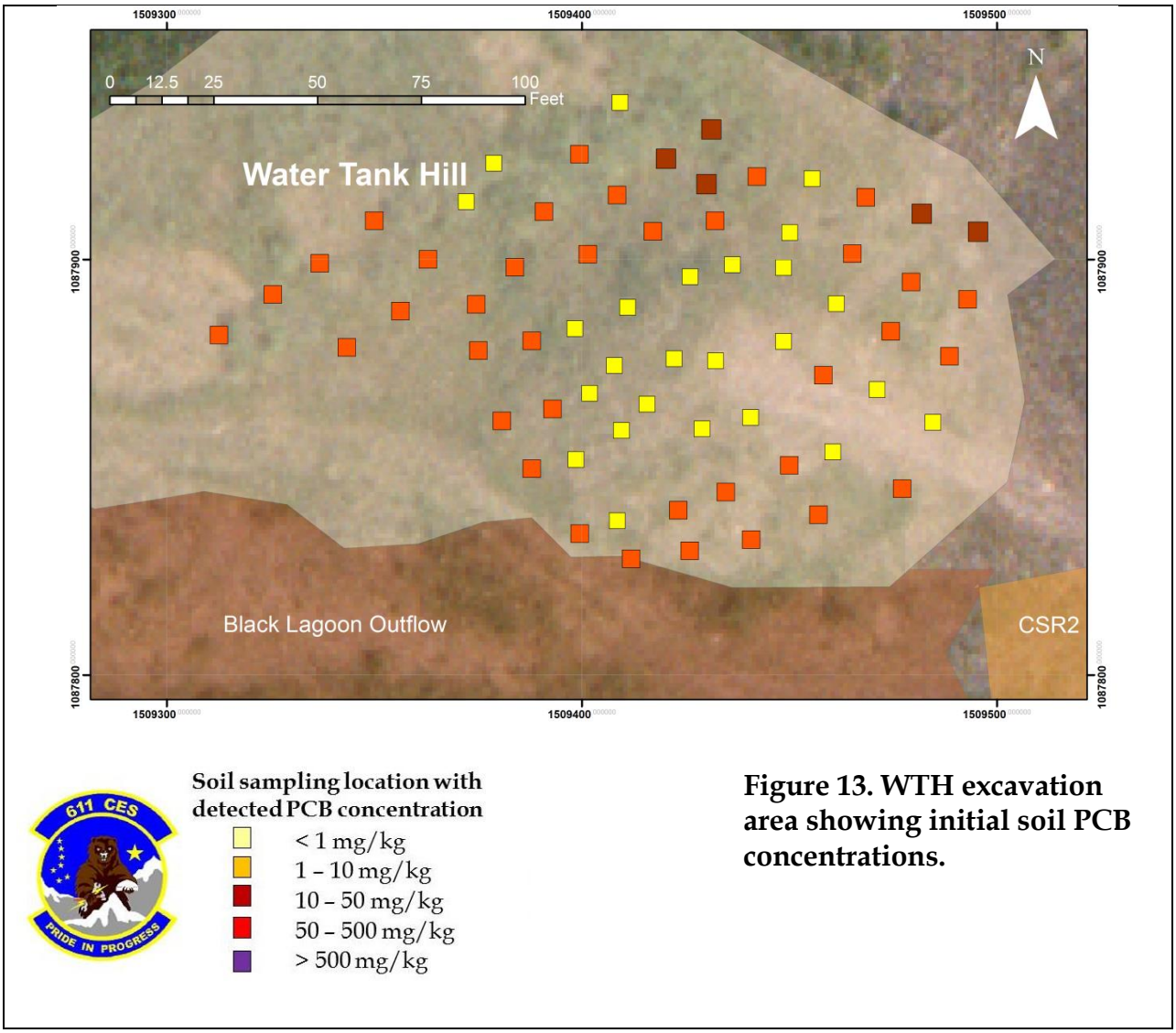


Figure 13. WTH excavation area showing initial soil PCB concentrations.

Figure 13 shows the spatial variation of PCB-contaminated soil samples in WTH. Samples with higher PCB concentrations were primarily located around the margins of the hill, with the highest values on the northern perimeter. No single soil sample exceeded the TSCA threshold of 50 mg/kg.

Following the protocol outlined in Section 3.5, soil was excavated from grid squares with soil PCB concentrations that exceeded 1 mg/kg and less than 50 mg/kg and transported to cells 1, 2 or 3. Excavated grid squares were re-sampled and additional soil lifted, if require. Table 9 shows the status of individual grid squares within the WTH excavation area. An estimated 200 yds^3 of PCB-contaminated soil was removed from this area. ADEC approved backfill soil was placed into select grids at WTH.

Table 9. PCB Analytical Results from WTH area.

Soil sample	Easting	Northing	Initial PCB mg/kg	Soil removed	1st lift PCB2 mg/kg	Soil removed	2nd lift PCB3 mg/kg	Soil removed	3rd lift PCB4 mg/kg	Soil removed
WTH-G001	1087839	1509457	**1.73**	0.5′	0.15					
WTH-G002	1087833	1509441	**4.48**	0.5′	0.04					
WTH-G003	1087830	1509426	**2.93**	0.5′	0.04					
WTH-G004	1087828	1509412	**4.20**	0.5′	0.78					
WTH-G005	1087834	1509400	**1.96**	0.5′	**1.65**	0.5′				
WTH-G006	1087850	1509388	**1.16**	0.5′	0.34					
WTH-G007	1087861	1509381	**1.79**	0.5′	0.02					
WTH-G008	1087878	1509375	**2.13**	0.5′						
WTH-G009	1087889	1509375	**3.81**	0.5′						
WTH-G010	1087898	1509384	**2.29**	0.5′						
WTH-G011	1087912	1509391	**3.05**	0.5′	0.19					
WTH-G012	1087925	1509399	**3.81**	0.5′	0.39					
WTH-G013	1087938	1509409	0.05	0						
WTH-G014	1087924	1509420	**16.9**	1.0′	0.38					
WTH-G015	1087931	1509431	**21.0**	1.0′	**1.95**	0.5′	0.194			
WTH-G016	1087918	1509430	**20.3**	1.0′	0.05					
WTH-G017	1087920	1509442	**6.27**	0.5′	1.11	0.5	0.477			
WTH-G018	1087919	1509456	0.56	0						
WTH-G019	1087915	1509468	**4.54**	0.5′	**1.19**	0.5′	**4.68**	0.5′	**1.54**	0.5
WTH-G020	1087911	1509482	**31.8**	1.0′	**1.32**	2.0′	0.453			
WTH-G021	1087907	1509496	**11.1**	1.0′	0.70					
WTH-G022	1087890	1509493	**1.94**	0.5′	**8.70**	0.5′	**5.18**	0.5′	0.102	
WTH-G023	1087877	1509489	**8.18**	0.5′	**22.40**		**2.85**	0.5	0.173	
WTH-G024	1087861	1509485	0.78							
WTH-G025	1087845	1509477	**1.18**	0.5′	**3.53**					
WTH-G026	1087854	1509461	0.53							
WTH-G027	1087850	1509450	**1.89**	0.5′	0.41					

Soil sample	Easting	Northing	Initial PCB mg/kg	Soil removed	1st lift PCB2 mg/kg	Soil removed	2nd lift PCB3 mg/kg	Soil removed	3rd lift PCB4 mg/kg	Soil removed
WTH-G028	1087844	1509435	**1.12**	0.5′	0.03					
WTH-G029	1087840	1509423	**1.15**	0.5′	0.04					
WTH-G030	1087837	1509409	0.79							
WTH-G031	1087852	1509399	0.48		**1.65**	0.5′				
WTH-G032	1087864	1509393	**1.05**	0.5′	0.04					
WTH-G033	1087880	1509388	**1.61**	0.5′	0.56					
WTH-G034	1087883	1509398	0.75							
WTH-G035	1087901	1509401	**1.87**	0.5′	0.05					
WTH-G036	1087916	1509408	**3.53**	0.5′	0.05					
WTH-G037	1087907	1509417	**2.36**	0.5′	0.13					
WTH-G038	1087909	1509432	**2.99**	0.5′	0.03					
WTH-G039	1087907	1509450	0.90							
WTH-G040	1087901	1509465	**1.41**	0.5′						
WTH-G041	1087895	1509479	**8.90**	0.5′	0.14					
WTH-G042	1087883	1509474	**4.17**	0.5′	0.13					
WTH-G043	1087869	1509471	0.72							
WTH-G044	1087872	1509458	**1.64**	0.5′	**4.71**	1.0′	**3.38**			
WTH-G045	1087862	1509441	0.21							
WTH-G046	1087859	1509429	0.09							
WTH-G047	1087859	1509410	0.55							
WTH-G048	1087868	1509402	0.47							
WTH-G049	1087888	1509411	0.72							
WTH-G050	1087896	1509426	0.11							
WTH-G051	1087899	1509436	0.49							
WTH-G052	1087898	1509449	0.51							
WTH-G053	1087889	1509461	0.67							
WTH-G054	1087880	1509449	0.41							
WTH-G055	1087876	1509432	0.13							
WTH-G056	1087876	1509422	0.06							

Soil sample	Easting	Northing	Initial PCB mg/kg	Soil removed	1st lift PCB2 mg/kg	Soil removed	2nd lift PCB3 mg/kg	Soil removed	3rd lift PCB4 mg/kg	Soil removed
WTH-G057	1087865	1509416	0.588							
WTH-G058	1087874	1509408	0.30							
WTH-G058	1087935	1509390	0.296							
WTH-G059	1087923	1509379	0.23							
WTH-G060	1087914	1509372	0.37							
WTH-G061	1087900	1509363	**1.59**	0.5′	0.718					
WTH-G062	1087888	1509356	**3.16**	0.5′	0.49					
WTH-G063	1087879	1509343	**3.98**	0.5′	0.05					
WTH-G064	1087909	1509350	**3.11**	0.5′						
WTH-G065	1087899	1509337	**6.79**	0.5′						
WTH-G066	1087892	1509326	**6.54**	0.5′						
WTH-G067	1087882	1509313	**2.11**	0.5′						

Bold indicates analysis was above ADEC clean-up levels of 1 mg/kg for PCB.

