U.S. EPA Contaminated ANCSA Lands Assistance Program

Cooperative Agreement No. AN-02J47101

*Revised Remedial Action Work Plan
To Address PCB-Impacted Soils
(Revision 1)

Dutch Harbor Warehouse - WWII Building 551

EPA Site No. ANCSA00706; ADEC Site Hazard No. 27905; ADEC File No. 2542.38.036;
18 East Point Road, Amaknak Island, Unalaska, AK 99685

Prepared for:

Ounalashka Corporation

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***Adapted From:**

***Qawalangin Tribe of Unalaska Native American Lands Environmental Mitigation Program Building 551: Remedial Action Workplan* prepared by Chilkat Environmental; dated April 13, 2015.**

April 24, 2024

TITLE AND APPROVAL PAGE

Document Title: *Revised Remedial Action Work Plan to Address PCB-Impacted Soils - Dutch Harbor Warehouse - WWII Building 551
Adapted From: Qawalangin Tribe of Unalaska, Native American Lands Environmental Mitigation Program, Building 551: Remedial Action Workplan; prepared by Chilkat Environmental (dated April 13, 2015 with approval by ADEC on April 14, 2015; provided in **Appendix A**).
Prepared for: Ounalashka Corporation
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Reviewed By: Kevin Ignaszak, PE (NY), Senior Principal Engineer (QEP per 18 AAC 75.333); Chris Gdak, Project Principal (QEP per 18 AAC 75.333); Jason Westenskow (QEP per 18 AAC 75.333).
Preparation Date: April 24, 2024
Revision number: 1

By signing below, each party acknowledges that they have reviewed/approved the above referenced document.

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List of Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska
ANC	Alaska Native Corporation
ANCSA	Alaska Native Claims Settlement Act
CA	Cooperative Agreement
CFR	Code of Federal Regulations
CSP	Certified Safety Professional
CM	Cubic Meter
CY	Cubic Yard
DoD	United States Department of Defense
EPA	United States Environmental Protection Agency
FSG	Field Sampling Guidance
mg/kg	Milligrams (mg) Per Kilogram (kg)
m^3	Cubic Meters
Montrose	Montrose Environmental Services, Inc. (QEP Contractor)
NHL	National Historic Landmark
NALEMP	Native American Lands Environmental Mitigation Program
OC	Ounalashka Corporation (Grantee/Site Owner)
OCE	Ounalashka Corporation Environmental Services, LLC (Remediation Subcontractor)
OZ	Ounce
PCB	Polychlorinated biphenyls
PE	Professional Engineer
PMP	Project Management Professional (certification)
ppb	Parts Per Billion
PPE	Personal Protective Equipment
PID	Photo Ionization Detector
QAPP	Master Quality Assurance Program Plan
QEP	Qualified Environmental Professional
Q Tribe	Qawalangin Tribe of Unalaska
RAWP	Remedial Action Work Plan
SB	Subsurface Samples
SF	Square Feet
SGS	SGS North America Inc. (Laboratory Subcontractor)
START	Superfund Technical Assessment and Response Team
SS	Surface Samples
TSCA	Toxic Substances Control Act
U.S.	United States
USACE	United States Army Corps of Engineers
VOCs	Volatile Organic Compounds
WM	Waste Management
WW	World War

1.0 Executive Summary

Montrose Environmental Solutions, Inc. (Montrose) prepared this Revised Remedial Action Work Plan (RAWP) on behalf of the Ounalashka Corporation (OC) to direct remedial actions for polychlorinated biphenyls (PCB)-impacted soils at the Dutch Harbor Warehouse - WWII Building 551 (the Site). The Site is located at 18 East Point Road on Amaknak Island, Unalaska, Alaska. The Site is referred to as ANCSA00706 by the U.S. Environmental Protection Agency (EPA), and Hazard ID No. 27905 by the Alaska Department of Environmental Conservation (ADEC). This project is being completed under the EPA's Contaminated Alaska Native Claims Settlement Act (ANCSA) Lands Assistance Program [Cooperative Agreement (CA) No. AN-02J47101].

This Revised RAWP was prepared in accordance with the U.S. EPA's Toxic Substances Control Act (TSCA) as per the U.S. Code of Federal Regulations (CFR) 40 CFR §Part 761.61(b) "Performance-based disposal" for soils with PCB concentrations greater than 1 milligram (mg) per kilogram (kg) total PCBs. This Revised RAWP was adapted from a previous RAWP, which was prepared by Chilkat Environmental and approved by ADEC on April 14, 2015, This Revised RAWP addresses comments and revisions requested by the former ADEC Site Manager, Cascade Galasso-Irish, as well as several additional updates and enhancements.

This Revised RAWP will be applied in tandem with the Master Quality Assurance Program Plan (QAPP) for this project, which is provided under separate cover. Both this Revised RAWP and the QAPP will be submitted to ADEC and the EPA for review prior to implementation of the proposed remedial activities.

As detailed thorough the remainder of this document, the proposed scope of work remains largely unchanged from the previously approved RAWP. A summary of the proposed remedial actions are as follows:

- Mobilize and complete Site preparation activities.
- Remove PCB-impacted soils with concentrations greater than 1 mg/kg, which are present at depths of 1 to 2.5 feet below ground surface over an area of approximately 5,035 square feet.
- The PCB-impacted soils are underlain by a beach rock layer, which is comprised of approximately 80% rock and 20% less fine soil materials. The underlying beach rock layer will be left in place to avoid the potential for encountering groundwater and/or petroleum contamination originating from WWII era tank farms.
- The PCB-impacted soils will be containerized and shipped to a permitted landfill as non-hazardous waste (pending waste characterization sampling results and disposal facility approval).
- Confirmation sampling will be conducted along the extents of excavation, and the area will be backfilled and restored with clean materials.
- The results will be documented in a Remedial Action Completion Report and submitted to ADEC and EPA for review and approval as part of project close-out activities.

2.0 Introduction

Montrose Environmental Solutions, Inc. (Montrose) prepared this Revised Remedial Action Work Plan (RAWP) on behalf of the Ounalashka Corporation (OC) to direct remedial actions for polychlorinated biphenyls (PCB)-impacted soils at the Dutch Harbor Warehouse - WWII Building 551 (the Site). The Site is located at 18 East Point Road on Amaknak Island, Unalaska, Alaska. The Site location is depicted in **Figure 1.** The Site is referred to as ANCSA00706 by the U.S. Environmental Protection Agency (EPA), and Hazard ID No. 27905 by the Alaska Department of Environmental Conservation (ADEC). This project is being completed under the EPA's Contaminated Alaska Native Claims Settlement Act (ANCSA) Lands Assistance Program [Cooperative Agreement (CA) No. AN-02J47101].

This Revised RAWP was prepared in accordance with the U.S. EPA's Toxic Substances Control Act (TSCA) as per the U.S. Code of Federal Regulations (CFR) 40 CFR §Part 761.61(b) "Performance-based disposal" for soils with PCB concentrations greater than 1 milligram (mg) per kilogram (kg) total PCBs.

An initial RAWP was prepared by Chilkat Environmental and approved by ADEC on April 14, 2015 (provided as **Appendix A**). The characterization of PCB-impacted soil at the Site is documented in a report prepared by Chilkat Environmental dated October 9, 2014 (provided as **Appendix B**). The report identifies the distribution of PCB-impacted soils above the applicable ADEC cleanup level of 1 mg/kg [per 18 Alaska Administrative Code (AAC) 75.341, Method Two]. The location and results of historic sampling activities on the Site are provided in **Figures 2, 3, 4, 5 and 6**. Additional details regarding the Site and previous characterization activities are provided in Sections 3 and 4 of this Revised RAWP.

The proposed remedial actions, which have yet to be completed, are summarized as follows:

- Mobilize and complete Site preparation activities.
- Remove non-impacted soils overlying the PCB-impacted soils and stage for re-use.
- Remove PCB-impacted soils with concentrations greater than 1 mg/kg, which are present at depths of 1 to 2.5 feet below ground surface over an area of approximately 5,035 square feet. The proposed area of excavation is depicted in **Figure 7**.
- The PCB-impacted soils are underlain by a beach rock layer, which is comprised of approximately 80% rock and 20% less fine soil materials. The underlying beach rock layer will be left in place to avoid the potential for encountering groundwater and/or petroleum contamination originating from WWII era tank farms.
- The PCB-impacted soils will be containerized and shipped for disposal at a permitted landfill as non-hazardous waste.
- Confirmation sampling will be conducted along the extents of excavation, and the area will be backfilled and restored with clean materials. The proposed location of confirmation soil samples is depicted in **Figure 7**.
- The results will be documented in a Remedial Action Completion Report and submitted to ADEC and EPA.

This Revised RAWP was adapted from the previous RAWP for this Site, and addresses the following comments and revisions requested by the former ADEC Site Manager, Cascade Galasso-Irish:

- **Executive Summary and Introduction**: Revise to reflect work will not be conducted under the Native American Lands Environmental Mitigation Program (NALEMP).
- **Section 2.1**: Ensure work will be conducted by Qualified Env. Professionals (QEPs) per 18 AAC 75.333.
- **Section 8:** Update references to the current Field Sampling Guidance (FSG; 2022).
- **Section 8.1:** Update reference to laboratory (the method is still correct for PCBs).
- **Section 9.0:** Update shipping and disposal methods.
- **Section 13:** Include QEP signature(s).

- **Section 14.0:** Update references to the current guidance documents (2017 and 2022).

This Revised RAWP will be applied in tandem with an EPA-approved Master QAPP, which is provided under separate cover. The Revised RAWP and the QAPP will be reviewed by EPA prior to implementation of the proposed remedial activities.

2.1 Project Team

Ounalashka Corporation – Natalie Cale, CEO/General Counsel (Grantee/Site Owner): Ounalashka Corporation owns the Site and is the recipient of the EPA Contaminated ANCSA Assistance Program Grant funding this project. Natalie is responsible for stakeholder coordination and contract management. Her contact information is: ncale@ounalashka.com; (907) 947-7105.

US EPA - Jeff Estes, Project Officer for Contaminated ANCSA Lands Program (Federal Regulatory/Funding Agency): The U.S. EPA will oversee grant management and compliance with the terms & conditions in the Cooperative Agreement, and technical activities and deliverables. Jeff's contact information is: estes.jeff@epa.gov; (907) 271-6558.

ADEC – Lizzy Buckingham, Environmental Program Specialist 3, ANCSA Contaminated Lands (State Regulatory Agency): ADEC will review and approve technical activities and deliverables. Lizzy's contact information is: lizzy.buckingham@alaska.gov; (907) 269-8924.

Montrose Environmental Solutions, Inc. (Montrose) – Andrea Pedersen, Project Manager (QEP Contractor): Andrea will be responsible for all grant management activities, including overseeing all QEP contractor activities. Andrea's contact information is: anpedersen@montrose-env.com; (425) 308-1727.

Montrose – Chris Gdak, Project Principal (QEP Contractor): Chris will assist with stakeholder engagement, grant management and technical activities and deliverables. Chris is a QEP per 18 AAC 75.333. Chris' contact information is: cgdak@montrose-env.com; (425) 760-1342.

OC Environmental Services, LLC (OCE) – Jason Westenow, Project Manager (Remediation Subcontractor): Jason will coordinate and oversee remedial field activities, including sampling and reporting activities. Jason is a QEP per 18 AAC 75.333. Jason's contact information is: jwestenskow@ounalashka.com; (907) 707-9272.

SGS North America Inc. (SGS) – Justin Nelson, Project Manager (Laboratory Subcontractor): SGS is anticipated to be the primary analytical laboratory for this project. Justin's contact information is: justin.nelson@sgs.com; (907) 562-2343.

3.0 Site History and Background

The Site is located at 18 East Point Road in Unalaska, Alaska. The Site is located approximately 100 feet upgradient of the shoreline of Dutch Harbor. The Site location is depicted in **Figure 1**. The Site is referred to as ANCSA00706 by the U.S. EPA, and Hazard ID No. 27905 by the ADEC. The Site is classified as a Formerly Used Defense Site (FUDS). This project is being completed under the EPA's Contaminated ANCSA Lands Assistance Program [CA No. AN-02J47101].

The Aleutian Islands are amongst the longest inhabited Native Lands in North America. The history of the indigenous Unangan, (later termed Aluet), dates back at least 9,000 years. The Aleutian Islands provided access to vast marine resources and therefore were an especially desirable place to live. Deep easterly currents from the Pacific Ocean promote upwelling systems that are of crucial importance for the productivity of the region. The coastal areas were extremely rich in edible plants and animals: seaweeds, shellfish, birds, fish, seals, and whales. The relationship of the people with the environment is extraordinary and is the foundation of their continuous occupation.

Russians arrived in Unalaska in 1759, claiming lands for the Russian Empire. At this time about 3,000 Aleuts lived in 24 settlements on Unalaska and Amaknak Islands. Unalaska became a Russian trading port for the fur industry in 1768. The U.S. purchase of Alaska in 1867 marked the end of Russian efforts to expand to the Pacific Coast of North America and became an important step in the U.S. rise as a great power in the Asia-Pacific region.

The U.S. Department of War created its first military outpost on Amaknak Island in 1911. In 1940, the U.S. Army established a top-secret military defense station on Amaknak Island. During peak military activities in 1942 and 1943, the Navy, Army, and Marines reportedly had combined forces of 65,000 personnel on Amaknak and Unalaska Islands. The Japanese attacked many times by air, most notably on June 4, 1942, when they bombed Fort Mears hitting the contractor ship the Northwestern, which was docked across the street from the Site. Three pole-mounted transformers in front of the main structure on the Site may have been damaged in the attack. Historic photos 1-5 presented in **Appendix C** demonstrate the area before, during and after bombing. It is likely the transformers were damaged during this act of war because they were replaced later the same year as documented in U.S. Army Corp of Engineers (USACE) by video account. Based on transformer size it was estimated that the maximum volume of spilled PCB containing dielectric oil was less than 75 gallons; however, it is possible that PCBs in the electrical equipment associated with the electrical supply shed or the power-generating vessel were also released. Following wartime events, a complete military withdrawal was concluded by 1947, leaving most of the wartime facilities intact.

With the passage of ANCSA in 1971, the Unangan people of Unalaska, including members of the Qawalangin Tribe of Unalaska (Q Tribe), opted to receive land conveyances. The Ounalashka Corporation (OC) was organized in 1973 for that purpose. Under previous cooperative agreements that the Q Tribe held with the Department of Defense (DoD), the Q Tribe prepared a Strategic Project Implementation Plan to coordinate cleanup of approximately 20 DoD impacted sites on OC lands. The fifth cooperative agreement from 2013 to April 2015 included supplemental characterization of PCB soil contamination at the Site. The cooperative agreement requirements were completed six months ahead of schedule and under budget, to the satisfaction of Native American Lands Environmental Mitigation Program (NALEMP) and ADEC. In January of 2015 NALEMP approved the Tribe's request to apply underspent resources to prepare the 2015 RAWP for the Site. The 2015 RAWP was approved by ADEC on April 14, 2015 (see **Appendix A**); however, funds had not been available to implement the approved remedial actions until the OC was awarded the EPA Contaminated ANCSA Lands Assistance Program funding for this project.

4.0 Site Characterization

4.1 Initial Site Investigations

Investigation of the PCB-impacted soils at the Site, which are located between Building 551 and East Point Road, was requested by ADEC in the mid-1990s. This request was prompted by a study conducted in 1994 and 1995 by the University of California, Santa Cruz. The report is titled, *Levels of Organochlorine Contamination in Blue Mussels, Mytilus Trossulus, from the Aleutian Archipelago.* The report presents analysis of a composite sample comprised of 30-50 individual blue mussels collected adjacent the Delta Western Dock across East Point Drive from the Site. PCBs were encountered at 2,800 parts per billion (ppb) dry weight.

The alarmingly high results prompted the preparation of the U.S. EPA's Dutch Harbor Sediment Expanded Site Inspection Report prepared by the U.S. EPA Region 10 Superfund Technical Assessment and Response Team (START) in 2000. This study analyzed harbor sediments, fish, sea lion fat and blue mussels for PCBs and other contaminants. The study also investigated surface and subsurface soils at the Site, as well as other surrounding buildings that similarly housed PCB-containing transformers such as the power plant and booster station. Six soil samples were collected on the Site between Building 551 and East Point Road. At each of the sample locations, a surface sample (SS) was collected from 0-6 inches below ground surface and another subsurface sample (SB) was collected from three to four feet below ground surface (ft bgs). Sample locations are illustrated in **Figure 2**. The SSs encountered PCB Aroclor 1260 above the 1 milligram per kilogram (mg/kg) state cleanup level, including: 7.1 mg/kg at sample location UP09SS; 29 mg/kg at sample location UP10SS and 12 mg/kg at sample location UP11SS. The SBs presented mixed results and questionable representativeness. Sample location UP09SB was below the reporting limits for PCBs, sample location UP10SB was below the state cleanup level at 0.73 mg/kg and sample location UP11SB was above the state cleanup level at 4.6 mg/kg.

Investigators documented descriptions of the soil collected in sample jars for analysis. UP09SS and UP09SB were each described as dark brown gravel loam. UP10SS/UP10SB and UP11SS/UP11SB were described as dark brown loam with minor pebbles. These descriptions failed to describe the soil being characterized and instead solely described the soil that was containerized for analysis. Loam is a common description for fine particle soil that is relatively equal parts sand, silt and clay. Laboratory samples were collected by START from the fine particle soil portion because rocks are not processed by the analytical methods. While this is customary it is also expected to document the portion of the soil represented by this fine particle fraction and this did not occur. Between 2000 when the EPA investigation was completed, and 2010 no significant changes are known to have occurred at the Site. In 2011-2012 Delta Western placed 0 to 36 inches of shot rock over the former lawn at the Site. The purpose of this placement of fill was to cap exposure to employees because the area is used for employee parking.

4.2 PCB Site Characterization

In July 2014, the Q Tribe's contractor, Chilkat Environmental, conducted PCB site characterization under the direction of NALEMP and ADEC. Characterization of PCB-impacted soil was performed following the requirements outlined in 40 CFR Part 761.61 Subparts N and O as approved in the 2014 Site Characterization Work Plan. These requirements directed grid sampling and selection of one sample in the middle of each grid. Investigators marked out 82 grids including 66 grids measured at 9.84 feet (three meters) by 9.84 feet (three meters) (= 96.8 feet square = 9 meters square) and 16 partial grids (along Building 551 and/or the property line). The shot-rock fill surface cap installed in 2011-2012 ranging from 0 to 36 inches in depth required manual removal at each sample location. This material was not sampled because it was applied after contamination occurred.

"Surface" samples were collected from each grid center at 0 - 6 inches below the surface of fine soil positioned beneath varied depths of overlying shot rock fill material. Samples were analyzed by U.S. EPA method 8082(a) with

results reported on a dry-weight basis as per 40 Code of Federal Regulations (CFR) 761.274. 97. Only Aroclor 1260 was detected and no other Aroclors were observed.

Table 1 (below) provides "surface" sample results of the impacted soil layer, and includes Sample ID, Depth of Overlying Shot Rock Fill Layer, identification of Blind Field Duplicate Samples, PCB Sample Results and Description of the Sample Composition. 34 of the 82 grids contained samples above the 1 mg/kg state cleanup level for PCBs. **Figure 3** depicts the grid layout with categorized PCB sampling results. **Figure 4** provides detailed PCB results. **Figure 5** highlights results with > 5 mg/kg hotspots identified.

Table 1 - PCB Results for Impacted Soil Layer (Below Shot Rock and Above Underlying Beach Rock)

Sample/Grid ID	Depth of Overlying Shot Rock (Inches)	Duplicate Samples	PCB Results (mg/kg)	Description of Sample Composition
1	0		0.73	Loam
2	0		1.1	Loam
3	0		0.38	Loam
4	0		4.6	Loam
5	0		0.68	Loam
6	0		2.6	Loam
7	0		0.11	Loam
8	16		0.11	Loam
9	16		3.4	Loam
10	8		0.58	Loam
11	8		0.77	Loam
12	16		1.4	Loam
13	0		0.74	Loam
14	16		0.55	Loam
Blind A	16	14 Dup	0.36	Loam
15	16		0.24	Loam
16	16		1.3	Loam
17	16		0.63	Loam
Blind B	16	17 Dup	0.86	Loam
18	16		0.93	Loam
19	24		2.7	Loam
20	24		1.4	Loam
21	24		0.73	Loam
22	24		1.1	Loam
23	18		2	Loam
24	6		10	Sand and gravel matrix without loam
25	0		0.027	Loam
26	20		0.6	Loam
27	24		5.7	Loam
Blind C	24	27 Dup	5.5	Loam
28	24		1.1	Loam
29	16		0.88	Loam

Sample/Grid ID	Depth of Overlying Shot Rock (Inches)	Duplicate Samples	PCB Results (mg/kg)	Description of Sample Composition
30	18		6.2	Loam
31	18		21	Loam
32	16		1	Loam
33	18		1.1	Loam
34	18		0.3	Loam
35	16		0.2	Loam
36	6		0.19	Loam
Blind D	6	36 Dup	0.18	Loam
37	12		<0.02	Sand and gravel matrix without loam
38	8		0.022	Sand and gravel matrix without loam
39	8		<2	Sand and gravel matrix without loam
40	4		0.043	Loam
41	5		0.085	Unstratified sand, gravel and 50% loam, disturbed fill
42	4		1.4	Loam with styrofoam pellets
43	16		0.38	Loam
44	16		2.8	Loam
45	16		13	Loam
46	16		2.4	Loam
Blind E	16	46 Dup	3.8	Loam
47	16		12	Loam
48	16		1.3	Loam
49	16		1.6	Loam
50	16		1.6	Loam
51	16		0.45	Loam
52	16		0.53	Loam
53	6		0.64	Loam
54	6		0.05	Sand and gravel matrix without loam
55	6		<2	Sand and gravel matrix without loam
Blind F	6	55 Dup	<0.2	Sand and gravel matrix without loam
56	16		0.43	Unstratified sand, gravel and 20% loam, disturbed fill
57	16		0.12	Unstratified sand, gravel and 20% loam, disturbed fill
58	16		0.22	Unstratified sand, gravel and 20% loam, disturbed fill
59	20		0.27	Unstratified sand, gravel and 20% loam, disturbed fill
60	16		0.57	Unstratified sand, gravel and 20% loam, disturbed fill
61	5		1.3	Utility island, loam
62	5		11	Utility island, loam
63	5		2.6	Unstratified sand, gravel and 10% loam, disturbed fill
64	6		2.3	Unstratified sand, gravel and 30% loam, disturbed fill
65	16		1.3	Loam
Blind G	16	65 Dup	2.4	Loam
66	16		0.4	70% gravel, 20% loam and 10% clay

Sample/Grid ID	Depth of Overlying Shot Rock (Inches)	Duplicate Samples	PCB Results (mg/kg)	Description of Sample Composition
67	16		2.1	Unstratified sand, gravel and 10% loam, disturbed fill
68	16		0.24	Loam
69	6		0.055	Loam
70	8		0.21	Loam
71	36		0.26	Utility Corridor with empty space and clay bottom
72	18		0.31	Unstratified sand, gravel and 10% loam, disturbed fill
73	16		0.28	Unstratified sand, gravel and 50% loam, disturbed fill
74	16		0.28	Loam under tree
75	6		5.4	Unstratified sand, gravel and 75% loam, disturbed fill
Blind H	6	75 Dup	11	Unstratified sand, gravel and 75% loam, disturbed fill
76	18		0.63	Unstratified sand, gravel and 25% loam, disturbed fill
77	12		0.43	Unstratified sand, gravel and 10% loam, disturbed fill
78	12		0.29	Unstratified sand, gravel and 50% loam, disturbed fill
79	17		0.36	Loam
80	14		<0.2	Loam
81	16		<0.02	Unstratified sand, gravel and 10% loam, disturbed fill, building corner, sink hole
82	16		<0.02	Unstratified sand, gravel and 10% loam, disturbed fill

Note: Depth of overlying shot rock fill layer is provided in inches and PCB results are stated in mg/kg. Results above the 1 mg/kg state cleanup level for PCB are highlighted with blue shading.

34 of the 82 grids contained samples above the 1 mg/kg state cleanup level for PCBs. Table 2 (below) provides “subsurface” sample results and includes Sample ID, Grid ID, Depth of Overlying Shot Rock Fill Layer, identification of Blind Duplicate Samples, PCB Sample Results and Description of the Sample Composition. Two of the five deep samples exceeded the state cleanup level of 1 mg/kg. Four of the five samples were 80-90% rock. Fines were collected from the surfaces of rocks. Subsurface Sample 83 (representing Grid 32) atypically came from a layer of 4.5 feet of fines. This sample was collected at the beach rock interface and was below the 1 mg/kg cleanup level with the result of 0.53 mg/kg. Subsurface Sample 84 (representing Grid 59) had a result of 3.7 mg/kg. Subsurface Sample 85 (Blind Duplicate Sample I; representing Grid 15) had a result of 1.1 mg/kg. The Surface Samples for Grids 15 and 59 were each below the 1 mg/kg state cleanup levels for PCBs. **Figure 3** depicts the grid layout with categorized PCB sampling results. **Figure 4** provides detailed PCB results. **Figure 5** highlights results with > 5 mg/kg hotspots identified.

Table 2 - PCB Results for Fines from Underlying Beach Rock Layer

Sample ID	Grid ID	Depth of Overlying Shot Rock (inches)	Duplicate Samples	PCB Results (mg/kg)	Description of Sample Composition
83	32	16		0.53	16" fill and 3.5 ft loam mixed with coal chunks, sample depth 54 inches
84	59	16		3.7	Beach rock 80%, 10% clay and 10% loam, sample depth 40 inches
85	15	0		0.9	Beach Rock 90% and sand, gravel 10% at tree with no overburden and 1.5 ft loam, sample 2 ft
Blind I	15	0	85 Dup	1.1	Beach Rock 90% and sand, gravel 10% at tree with no overburden and 1.5 ft loam, sample 2 ft
86	4	0		0.07	Beach Rock 90% and sand, gravel 10% with no overburden and 1.5 ft loam, sample 2 ft
87	24	14		0.1	Beach rock 80%, 10% clay and 10% sand, gravel, sample depth 28 inches

Note: Depth of overlying shot rock fill layer is provided in inches and PCB results are stated in mg/kg. Results above the 1 mg/kg state cleanup level for PCB are highlighted with blue shading.

4.3 Quantity of PCB Contaminated Soil

As the site characterization results fall below applicable Toxic Substances Control Act (TSCA) cleanup levels for PCBs, this Revised RAWP was prepared to satisfy requirements outlined in ADEC Field Sampling Guidance (FSG) January 2022.

The PCB-impacted soil was previously covered by 0 to 36 inches of shot rock fill materials, with an average estimated thickness of 16 inches or 0.381 meters (m). To access the underlying PCB-impacted soils, approximately 178 cubic meters (m^3) or 233 cubic yards (CY) of this overlying material will be removed and staged for reuse as backfill.

To estimate the total volume of PBC-impacted soil, the thickness of the impacted soil layer (beneath the overlying shot rock fill and above the underlying beach rock) was estimated at an average of 1.5 feet or 0.4572 meters (m). Thus, each grid contains an estimated volume of 3m X 3m X 0.4572m = 4.115 cubic meters (m^3) or 5.4 cubic yards (CY) of PCB-impacted soil. Therefore, the total volume of PCB-impacted soil in 34 grids with results above the 1 mg/kg in state cleanup level was estimated at approximately 184 CY. However, cells with results below 1 mg/kg that are surrounded by cells over this level will require excavation of an additional 18 grids to accomplish an excavation perimeter including all grids above 1 mg/kg. The initial ADEC Project Manager, Meredith Savage, concurred with the addition of these extra grids for excavation when the initial RAWP was approved in 2015. Accordingly, the total volume of contaminated soil to be removed from the 52 grids is estimated at approximately 281 CY, or 422 tons (assuming a unit weight of 1.5 tons/CY). The proposed extents of excavation and confirmation sampling locations are depicted in **Figure 7**.

5.0 Scope of Remedial Action

The proposed scope of this remedial action is to remove PCB-impacted soils with concentrations at 1 mg/kg or greater from the soil layer underlying the upper shot rock fill and overlaying the lower beach rock layer. The proposed extents of excavation and confirmation sampling locations are depicted in **Figure 7**.

Once the shot rock material is removed, stockpiled, and staged for reuse, the underlying contaminated soil layer, which ranges from 1 to 2.5 feet in depth below the shot rock, will be excavated based on visual observation to the top of the underlying beach rock layer, containerized, and transported offsite for disposal at a regulated facility. The thickness of the underlying beach rock layer has not been determined. It is possible that fines from the contaminated soil layer have sifted down into the underlying beach rock layer, the extent of which will be determined through confirmation sampling at the depths of excavation (see **Section 8.0**); however, at this time there are no plans for excavation into this beach rock layer due to the potential of encountering groundwater and/or petroleum contamination from neighboring tanks farms (Pre-WWII and WWII), each of which is known to have impacted the Site at greater depths. It is also possible that PCB contamination could remain beneath the right-of-way and adjacent property south of the right-of-way, as the limits of excavation will end close to the existing building and along the property boundary. Confirmation samples will be collected along the lateral extents of excavation to characterize the soil remaining in place.

Previous correspondence with ADEC during the development of the 2015 RAWP established that capping alone would not satisfy requirements for complete cleanup with unrestricted use, nor would placement of a cap after removal of most of the contaminated soil. The ADEC cleanup standard for PCB is 1 mg/kg and we propose to remediate to that level as confirmed by sampling at the extents of excavation. A phased, multi-year cleanup approach was rejected because of inefficiencies and a single excavation event approach was preferred.

This Revised RAWP proposes methodology to remove approximately 281 CY (or 422 tons) of PCB-impacted soil; perform confirmation sampling at the extents of excavation and backfill the excavation utilizing the removed overburden shot-rock and imported clean fill. If confirmation sampling indicates residual contamination remains above 1 mg/kg at the extents of excavation, and where practical, these areas will be capped with concrete paving.

6.0 Site Preparation

6.1 Kickoff Meeting

Prior to the start of remedial work, a virtual kickoff meeting will be held with the OC, Montrose and OCE. Prior to the meeting, OCE will conduct a Site visit to observe the Site, speak with the warehouse operator about the upcoming work, observe traffic conditions, and troubleshoot other potential concerns. The objective of the kickoff meeting will be to provide a general overview of the work, review of roles and responsibilities, confirm OCE's coordination with the City of Unalaska (i.e, required permits, utility clearances, traffic control measures), material management requirements (including necessary submittals/approvals), summarize dust monitoring activities and corrective actions, review truck and equipment decontamination procedures, and outline confirmation sampling procedures.