4.4 North of Road Area (NRD).

Excavation and remediation of PCB-contaminated soil at the NRD was carried out in 2012 by Jacobs and is not addressed in this report.

4.5 Port Heiden Community Landfill.

In 2011, ADEC directed that PCB-contaminated soil originally from area CSR2 be removed from the Port Heiden Community landfill after multi-incremental sampling demonstrated that soil exceeded the allowed 10 mg/kg disposal limit (Jacobs, 2011). Approximately 800 yds^3 of soil were excavated from the landfill and temporarily stockpiled at CSR2 on the Former Port Heiden RRS.

Standing water that had accumulated in the excavation during material removal had been in contact with PCB-contaminated soil and required treatment before discharge. Water was drained from the landfill in 2011 and initially stored in a temporary holding pond, after filtration through Granulated Activated Carbon (GAC). Beginning July 7th, 2012, water was pumped through a MYCLEX filtration system to remove PCB contamination. Initially, 300-gallons of the water were pumped through the filtration system and into a 300 gallon plastic tank. The treated water (LFW1) was sampled and analyzed for TAH, TAqH and PCBs. Analytical results were below the clean-up levels, therefore water treatment continued through the MYCLEX system.

Figure 14. MYCLEX filtration system in operation at Port Heiden Community landfill, showing detail of the filter.

Additional water was run through the filtration system and pumped into 5 storage tanks. Five water samples were collected (one from each tank) on Aug 1st 2012 and shipped to the laboratory for analysis for TAH, TAqH and PCBs. Results are shown in Table 10. ADEC approved discharge of the treated water.

The CA decided to pump all of the water into one holding pond and then treat all of it through the MYCLEX filtration system and into the other holding pond and collect a confirmation sample. Analytical results met regulatory criteria for discharge and on October 9th, 2012, ADEC approved discharge of the treated water. Approximately 40,000 gallons of treated water was discharged. The ponds were backfilled with treated material from Landspreading Area 5 (LSA5) and Trapper Hill soil with ADEC approval. Pond linings were transferred to Supersacks for disposal.

Table 10. Analysis of treated water from Port Heiden Community landfill.

Job:1123402		Sample	LFWT1	LFWT2	LFWT3	LFWT4	LFWT5	LFWT5D
		Lab Id:	1123402001	1123402002	1123402003	1123402004	1123402005	1123402006
Method	Analyte	Date	8/1/2012	8/1/2012	8/1/2012	8/1/2012	8/1/2012	8/1/2012
EPA 602/624	1,2-Dichlorobenzene	µg/L	<0.62	<0.62	<0.62	<0.62	<0.62	<0.62
EPA 602/624	1,3-Dichlorobenzene	µg/L	<0.62	<0.62	<0.62	<0.62	<0.62	<0.62
EPA 602/624	1,4-Dichlorobenzene	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
EPA 602/624	Benzene	µg/L	0.190	0.540	0.460	0.430	0.200	0.210
EPA 602/624	Chlorobenzene	µg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
EPA 602/624	Ethylbenzene	µg/L	0.350	0.700	0.820	0.940	0.630	0.660
EPA 602/624	o-Xylene	µg/L	0.450	0.960	1.35	1.67	1.49	1.43
EPA 602/624	P & M -Xylene	µg/L	1.02	2.10	2.92	3.40	2.80	2.81
EPA 602/624	Toluene	µg/L	1.53	4.87	5.43	6.33	3.46	3.55
EPA 625M SIMS (PAH)	Acenaphthene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.0322
	Acenaphthylene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.0322
	Anthracene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.0322
	Benzo(a)Anthracene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Benzo[a]pyrene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Benzo[b]Fluoranthene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Benzo[g,h,i]perylene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Benzo[k]fluoranthene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Chrysene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Dibenzo[a,h]anthracene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Fluoranthene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Fluorene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.0322
	Indeno[1,2,3-c,d] pyrene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
	Naphthalene	µg/L	<0.0712	<0.0712	0.0407	0.0654	<0.0666	<0.0666
	Phenanthrene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.0322
	Pyrene	µg/L	<0.0344	<0.0344	<0.0338	<0.034	<0.0322	<0.1612
SW8082A	Aroclor-1016	µg/L	<0.0674	<0.0688	<0.0688	<0.0688	<0.0682	<0.0646
SW8082A	Aroclor-1221	µg/L	<0.326	<0.334	<0.334	<0.334	<0.33	<0.312
SW8082A	Aroclor-1232	µg/L	<0.0674	<0.0688	<0.0688	<0.0688	<0.0682	<0.0646
SW8082A	Aroclor-1242	µg/L	<0.0674	<0.0688	<0.0688	<0.0688	<0.0682	<0.0646
SW8082A	Aroclor-1248	µg/L	<0.0674	<0.0688	<0.0688	<0.0688	<0.0682	<0.0646
SW8082A	Aroclor-1254	µg/L	<0.0674	<0.0688	<0.0688	<0.0688	<0.0682	<0.0646
SW8082A	Aroclor-1260	µg/L	<0.0674	<0.0688	<0.0688	<0.0688	<0.0682	<0.0646

4.5.1 Confirmation Soil Samples from Holding Pond Area.

Soil samples were collected from underneath the liner. Figure 15 shows the location of the soil samples. All soil sample results were less than the clean-up level for PCBs. ADEC reviewed the analytical results and approved the site for re-grading and backfilling.

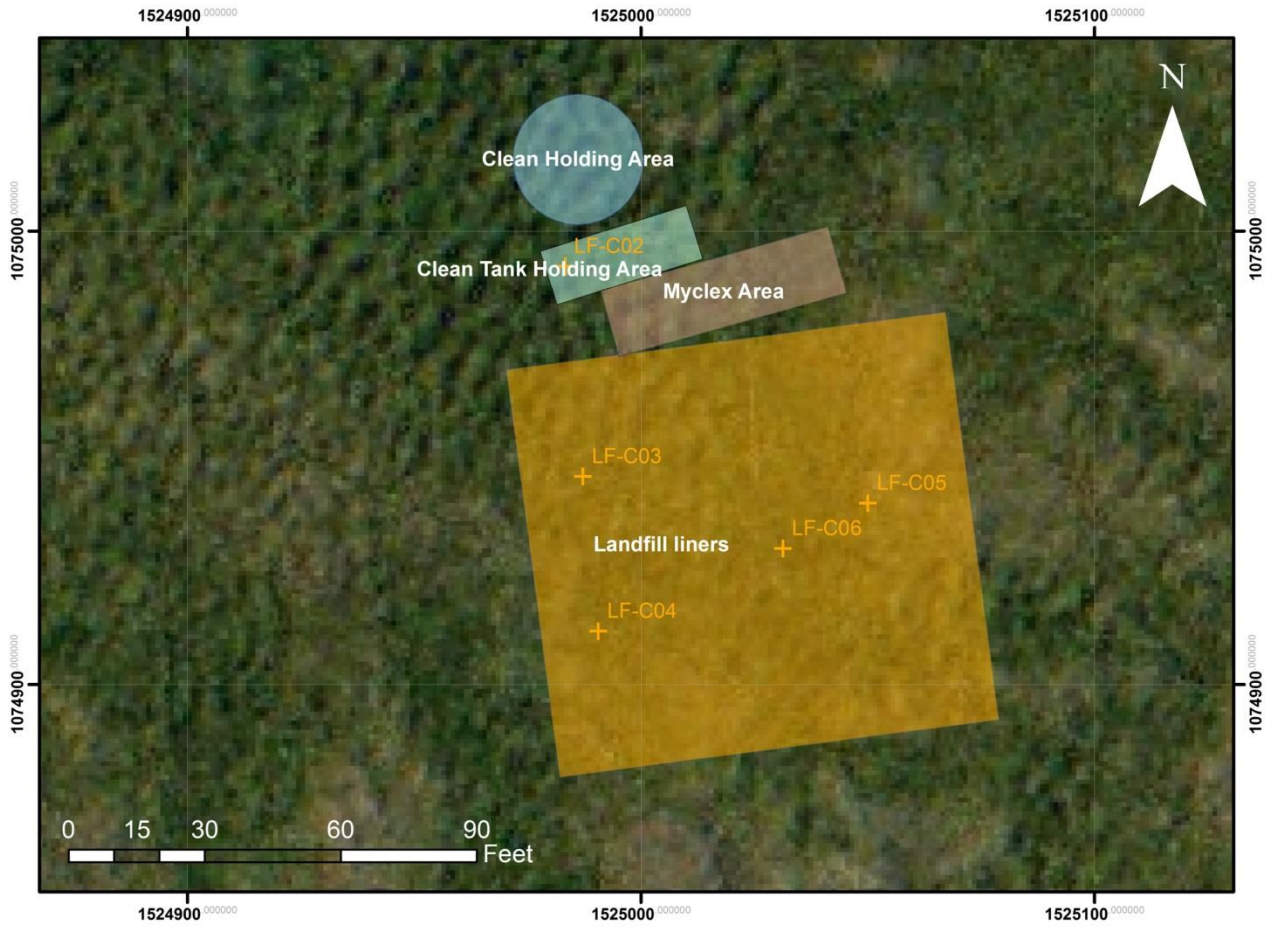


Figure 15. Sampling points beneath landfill liners.

4.5.2 Seeding of Landfill Cells.

The landfill cells were backfilled in 2011 and final grading completed in 2012. NVPH coordinated with the State of Alaska University Extension service to determine the seed mix to apply to the landfill cover soils. The seed mix, as shown in Table 11, was applied on October 23, 2012:

Table 11. Seed Mix Composition.