6.2 Field Office

OCE's field office is located at 400 Salmon Way in Unalaska, approximately 1 mile southwest of the Site. The office has heat, electricity, drinking water and sanitation facilities. OCE's staff will use their office for equipment and material staging, charging equipment, sample management, reporting, etc.

6.3 Erosion and Sedimentation Controls

Best Management Practices (BMPs) will be employed by OCE for erosion and sediment controls (ESCs), which if needed, may include: silt fence, bermed and lined material stockpiles, stabilized construction entrances, vehicle decontamination to minimize tracking of soil from the Site, and dust control measures to minimize wind-blow soil particulates. Existing concrete and asphalt surfaces will be kept free of loose soil/dust to minimize the amount of potentially mobile sediment discharge off-site. Submittals of proposed ESC measures to be deployed by OCE will first be submitted to Montrose for review.

6.4 Stabilized Construction Entrance

The OCE will be responsible for ensuring that egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during remediation. Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-site sediment tracking. Cleaning of the adjacent streets will be performed as needed by OCE to maintain a clean condition with respect to Site-derived materials.

6.5 Pedestrian and Traffic Safety

Vehicular traffic is present in the vicinity of the Site and minimal pedestrian traffic is expected. OCE will contact the City of Unalaska and discuss proposed traffic control measures which may include, but not be limited to, the posting of "Men Working" signs when approaching the Site from both directions, and a reduction of vehicle speed from 30 mph to 20 mph with appropriate signage in the vicinity of the Site. During fieldwork activity the right of way along East Point Road may be marked with traffic cones and flashers. In addition, the remainder of the Site boundary will be flagged with "Do Not Enter" tape. OCE will provide a worker(s) with flags at the Site entrance, when deemed necessary, to ensure safe entry and exit of vehicles.

6.6 Utility Clearance

OCE will notify the City of Unalaska's Department of Public Utilities (DPU) to coordinate utility identification and clearance prior to the start of work. OCE will be responsible for the identification of utilities that might be affected by work under the Revised RAWP and for implementation of all required, appropriate, or necessary health and safety measures during performance of work. OCE will be responsible for safe execution of all work performed. OCE will obtain the local, State, or Federal permits or approvals pertinent to intrusive activities that may be required to perform work under this Revised RAWP.

6.7 Equipment and Material Staging

OC owns lands in the vicinity of the Site that will be designated as an Equipment and Material Staging Area. Clean shot rock designated for reuse, waste disposal supersacks, equipment, and other materials may be staged here by OCE as needed to support the remedial activities. .

6.8 Decontamination Pad

Decontamination Areas will be designated in portions of the Site near the areas that will require remediation.

6.9 Site Clearing

Three spruce trees that are within the project boundary will be cut down and disposed of off-site. The tree roots and attached soil will be treated as contaminated soil and disposed of appropriately.

7.0 Health and Safety

OCE will prepare a detailed site-specific Health & Safety Plan (HASP) prior to completing fieldwork. The HASP will identify the OCE's designated Site Safety Supervisor and provide detailed information on the anticipated hazards, identify controls, and outline health and safety procedures and protocols.

PCBs and potential petroleum constituents present in the soil or groundwater are an exposure hazard and should not come in contact with skin. Personal Protective Equipment (PPE), dust monitoring and dust mitigation measures will be used to prevent exposure. PPE will include Viton butyl rubber gloves and protective outer wear. Known contaminants in soil are not volatile and respirator use is not anticipated. Respirators will be available for qualified personnel in case petroleum or other volatile organic compounds (VOCs) are encountered. A photoionization detector (PID) will be used to monitor VOCs in the work area to inform PPE requirements. Asbestos pipe is known to be present in association with utilities. If suspected asbestos is encountered during excavation, particulate masks will be donned in accordance with the HASP, locations will be documented, and care taken to rebury any exposed material in its original position. The Site Safety Supervisor will assist technicians as needed with PPE requirements. Fine particle soil observed on the technician's PPE should be cleaned off to prevent accidental exposure.

Safety concerns also include traffic on East Point Drive that will be controlled with traffic control devices. The Site Safety Supervisor will ensure technicians are facing the street when exposed to this hazard and will inform them each time a vehicle approaches. Work will not be performed in the roadway. In addition to Level D PPE (steel toed-boots, hard hats, safety gloves, etc. as specified in the HASP), field crews will also wear bright reflective safety vests while equipment is operating.

In case of emergency 911 services are provided locally. The Iliuliuk Health clinic is nearby at 34 Lavelle Court. The clinic can be reached at (907) 581-1202. They are open Monday to Friday 0830 to 1800, Saturdays 0830 to 1300 and are closed Sundays (though emergency services are still provided).

8.0 Excavation of PCB Contaminated Soil

The three-meter (9.8 foot) square grids from the Characterization of PCBs in Soil Report (October 2014) and the previous RAWP (April 2015) will be replicated during remedial activities and the boundary of the excavation will be delineated as depicted in **Figure 7**. This will produce a contiguous excavation boundary that can be anticipated to produce perimeter results below cleanup levels of 1 mg/kg. OCE will layout the grid and excavation areas in the field utilizing a pre-programmed, geo-referenced Trimble GPS device along with stakes, pin flags and/or marking paint. Periodic, horizontal distance, field measurements to the building corners with a 200-foot tape and monitoring of excavation depths with a tape measure will also be used to measure accuracy and document the extents of excavation and location of confirmation samples.

OCE will monitor for any signs of visible dust being generated during the work activities. No dust will be allowed to be generated during the work and all work will be stopped if dust is present. If necessary, OCE will implement dust control measures such as slowing down the work or the application of water. When water is used, it will be applied utilizing a water truck or other means in a manner to suppress dust in the excavation, stockpiles, and other areas as required. In addition, direct spray may also be applied using a hose for more targeted dust mitigation at the point of excavation. Water runoff from the Site will not be allowed during dust suppression water application activities.

Excavation of contaminated soil will include some shot rock and beach rock as illustrated in **Figure 6** (below) to capture the contaminated material.

Figure 6 - Depiction of Substrate Composition of Remedial Excavation

(Note: photos below are only stock examples of the type of material that may be encountered at the site and may not be representative of actual Site conditions**)**

The overlying shot rock fill materials, ranging in depth from 0 to 36 inches, will first be removed from across the grid locations and staged for reuse using a toothless landscaping bucket to avoid mixing with contaminated soil. Landscaping buckets have a straight edge and can be used to scrape the surface while minimizing disturbance of the underlying soil. The shot rock fill will be removed incrementally allowing the excavator to stand on clean fill to

remove contaminated soil. Two excavators, or two excavator buckets, will be used to expedite incremental approach by avoiding contamination of the shot rock fill or the landscape bucket. A dedicated toothed bucket will be used for contaminated soil removal from the grids. Excavation will begin at the south inner corner (at grid #1) and commence outward to eliminate equipment standing on contaminated soil. A sufficiently sized excavator will be used to accomplish this task.

The low levels of PCB present at this Site cannot be observed with field equipment and therefore excavation will be guided by substrate type. Excavation of contaminated soil in the proposed excavation area will be advanced until the substrate is dominated by 80% rocks instead of soil as visually observed by investigators. Cleanup will require manual excavation adjacent the right of way and to preserve existing utilities and building integrity.

It is anticipated that approximately 281 CY, or 422 tons (assuming a unit weight of 1.5 tons/CY) of PCB-impacted soils will be directly loaded and containerized in 8.5 CY supersacks and labeled appropriately for transport and disposal. The approximately 33 supersacks will then transported and stored at the Equipment and Material Staging Area until they are ready to be loaded on a vessel and shipped as non-hazardous waste to an appropriate off island disposal facility.

9.0 Confirmation Sampling

Confirmation sampling will be performed along the excavation sidewalls and excavation bottom based on Table 2b of the current ADEC Field Sampling Guidance (FSG), January 2022. A Master QAPP has been prepared for this project under separate cover and is under concurrent review by EPA. Confirmation sampling will be performed at the vertical and lateral extents of excavation to confirm that cleanup is complete. Sampling procedures and laboratory analysis will be conducted per the methods and procedures detailed in the QAPP. Samples will be analyzed by SGS North America Inc. (SGS) in Anchorage, Alaska.

The designated grid numbers, area of excavation and location of confirmation samples are shown in **Figure 7**. During and after excavation, the grid locations will be maintained in the field utilizing GPS and horizontal field measurements from the face of the building. ADEC sampling guidance for the floor of an excavation calls for two samples for the first 250 square feet (SF). and one additional sample for each additional 250 SF. The proposed excavation includes 5,035 SF; therefore 22 floor samples and three duplicate samples will be collected. The Confirmation Sampling Plan is summarized in **Table 3** (below). Because confirmation sampling of the excavation floor will occur within the beach rock layer representative samples will include soil fines only, which are estimated to constitute less than 20% of the matrix by volume.

There will be approximately 192 linear feet of soil matrix sidewall at the extents of excavation to a depth of approximately 3-5 ft bgs. The FSG calls for collection of a minimum of one confirmation sample plus one additional sample per 250 sq. ft. of sidewall, however, based on a previous request from ADEC for more concentrated sampling, sidewall samples will be collected at approximately three-meter (9.8 feet) intervals, for a total of 18 sidewall samples and 2 duplicate samples. Sidewall samples will be collected from the fine soil lens immediately above the beach rock layer. Confirmation samples will include documentation of soil type using the Munsell Soil Chart to describe the substrate composition.

Table 3 – Confirmation Sampling Plan

Sample Type	Floor	Sidewall	Perimeter wall	Walkway
PCB Soil Samples	22	18	2	2
Duplicates	3	2	0	1

Soil samples will be collected from fine particle soil exposed on the sidewalls and floor of the excavations using gloved hands and dedicated spoons in accordance with the approved QAPP. Confirmation sampling will also include analysis of PCB concentrations in concrete at the perimeter wall foundation of Building 551 as well as the currently buried concrete walkway that connects the building entrance to East Point Drive. Methodology for porous material sampling will be consistent with EPA's guidance document "Standard Operating Procedures for Sampling Porous Surfaces for Polychlorinated Biphenyls" (May 2011). This EPA guidance directs sampling methods to describe contamination at the surface of concrete by drilling ½-inch into the material repeatedly and collection of the resulting dust for a minimum 10 grams (20 mL) sample volume.

Composite sampling of the concrete surfaces at the perimeter wall and concrete walkway will each include two discrete sample sources that will be homogenized. One composite sample will be submitted from the perimeter wall concrete and one composite sample will be submitted from the concrete walkway. The locations of the two discrete concrete grab sample locations to comprise each composite sample are shown on **Figure 7**. The two-perimeter wall composite samples will be located at Grid 4 and Grids 12/75. The precise location of the walkway is unknown because it is buried. After the area has been excavated the two most contaminated grids that were in contact with the walkway (once found and uncovered) will be evident and composite samples will be collected. Each sample

location's concrete surface will first be decontaminated per 40 CFR Section 761 Subpart S to minimize cross contamination with residual impacted soils.

Samples will be shipped to the laboratory under chain-of-custody for analysis of PCBs and on standard 2-week turn around. The results of confirmation sampling will not direct excavation, backfill the excavation or Site restoration activities (see rationale provided in Section 5 – Scope of Remedial Action).

9.1 Quality Assurance / Quality Control (QA/QC)

Quality Assurance/Quality Control (QA/QC) procedures will be followed in accordance with Montrose's Master QAPP for Implementation of EPA Region 10 Contaminated ANCSA Lands Grant & Brownfield CWA Grant Cooperative Agreement No. AN-02J47101 & 4B-02J55101, being prepared simultaneously with this Revised RAWP under a separate cover. The QAPP is undergoing review for approval by the U.S. EPA.

10.0 Shipping and Disposal

Upon Work Plan approval from the ADEC, OCE will contact the landfill and solicit landfill approval utilizing the existing laboratory analytical data. If the facility requires additional waste characterization to evaluate acceptance of the soil, the OCE will collect the required samples from the PCB-contaminated soil layer as soon as possible and submit them for the type of analyses requested.

Following landfill acceptance, OCE will procure a waste management subcontractor who will arrange for the transportation and disposal of excavated PCB-impacted soil. It is anticipated that the PCB-impacted soils will be directly loaded and containerized in 8.5 CY supersacks and labeled appropriately for transport and disposal as non-hazardous waste at an appropriate landfill facility (e.g. - Columbia Ridge Landfill in Oregon). The loaded supersacks will be staged at the northern staging area adjacent to the Site or at a port staging area, placed in roll-off containers at the port staging area, and then loaded onto a vessel for transport to the designated landfill facility. It is anticipated that the waste will be offloaded at the port-of-entry in Oregon and transported to the designated landfill facility via rail and/or trucks. The waste will be continuously tracked and documented, and applicable disposal paperwork will be kept on file and submitted in the Remedial Action Completion Report. This includes the following types of documents:

- Notification of PCB Activity (Form 7710-53)
- Generator Waste Profiles
- Disposal Facility Waste Approval Letters
- Transportation Manifests for Non-Hazardous Waste
- Bills of Lading for Non-Hazardous Waste
- Certificates of Disposal for Non-Hazardous Waste
- Weight tickets for Disposal of Non-Hazardous Waste.

OCE will remain responsible for PCB contaminated soil until certificates of disposal are produced. **Appendix D** provides a preliminary cost proposal for shipping and disposal provided by Waste Management in 2023. This bid includes the following estimated costs:

- Transportation: A rate of $4,840.00 per 8.5 CY supersack of non-TSCA PCB from Dutch Harbor to the Columbia Ridge Landfill in Oregon. It is estimated that 33 bags will be required with an estimated transportation cost of $160,000.00.
- Disposal: A rate of $39.60 per ton of non-TSCA PCB Soil. It is estimated that 422 tons will be disposed of with an estimated disposal cost of $16,711.20.
- Miscellaneous Fees & Taxes:
    - Profiling: $85.00.
    - Certificates of Disposal: $35.00.
    - ODEQ Taxes: $6.89/ton = $2,907.58.
    - Wastewater Management Fee: 4.75% of disposal cost = $796.63.
    - Total: $3,824.21.
- **Subtotal**: $180,535.00.
- **20% Contingency**: $36,107.49.
- **Total (incl. 20% Contingency): $216,642.49.**

This work will require new bids following approval of this Revised RAWP and the costs are anticipated to increase.

11.0 Decontamination

Disposable sampling spoons, Tyvek, boot covers, gloves and other disposable Personal Protective Equipment (PPE) as specified in the Health and Safety Plan (HASP; to be completed) will be utilized and will not require decontamination. Respirators, safety glasses, and other non-disposable PPE as specified in the HASP will be decontaminated using standard procedures such as utilizing pre-wetted alcohol wipes and paper towels. All used PPE will be disposed of with the impacted soils.

Prior to coming into contact with imported fill, or any other clean fill, and prior to leaving the Site, decontamination of heavy equipment that has come into contact with PCBs will be completed by OCE in accordance with 40 CFR § 761.7(C) ”Self-implementing decontamination procedures”. The bucket, blade or other components shall first be decontaminated over a decontamination pad and shall be constructed of timbers and two layers of 8-mil polyethylene sheeting. Decontamination procedures shall include use of a pressure washer, followed by two rounds of spraying a solvent (such as diesel fuel or hexane) and hand wiping each application with disposal rags using the double wash/rinse method as defined in 40CFR § 761 Subpart S “Double wash/Rinse Method for Decontamination Non-Porous Surfaces”. Rags will be allowed to evaporate and will be disposed of with the contaminated soil. The resulting decontamination fluids will also be added to the disposed soil in small volume.

In accordance with 40 CFR § Subpart D, 761.79(b)(3)(i)(A), and when decontamination is deemed complete, OCE will collect a verification wipe sample of the heavy equipment and submit for laboratory analyses. The laboratory will be requested to provide a two-three business-day turnaround time to report the results. If results indicate residual PCB concentrations are above the 10 ug/100 cm^2 standard for unrestricted use, OCE will be required to repeat the decontamination procedures above on the heavy equipment, followed by a second wipe sample verification using laboratory analysis. No heavy equipment will be allowed to leave the Site without approval.

12.0 Final Reporting

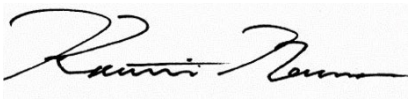
Following execution of field work, a Remedial Action Completion Report will be prepared by Montrose and OCE to satisfy ADEC and EPA reporting requirements. The Remedial Action Completion Report will include detailed documentation of excavation and sampling activities including a photolog and field notes, laboratory results, Data Quality Review Checklist, updated Conceptual Site Model, an Eco-Scoping Model, Waste Profiles, Certificates of Transportation and Disposal and request for closure of the PCB concerns at the Site without Institutional Controls (if warranted).

13.0 Backfilling & Capping

Following the completion of excavation and collection of confirmatory soil samples, the excavation will be lined with a geotextile fabric and backfilled utilizing the previously staged clean shot-rock fill and additional clean imported fill. OCE will properly compact the placed backfill in 12–18-inch lifts or specifications of the selected paving contractor (to be determined). As a contingency, in areas where the PCB cleanup level of 1 mg/kg could not be achieved, a surface cap consisting of a minimum of six inches of concrete with reinforcement will be installed. The concrete cap will be appropriately designed to support truck and other vehicular traffic and sloped to surrounding grades to provide adequate surface flow drainage. It is estimated that up to 2,000 square feet of concrete paving will be completed at a cost not to exceed $100,000.

14.0 Signature of Qualified Environmental Professionals (QEP)

Prepared by:



March 14, 2024

Katie Nelson — Date
(QEP per 18 AAC 75.333)

Reviewed by:

March 14, 2024

Kevin Ignaszak, PE (New York) — Date
(QEP per 18 AAC 75.333)

15.0 References

EPA, 1985. Verification of PCB Spill Cleanup by Sampling and Analysis. August 1985. Environmental Protection Agency, Office of Toxic Substances.

EPA, 1986. Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup. May 1986. Environmental Protection Agency, Office of Toxic Substances.

EPA, 2000. Dutch Harbor Sediment Expanded Site Inspection Report. June, 2000. Environmental Protection Agency. Superfund Technical Assessment and Response Team.

ADEC, 2017. Site Characterization Workplan and Reporting Guidance for Investigation of contaminated Sites. March 2017. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program.

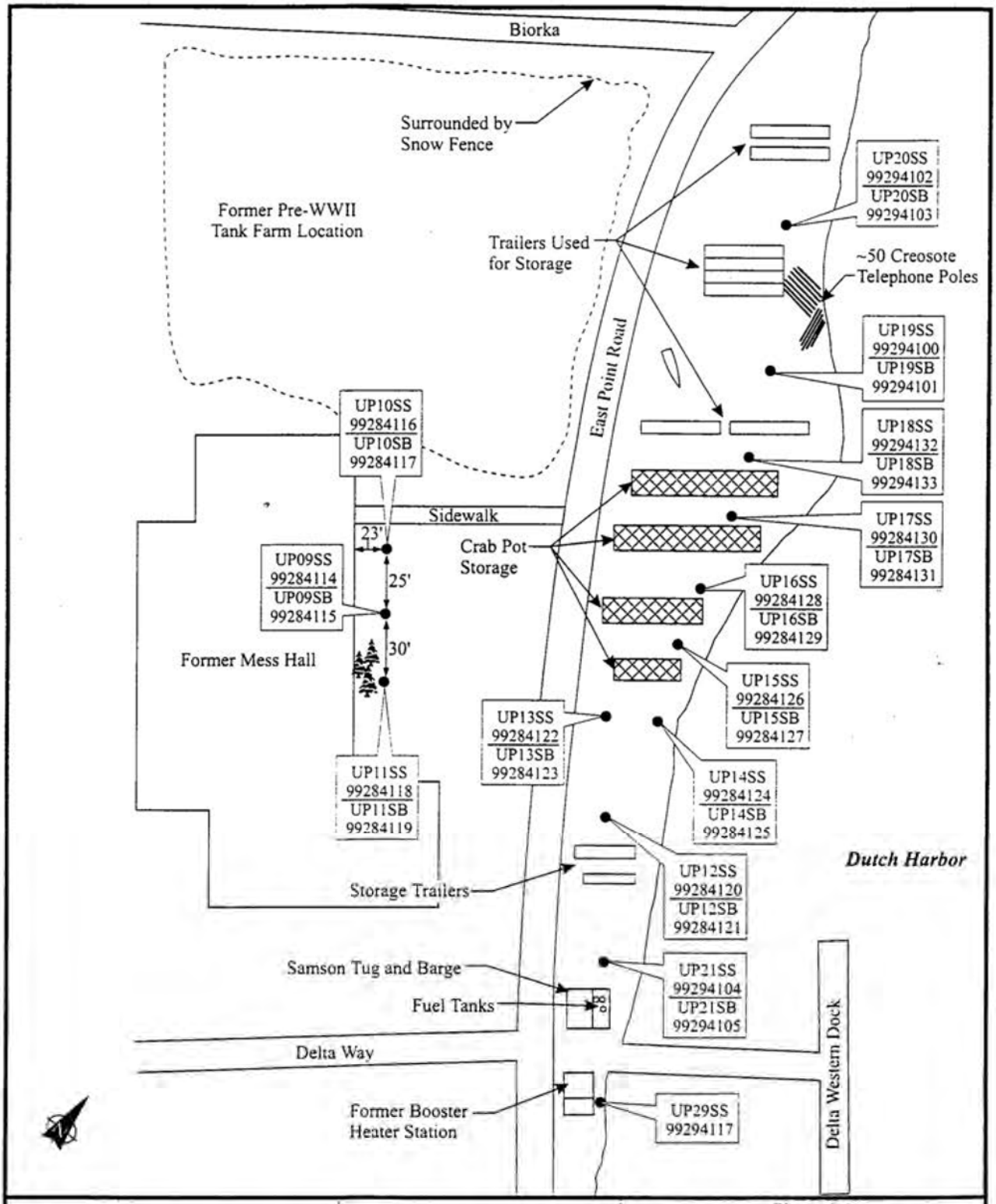
ADEC, 2022. Field Sampling Guidance (FSG). January 2022. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program.

Montrose, 2024. Master Quality Assurance Project Plan (QAPP) for Implementation of EPA Region 10 Contaminated ANCSA Lands Grant & Brownfield CWA Grant Cooperative Agreement No. AN-02J47101 & 4B-02J55101, March 2024.

Figures

SOURCE: Maxar aerial photograph, 7/17/2022; City of Unalaska GIS Roads, 7/7/2021; ESRI, 2024; Montrose Environmental, 4/29/2024

Figure 1
Building 551 Site Location Map



ecology and environment, inc.
International Specialists in the Environment
Anchorage, Alaska

DUTCH HARBOR ESI REPORT
Unalaska, Alaska

Figure 6-4
DELTA WESTERN DOCK AREA
UPLAND SOIL SAMPLE LOCATIONS

Not to Scale	Drawn: AES	DATE: 4/13/00	JOB NO. C10801SRT0	Dwg.No. C10801 6-4

CREATION DATE:	PROJECT NO:	
FEBRUARY 20, 2024	PROJ-0223536	FIGURE 2: HISTORIC SITE LAYOUT WITH SAMPLE LOCATIONS (FROM EPA START REPORT, JUNE 2000)
MONTROSE	DRAWN BY: MNW / APPRV'D BY: KN	
	CHEK'D BY: KN / REVISION: 1	BUILDING 551 DUTCH HARBOR, UNALASKA, ALASKA

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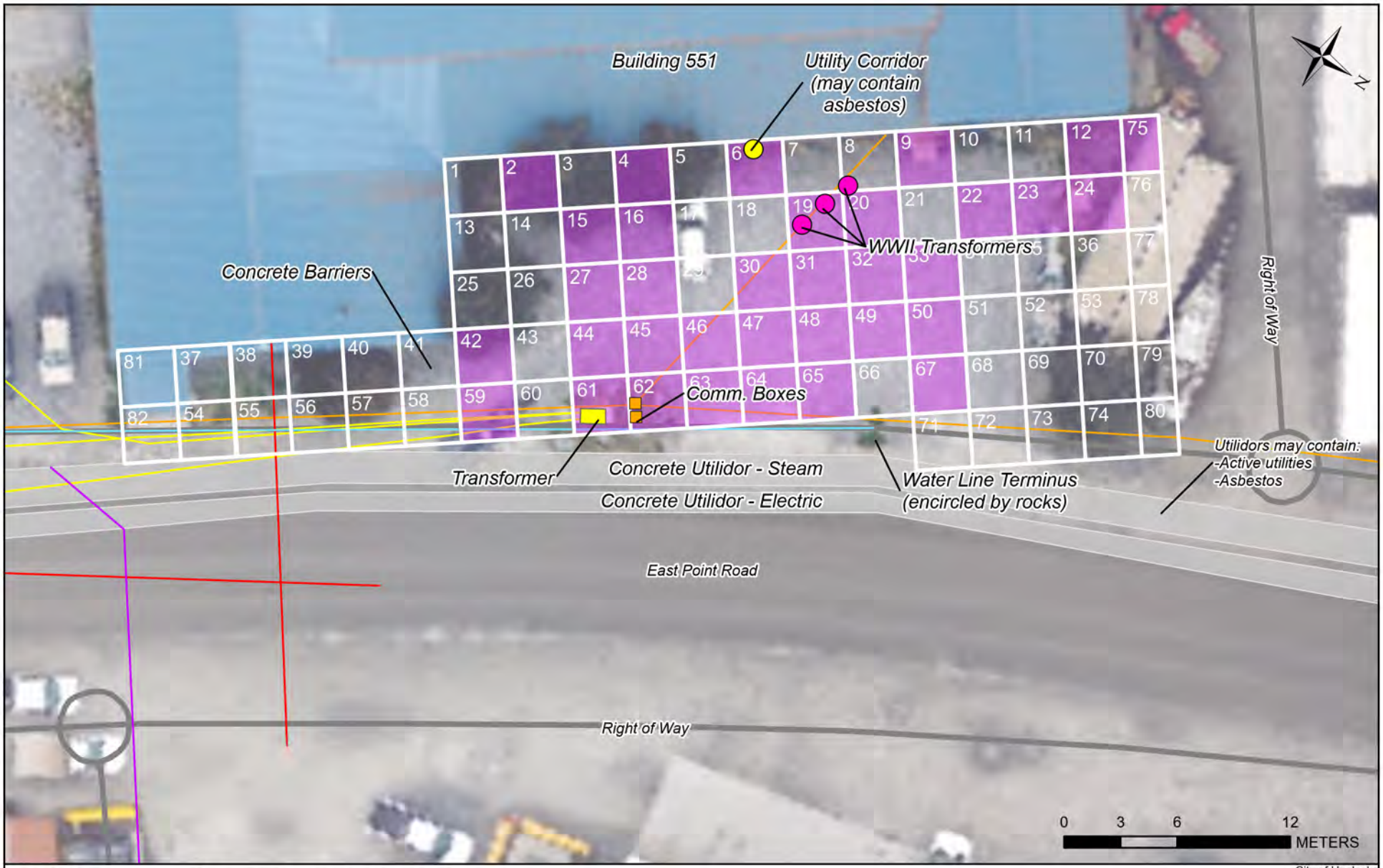

3m x 3m Grid

- <1 mg/kg PCB
- >1 mg/kg PCB

Buried Utilities and Approximate Depth

- Electric - 3'
- Telephone/Comm - 3'
- Fuel (Abandoned) - 3.5'
- Water - 5'
- Storm Drain - varies

City of Unalaska

CREATION DATE: FEBRUARY 20, 2024	PROJECT NO: PROJ-0223536		FIGURE 3: SITE PLAN WITH CATEGORIZED RESULTS (FROM 2015 RAWP)
MONTROSE ENVIRONMENTAL	DRAWN BY: MNW	APPRV'D BY: KN	
	CHEK'D BY: KN	REVISION: 1	BUILDING 551 DUTCH HARBOR, UNALASKA, ALASKA

P:\mwaldman\Alaska Projects\551 Building\GIS\551_Building.aprx

3m x 3m Grid

<1 mg/kg PCB

>1 mg/kg PCB

Surface Sample

Subsurface Sample

* Subsurface duplicate sample

City of Unalaska

CREATION DATE:	PROJECT NO:		FIGURE 4: SITE PLAN WITH DETAILED PCB RESULTS (FROM 2015 RAWP)
FEBRUARY 20, 2024	PROJ-0223536		
MONTROSE ENVIRONMENTAL	DRAWN BY: MNW	APPRV'D BY: KN	
	CHEK'D BY: KN	REVISION: 1	BUILDING 551 DUTCH HARBOR, UNALASKA, ALASKA

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3m x 3m Grid

- <1 mg/kg PCB
- >1 mg/kg PCB
- >5 mg/kg PCB
- # Surface Sample
- # Subsurface Sample

City of Unalaska

CREATION DATE:	PROJECT NO:		FIGURE 5: SITE PLAN HIGHLIGHTING PCB RESULTS <5 MG/KG (FROM 2015 RAWP)
FEBRUARY 20, 2024	PROJ-0223536		
MONTROSE ENVIRONMENTAL	DRAWN BY: MNW	APPRV'D BY: KN	
	CHEK'D BY: KN	REVISION: 1	BUILDING 551 DUTCH HARBOR, UNALASKA, ALASKA

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3m x 3m Grid

<1 mg/kg PCB

>1 mg/kg PCB

Surface Sample

Subsurface Sample

* Subsurface duplicate sample

Samples at extent of excavation:

Floor (22)

Perimeter (18)

Sources for Composite samples:

Perimeter Wall , Concrete

Walkway, Concrete

Proposed Excavation

City of Unalaska

CREATION DATE:	PROJECT NO:		FIGURE 7: EXTENTS OF EXCAVATION/CONFIRMATION SAMPLE LOCATIONS
FEBRUARY 20, 2024	PROJ-0223536		
MONTROSE ENVIRONMENTAL	DRAWN BY: MNW	APPRV'D BY: KN	
	CHEK'D BY: KN	REVISION: 1	BUILDING 551 DUTCH HARBOR, UNALASKA, ALASKA

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Appendix A

2015 Building 551 Remedial Action Work Plan and ADEC Approval

Qawalangin Tribe of Unalaska
Native American Lands Environmental Mitigation Program

Building 551:
Remedial Action Workplan

Prepared for:
Qawalangin Tribe
205 W Broadway Ave. Unalaska, AK 99685

Prepared by:

April 13, 2015

Table of Contents

Acronyms

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
CFR	Code of Federal Regulations
CA	Cooperative Agreement
DoD	United States Department of Defense
EPA	Environmental Protection Agency
NHL	National Historic Landmark
NALEMP	Native American Lands Environmental Mitigation Program
OC	Ounalashka Corporation
PCB	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
PID	Photo Ionization Detector
QT	Qawalangin Tribe
SB	Subsurface Samples
START	Superfund Technical Assessment and Response Team
SS	Surface Samples
USACE	United States Army Corps of Engineers

1.0 EXECUTIVE SUMMARY

The Qawalangin Tribe of Unalaska prepared this workplan to direct the cleanup of PCB contaminated soil from the Building 551 site in Unalaska owned by Ounalashka Corporation. This workplan was prepared to gain ADEC approval so that when resources become available the Tribe has sufficient information to prepare a Cooperative Agreement with Department of Defense to conduct the proposed remedial action.