Pure Seed	Variety	Germination rate	Origin
2.01%	Wendy Jean Creeping Red Fescue	85	OR
1.47%	Silver Dollar Perennial Ryegrass	90	OR
1.32%	Courtyard Kentucky Bluegrass	85	ID
1.10%	Fenway Creeping Red Fescue	85	OR
0.73%	Majesty II Perennial Ryegrass	90	MN
0.50%	Avalanche Kentucky Bluegrass	85	WA/Canada
0.21%	Juliet Kentucky Bluegrass	85	WA
92.63%	Inert material: 88% mulch 3% fertilizer 0.2% other crop seed 0.1% inert from seed 0.01% weed seed (no noxious weeds)		

5 Estimated volume of contaminated soil in place.

Excavated soil was screened as described previously. There are no viable methods to treat PCB-contaminated soil at Port Heiden RRS. Soil with PCB in excess of 1 mg/kg was separated, excavated and stockpiled in three lined cells on the site until it can be safely removed for disposal. Grid cells that still contain soil with PCB content above 1 mg/kg are listed in Table 12.

Table 12. Final soil grid analytical values remaining above ADEC clean-up levels.

Label	Northings	Eastings	Final PCB mg/kg	Label	Northings	Eastings	Final PCB mg/kg
BLO-G001	1087798.513	1509482	1.04	CSR2-G483	1087581.768	1509500.92	1.61
BLO-G004	1087787.11	1509442.082	4.24	CSR2-G484	1087598.304	1509500.681	1.21
BLO-G006	1087776.53	1509412.68	**187**	CSR2-G486	1087620.346	1509500.101	4.08
BLO-G007	1087772.828	1509398.083	**71.6**	CSR2-G503	1087643.707	1509481.269	1.66
BLO-G008	1087768.387	1509385.538	**82.1**	CSR2-G504	1087629.834	1509482.472	2.36
BLO-G009	1087761.362	1509369.144	1.12	CSR2-G505	1087614.126	1509484.002	**109**
BLO-G016	1087791.57	1509408.823	**75.9**	CSR2-G506	1087598.913	1509486.446	1.04
BLO-G017	1087787.534	1509395.328	**130**	CSR2-G507	1087583.561	1509488.328	1.33
BLO-G018	1087782.413	1509380.208	**167**	CSR2-G510	1087596.971	1509471.076	**74.7**
BLO-G019	1087778.567	1509364.256	14.9	CSR2-G511	1087612.621	1509469.546	4.09
BLO-G025	1087809.674	1509416.477	1.21	CSR2-G521	1087742.563	1509444.592	2.4
BLO-G026	1087805.496	1509401.913	10	CSR2-G522	1087727.614	1509447.384	4.3
BLO-G027	1087801.632	1509389.142	**78.3**	CSR2-G523	1087713.381	1509446.912	1.08
BLO-G028	1087796.355	1509374.202	**2,590**	CSR2-G530	1087609.494	1509457.128	1.53
BLO-G030	1087785.84	1509347.529	48.1	CSR2-G531	1087593.474	1509456.427	19.4
BLO-G031	1087823.226	1509414.321	1.65	CSR2-G533	1087602.627	1509437.451	46.2
BLO-G032	1087819.256	1509398.599	1.08	CSR2-G534	1087618.43	1509435.355	1.39
BLO-G034	1087809.236	1509368.081	2.03	CSR2-G537	1087664.618	1509437.406	1.34
BLO-G035	1087805.016	1509354.428	6.32	CSR2-G538	1087677.948	1509438.039	1.06
BLO-G036	1087799.729	1509339.774	1.24	CSR2-G541	1087724.327	1509433.483	1.21
BLO-G038	1087822.965	1509364.459	9.29	CSR2-G542	1087739.253	1509431.565	3.89
BLO-G039	1087818.756	1509349.833	1.2	CSR2-G544	1087718.074	1509417.9	1.12
BLO-G040	1087815.373	1509335.29	1.19	CSR2-G545	1087704.166	1509420.049	1.04
BLO-G059	1087735.346	1509334.564	11.9	CSR2-G546	1087688.511	1509422.558	2.09
BLO-G065	1087762.772	1509416.782	2.04	CSR2-G548	1087660.144	1509425.343	2.89
BLO-G070	1087739.058	1509346.86	1.12	CSR2-G549	1087644.71	1509425.728	1.43

BLO-G072	1087747.64	1509330.204	3.03	CSR2-G550	1087613.911	1509416.613	1.81
BLO-G074	1087759.227	1509324.601	13.3	CSR2-G551	1087626.559	1509417.384	2.57
BLO-G076	1087774.832	1509318.19	13.8	CSR2-G552	1087642.048	1509414.75	1.45
BLO-G077	1087795.551	1509327.718	1.44	CSR2-G553	1087655.368	1509411.919	1.4
BLO-G078	1087789.99	1509312.106	1.5	CSR2-G554	1087671.166	1509411.388	1.89
BLO-G079	1087808.651	1509322.434	1.38	CSR2-G555	1087683.897	1509407.726	2.5
BLO-G080	1087803.707	1509307.023	2.12	CSR2-G556	1087699.861	1509406.024	3.3
BLO-G082	1087818.007	1509302.802	2.24	CSR2-G557	1087712.177	1509403.124	2.66
BLO-G083	1087837.002	1509312.468	**57.8**	CSR2-G558	1087729.505	1509403.682	2.61
BLO-G087	1087840.415	1509277.396	1.13	CSR2-G559	1087724.958	1509388.56	16.3
BLO-G088	1087827.915	1509283.248	1.51	CSR2-G560	1087708.835	1509391.71	6.52
BLO-G089	1087811.845	1509290.008	1.28	CSR2-G561	1087695.493	1509392.682	1.64
BLO-G092	1087769.628	1509303.993	**403**	CSR2-G562	1087680.555	1509394.045	2.1
BLO-G093	1087757.295	1509309.411	**251**	CSR2-G563	1087666.986	1509396.517	3.05
BLO-G094	1087743.449	1509313.525	12.3	CSR2-G564	1087651.824	1509398.176	1.35
BLO-G095	1087729.647	1509319.241	3.67	CSR2-G565	1087637.345	1509398.223	1.12
BLO-G096	1087726.912	1509304.858	1.09	CSR2-G566	1087620.925	1509400.714	5.31
BLO-G097	1087723.189	1509289.784	9.48	CSR2-G567	1087606.926	1509403.955	11.4
BLO-G098	1087719.28	1509274.482	13.3	CSR2-G568	1087602.948	1509389.175	**111**
BLO-G099	1087716.262	1509259.909	3.19	CSR2-G569	1087620.495	1509387.577	4.55
BLO-G101	1087739.058	1509300.446	1.78	CSR2-G570	1087635.006	1509386.858	1.11
BLO-G102	1087736.648	1509285.455	4.07	CSR2-G571	1087649.615	1509385.677	1.16
BLO-G103	1087733.518	1509270.286	25.3	CSR2-G572	1087664.406	1509383.124	2.08
BLO-G104	1087731.072	1509255.15	1.45	CSR2-G573	1087679.279	1509380.192	3.91
BLO-G106	1087754.374	1509295.637	19.6	CSR2-G574	1087693.115	1509379.497	2.9
BLO-G107	1087751.127	1509281.571	2.24	CSR2-G575	1087706.769	1509374.559	41.7
BLO-G108	1087768.094	1509290.892	**480**	CSR2-G576	1087721.353	1509375.161	14.3
BLO-G109	1087781.773	1509284.677	7.01	CSR2-G578	1087731.83	1509358.394	4.12
BLO-G110	1087795.67	1509278.91	1.93	CSR2-G579	1087718.393	1509361.458	2.68

BLO-G113	1087835.114	1509263.333	1.08	CSR2-G586	1087615.883	1509373.798	9.3
BLO-G114	1087747.401	1509266.714	3.1	CSR2-G587	1087598.483	1509374.357	**54.9**
BLO-G116	1087764.659	1509275.231	**13,400**	CSR2-G588	1087592.038	1509358.889	10.8
BLO-G117	1087761.455	1509260.243	2.19	CSR2-G589	1087610.747	1509360.398	16.7
BLO-G120	1087830.616	1509249.289	1.06	CSR2-G596A	1087726.739	1509341.521	3.26
CSR2-G144	1087827.475	1509556.207	2.36	CSR2-G605	1087616.552	1509326.417	8.53
CSR2-G145	1087824.672	1509540.35	1.07	CSR2-G612	1087718.926	1509315.248	2.8
CSR2-G146	1087820.721	1509525.82	1.42	CSR2-G613	1087702.797	1509302.568	1.99
CSR2-G148	1087815.257	1509495.403	2.99	CSR2-G619	1087613.789	1509314.694	**54.7**
CSR2-G203	1087783.696	1509561.963	1.46	CSR2-G620	1087623.042	1509298.739	26.6
CSR2-G219	1087771.654	1509579.773	5.21	CSR2-G621	1087638.052	1509297.002	4.87
CSR2-G220	1087768.173	1509563.907	9.43	CSR2-G622	1087651.765	1509293.496	1.63
CSR2-G221	1087766.174	1509547.62	1.18	CSR2-G623	1087665.034	1509290.611	1.76
CSR2-G223	1087759.969	1509517.539	1.69	CSR2-G624	1087681.874	1509289.933	1.2
CSR2-G228	1087745.032	1509675.277	**634**	CSR2-G626	1087695.563	1509273.255	5.67
CSR2-G234	1087758.915	1509593.927	6.35	CSR2-G627	1087678.417	1509275.215	6.72
CSR2-G239	1087743.977	1509519.978	2.25	CSR2-G628	1087664.321	1509276.861	13.6
CSR2-G249	1087747.689	1509606.89	**52.4**	CSR2-G629	1087648.311	1509279.168	27.3
CSR2-G250	1087743.959	1509593.062	43.3	CSR2-G630	1087633.716	1509281.399	19.8
CSR2-G255	1087729.761	1509519.392	4.88	CSR2-G631	1087618.057	1509283.622	18.5
CSR2-G256	1087728.275	1509506.873	1.57	CSR2-G632	1087630.313	1509268.583	**102**
CSR2-G257	1087703.71	1509696.995	**153**	CSR2-G633	1087645.595	1509264.457	22.5
CSR2-G258	1087709.768	1509683.726	**101**	CSR2-G634	1087660.667	1509263.095	21.5
CSR2-G264	1087732.779	1509609.203	**113**	CSR2-G635	1087676.553	1509262.486	8.98
CSR2-G272	1087690.676	1509688.375	**188**	CSR2-G636	1087691.097	1509260.623	19.2
CSR2-G273	1087697.331	1509675.309	2.47	CSR2-G637	1087686.942	1509244.883	2.75
CSR2-G274	1087703.366	1509660.66	**63.9**	CSR2-G638	1087670.12	1509245.709	8.11
CSR2-G275	1087709.36	1509647.725	**160**	CSR2-G639	1087655.443	1509246.652	42.9
CSR2-G276	1087715.602	1509634.34	**132**	CSR2-G640	1087641.339	1509251.795	**87.5**