2.0 INTRODUCTION

The Qawalangin Tribe (QT) produced this workplan for the United States Department of Defense (DoD) Native American Lands Environmental Mitigation Program (NALEMP) administered by the United States Army Corps of Engineers (USACE), Alaska District. This program addresses DoD impacts on Native lands. Unalaska has about 5,000 residents and is located about 800 miles from Anchorage, Alaska. Refer to Figure 1 for map. The Qawalangin Tribe performed this work through our fifth Cooperative Agreement (CA) NALEMP-FY14-08 W912DY-14-2-0308 with the DoD. The CA included site characterization of soil at Building 551 and removal of 10,000 pounds of screw stakes from remote locations in Beaver Inlet.

Building 551 site characterization determined distribution of soil contaminated with Polychlorinated Biphenyls (PCB) above the Alaska Department of Environmental Conservation (ADEC) cleanup level of 1 mg/kg per 18 Alaska Administrative Code (AAC) 75, Article 3. A workplan was submitted and approved by ADEC May 2014. Fieldwork was conducted July 2014 and ADEC approval for the Site Characterization Workplan received October 9, 2014. After the Tribe completed CA requirements satisfactorily and under budget NALEMP approved the Tribe's request to apply underspent resources to prepare this Remedial Action Workplan for Building 551 project area. The site is owned by Ounalashka Corporation (OC), leased to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees. The Tribe is currently underway on our sixth CA and proposes to conduct cleanup of the Building 551 project area in a future cooperative agreement.

Figure 1: Location and vicinity of Building 551 in Dutch Harbor, Alaska.

2.1 PROJECT TEAM

Tribal Administrator (Qawalangin Tribe) – **Robin Waldron**: Robin manages NALEMP for QT and is the contract manager for Chilkat Environmental.
robin.qawalangin@gmail.com (907) 581-2920

NALEMP Program Manager (USACE AK District) – **Andrea Elconin**: Andrea manages this NALEMP Project and provides assistance to Tribes while they perform Cooperative Agreements.
Andrea.B.Elconin@usace.army.mil (907) 753-568

USACE Environmental Engineer (USACE AK District) – **Thomas Reed:** Tom is familiar with Building 551 from past projects and was consulted during the site characterization. He provides technical assistance on remedial investigations and actions
Thomas.J.Reed@usace.army.mil (907) 753-5642

ADEC Regulatory Representative – **Meredith Savage**: Meredith is an Environmental Program Specialist III with ADEC Contaminated Sites Program. She is the lead regulatory authority for this project. Meredith approved the site characterization workplan and report.
meredith.savage@alaska.gov (907) 269-7578

ADEC Regulatory Representative – **John Halverson**: John is the Environmental Program Manager for the ADEC Contaminated Sites Program. He has managed the Building 551 site until 2014 when Meredith Savage took over as Project Manager. John provided technical support for the site characterization workplan and will be provided all project documents.
john.halverson@alaska.gov (907) 269-7545

Principal Investigator (**Chilkat Environmental) – Elijah Donat:** Elijah is the Principal Investigator. His responsibilities include preparing the workplan, conducting fieldwork and preparing this report. Chilkat Environmental was selected by the Tribe to conduct this site characterization. Environmental Engineer, Elijah is a qualified Environmental Professional as defined in 18 AAC 75.990 and has a BS in Environmental Science, a BA in Federal Indian Law and an MS in Environmental Engineering. He has 15 years of experience as a Principal Investigator in Alaska. Mr. Donat has prepared many NALEMP documents including: 38 Phase 1 Assessments, 33 workplans, 4 Strategic Project Implementation Plans and 19 cleanup reports. Elijah has extensive experience working with ADEC and has managed investigation; site characterization, cleanup and successful closure for 40 ADEC contaminated sites. Elijah prepared the site characterization workplan and site characterization report for Building 551 in 2014.
elijah@chilkatenvironmental.com (907) 303-7899

Senior Scientist (**Chilkat Environmental) – Bruce Wright:** Bruce supervised site characterization of Building 551 in 2014 and helped prepare the site characterization workplan report in 2014. He has also provided support for this remedial action workplan. Mr. Wright was trained as an ecologist and has 35 years of experience as a scientist in Alaska including management of Valdez remedial response for NOAA.
bruce@chilkatenvironmental.com (907) 354-8358

Lands Manager (**Ounalashka Corporation) – Denise Rankin:** Ounalashka Corporation owns the property under investigation. Denise is responsible for providing landowner permission and will be provided the final site report.
Rankin@ounalashka.com (907) 582-1276

Leasee (Delta Western Inc.) – Bev Nieman: Bev is the environmental contact for Delta Western. The subject property is leased by OC to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees. The property across East Point Drive features Delta Western Offices and the fuel dock. The subject property is included in Maritime Security Zone and Chilkat Environmental obtained permission from Delta Western for investigators to be on site. Delta Western was provided the workplan and will be provided this report.
bevn@DeltaWestern.com (206) 357-1722

Planning Director (City of Unalaska) – Erin Reinders: City of Unalaska has jurisdiction over the utility and road right of way parallel East Point Road and supplied helpful information for site characterization workplan development. Eric will be consulted for remedial action workplan as well.
ereinders@ci.unalaska.ak.us (907) 581-4181

Planning Administrator (City of Unalaska) – Anthony Grande: City of Unalaska has jurisdiction over the utility and road right of way parallel East Point Road. Anthony has been very helpful providing information such as plats and will be included in the remedial action workplan development.
agrande@ci.unalaska.ak.us (907) 581-4181

TelAlaska: TelAlaska owns buried communication utilities within the right-of-way. Prior to site activity they will be contacted as directed on signage and written permission obtained.
(800) 478-3121

Electric Cooperative: The City of Unalaska owns buried utilities within the right-of-way. Prior to site activity they will be contacted as directed on signage and written permission obtained. The city manages the Electric Cooperative. (907) 581-1260

3.0 SITE DESCRIPTION AND BACKGROUND

Unangan history dates back at least 9,000 years. The Aleutian Islands are amongst the longest inhabited Native Lands in North America. Russian contact in the mid-1700's brought significant change to the Unangan. The first Russians arrived in Unalaska in 1759, claiming lands for the Russian Empire. At this time about 3,000 Aleuts lived in 24 settlements on Unalaska and Amaknak Islands. Unalaska became a Russian trading port for the fur industry in 1768.

The Aleutian Islands provided access to vast marine resources and therefore were an especially desirable place to live for the Unangan, later termed Aleut. Deep easterly currents from the Pacific Ocean promote upwelling systems that are of crucial importance for the productivity of the region. The coastal areas were extremely rich in edible plants and animals: seaweeds, shellfish, birds, fish, seals, and whales. The relationship of the Unangan people with the environment is extraordinary and is the foundation of their continuous occupation.

The Department of War created its first military outpost on Amaknak Island in 1911. Though it was just a Navy coaling station this began the US military legacy. In 1940, the US Army established a top-secret military defense station on Amaknak Island. During peak military activities in 1942 and 1943 the Navy,

Army, and Marines reportedly had combined forces of 65,000 personnel on Amaknak and Unalaska Islands. The Japanese attacked many times by air but most notably on June 4, 1942 when they bombed Fort Mears hitting the contractor ship the Northwestern, which was docked across the street from Building 551. Three pole-mounted transformers may have been damaged in front of the building. Historic photos 1-5 demonstrate the area before, during and after bombing.

Photo 1: Historic photo prior to bombing.
Navy Mess Hall, also known as Building 551, is identified. Delta Western currently uses the Main NAS Dock. The MV Northwestern is tied along shore. Four wooden oil tanks are visible near barracks. View looking south.

Photo 2: Historic photo prior to bombing.
Navy Mess Hall at left and MV Northwestern is tied along shore. Wood stave oil tanks and three transformers on poles are visible. View looking north.

Photo 3: Historic photo during bombing.
Northwestern is burning along shore across from Building 551. View looking south.

Photo 4: Historic photo during bombing.
MV Northwestern is burning along shore across from Building 551. View looking east.

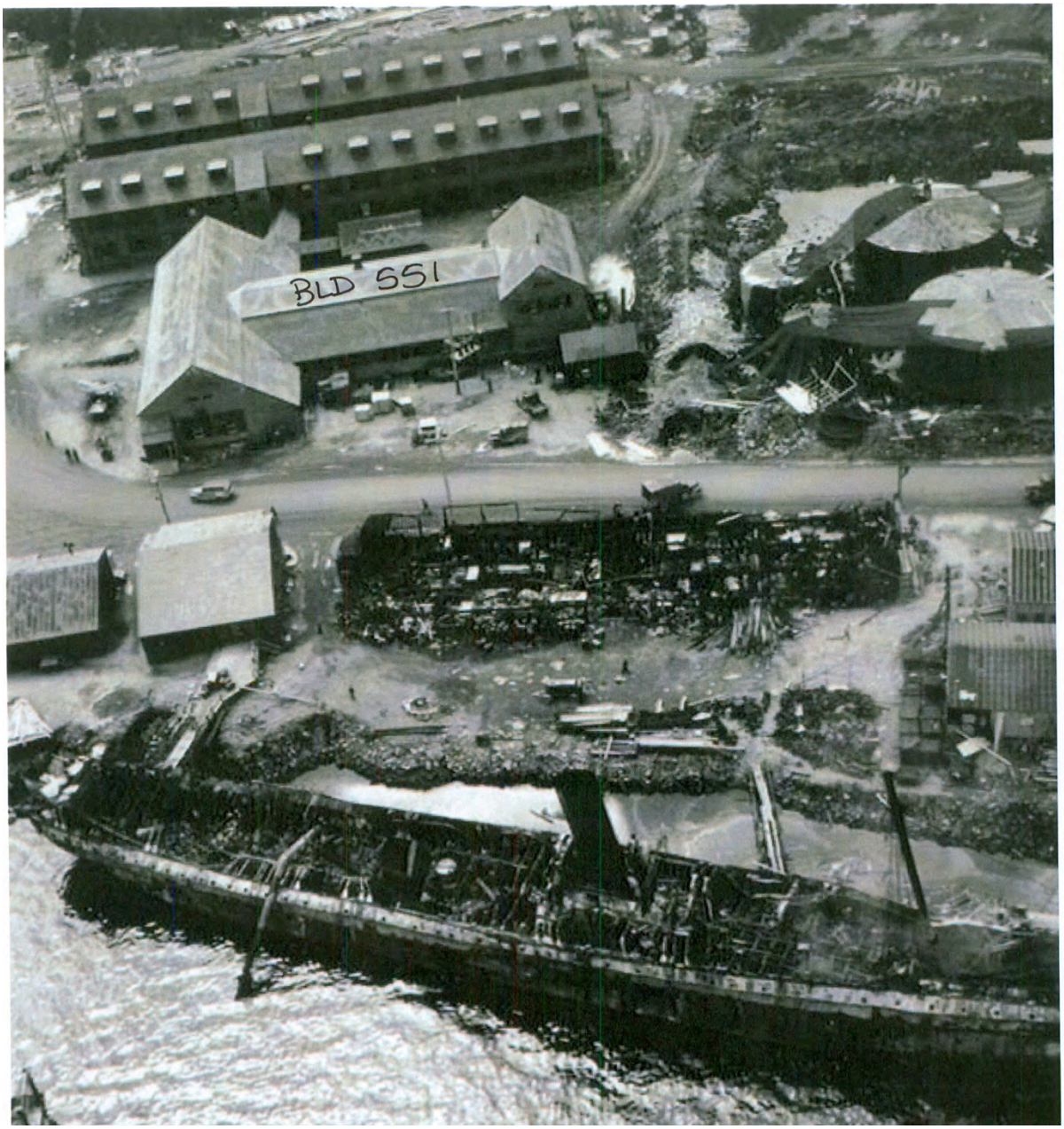


Photo 5: Historic photo after bombing.
MV Northwestern is damaged and supply building destroyed across from Building 551. Three transformers still on poles in front of Building 551 may have been damaged. View looking west.

It is likely the transformers in front of Building 551were damaged during this act of war because they were replaced later the same year as documented in USACE by video account. Based on transformer size we estimate maximum volume of spilled PCB containing dielectric oil was less than 75 gallons however it is possible that PCB's in the electrical equipment associated with the electrical supply shed or the power-generating vessel was released as a result of the bombing. Following wartime events, a complete military withdrawal was concluded by 1947, leaving most of the facilities intact.

Many of the former military improvements are now historic landmarks, including; the Dutch Harbor Naval Operating Base and Fort Mears National Historic Landmark (NHL), the Sitka Spruce Tree Plantation NHL, and the affiliated WWII National Historic Area. Several of the other remaining military buildings are now privately owned by commercial industries including facilities supporting fishing and fish processing and shipping.

Still there are hundreds of dilapidated military buildings that pose health and safety hazards on Native-owned lands. Tribal members are exposed to these hazards during subsistence and recreational activities but also in daily life. Similarly, environmental concerns such as asbestos, and petroleum contamination abound throughout the community as a result of military activities.

Under QT's first cooperative agreement with DoD in 2001, the Tribe prepared a Strategic Project Implementation Plan to coordinate cleanup of approximately 20 DoD impacted sites on Native Corporation lands that the Tribe was concerned about. The second cooperative agreement in 2002 was carried out for the Tribe to provide consultation on historic properties. Our third CA was prepared to address anti-personnel Screw Stakes located within Beaver Inlet at: Peace of Mind Bay, Agamgik Bay, Uniktali Bay and Ugadaga Bay. Tribal staff performed investigations to document the original rows of stakes and to consolidate them into piles for later removal. The workplan for this effort was prepared 11.15.05 but extreme weather and logistical challenges encouraged extension of the period of performance until the final report was submitted January 2007. The fourth CA in 2012 was developed to prepare a revised Strategic Project Implementation Plan completed May of 2013.

This remedial action workplan was prepared under our fifth CA 2013 to April 2015. Our work included management of our contractor, Chilkat Environmental, to perform Building 551 site characterization and removal of 10,000 pounds of screw stakes from remote locations by our Tribal staff. The Tribe consolidated screw stake piles that were staged, during previous efforts, throughout remote locations of Beaver Inlet, including; Uniktali Bay, Agamgik Bay and Peace of Mind Bay. The Tribe was also awarded additional CA resources to characterize PCB contamination at Building 551. QT completed CA requirements 6 months ahead of schedule, to the satisfaction of NALEMP and ADEC and under budget. In January of 2015 NALEMP approved the Tribe's request to apply underspent resources to prepare a Remedial Action Workplan for Building 551. The site is owned by Ounalashka Corporation (OC), leased to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees.