CSR2-G277	1087718.761	1509620.691	**115**	CSR2-G641	1087624.687	1509251.41	25.2
CSR2-G278	1087718.411	1509609.35	**284**	CSR2-G642	1087640.013	1509235.896	14.4
CSR2-G279	1087714.355	1509594.382	4.47	CSR2-G643	1087654.154	1509234.687	27.8
CSR2-G285	1087697.54	1509506.764	1.98	CSR2-G644	1087670.566	1509232.903	1.1
CSR2-G286	1087671.639	1509692.936	**16,10**	CSR2-G645	1087663.771	1509219.454	4.5
CSR2-G287	1087678.781	1509680.339	**2,070**	CSR2-G646	1087647.171	1509219.893	11.2
CSR2-G288	1087685.683	1509666.943	**1,080**	CSR2-G647	1087663.478	1509201.989	2.16
CSR2-G289	1087692.298	1509653.988	**1,170**	CSR2-G648	1087717.211	1509302.487	3.24
CSR2-G290	1087697.066	1509639.634	**211**	CSR2-G649	1087711.607	1509287.021	10.3
CSR2-G291	1087702.84	1509627.41	**940**	CSR2-G650	1087708.64	1509273.773	6.52
CSR2-G292	1087702.146	1509617.351	**195**	CSR2-G651	1087705.035	1509258.272	14.3
CSR2-G293	1087701.991	1509607.88	**137**	CSR2-G652	1087701.589	1509245.202	1.87
CSR2-G294	1087700.33	1509596.664	33.5	CSR2-G653	1087682.727	1509231.309	1.3
CSR2-G301	1087653.675	1509694.232	**4,880**	CSR2-G656	1087670.719	1509188.717	1.63
CSR2-G302	1087659.817	1509684.32	312	CSR2-G657	1087658.221	1509189.835	2.09
CSR2-G303	1087666.424	1509671.904	**1,570**	CSR2-G659	1087728.998	1509790.494	1.82
CSR2-G304	1087673.113	1509658.465	**609**	CSR2-G675	1087740.579	1509802.937	4.04
CSR2-G305	1087680.056	1509645.583	**128**	CSR2-G678	1087717.488	1509821.611	1.97
CSR2-G306	1087685.641	1509633.095	**424**	CSR2-G679	1087702.243	1509826.72	4.35
CSR2-G307	1087686.89	1509620.077	**74.8**	CSR2-G680	1087689.182	1509830.362	1.25
CSR2-G308	1087687.216	1509607.982	**93.7**	CSR2-G683	1087719.117	1509840.284	4.69
CSR2-G309	1087684.588	1509596.54	**84.4**	CSR2-G688	1087522.042	1509659.28	1.59
CSR2-G310	1087681.652	1509583.076	5.78	CSR2-G690	1087538.059	1509635.621	1.22
CSR2-G311	1087678.333	1509567.598	12.4	CSR2-G693	1087552.987	1509596.504	1.69
CSR2-G312	1087677.869	1509551.621	1.92	CSR2-G697	1087537.607	1509536.625	1.16
CSR2-G313	1087674.77	1509537.281	2.3	CSR2-G702	1087552.234	1509477.077	1.17
CSR2-G315	1087640.156	1509690.276	**5,340**	CSR2-G706	1087588.22	1509440.568	49.9
CSR2-G316	1087646.056	1509678.097	**8,170**	CSR2-G707	1087582.357	1509422.553	2.54
CSR2-G317	1087653.752	1509663.471	**13,600**	CSR2-G708	1087597.965	1509419.169	**60.2**

CSR2-G318	1087660.447	1509651.078	**3,530**	CSR2-G709	1087592.81	1509405.241	**129**
CSR2-G319	1087666.084	1509637.815	**1,300**	CSR2-G710	1087577.872	1509407.145	1.49
CSR2-G320	1087671.665	1509624.478	**244**	CSR2-G711	1087573.093	1509392.643	1.32
CSR2-G321	1087672.863	1509609.493	**73.1**	CSR2-G712	1087588.285	1509390.798	46
CSR2-G322	1087668.293	1509597	1.33	CSR2-G721	1087610.904	1509301.029	30.8
CSR2-G324	1087664.6	1509569.31	**467**	CSR2-G724	1087614.749	1509269.884	**69.6**
CSR2-G325	1087662.194	1509552.629	1.8	CSR2-G725	1087609.635	1509252.127	28.9
CSR2-G326	1087659.062	1509538.914	1.7	CSR2-G730	1087487.051	1509694.207	**54.7**
CSR2-G328	1087621.972	1509694.031	**631**	CSR2-G731	1087494.941	1509681.513	15.5
CSR2-G329	1087628.437	1509681.324	**489**	CSR2-G732	1087502.057	1509668.56	14.6
CSR2-G330	1087634.211	1509667.758	**681**	CSR2-G733	1087508.457	1509656.213	2.87
CSR2-G331	1087641.615	1509654.341	**518**	CSR2-G734	1087519.38	1509639.338	8.75
CSR2-G332	1087648.4	1509641.04	**236**	CSR2-G735	1087527.123	1509626.327	5.95
CSR2-G333	1087653.746	1509628.29	**298**	CSR2-G736	1087531.928	1509611.789	4.63
CSR2-G334	1087657.664	1509617.866	**52.5**	CSR2-G737	1087538.646	1509598.486	5.27
CSR2-G335	1087657.293	1509609.518	**52.4**	CSR2-G738	1087534.046	1509584.114	5.07
CSR2-G337	1087651.951	1509582.77	2.84	CSR2-G739	1087528.512	1509569.827	2.05
CSR2-G338	1087649.931	1509569.592	20.4	CSR2-G740	1087525.996	1509554.623	2.66
CSR2-G340	1087642.133	1509539.488	6.97	CSR2-G741	1087523.089	1509540.371	1.57
CSR2-G341	1087601.763	1509697.681	7.32	CSR2-G742	1087523.554	1509525.565	1.78
CSR2-G342	1087609.077	1509688.26	**69.7**	CSR2-G745	1087537.879	1509476.538	1.02
CSR2-G343	1087616.545	1509674.1	27.8	CSR2-G746	1087558.556	1509444.908	3.7
CSR2-G344	1087621.274	1509660.344	**320**	CSR2-G747	1087568.527	1509428.342	1.61
CSR2-G345	1087627.357	1509647.854	**262**	CSR2-G748	1087564.548	1509413.368	3.14
CSR2-G346	1087635.173	1509633.056	**318**	CSR2-G751	1087609.151	1509237.332	9.15
CSR2-G347	1087641.68	1509620.718	**129**	CSR2-G758	1087495.873	1509708.132	4.52
CSR2-G348	1087642.823	1509608.265	**155**	CSR2-G759	1087481.255	1509704.205	**66.6**
CSR2-G349	1087640.002	1509597.825	**110**	CSR2-G760	1087465.472	1509703.791	**101**
CSR2-G354	1087589.358	1509692.763	**595**	CSR2-G761	1087472.475	1509689.942	49.2

CSR2-G355	1087596.937	1509678.484	**460**	CSR2-G762	1087481.104	1509675.723	42.9
CSR2-G356	1087602.998	1509666.046	**1,120**	CSR2-G763	1087488.407	1509662.993	7.82
CSR2-G357	1087609.837	1509652.224	**2,120**	CSR2-G764	1087493.694	1509651.315	6.8
CSR2-G358	1087616.971	1509639.7	**1,440**	CSR2-G765	1087502.487	1509635.681	5.59
CSR2-G359	1087624.313	1509627.064	**1,480**	CSR2-G766	1087511.274	1509623.54	2.74
CSR2-G360	1087627.639	1509613.109	**1,310**	CSR2-G767	1087518.5	1509608.274	3.16
CSR2-G367	1087576.107	1509683.691	**76.3**	CSR2-G768	1087522.215	1509596.156	2.81
CSR2-G368	1087583.363	1509671.259	**75.9**	CSR2-G769	1087521.132	1509584.762	1.89
CSR2-G369	1087590.29	1509657.919	**685**	CSR2-G770	1087514.399	1509566.96	1.8
CSR2-G370	1087597.796	1509644.351	**732**	CSR2-G773	1087507.418	1509524.995	2.11
CSR2-G371	1087604.029	1509630.305	**732**	CSR2-G774	1087522.32	1509495.45	1.36
CSR2-G372	1087610.45	1509617.938	**79.1**	CSR2-G776	1087522.84	1509479.233	1.35
CSR2-G382	1087579.003	1509649.824	**7.87**	CSR2-G777	1087532.427	1509463.462	1.83
CSR2-G383	1087585.519	1509634.809	**131**	CSR2-G778	1087544.736	1509447.826	1.58
CSR2-G384	1087591.689	1509622.706	**268**	CSR2-G779	1087554.874	1509430.783	1.18
CSR2-G418	1087621.638	1509718.09	**71.4**	CSR2-G781	1087594.592	1509243.051	1.32
CSR2-G423	1087647.689	1509723.904	**108**	CSR2-G782	1087619.817	1509222.964	1.83
CSR2-G424	1087662.229	1509720.72	**137**	WTH-G005	1087834.063	1509399.501	1.65
CSR2-G428	1087636.536	1509740.81	19	WTH-G025	1087844.876	1509477.231	3.53
CSR2-G466	1087645.363	1509524.726	**90.5**	WTH-G044	1087872.201	1509458.2	3.38
CSR2-G476	1087593.788	1509517.331	1.51	WTH-G064	1087909.368	1509349.996	3.11
CSR2-G477	1087610.181	1509516.704	18.3	WTH-G065	1087899.116	1509336.893	6.79
CSR2-G478	1087627.047	1509515.245	**71.9**	WTH-G066	1087891.626	1509325.593	6.54
CSR2-G479	1087639.874	1509512.275	2.64	WTH-G067	1087881.881	1509312.568	2.11

Figures in **bold** exceed TSCA limit of 50 mg/kg

Estimated volumes of PCB-contaminated soil at 9 of the 11 Former RRS AOCs and the stockpiles at the RRS are shown in Table 13. Note that two AOCs show the volume of contaminated soil to be zero based on the *Draft Soil Characterization and Disposal Report*, May 2012 (2012c). Tight volumes are shown, as are loose volumes. The loose volumes assume a 25 percentage expansion factor after affected soils have been excavated. The road AOC has been excluded from Table 12. Volumes in AOCs CSR1, DSA, DSA – Debris Pile, FCS/PG1, and Location 5 are based on previous investigations.

Table 13. Volumes of PCB-contaminated soil at Port Heiden RRS.

AOC	TSCA volume (cubic yards)	Non-TSCA volume (cubic yards)	Tight volume (cubic yards)	Loose volume (cubic yards)
BLO/SSO	400	192	592	740
CSR1	0	0	0	0
CSR2	1,860	756	2,616	3,270
DSA	0	0	0	0
DSA – Debris Pile	Unknown	Unknown	1,167	1,458
FCS/PG1	Unknown	Unknown	889	1,111
WTH	-	28	28	35
Location 5	Unknown	Unknown	139	174
NLF	Unknown	Unknown	1,333	1,667
Stockpiles	0	5,650	5,650	7,062
Totals:			**12,414**	**15,518**

Figure 16 shows grids within WTH, BLO and CSR2 that remain above PCB clean-up levels at the conclusion of the 2012 field season.

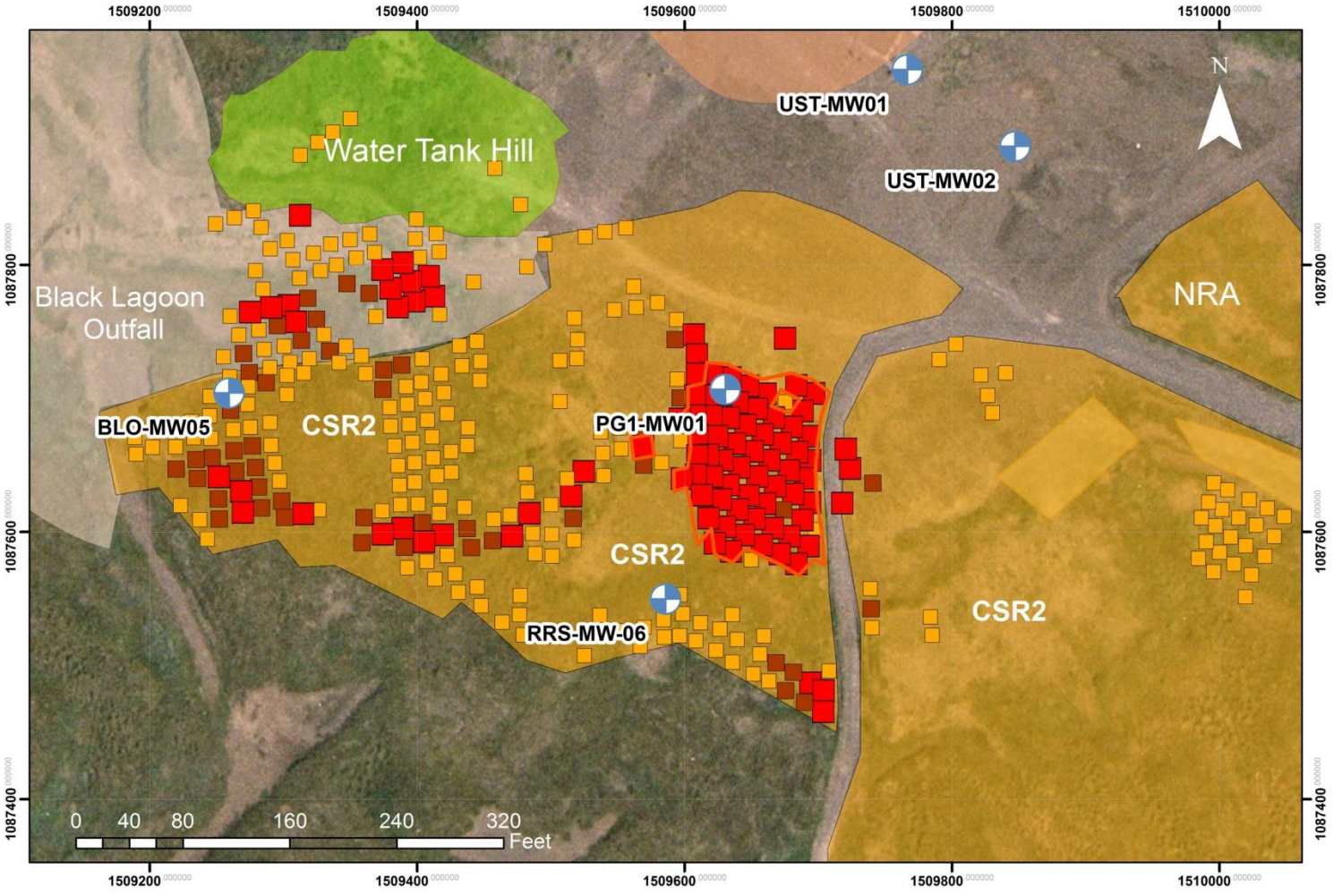


Figure 16. Grid cells that remain above ADEC clean-up level of 1 mg/kg for PCB, including cells characterized in 2011.

6 Quality Assurance Program.

Summary reports of samples analyzed by the laboratory are included in Appendix C. The samples were analyzed by:

SGS North America, Inc.
200 West Potter Drive
Anchorage, AK 99518

SGS North America, Inc. is a laboratory that is accredited by ADEC (UST-005).

Data quality was reviewed using the ADEC Laboratory Data Review Form by Argon, Inc., which are included for each work order in Appendix D. These are summarized in Table 14. No issues were uncovered that would affect data quality.

Table 14. Summary of analytical laboratory reports.

Laboratory Report #	No. of samples	Type	Date received by lab	Analysis	Location	Checklist date
1122519	34	Soil	June 25th, 2012	PCB	CSR2	
1122581	43	Soil	June 27th, 2012	PCB	CSR2	2/9/13
1122622	35	Soil	June 28th, 2012	PCB	PSP WSZ	2/9/13
1122629	22	Soil	June 28th, 2012	PCB	CSR2	2/10/13
1122666	57	Soil	June 29th, 2012	PCB	CSR2	2/10/13
1122713	73	Soil	July 2nd, 2012	PCB	CSR2	2/11/13
1122783	94	Soil	July 5th 2012	PCB	CSR2	2/12/13
1122862	84	Soil	July 9th, 2012	PCB	CSR2 BLO	2/13/13
1122955	63	Soil	July 12th, 2012	PCB	CSR2 SS	2/14/13
1123006	63	Soil	July 14th, 2012	PCB	WTH	2/14/13
1123084	47	Soil	July 18th, 2012	PCB	CSR2	2/25/13
1123158	71	Soil	July 20th, 2012	PCB	CSR2	2/25/13
1123496	41	Soil	Aug 7th, 2012	PCB	BLO CSR2	2/25/13
1123157	94	Soil	July 21st, 2012	PCB	CSR2	2/25/13
1123780	16	Soil	Aug 16th, 2012	PCB	CSR2	2/21/13
1123794	28	Soil	Aug 17th, 2012	PCB	WTH	2/25/13
1123818	32	Soil	Aug 20th, 2012	PCB	CSR2	2/25/13
1123879	48	Soil	Aug 22nd, 2012	PCB	CSR2	3/5/13
1123926	41	Soil	Aug 22nd, 2012	PCB	CSR2	2/26/13
1124043	72	Soil	Aug 30th, 2012	PCB	CSR2	2/26/13
1124092	5	Water	Aug 31st, 2012	PCB VOC	LF	2/27/13
1124194	111	Soil	Sept 6th, 2012	PCB	CSR2 WTH BLO	2/28/13
1124259	91	Soil	Sept 10th, 2012	PCB	CSR2 BLO	2/28/13
1124347	24	Soil	Sept 13th, 2012	PCB	CSR2	3/1/13
1124363	18	Soil	Sept 14th, 2012	PCB	CWTH	3/13/13
1124514	41	Soil	Sept 20th, 2012	PCB	CSR2 BLO	3/4/13

Laboratory Report #	No. of samples	Type	Date received by lab	Analysis	Location	Checklist date
1124616	36	Soil	Sept 25th, 2012	PCB	CSR2 BLO	3/4/13
1124640	15	Soil	Sept 26th 2012	PCB	CSR2 BLO	3/5/13
1124701	26	Soil	Sept 27th 2012	PCB	BLO CSR2	3/5/13
1124831		Water	Oct 3rd 2012	PDC VOC	LF	3/4/13
1124991	64	Soil	Oct 10th 2012	PCB	BLO CSR2	3/5/13
1125063	28	Soil	Oct 16th 2012	PCB	CSR2	3/6/13
1125131	13	Soil water	Oct 16, 2012	PCB	LF THF LFW	3/6/13

6.1 Data Quality Assurance

Summaries for each laboratory work order are shown below.