4.0 SITE CHARACTERIZATION

4.1 Background

Investigation of the subject property between Building 551 and East Point Road was requested by ADEC in the mid 1990's. This request was prompted by a thesis submitted by a graduate student as part of a study of 39 sites on 17 Aleutian Islands conducted in 1994 and 1995 by the University of California, Santa Cruz. The report is titled, *Levels of Organochlorine Contamination in Blue Mussels, Mytilus Trossulus, from the Aleutian Archipelago.* The report presents analysis of a composite sample comprised of 30-50 individual blue mussels collected adjacent the Delta Western Dock across East Point Drive from Building 551. PCB was encountered at 2,800 ppb dry weight. Only one sample was collected within Dutch Harbor during this study but the alarmingly high results prompted the Environmental Protection Agency (EPA) Dutch Harbor Sediment Expanded Site Inspection Report prepared by the EPA Region 10 Superfund Technical Assessment and Response Team (START) in 2000. This study analyzed harbor sediments, fish, sea lion fat

and Blue Mussels for PCB and other contaminants. The study also investigated surface and subsurface soils at Building 551 as well as other surrounding buildings that similarly housed PCB containing transformers such as the power plant and booster station.

Six samples were collected for the START report between the Former Mess Hall (Building 551) and East Point Road. At each of the three sample sites one sample was collected from 0-6 inches below ground surface and another sample collected from 3 to 4 feet deep. Sample locations are illustrated in Figure 2, including samples; UP9SS/UP9SB, UP10SS/UP10SB and UP11SS/UP11SB.

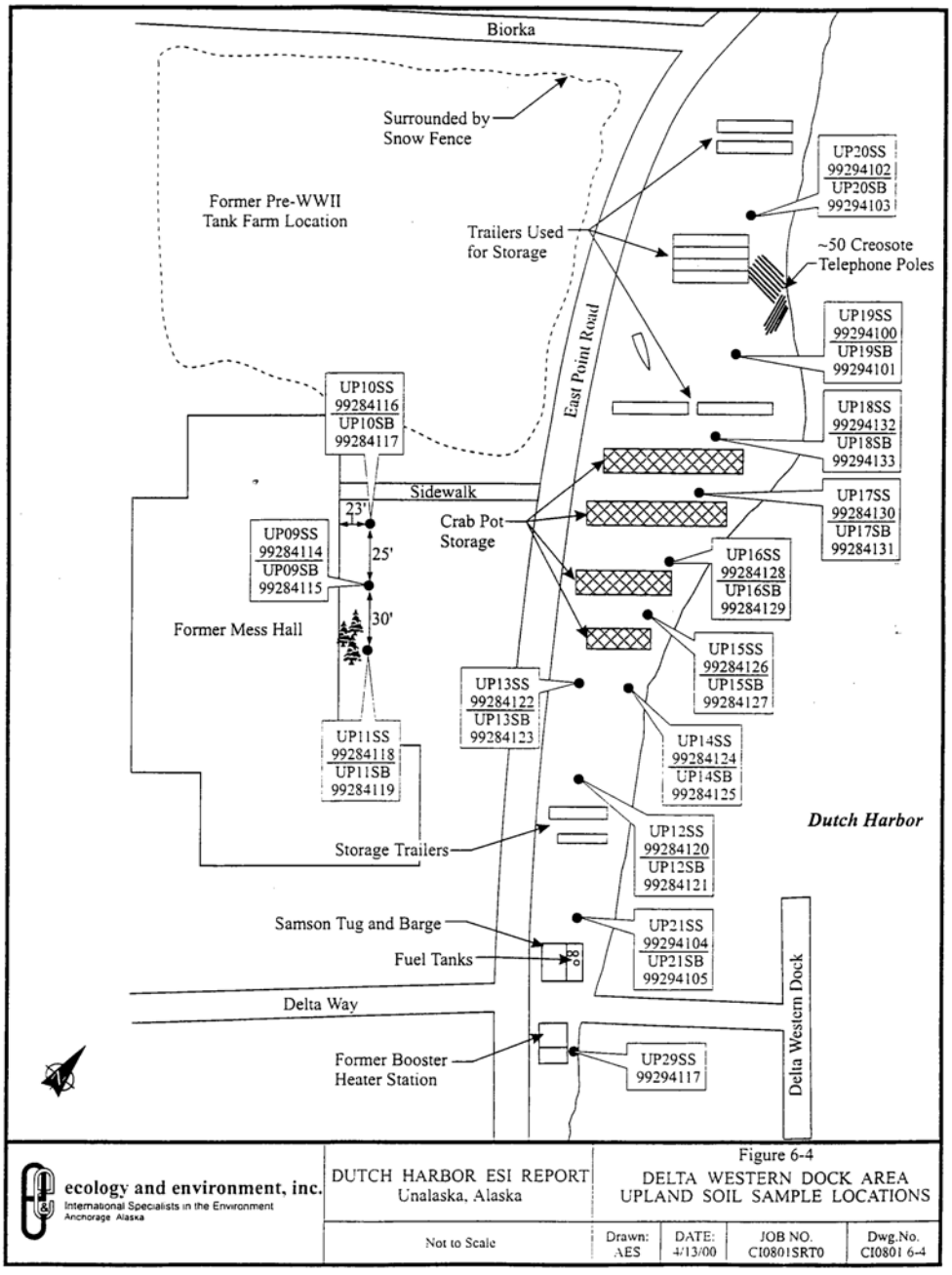


Figure 2: Sample location drawing taken from EPA START report

Surface samples (SS) encountered PCB Aroclor 1260 above 1 mg/kg state cleanup level, including; 7.1 mg/kg for UP09SS; 29 mg/kg for UP10SS and 12 mg/kg for UP11SS. Subsurface samples (SB) presented mixed results and questionable representativeness. Sample UP09SB was below reporting limits for PCB, UP10SB was below cleanup level at 0.73 mg/kg and UP11SB was above cleanup at 4.6 mg/kg. Investigators documented descriptions of the soil collected in sample jars for analysis. UP09SS and UP09SB were each described as dark brown gravel loam. UP10SS/UP10SB and UP11SS/UP11SB were all described as dark brown loam with minor pebbles. These descriptions failed to describe the soil being characterized and instead solely described the soil that was containerized for analysis. Loam is a common description for fine particle soil that is relatively equal parts sand, silt and clay. Laboratory samples were collected by START from the fine particle soil portion because rocks are not processed by the analytical methods. While this is customary it is also expected to document the portion of the soil represented by this fine particle fraction and this did not occur. Between 2000 when the EPA investigation was completed and 2010 no significant changes are known to have occurred at the site. In 2011-2012 Delta Western placed 0 to 36 inches of rock over the former lawn at the subject property. The purpose of this placement of fill was to cap exposure to employees because the area is used for employee parking and it was understood that PCB's had been observed at the site by EPA. This protective cap is still in place and required manual removal at sample sites for site characterization by Chilkat Environmental in 2014.

4.2 PCB Site Characterization

The Qawalangin Tribe's contractor, Chilkat Environmental, conducted PCB site characterization July 2014. Samples were analyzed by EPA method 8082(a) with results reported by dry-weight as per 40 Code of Federal Regulations (CFR) 761.274. 97. All results were Aroclor 1260 and no other Aroclors were observed. All data from the site characterization was considered usable. Figure 3 provides the final grid layout with categorized results. Figure 4 provides detailed results and Figure 5 shows detailed results with > 5 mg/kg hotspots identified. Table 1 provides results in spreadsheet format and includes date, time, depth of shot rock overburden, description of the sample matrix, identification of blind duplicates and identification of deep sample grid locations and soil composition. Surface samples were collected from each grid center at 0 - 6 inches below the surface of fine soil positioned beneath varied depths of fill material. Five samples were also collected from below the 1-foot soil lens and into the limited fine particles within the beach rock substrate. No samples were collected from the shot rock overburden. Table 2 provides this same information for the five subsurface samples.

Thirty-four of the eighty-two grids characterized were above 1 mg/kg. The contaminated soil lens is about one foot deep. For the purpose of volume estimation contaminated soil depth for surface samples is calculated at 1.5 feet. Grids are 3 meters square rendering about 5.4 yds^3 each. The total volume of soil contaminated above 1 mg/kg was estimated at 180.9 yds^3. However, cells with results below 1 mg/kg that are surrounded by cells over this level will require excavation to accomplish an excavation perimeter below 1 mg/kg. Accordingly, the total volume of contaminated soil is estimated at 280 yds^3.

Figure 3: Grid layout with results above 1 mg/kg

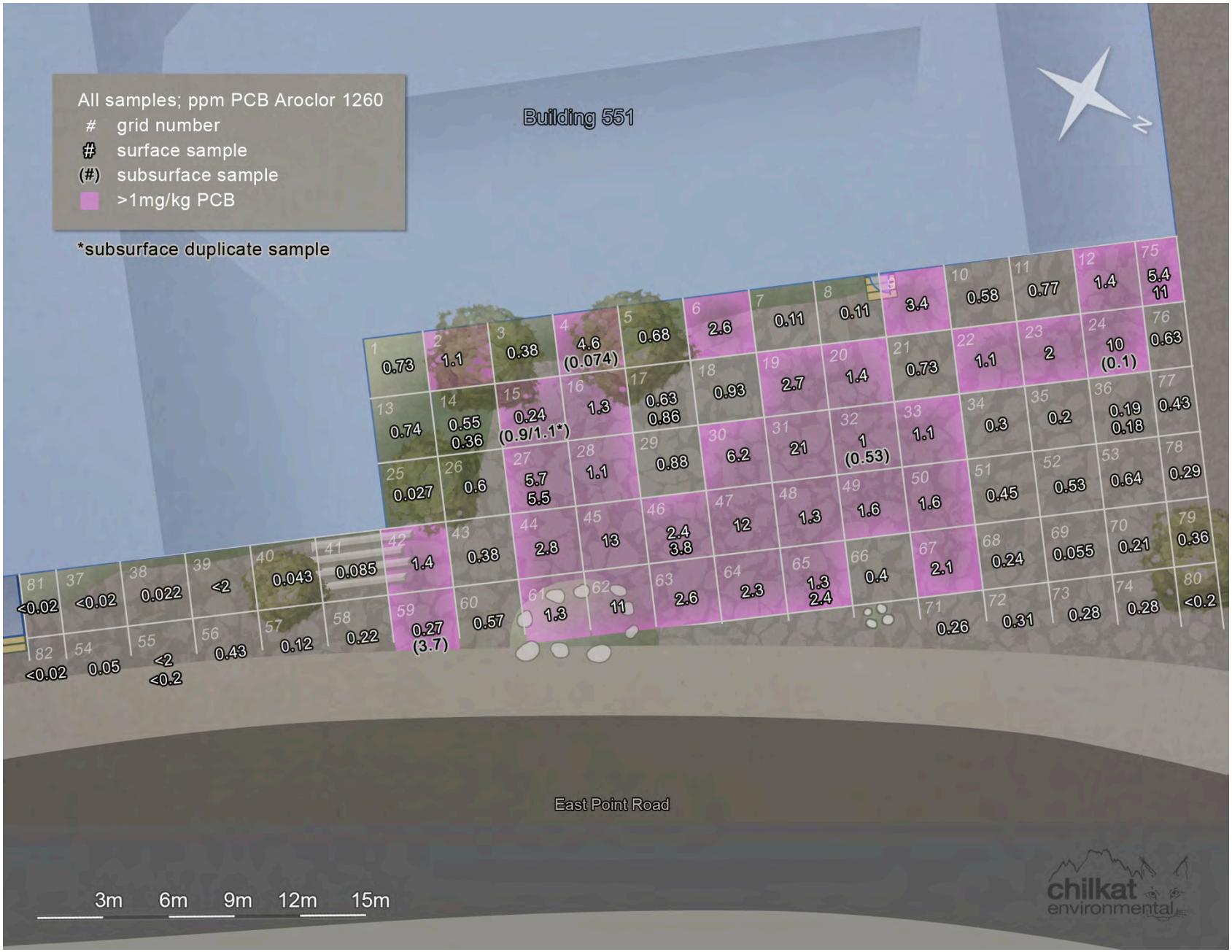


Figure 4: Grid layout with detailed results

Figure 5: Grid layout with detailed results. Over 5 mg/kg highlighted to show hotspots.

Sample ID	Depth of Fill	Duplicate	PCB	Description
1	0		0.73	loam
2	0		1.1	loam
3	0		0.38	loam
4	0		4.6	loam
5	0		0.68	loam
6	0		2.6	loam
7	0		0.11	loam
8	16		0.11	loam
9	16		3.4	loam
10	8		0.58	loam
11	8		0.77	loam
12	16		1.4	loam
13	0		0.74	loam
14	16		0.55	loam
Blind A	16	14 Dup	0.36	loam
15	16		0.24	loam
16	16		1.3	loam
17	16		0.63	loam
Blind B	16	17 Dup	0.86	loam
18	16		0.93	loam
19	24		2.7	loam
20	24		1.4	loam
21	24		0.73	loam
22	24		1.1	loam
23	18		2	loam
24	6		10	Sand and gravel matrix without loam
25	0		0.027	loam
26	20		0.6	loam
27	24		5.7	loam
Blind C	24	27 Dup	5.5	loam
28	24		1.1	loam
29	16		0.88	loam
30	18		6.2	loam
31	18		21	loam
32	16		1	loam
33	18		1.1	loam
34	18		0.3	loam
35	16		0.2	loam
36	6		0.19	loam
Blind D	6	36 Dup	0.18	loam
37	12		<0.02	Sand and gravel matrix without loam

Table 1: PCB results and sampling notes.
Depth of fill is in inches and results are stated in mg/kg. Table continued below. Results above 1 mg/kg are highlighted.

Sample ID	Depth of Fill	Duplicate	PCB	Description
38	8		0.022	Sand and gravel matrix without loam
39	8		<2	Sand and gravel matrix without loam
40	4		0.043	loam
41	5		0.085	unstratified sand, gravel and 50% loam, disturbed fill
42	4		1.4	loam with styrofoam pellets
43	16		0.38	loam
44	16		2.8	loam
45	16		13	loam
46	16		2.4	loam
Blind E	16	46	3.8	loam
47	16		12	loam
48	16		1.3	loam
49	16		1.6	loam
50	16		1.6	loam
51	16		0.45	loam
52	16		0.53	loam
53	6		0.64	loam
54	6		0.05	Sand and gravel matrix without loam
55	6		<2	Sand and gravel matrix without loam
Blind F	6	55 Dup	<0.2	Sand and gravel matrix without loam
56	16		0.43	unstratified sand, gravel and 20% loam, disturbed fill
57	16		0.12	unstratified sand, gravel and 20% loam, disturbed fill
58	16		0.22	unstratified sand, gravel and 20% loam, disturbed fill
59	20		0.27	unstratified sand, gravel and 20% loam, disturbed fill
60	16		0.57	unstratified sand, gravel and 20% loam, disturbed fill
61	5		1.3	Utility island, loam
62	5		11	Utility island, loam
63	5		2.6	unstratified sand, gravel and 10% loam, disturbed fill
64	6		2.3	unstratified sand, gravel and 30% loam, disturbed fill
65	16		1.3	loam
Blind G	16	65 Dup	2.4	loam
66	16		0.4	70% gravel, 20% loam and 10% clay
67	16		2.1	unstratified sand, gravel and 10% loam, disturbed fill
68	16		0.24	loam
69	6		0.055	loam
70	8		0.21	loam
71	36		0.26	Utility Corridor with empty space and clay bottom
72	18		0.31	unstratified sand, gravel and 10% loam, disturbed fill
73	16		0.28	unstratified sand, gravel and 50% loam, disturbed fill
74	16		0.28	loam under tree
75	6		5.4	unstratified sand, gravel and 75% loam, disturbed fill
Blind H	6	75 Dup	11	unstratified sand, gravel and 75% loam, disturbed fill
76	18		0.63	unstratified sand, gravel and 25% loam, disturbed fill
77	12		0.43	unstratified sand, gravel and 10% loam, disturbed fill
78	12		0.29	unstratified sand, gravel and 50% loam, disturbed fill
79	17		0.36	loam
80	14		<0.2	loam
81	16		<0.02	unstratified sand, gravel and 10% loam, disturbed fill, building corner, sink hole
82	16		<0.02	unstratified sand, gravel and 10% loam, disturbed fill

Table 1 Continued: PCB results and sampling notes
Depth of fill is in inches and results are stated in mg/kg. Results above 1 mg/kg are highlighted.