6.1.1 QA Summary for 1122581.

Precision was demonstrated by the analysis of matrix spike duplicate and laboratory control duplicate samples. The matrix spike duplicate and laboratory control duplicate samples met the laboratory criteria for precision and the quality of this data set is not impacted.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The matrix spike and matrix spike duplicate samples prepared from NVPH12-CSR2-G168 recovered high for Aroclor-1260 and the matrix spike duplicate sample prepared from NVPH12-CSR2-G151 recovered low for Aroclor-1260. Both parent samples had Aroclor-1260 concentrations greater than 4 times the MS/MSD spike levels and are considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.2 QA Summary for 1122622.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate samples met the laboratory criteria for precision. The matrix spike / matrix spike duplicate RPD prepared from sample NVPH12-PSP-A30 for Aroclor-1016 and Aroclor-1260 were above the laboratory control limits. These failures were due to a laboratory error in sample preparation. The laboratory calculated a corrected RPD that is within the control limit and the quality of this data set is not impacted.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples, matrix spike samples, and spiked surrogate compounds met the laboratory criteria for percentage recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.3 QA Summary for 1122629.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate and laboratory control duplicate samples met the laboratory criteria for precision and the quality of this data set is not impacted.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The matrix spike and matrix spike duplicate samples prepared from NVPH12-CSR2-G184D recovered out of laboratory limits for Aroclor-1260. The parent sample had an Aroclor-1260 concentration greater than 4 times the MS/MSD spike levels and is considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.4 QA Summary for 1122666.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate and laboratory control duplicate samples met the laboratory criteria for precision and the quality of this data set is not impacted.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The matrix spike and matrix spike duplicate samples prepared from NVPH12-CSR2-G221 recovered out of laboratory limits for Aroclor-1260. The parent sample had an Aroclor-1260 concentration greater than 4 times the MS/MSD spike levels and is considered unaffected by the out of control recoveries. Additionally, the MSD sample prepared from NVPH12-CSR2-G194 recovered high for Aroclor-1260. The parent sample did not detect Arloclor-1260 and is considered unaffected by the high MSD recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Sample NVPH12-CSR2-G219 had undetected Aroclors with LODs above the clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.5 QA Summary for 1122713.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision for Aroclor-1260 calculated from spiked sample NVPH12-CSR2-G257 was above the laboratory limit; however, the parent sample Aroclor-1260 concentration was greater than 4 times the spike level and the precision and accuracy calculations are not meaningful. The quality of this data set is not impacted by the precision measurements.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The matrix spike and matrix spike duplicate samples prepared from sample NVPH12-CSR2-G276 recovered low for Aroclor-1260. The parent sample had an Aroclor-1260 concentration greater than 4 times the MS/MSD spike levels and is considered unaffected by the low recoveries. Additionally, the MS/MSD samples prepared from NVPH12-CSR2-G257 recovered high for Aroclor-1016 and low for Aroclor-1260. The parent sample did not detect Arloclor-1016 and is considered unaffected by the high recoveries and Aroclor-1260 was detected in the parent sample at a concentration greater than 4 times the MS/MSD spike levels and is also considered unaffected. Spiked surrogate compound decachlorobiphenyl recovered high in samples NVPH12-CSR2-G286, NVPH12-CSR2-G287, NVPH12-CSR2-G288, NVPH12-CSR2-G289, NVPH12-CSR2-G290, NVPH12-CSR2-G291, NVPH12-CSR2-G292, NVPH12-CSR2-G293, NVPH12-CSR2-G301, and NVPH12-CSR2-G303. Aroclor-1260 results reported in these samples should be considered estimates due to the high surrogate recoveries. All other Aroclors were not detected and are considered unaffected by the high surrogate recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Samples NVPH12-CSR2-G286, NVPH12-CSR2-G287, NVPH12-CSR2-G288, NVPH12-CSR2-G289, NVPH12-CSR2-G290, NVPH12-CSR2-G291, NVPH12-CSR2-G292, and NVPH12-CSR2-G293 had undetected Aroclors with LODs above the clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.6 QA Summary for 1122783.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate and laboratory control duplicate samples met the laboratory and project criteria for precision. The field duplicate precision for Aroclor-1260 calculated from samples NVPH12-CSR2-G324 and NVPH12-CSR2-G324D was 121%, which is above the project limit of 100%. The Aroclor-1260 results for both samples are considered estimates due to the field duplicate imprecision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The matrix spike and/or matrix spike duplicate samples prepared from samples NVPH12-CSR2-G324, NVPH12-CSR2-G338, NVPH12-CSR2-G383, and NVPH12-CSR2-G344 recovered out of laboratory limits for Aroclor-1260. In all cases, the parent sample had an Aroclor-1260 concentration greater than 4 times the MS/MSD spike levels and is considered unaffected by the low recoveries. Additionally, the MS/MSD samples prepared from NVPH12-CSR2-G344 recovered high for Aroclor-1016. The parent sample did not detect Arloclor-1016 and is considered unaffected by the high recoveries. Spiked surrogate compound decachlorobiphenyl recovered high in samples NVPH12-CSR2-G316, NVPH12-CSR2-G317, NVPH12-CSR2-G328, NVPH12-CSR2-G329, NVPH12-CSR2-G330, NVPH12-CSR2-G331, NVPH12-CSR2-G343, NVPH12-CSR2-G344, NVPH12-CSR2-G345, NVPH12-CSR2-G354, NVPH12-CSR2-G354D, NVPH12-CSR2-G355, NVPH12-CSR2-G356, NVPH12-CSR2-G357, NVPH12-CSR2-G358, NVPH12-CSR2-G359, NVPH12-CSR2-G360, NVPH12-CSR2-G370, and NVPH12-CSR2-G371. Aroclor-1260 results reported in these samples should be considered estimates due to the high surrogate recoveries. All other Aroclors in these samples were not detected and are considered unaffected by the high surrogate recoveries. Additionally, spiked surrogate compound decachlorobiphenyl recovered out of control in samples NVPH12-CSR2-G336, NVPH12-CSR2-G337, NVPH12-CSR2-G341, NVPH12-CSR2-G342, and NVPH12-CSR2-G343. These out of control recoveries were due to dilutions of 50x to 100x and the sample results were not qualified.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Samples NVPH12-CSR2-G336, NVPH12-CSR2-G337, NVPH12-CSR2-G341, NVPH12-CSR2-G342, and NVPH12-CSR2-G343 had undetected Aroclors with LODs above the

clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.7 QA Summary for 1122862.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision for Aroclor-1260 calculated from samples NVPH12-BLO-G052 and NVPH12-CSR2-G411 were above the laboratory limit. The Aroclor-1260 result for NVPH12-BLO-G052 is considered an estimate due to the matrix spike duplicate imprecision. The Aroclor-1260 result for NVPH12-CSR2-G411 is considered unaffected by the imprecision because the sample concentration was greater than 4 times the MS/MSD spike level and the precision calculation is not meaningful.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MSD prepared from sample NVPH12-BLO-G052 recovered low for Aroclor-1260 and the parent sample result is considered an estimate. The MS/MSD prepared from sample NVPH12-BLO-G028 recovered out of control for Aroclor-1016 and -1260, but the spiked compounds were diluted out of the sample and the parent sample results were not qualified. The MS/MSDs prepared from samples NVPH12-CSR2-G411 and NVPH12-CSR2-G128a recovered out of control for Aroclor-1260, but the parent sample concentrations were greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries. The MSD prepared from sample NVPH12-BLO-G048 recovered high for Aroclor-1260 and the parent sample result is considered an estimate. Spiked surrogate compound decachlorobiphenyl recovered low in sample NVPH12-CSR2-G411. The detected Aroclor-1260 result reported in this sample should be considered an estimate due to the low surrogate recovery. All other Aroclors in this sample were not detected and are considered estimates for the reporting limit due to the low surrogate recovery. Additionally, spiked surrogate compound decachlorobiphenyl recovered high in samples NVPH12-BLO-G017 and NVPH12-BLO-G028. These high recoveries were due to dilutions of 100x to 1000x and the sample results were not qualified.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Samples NVPH12-BLO-G016, NVPH12-BLO-G017, NVPH12-BLO-G027, NVPH12-BLO-G028, and NVPH12-BLO-G030 had undetected Aroclors with LODs above the clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.8 QA Summary for 1122955.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision for Aroclor-1260 calculated from sample NVPH12-CSR2-G447 was above the laboratory limit. The Aroclor-1260 result for NVPH12-CSR2-G447 is considered unaffected by the matrix spike duplicate imprecision because the sample concentration was greater than 4 times the MS/MSD spike level and the precision calculation is not meaningful.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The MS/MSD prepared from sample NVPH12-CSR2-G447 recovered out of control for Aroclor-1016 and -1260. The parent sample results are considered unaffected because Aroclor-1016 was diluted out of the sample and the Aroclor-1260 parent sample concentrations were greater than 4 times the MS/MSD spike levels.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.9 QA Summary for 1123006.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision for Aroclor-1260 calculated from sample NVPH12-WTH-G012 was above the laboratory limit. The Aroclor-1260 result for NVPH12-WTH-G012 is considered unaffected by the matrix spike duplicate imprecision because the sample concentration was greater than 4 times the MS/MSD spike level and the precision calculation is not meaningful.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The MS/MSD prepared from sample NVPH12-WTH-G012 recovered high for Aroclor-1260. The parent sample results are considered unaffected because the Aroclor-1260 parent sample concentrations were greater than 4 times the MS/MSD spike levels.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.10 QA Summary for 1123084.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate, field duplicate samples, and matrix spike duplicate samples.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS prepared from sample NVPH12-CSR2-G497 and the MS and MSD prepared from NVPH12-CSR2-G514 recovered low for Aroclor-1260, but in all cases the parent sample concentrations were greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.11 QA Summary for 1123158.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. One sample from another NVPH project and one sample from a non-NVPH project had out of control matrix spike duplicates.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. Recovery on the Aroclor-1016 MS prepared for NVPH12-CSR2-G620D was out of control and results are considered estimated. For the MS and MSD prepared from this sample, Aroclor-1260 recovered high but parent sample concentration is greater than 4x laboratory spike level and sample results are considered unaffected by the spike recoveries. For the MS/MSD prepared from NVPH-CSR2-G609 both MS and MSD recoveries for Aroclor-1260 are low and parent sample concentration is estimated. Additionally, MSDs demonstrated out of control recoveries on one sample from another NVPH project and one sample from a non-NVPH project. All laboratory control samples met the laboratory criteria for percentage recovery.

Spiked surrogate compound decachlorobiphenyl recovered high in samples NVPH12-CSR2-G631 and NVPH12-CSR2-G636. These two samples are estimated.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Samples NVPH12-CSR2–G632, NVPH12-CSR2-G639, and NVPH12-CSR2-G640 had undetected Aroclors with LODs above the clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.12 QA Summary for 1123496.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS/MSD set prepared from sample NVPH12-BLO-G84 recovered high for Aroclor-1260; however, the concentration of Aroclor-1260 in the parent sample is greater than 4x the spike level and the sample is considered unaffected by the out of control recoveries.

The MS and MSD from a non-project sample had out of control recoveries for Aroclor-1260. Additionally, spiked surrogate compound decachlorobiphenyl recovered low in sample NVPH12-BLO-G59. The detected Aroclor-1260 result reported in this sample should be considered an estimate due to the low surrogate recovery. All other Aroclors in this sample were not detected and are considered estimates for the reporting limit due to the low surrogate recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.13 QA Summary for 1123157.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision for Aroclor-1260 calculated from sample NVPH12-CSR2-G590D was above the laboratory limit. The Aroclor-1260 result for NVPH12-CSR2-G590D is considered an estimate due to the matrix spike duplicate imprecision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS and MSD prepared from sample NVPH12-CSR2-G485 recovered high for Aroclor-1260 and the MS prepared from sample NVPH-CSR2-G553 recovered low. Parent sample concentrations were greater than 4 times the MS/MSD spike levels for these samples, and the samples are considered unaffected by the out of control recoveries. The MSD prepared from sample NVPH12-CSR2-G590D recovered high for Aroclor-1260, and the parent sample is considered an estimate. Spiked surrogate compound decachlorobiphenyl recovered low in samples NVPH12-CSR2-G583 and NVPH12-CSR2-G586. The detected Aroclor-1260 results should be considered estimates. Non-detected Aroclors in these two samples are considered estimates for the reporting limit due to the low surrogate recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Sample NVPH12-CSR2-G575 had undetected Aroclors with LODs above the clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.14 QA Summary for 1123794.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate and laboratory control duplicate samples met the laboratory and project criteria for precision. Field duplicate sample NVPH12-CSR2-G199D exceeded the project RPD limit for Aroclor-1260 and the parent sample result is considered an estimate.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. The Aroclor-1260 MSD prepared for NVPH12-CSR2-G144 recovered low for Aroclor-1260, but the parent sample result was greater than 4 times the MSD spike level. The sample is considered unaffected by the out of control recovery. All laboratory control samples met the laboratory criteria for percentage recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals, as measured by comparison of the LOD (2x MDL) or MDL and the clean-up level, were met for this project. Additionally, all method blank results were less than the LOD.

6.1.15 QA Summary for 1123818.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MSD prepared from sample NVPH12-CSR2-G658 recovered high for Aroclor-1260 and the parent sample is considered an estimate. The MS/MSD prepared from NVPH12-CSR2-G675 recovered out of control for Aroclor-1260, but the parent sample concentration was greater than 4 times the MS/MSD spike level and the sample is considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.16 QA Summary for 1123879.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision values for Aroclor-1016 and Aroclor-1260 calculated from sample NVPH12-CSR2-G703 were above the laboratory limit. The precision value calculated from the spiked surrogate compound decachlorobiphenyl was out of control on this sample as well. All Aroclor results for NVPH12-CSR2-G703 are considered estimated due to the matrix spike duplicate and spiked surrogate imprecision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS/MSDs prepared from sample NVPH12-CSR2-G404 recovered out of control for Aroclor-1260, but the parent sample concentrations were greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries. The Aroclor-1260 MS recovery and the spiked surrogate compound decachlorobiphenyl recovery calculated from sample NVPH12-CSR2-G703 were low. The detected Aroclor-1260 result reported in this sample should be considered an estimate due to the low MS and spiked surrogate recoveries; all other Aroclors were not detected and are considered estimates for the reporting limit due to the low surrogate recovery. Additionally, the spiked surrogate compound recovered low in samples NVPH12-CSR2-G689 and NVPH12-CSR2-G702D. The detected Aroclor-1260 result reported in this sample should be considered an estimate due to the low spiked surrogate recoveries; all other Aroclors were not detected and are considered estimates for the reporting limit due to the low surrogate recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.17 QA Summary for 1123926.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate, and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS/MSD prepared from sample NVPH12-CSR2-G719 recovered low for Aroclor-1260 and the parent sample result is considered an estimate. The MS/MSD prepared from sample NVPH12-CSR2-G707 recovered out of control for Aroclor-1260, but the parent sample concentrations were greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries. Spiked surrogate compound decachlorobiphenyl recovered low in samples NVPH12-CSR2-G714, NVPH12-CSR2-G720, and NVPH12-CSR2-G720D. The detected Aroclor-1260 result reported in these samples should be considered estimated due to the low surrogate recovery. All other Aroclors in these samples were not detected and are considered estimates for the reporting limit due to the low surrogate recovery. Additionally, spiked surrogate compound decachlorobiphenyl recovered low in sample NVPH12-CSR2-G724. This low recovery was due to dilutions of 20x to 40x and the sample results were not qualified.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Sample NVPH12-CSR2-G724 had undetected Aroclors with LODs above the clean-up level. It is not possible to tell if undetected Aroclors in these samples were present at or below the clean-up level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.18 QA Summary for 1124043.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and matrix spike duplicate samples met the laboratory and project criteria for precision. The field duplicate precision for Aroclor-1260 calculated from samples NVPH12-CSR2-G206/-G206D was above the laboratory limit. The Aroclor-1260 results for NVPH12-CSR2-G206/G206D are considered an estimated due to the field duplicate imprecision. Additionally, the RPD calculated from one non-project MS/MSD set is elevated for Aroclor-1260 but sample result for this analyte is considered unaffected by the imprecision because the sample concentration was greater than 4 times the MS/MSD spike level and the precision calculation is not meaningful.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and matrix spike samples met the laboratory and project criteria for percentage recovery. One non-project MS/MSD set recovered high for Aroclor-1260, but the parent sample concentration was greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries. Spiked surrogate compound decachlorobiphenyl recovered high in sample NVPH12-CSR2-G224. The detected Aroclor-1260 result reported in this sample should be considered an estimate due to the elevated surrogate recovery. All other Aroclors in this sample were not detected and are not affected by the elevated surrogate recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.19 QA Summary for 1124092.

Precision was demonstrated by the analysis of laboratory control duplicate samples. The laboratory control duplicate samples met the laboratory criteria for precision and the quality of this data set is not impacted.

Accuracy was demonstrated by the analysis of laboratory control samples and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.20 QA Summary for 1124194.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate samples met the laboratory and project criteria for precision. Precision for field duplicate sample set NVPH12-WTH-G019 and NVPH12-WTH-G019D was out of control for Aroclor-1260 and the sample is considered estimated due to the field duplicate imprecision. The matrix spike duplicate precision for Aroclor-1260 calculated from samples NVPH12-CSR2-G149, NVPG12-CSR2-G294 and NVPH12-CSR2-G429 were above the laboratory limit. The Aroclor-1260 result for these samples is considered unaffected by the imprecision because the sample concentration was greater than 4 times the MS/MSD spike level and the precision calculation is not meaningful.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate samples met the laboratory criteria for percentage recovery. The MS prepared from sample NVPH12-CSR2-G116 recovered low for Aroclor-1260 and the parent sample result is considered an estimate. The MS/MSDs prepared from samples NVPH12-CSR2-G149, NVPH12-CSR2-G294, and NVPH12-CSR2-G429 recovered out of control for Aroclor-1260, but the parent sample concentrations were greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries. One MS prepared from a non-project sample recovered high for Aroclor-1260 and the parent sample result is considered an estimate.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.21 QA Summary for 1124259.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate samples met the laboratory and project criteria for precision. The field duplicate precision for Aroclor-1260 calculated from samples NVPH12-CSR2-G476 and NVPH12-CSR2-G476D was above the laboratory limit. The Aroclor-1260 results for NVPH12-CSR2-G476 and NVPH12-CSR2G476D are considered an estimated due to the field duplicate imprecision. Additionally, the RPD calculated from one non-project MS/MSD set is elevated for Aroclor-1260 but the sample result for this analyte is considered unaffected by the imprecision because the sample concentration was greater than 4 times the MS/MSD spike level and the precision calculation is not meaningful.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate samples met the laboratory and project criteria for percentage recovery. The MS prepared from sample NVPH12-CSR2-G166 and the MS and/or MSDs prepared from two non-project samples demonstrated out of control recoveries for Aroclor-1260. In all cases the parent sample concentration for Aroclor-1260 was greater than 4x the MS/MSD spike level and the samples are considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.22 QA Summary for 1124347.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate, and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The MS and/or MSDs prepared from two non-project samples had out of control recoveries and the parent sample results are considered estimated for Aroclor-1260.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.23 QA Summary for 1124514.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The MS and MSD prepared from another NVPH project recovered low for Aroclor-1260 and the parent sample result is considered an estimate. The MS and MSD prepared from sample NVPH12-CSR2-G149 recovered out of control for Aroclor-1260, but the parent sample concentrations were greater than 4 times the MS/MSD spike levels and the samples are considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.24 QA Summary for 1124616.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples, matrix spike samples, and spiked surrogate compounds met the laboratory criteria for percentage recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.25 QA Summary for 1124640.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. Aroclor-1260 recoveries in the MS/MSD set prepared from sample NVPH12-CSR2-G682 were low, and sample results for this compound are considered estimated.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.26 QA Summary for 1124701.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision. The matrix spike duplicate precision for Aroclor-1016 calculated from a non-project MS/MSD set was above the laboratory limit.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS and/or MSDs prepared from two non-project sample sets recovered out of control for Aroclor-1260. Spiked surrogate compound decachlorobiphenyl recovered low in samples NVPH12-BLO-G105, NVPH12-BLO-G105D, and NVPH12-BLO-G098. The detected Aroclor-1260 results reported in these samples should be considered estimated due to the low

surrogate recovery. All other Aroclors in these samples were not detected and are considered estimates for the reporting limit due to the low surrogate recovery.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.27 QA Summary for 1124831.