Sample ID	Depth of Fill	Duplicate	PCB	Description	GRID
83	16		0.53	16" fill and 3.5 ft loam mixed with coal chunks, sample depth 54 inches	32
84	16		3.7	Beach rock 80%, 10% clay and 10% loam, sample depth 40 inches	59
85	0		0.9	Beach Rock 90% and sand,gravel 10% at tree with no overburdon and 1.5 ft loam, sample 2 ft	15
Blind I	0	85 Dup	1.1	Beach Rock 90% and sand,gravel 10% at tree with no overburdon and 1.5 ft loam, sample 2 ft	15
86	0		0.07	Beach Rock 90% and sand,gravel 10% with no overburdon and 1.5 ft loam, sample 2 ft	4
87	14		0.1	Beach rock 80%, 10% clay and 10% sand,gravel, sample depth 28 inches	24

Table 2: PCB results for subsurface samples and sampling notes
Depth of fill is in inches and results are stated in mg/kg. Results above 1 mg/kg are highlighted.

As called for in the workplan 5 deep samples were advanced below the fine soil layer. Substrate descriptions are detailed in Table 2. Four of the five samples were 80- 90% rock. Fines were collected from the surfaces of rocks. Subsurface sample 83 representing Grid 32 atypically presented 4.5 feet of fines. This sample was collected at the beach rock interface and was below cleanup level with the result of 0.53 mg/kg. Two of the five deep samples exceed cleanup level. These include Sample 84 representing Grid 59 with a result of 3.7 mg/kg and Sample 85 (Blind I) with a result of 1.1 mg/kg representing Grid 15. These deep sample grids 15 and 59 were each below cleanup level for surface samples and likely would not contribute to excavation volume because subsurface soil is likely not recoverable from the dominant rocky matrix.

4.3 Quantity of PCB Contaminated Soil

Site characterization of PCB in soil was performed in 2014 following requirements outlined in 40 CFR Part 761.61 Subparts N and O as approved in the workplan. These requirements directed grid sampling and selection of one sample per grid in the middle. In contrast, this Remedial Action Workplan was prepared to satisfy requirements outlined in ADEC Draft Field Sampling Guidance May 2010 because characterization results were below Toxic Substances Control Act (TSCA) cleanup levels. ADEC sampling guidance directs confirmation sampling at the perimeter extent of excavation as well as from the floor of the excavation Satisfaction of cleanup levels will require excavation of some grids that had results below 1 mg/kg because they were adjacent to grids contaminated above 1 mg/kg. Accordingly, the total volume of contaminated soil is 280 yds^3 with 52 grids planned for excavation. This is the result of adding 17 grids raising the number of grids for excavation from 35 to 52. The ADEC Project Manager Meredith Savage concurs with the addition of these extra grids for excavation.

5.0 Scope of Remedial Action

The proposed scope of this remedial action is to remove from the property of Bldg. 551 all soils with PCB contaminant concentrations at 1 mg/kg or greater. Once the overburden of shot rock is removed, the contaminated soil layer to be excavated ranges from 1 to 2.5 feet in depth. Underlying this layer is beach rock of an undetermined depth. It is possible that fines from the contaminated soil layer have sifted down into the beach rock layer, the extent of which will be determined through confirmation sampling (see Sec. 8.0), however at this time there are no plans for excavation into this rock layer. This is because of the potential of encountering groundwater and/or encountering deeper petroleum contamination from the former neighboring tanks farms (Pre World

War II and World War II), each of which is known to have impacted the subject property at greater depths. It is also possible that PCB contamination could remain beneath the right-of-way and adjacent property south of the right-of-way."

Consultation between Principal Investigator Elijah Donat and ADEC Project Manager Meredith Savage 1.21.15 established that capping alone would not satisfy requirements for Cleanup Complete with unrestricted use, nor would placement of a cap after removal of the most contaminated soil. The ADEC cleanup standard for PCB is 1 mg/kg and QT proposes to clean to that level as confirmed by sampling at the extent of excavation. A phased, multi-year cleanup approach was rejected because of inefficiencies and increased costs and a single event approach is preferred.

This workplan proposes methodology to remove 280 yds^3 of PCB contaminated soil; perform confirmation sampling at the extent of excavation and refill the excavation. If confirmation sampling indicates more contamination at the extent of excavation the investigators will recommend further excavation in the future or institutional controls for the refilled site. This remedial action plan details health and safety planning, excavation, verification sampling, Quality Assurance/ Quality Control, shipping and disposal, decontamination, and final reporting.

6.0 Health and Safety

This workplan element is not regulated by ADEC but is included for planning purposes. Prior to site activity the cleanup team will obtain maritime security permissions from Delta Western. Permission for site activity will be coordinated with City of Unalaska and Ounalashka Corporation and notifications must be provided for buried utilities. Contact information for utilities notifications are provided in section 1.1. During fieldwork activity the right of way along East Point Road will be marked with traffic cones and the remainder of the site boundary marked with "Do Not Enter" tape.

PCB and potential petroleum analytes present in the soil are an exposure hazard and should not come in contact with skin. Personal Protective Equipment (PPE) will be used to prevent exposure. PPE will include Viton butyl rubber gloves and protective rainwear. Contaminants in soil are not volatile and respirators are not called for but will be on hand for trained personnel in case petroleum contamination is encountered. Photo Ionization Detector (PID) will be used to monitor organic vapors in work area to inform PPE requirements. Asbestos is known to be present in association with site utilidors. If suspected asbestos is encountered during excavation, particle masks will be donned, location documented and care taken to rebury any exposed material in its original position. Site safety supervisor will assist technicians as needed with PPE requirements. Any fine particle soil observed on the technician's PPE should be cleaned off to prevent accidental contact.

Safety concerns include traffic on East Point Drive that will be controlled by traffic cones. During investigation the Safety Supervisor will ensure technicians are facing the street when exposed to this hazard and will inform them each time a vehicle approaches. Work will not be performed in the roadway. Field crew will wear bright reflective safety vests and sport hard hats with eyewear while equipment is operating.

Confirmation sampling will include direct interaction with the PCB contaminated soil matrix. 4 oz. of soil will be collected from using stainless steel sampling spoons. One spoon will be used to expose fresh soil that has not come in contact with the augur. The second spoon will be used to acquire the soil sample. Fine particle soil displaced during investigation will be contained and returned to the disposed soil to avoid redistribution. Decontamination will be conducted for sampling spoons after each sample is collected at that sampling location.

Decontamination will be carried out using Alconox© and water. Decontamination will begin with use of a dishwashing brush to remove soil particles at the sampling location. Once particles are removed the spoons will be sprayed in Alconox solution deployed from a pressurized sprayer and rinsed. Protective rainwear and gloves will be cleaned the same way. In case of emergency 911 services are provided locally. The Iliuliuk Health clinic is nearby at 34 Lavelle Court. The clinic can be reached at (907) 581-1202. They are open Monday to Friday 0830 to 1800, Saturdays 0830 to 1300 and are closed Sundays though emergency services are still provided.

7.0 Excavation of PCB Contaminated Soil

The three-meter square grids from the 2014 site characterization will not be replicated for cleanup activity. Instead, the boundary of the excavation will be as shown in Figure 7. Excavation of PCB contaminated soil will be advanced in grids where results were over 1 mg/kg and in the 19 adjacent grids where results were below 1 mg/kg. This will produce a contiguous excavation boundary that can be anticipated to produce perimeter results below cleanup levels of 1 mg/kg. Three spruce trees that are within the project boundary will be cut down and disposed of off-site. The tree roots and attached soil will be treated as contaminated soil and disposed.

Shot rock ranging in depth from 0 to 36 inches will be removed using a toothless landscaping bucket to avoid mixing with contaminated soil. Landscaping buckets have a straight edge and can be used to scrape the surface while minimizing disturbance of the underlying soil. Excavation of contaminated soil will include some shot rock and beach rock as illustrated in figure 6 to capture the contaminated material.

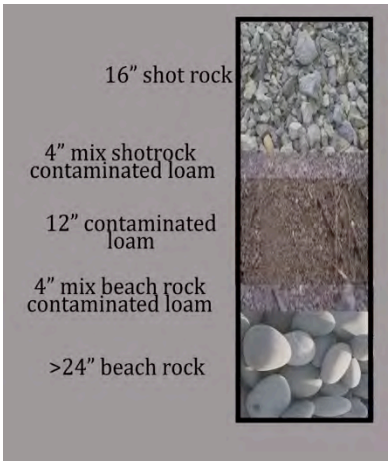


Figure 6: Description of substrate composition at Building 551

Overburden shot rock will be removed incrementally allowing the excavator to stand on clean fill to remove contaminated soil. Two excavators, or two excavator buckets, will be used to expedite incremental approach by avoiding contamination of the shot rock fill or the landscape bucket. A dedicated toothed bucket will be used for contaminated soil removal. Excavation will begin at the south inner corner (at grid #1) and commence outward to eliminate equipment standing on contaminated soil. A sufficiently sized excavator will be used to accomplish this task.

The low levels of PCB present at this site cannot be observed with field equipment and therefore excavation will be guided by site characterization results and substrate type. Excavation of contaminated soil in the proposed excavation area will be advanced until the substrate is dominated by 80% rocks instead of soil as visually observed by investigators. Cleanup will require manual excavation adjacent the right of way to preserve existing utilities. Confirmation sampling will be performed upon completion of the proposed excavation.

8.0 Confirmation Sampling

Confirmation sampling will be performed for the excavation sidewalls and floor based on Table 2b of the ADEC Draft Field Sampling Guidance, May 2010. The area of excavation and location of confirmation samples are shown in Figure 7. ADEC sampling guidance for the floor of an excavation calls for two samples for the first 250 sq. ft. and one additional sample for each additional 250 sq. ft. The proposed excavation includes 5,035 sq. ft., therefore 22 floor samples and three duplicate samples will be collected. Confirmation sampling plan is included in Table 3 below. Because confirmation sampling of the excavation floor will occur within the beach rock layer representative samples will include soil fines only, which will constitute less than 20% of the matrix by volume.

There will be approximately 192 linear feet of soil matrix sidewall at the extent of excavation. The field guidance calls for collection of a minimum of one confirmation sample per 20 linear feet of sidewall, but based on a request from ADEC for more concentrated sampling, sidewall samples will be collected at approximately 3 meter (9.8 feet) intervals, for a total of 18 sidewall samples and 2 duplicate samples. Sidewall samples will be collected from the fine soil lens immediately above the beach rock layer. All confirmation samples will include documentation of soil type using the Munsell Soil Chart to describe the substrate composition.

Sampling Plan	Floor	Sidewall	Perimeter wall	Walkway
PCB samples	22	18	2	2
Duplicates	3	2	0	1

Table 3: Confirmation sampling plan

Confirmation sampling will also include analysis of PCB concentration in concrete at the perimeter wall foundation of Building 551 as well as the currently buried concrete walkway that connects the building entrance to East Point Drive. Methodology for porous material sampling will be consistent with “Standard Operating Procedures for Sampling Porous Surfaces for Polychlorinated Biphenyls)”. This EPA guidance was published May 2011 and directs sampling methods to describe contamination at the surface of concrete by drilling 2mm into the material repeatedly and collection of the resulting dust for sampling a minimum 2 mL sample volume.

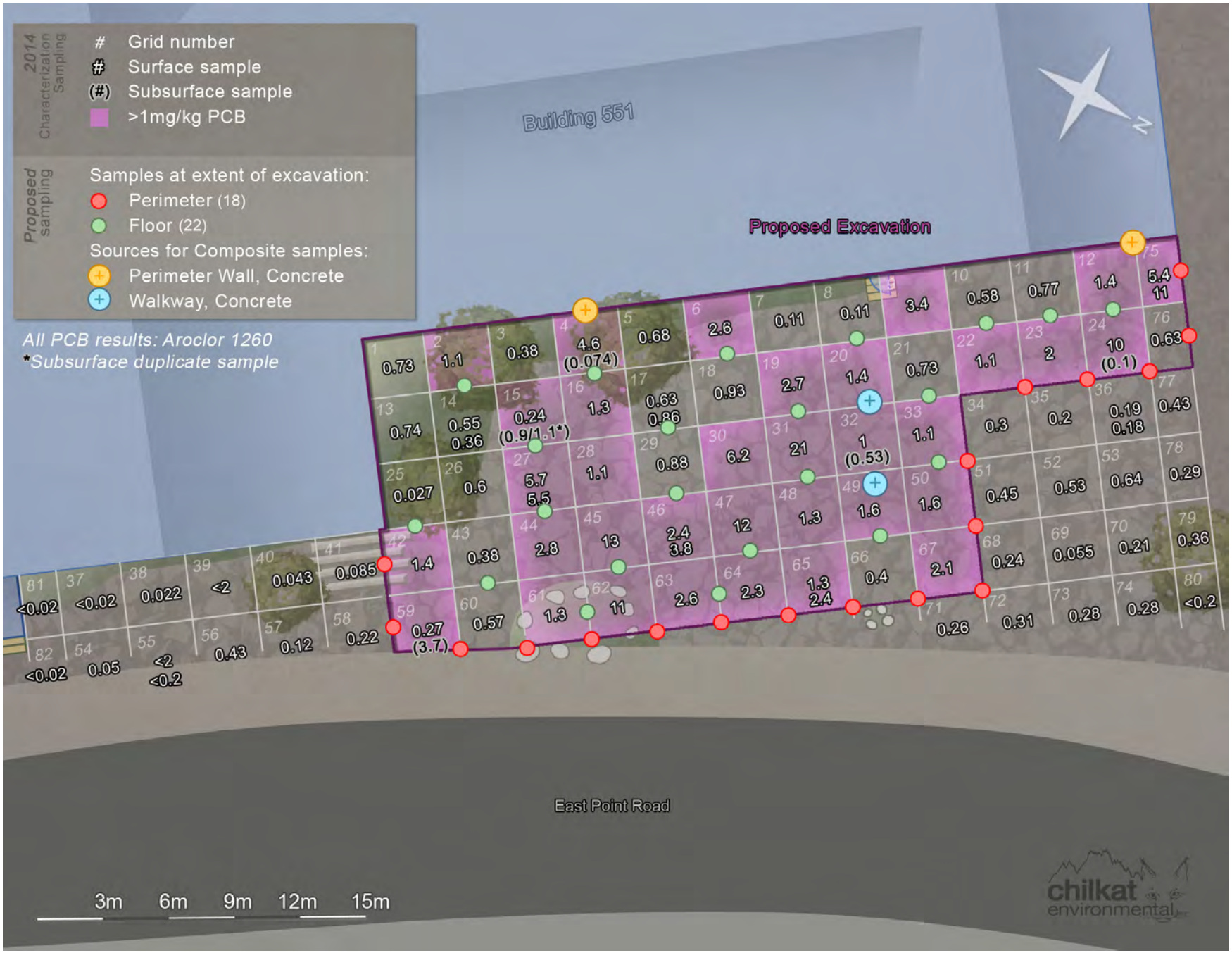


Figure 7: Proposed excavation and confirmation sampling

Composite sampling of the concrete surfaces at the perimeter wall and concrete walkway will each include 2 discrete sample sources that will be homogenized. The two perimeter wall composite samples will be located at excavated grid 4 and the second at excavated grids 12 and 75. The precise location of the walkway is unknown because it is buried. After the area has been excavated the two most contaminated grids that were in in contact with the walkway will be evident and composite samples will be collected. Samples will be air shipped to the laboratory with standard 2-week turn around because results will not influence decision-making for closure of the excavation.