Precision was demonstrated by the analysis of laboratory control duplicate, matrix spike duplicate, and field duplicate samples. The laboratory control duplicate, matrix spike duplicate, and field duplicate samples met the laboratory criteria for precision and the quality of this data set is not impacted.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. The laboratory control samples, matrix spike samples, and spiked surrogate compounds met the laboratory criteria.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, most method blank results were less than the LOD. The VOC method blank showed toluene contamination above the PQL, but because toluene was not detected in the associated samples they are not affected.

6.1.28 QA Summary for 1124991.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The laboratory control duplicates and field duplicate samples met the laboratory and project criteria for precision. Additionally, the RPDs calculated from two non-project MS/MSD sets are elevated for Aroclor-1260. (One set is estimated due to the MS/MSD imprecision; one set is unaffected by the imprecision due to the parent sample concentration being greater than 4x the level of the spikes.)

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met laboratory and project criteria for percentage recovery. The MSDs prepared from samples NVPH12-CSR2-G447, NVPH12-BLO-G120, and one non-project sample were elevated for Aroclor-1260; the parent samples are considered estimated for this compound. One non-project MS/MSD sample set demonstrated out of control recoveries for Aroclor-1260 as well as out of control spiked surrogate decachlorobiphenyl recoveries; the parent sample concentration for Aroclor-1260 was greater than 4x the MS/MSD spike level and the sample is considered unaffected by the out of control recoveries. Spiked surrogate compound decachlorobiphenyl recovered high in sample NPVH12-BLO-G116. These elevated recoveries were due to dilutions of 10000x and the sample result is not qualified.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Sample NVPH12-BLO-G116 had LODs greater than the Clean-up Level for undetected analytes. The sample was diluted 10000x by the laboratory due to high concentrations of Aroclor-1260. It is not possible to tell if undetected Aroclors were present at or below the Clean-up Level due to the elevated LODs. Additionally, all method blank results were less than the LOD.

6.1.29 QA Summary for 1125063.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples and spiked surrogate compounds met the laboratory criteria for percentage recovery. The MSDs prepared from NVPH12-CSR2-G697D and one sample from another NVPH project demonstrated elevated recoveries for Aroclor-1260 and the parent samples are considered estimates.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for all analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Additionally, all method blank results were less than the LOD.

6.1.30 QA Summary for 1125131.

Precision was demonstrated by the analysis of matrix spike duplicate, laboratory control duplicate, and field duplicate samples. The matrix spike duplicate, laboratory control duplicate and field duplicate samples met the laboratory and project criteria for precision.

Accuracy was demonstrated by the analysis of laboratory control samples, matrix spike samples, and spiked surrogate compounds. All laboratory control samples met the laboratory criteria for percentage recovery. The MS/MSD set prepared from sample NVPH12-THF-S003 had elevated recoveries for dieldrin and the parent sample is considered estimated for this compound. For a non-project sample set the following PAH-SIMS MS and/or MSDs recovered low: acenaphthene, acenaphthylene, benzo(g,h,i)perylene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene, and spiked surrogate 2-fluorobiphenyl. Anthracene, fluoranthene, pyrene, fluorene, naphthalene, and phenanthrene recovered high for the same non-project sample set, with the parent sample measuring greater than 4x the spike level for the last three compounds noted above. A second non-project MS/MSD set recovered low for Aroclor-1260 with the parent sample measuring greater than 4x the spike level and the samples are considered unaffected by the out of control recoveries.

Representativeness was demonstrated by choosing the number of samples, sample locations, and sampling procedures in order to produce results showing as accurately as possible the matrix and site conditions.

Comparability was demonstrated by keeping the analytical laboratory the same throughout the project. Analytical methods, laboratory procedures, and reporting limits were therefore consistent and comparable between laboratory reports.

Completeness was calculated at 100% for this data set, which meets the 85% goal per UST Procedures Manual.

Sensitivity goals were met for most analytes by comparison of the LOD (2x MDL) or MDL and the clean-up level. Samples had undetected results for 1,2,3-trichloropropane with LODs above the clean-up level. It is not possible to tell if 1,2,3-trichloropropane was present at or below the clean-up level due to the high LODs. Additionally, all method blank results were less than the LOD.

7 Summary.

At the former Port Heiden RRS, additional work was undertaken to delineate and remove PCB contaminated soil and to treat standing water contaminated by POL and PCBs at the Port Heiden Community Landfill.

Approximately 40,000 gallons of standing water was removed from the landfill and treated using a MYCLEX filtration system, which contained reagents formulated to remove contaminants. Water samples were collected and laboratory analysis confirmed that the treated water met ADEC clean-up levels. Permission was obtained from ADEC to discharge the water on site.

Soil at several AOC's at the former Port Heiden RRS was sampled and analyzed for PCB content by collecting composite samples within 15' x 15' grid squares and analysing in the laboratory using Method SW8082A. Soil with PCB concentrations in excess of 1 mg/kg and less than 50 mg/kg was excavated from the grid squares and transferred to one of three constructed lined stockpile cells. Additional soil lifts were excavated until the grid square tested below 1 mg/kg or field conditions prevented additional excavation. Soil with PCB concentration in excess of 50 mg/kg was left in-situ and the grid square fenced off.

At CSR2, over 150,000 ft^2 was sampled and approximately 2,569 yds^3 of PCB-contaminated soil was excavated and transported to Cells, 1, 2 or 3. Almost 18,000 ft^2 was determined to have PCB contamination above 50 mg/kg and was left in-situ for future remediation. PCB contamination continued to be uncovered as the boundaries of CSRS2 were extended westwards, indicating that additional PCB contamination is likely present.

At the BLO, an area of over 27,000 ft^2 was sampled and 208 $yrds^3$ of PCB-contaminated soil excavated and transported to Cells 1, 2 or 3. At WTH, an area of over 15,000 ft^2 was sampled and 200 $yrds^3$ excavated and removed to the stockpile cells.

8 References.

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Plates (Provided on compact disc)

Plate 1 PCB Grids.

Plate 2 PCB Grids with 2009 Overlay.

Appendix A Work Log.

Date	Activity	QP
6/23/12	Sampling at CSR2 for PCB.	GD
6/24/12	Shipment of soil samples.	GD
6/25/12	Re-sampling at CSR2. Background samples collected	GD
6/26/12	Sampling of worker safety zone (WSZ). Sampling at CSR2	GD
6/27/12	Sampling at CSR2 G190 – G241	GD
6/28/12	Sampling at CSR2	GD
6/29/12	Sampling at CSR2	GD, JC
6/30/12	Sampling at CSR2	GD
7/3/12	Sampling at CSR2	GD
7/4/12	Work prep for land farming	GD
7/5/12	Sampling at CSR2; Trapper Hill	GD
7/6/12	Sampling at CSR2 and BLO	GD GL
7/8/12	Sampling at Borrow Pit	GD GL
7/9/12	Grid layout at CSR2 south area and begin sampling. GD leaves for Anchorage	GL
7/10/12	Grid layout and sampling at WTH	GL
7/11/12	Grid layout LSA5	GL
7/12/12	PID measurement at land spreading area (LSA 5)	GL
7/13/12	PID measurement at land spreading area (LSA 5)	GL
7/14/12	Begin staking LSA 3 & 4.	GL
7/15/12	PID screening at LSA5. Grid out CSR2 – North End.	GL
7/16/12	Finish PID screening at LSA5	GL, JC
7/17/12	Day off for work crew.	GL
7/18/12	Sampling at CSR2.	GL
7/19/12	Finish sampling at CSR2. Lab samples collected at LSA5. COC 1123166 shipped out to SGS. Begin gridding LSA1	GL
7/20/12	PID measurements at LSA1	NW
7/21/12	PID measurements at LSA1	NW
7/22/12	PID measurements at LSA1	NW
7/23/12	PID measurements at LSA1	NW
7/24/12	Day off for work crew	NW
7/25/12	Finish PID measurements at LSA1. Collect lab samples from LSA1 – 15 samples with 2 duplicates. COC 1123285 shipped out to SGS. Field screening at LSA2 using PID.	NW
7/26/12	LSA2 field screening by PID. CSR2 grids set out.	NW
7/27/12	Finish mapping CSR2	NW
7/28/12	Mapping at CSR2.	NW
7/29/12	Finish mapping CSR2	NW
8/1/12	330 yds^3 of clean fill moved from Trapper Hill to landfill. Water samples collected from treated landfill water and shipped to SGS (LFWT1)	GD
8/2/12	Grids set up at BLO PCB area	GD
8/3/12	Sampling at CSR2	GD
8/4/12	Liners installed at stockpile cells 1, 2 & 3.	GD JC

8/5/12	Prep for surveying	GD
8/6/12	Day off for work crew	GD
8/7/12	Surveying	GD
8/8/12	Surveying	GD
8/9/12	Wind issues – limited work	GD
8/10/12	Surveying	GD
8/11/12	Surveying at LSA1	GD
8/12/12	Excavation of PCB-contaminated soils along access road	GD
8/15/12	Sampling at CSR2	GD
8/16/12	Soil sampling at CSR2. Surveying	GD
8/17/12	Soil sampling at CSR2	GD
8/18/12	Wind day. Limited work.	GD
8/19/12	Surveying and sampling at CSR2. GD leaves	GD GL
8/21/12	Sampling at GSR2. Survey of sample points at LSA5	GL
8/22/13	PID measurements at land spreading area 3 (LSA3.) PID measurements at land spreading area 2 (LSA2).	GL
8/23/13	PID screening at LSA2. Sampling at CSR2.	GL
8/24/12	PID screening at LSA2	GL
8/25/12	PID Screening at LSA3	GL
8/26/12	PID Screening at LSA3 and LSA4	GL
8/27/12	P	GL
8/28/12	Finish PID screening at LSA3 and LSA4	GL
8/29/12	Collect LSA2 and LSA3 DRO samples. COC 1124099 shipped to SGS.	GL
8/30/12	Sampling at BLO	GL

GD Greg DuBois; GL Galen Laird; JC Jacyln Christensen; NW Nicole Ward

Appendix B Field Notes.
(Provided on compact disc)

Appendix C Laboratory Reports.
(Provided on compact disc).

Appendix D Laboratory Quality Control Information. (Provided on compact disc)

Appendix E Chain of Custody Forms.

Appendix F Comments.