Soil samples will be collected from fine particle soil using gloved hands and spoons. Once the soil is exposed a 3-inch soil augur will be used to access the soil column. The soil augur and shovels will be scoured after each sample site using a dry brush to prevent movement of soil between test pits. Once accessed, the 4 oz. of soil will be collected from the exposed using stainless steel sampling spoons. One spoon will be used to expose fresh soil that has not come in contact with the augur. The second spoon will be used to acquire the soil sample. Fine particle soil displaced during investigation will be disposed with contaminated soil. Decontamination will be conducted for sampling spoons after each sample is collected at that sampling location.

Decontamination will be carried out using Alconox© and water. Decontamination will begin with use of a dishwashing brush to remove soil particles at the sampling location. Once particles are removed the spoons will be scrubbed in Alconox solution deployed from a pressurized sprayer and rinsed.

8.1 Quality Assurance / Quality Control

Confirmation sampling will be performed at the extent of excavation to confirm that cleanup is complete.
Samples will be analyzed by Friedman and Bruya in Seattle using EPA method 8082(a). Results will be reported by dry-weight as per 40 CFR 761.274. 97. Soil will be collected in 4oz. amber jars with no preservative and kept at 4 ± 2 ºC through air shipment with chain of custody and custody seal. Friedman and Bruya is certified to perform PCB in soil by EPA method 8082(a) with results reported by dry-weight as per 761.274. Quality assurance and control elements are discussed below including; precision, accuracy, representativeness, comparability and completeness.

Precision
Precision is the amount of agreement between repeated measurements. Precision is expressed in terms of analytical variability and will be measured as the relative percent difference (RPD) between results for 5 blind duplicates. RPD goal for this project is 50%. Precision calculation for laboratory data analyses using matrix spike/matrix spike duplicates and laboratory control sample/laboratory control sample duplicates are included in the laboratory report.

Accuracy
Accuracy is the amount of agreement between a measured value and the true value. This will be measured as the percent recovery of matrix spike samples, laboratory control samples, surrogate samples, blank samples and initial and continuing calibration included in the laboratory report.

Sensitivity
The laboratory report will present detection limits for each result and has documented results between the detection limit and limit of quantitation to indicate the uncertainty in the value reported. The limits of quantitation reported by the laboratory reflect the lowest standard used for the initial calibration curve for each target analyte, as adjusted for sample-specific factors, including moisture content, serial dilutions, and dilutions.

Representativeness
Representativeness is a qualitative parameter that expresses the degree to which sample data accurately and precisely represent the conditions under study. Representativeness for this project is sanctioned by ADEC approval of the sampling design in this workplan

Comparability
Comparability is the degree to which data from one study can be compared with data from other similar studies. This goal was achieved by using standard techniques to collect and analyze representative samples and reporting results in appropriate units.

Completeness
Completeness is the percentage of usable measurements that satisfy method detection limits compared to the number of measurements requested in the workplan.

9.0 Shipping and Disposal

Chilkat Environmental will coordinate shipping and disposal by Waste Management Inc. The 2014 site characterization report will be submitted to Waste Approvals Manager Kristin Castner to assist in completion of waste profile. PCB contaminated soils will be containerized and shipping manifest prepared for shipping to Oregon for proper disposal. The contractor will remain responsible for PCB contaminated soil until certificates of disposal are produced. Open-top connexes that are lined and covered will be properly labeled by the contractor per DOT requirements. Exhibit A below provides a cost proposal for shipping and disposal. This quote will require rebidding at the time this project commences and is likely to increase. This bid shows that it will cost about $15,000 per container at about 24 yds^3 each, requiring 12 containers for an estimated shipping and disposal cost of $180,000.00. For estimation purposes it is assumed this rate may increase by about 10% within 2 years and therefore $198,000 should be allotted. To ensure the maximum allowable volume of contaminated soil, without exceedence, is loaded in each container the contractor will have them transported to the landfill where they will be weighed and corrected at the site as called for by variation of 2 tons or more.

WM SUSTAINABILITY SERVICES AND INDUSTRIAL WASTE SERVICES AGREEMENT

Exhibit A

CWM Profile #	N/A	CRL Profile #	TBD

CUSTOMER BILLING ADDRESS	CUSTOMER CONTRACTING ADDRESS (If different from Billing Address)	CUSTOMER SERVICE LOCATION (If different from Billing Address)
Elijah Donat	Same as "Billing"	Same as "Billing"
Chilkat Environmental		
P.O. Box 865		
Haines, AK 99827		
Contact Phone: (907) 303-7899		

Customer Service Contacts			WMSS Contact Information		
Melissa Bentley	abentley@wm.com	(503) 528-0677	Mike Holzschuh	mholzschuh@wm.com	(206) 423-4955 – cell
			William Hickey	whickey@wm.com	(360) 272-0430 - cell

Service Information				
Generator:	Unspecified – Unalaska, AK		**WMSS Quote Number: CLK012115-02**	
Waste Information:	**Waste Type: SOIL (Non-TSCA) PCB conc. <10 ppm**		**Volume / tons: 50-200 Yards**	**Start date: 2016**
Ground Transporter / AK:	Provided by Waste Management (WM) & incorporated into Marine Transporter quote			
Marine Transporter:	$7,500.00 per 20-ft container			
Ground Transporter / WA:	Provided by WM @ $175.00 each way per 20-ft container			
Disposal Cost:	$30.00/ton (Non-hazardous solids for Subtitle D landfill)			
Taxes:	$2.00 per ton (OR DEQ fee)			
Profile Fee (per profile):	$75.00 each profile			
Fuel and Environmental Fee:	13% of disposal cost (variable at time of disposal)			
Rail Transporter: UPRR	$850.00 per 20-ft container			
UPRR Container handling fee:	$100.00 per 20-ft container ($50.00 /in and $50.00/out)			
WM Containers:	Quantity: TBD	Size: 20-ft open top	Daily Rental Rate: $10.00	Liners: $40.00/each
United States Manifest / BOL Fee:	Provided by WM at $75.00 lump sum			
Canadian Transit Notice/Manifest	N/A			
Additional Information:	• Rates provided are for roundtrip service between WM Seattle and Dutch Harbor (Unalaska) jobsite (must be located within the city limits of Unalaska). • Marine transporter may charge an additional fuel surcharge at time of shipment based on fuel rates. • The net weight of soil loaded into each 20-ft container must not exceed 45,000 lbs or additional fees apply. • Shipper shall provide all required documents to the driver at time of pickup at jobsite to allow legal transportation through Alaska, Washington and Canada.			
Salesperson Code:	**State 2 digit code:**	**Waste CAT: ☐BA ☐EV**	**Waste Type: ☐MD ☐SP ☐ID ☐**	

THE WORK CONTEMPLATED BY THIS EXHIBIT A IS TO BE DONE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE WM SUSTAINABILITY SERVICES AND INDUSTRIAL WASTE SERVICES AGREEMENT BETWEEN THE PARTIES DATED: TBD

COMPANY			CUSTOMER		
By:	Waste Management	1-21-2015	By:	Chilkat Environmental	
Name:	William Hickey	Date	Name:		Date
Title	Project Manager		Title:		

10.0 Decontamination

Investigation derived waste will be reduced by cleaning gloves and sampling equipment between verification sampling locations with pressurized Alconox© solution and rinse water. The landscape bucket that is used to remove shot rock cover will be washed if it comes in contact with contaminated soil. The excavator bucket used to remove contaminated soil will be decontaminated once at project completion: first using dry brushes, second with pressurized Alconox© water, third with rags and brushes and solvents; and performing a final wash with Alconox© and water. Rags will be allowed to evaporate and will be disposed with the contaminated soil. The cleanup crew will use a washing station with Alconox and the resulting wastewater will be added to disposed soil in small volume.

11.0 Final Reporting

The Tribe will prepare a Remedial Action Report to satisfy final reporting requirements. This report will satisfy ADEC requirements by providing information explaining excavation effort and sampling activities including detailed photolog and field notes. The report will present laboratory results, laboratory narrative, Data Quality Review Checklist, updated Conceptual Site Model, an Eco-Scoping Model, Certificates of Disposal for PCB contaminated soil and request for closure of the PCB concern at this site without Institutional Controls if warranted. The photolog will include documentation of the floor samples to show beach rock and fine soil proportions.

12.0 Capping Alternative

This workplan was prepared to accomplish cleanup of the site to 1 mg/kg. If contamination at the extent of excavation exceeds this level additional cleanup phase could remedy this in the future or Institutional Controls may be considered. At the close of this project the site will be returned to grade using shot rock that is locally available for $22 per yd^3. Capping with concrete is outside the scope of this workplan but a quote for $44,500 was prepared for cost consideration of this option and is attached for reference. This cost assumes 700 square feet of the best quality of locally available concrete at 1 foot thick with sufficient reinforcement and steel protection around the perimeter. This cap size was selected under the assumption that remaining contamination would likely be isolated but a larger cap could be called for depending on results and intended reuse of the site.

CALENDAR CONSTRUCTION, INC.

P.O. Box 82
Bow, WA 98232
Phone: 360-766-4055
Fax: 1-866-404-1201

Estimate

DATE	ESTIMATE NO.
2/5/2015	164

NAME / ADDRESS
Chilkat Environmental P.O. Box 865 Haines, AK 99827

PROJECT

DESCRIPTION	QTY	COST	TOTAL
Form and pour 700 square feet of slab 12" thick concrete with edge angle all the way around. Provide all the labor and materials to perform the work.	1	44,500.00	44,500.00T
Sales Tax		0.00%	0.00

Thank you for the opportunity to do business with you.

TOTAL $44,500.00

13.0 Signature of Qualified Professional

Qualified Environmental Professional, Elijah Donat MS PMP, prepared this 31-page report.

April 13,2015
Elijah Donat MS PMP
Principal Investigator

14.0 References

EPA, 1985. Verification of PCB Spill Cleanup by Sampling and Analysis. August 1985. Environmental Protection Agency, Office of Toxic Substances.

EPA, 1986. Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup. May 1986. Environmental Protection Agency, Office of Toxic Substances.

EPA, 2000. Dutch Harbor Sediment Expanded Site Inspection Report. June, 2000. Environmental Protection Agency. Superfund Technical Assessment and Response Team.

ADEC, 2009. Site Characterization Workplan and Reporting Guidance for Investigation of contaminated Sites. September 2009. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program.

ADEC, 2010. Draft Field Sampling Guidance. May 2010. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program.

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

555 Cordova St
Anchorage, AK 99501
Main: 907-269-7578
Fax: 907-269-7687
www.dec.alaska.gov

File No.: 2542.38.024

April 14, 2014

Elijah Donat
Chilkat Environmental
Box 865
Haines, AK 99827

Re: Building 551, Remedial Action Workplan

Dear Mr. Donat;

The Alaska Department of Environmental Conservation (ADEC) received an electronic copy of the final report titled *Building 551: Remedial Action Workplan* on April 14, 2015. The report details the actions necessary to remove from the Building 551 property all soils with PCB concentrations of 1 mg/kg or greater. An area of approximately 5,035 square feet will be excavated from 1 to 2.5 feet depth down to the underlying beach rock layer. The beach rock layer is comprised of 80% or greater rock and 20% or less fine soil material. There are no plans at this time to excavate into the beach rock layer because of the potential of encountering groundwater and/or a deeper layer of petroleum contamination originating from World War II era tank farms and earlier. Excavated PCB contaminated soil will be containerized and shipped to Oregon for disposal.

ADEC has reviewed this work plan and finds that it meets the requirements of 18 AAC 75.340 for cleanup levels for hazardous substances in soil and accepts it as final.

If you have any questions regarding this letter, please contact me at (907) 269-7578 or at Meredith.Savage@alaska.gov.

Sincerely,

Meredith Savage
Environmental Program Specialist

Appendix B

Historic (WWII) & Recent Site Photographs

Historical Photographic Log

Photo 1	
Historical Photo Prior to Bombing Navy Mess Hall, also known as Building 551, is identified. Delta Western currently uses the Main NAS Dock. The MV Northwestern is tied along shore. Four wooden oil tanks are visible near barracks. View looking south.	

Photo 2	
Historical Photo Prior to Bombing Navy Mess Hall at left and MV Northwestern is tied along shore. Wood stave oil tanks and three transformers on poles are visible. View looking north.	

MONTROSE ENVIRONMENTAL

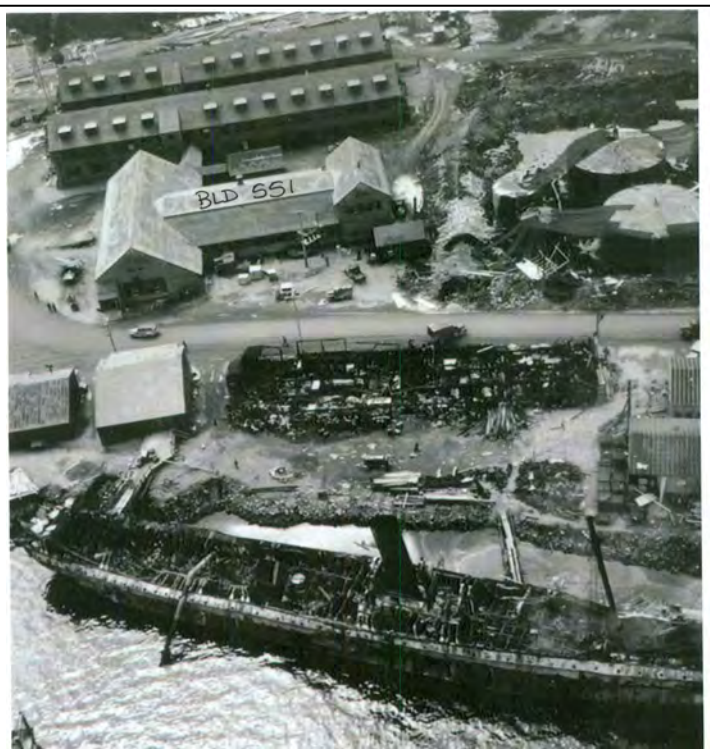
Historical Photographic Log

Photo 3 **Historical Photo During Bombing** Northwestern is burning along shore across from Building 551. View looking south.	

Photo 4 **Historical Photo During Bombing** MV Northwestern is burning along shore across from Building 551. View looking east.	

MONTROSE ENVIRONMENTAL

Historical Photographic Log

Photo 5	
Historical Photo After Bombing MV Northwestern is damaged and supply building destroyed across from Building 551. Three transformers still on poles in front of Building 551 may have been damaged. View looking west.	

MONTROSE ENVIRONMENTAL

Site Photos – February 23, 2024

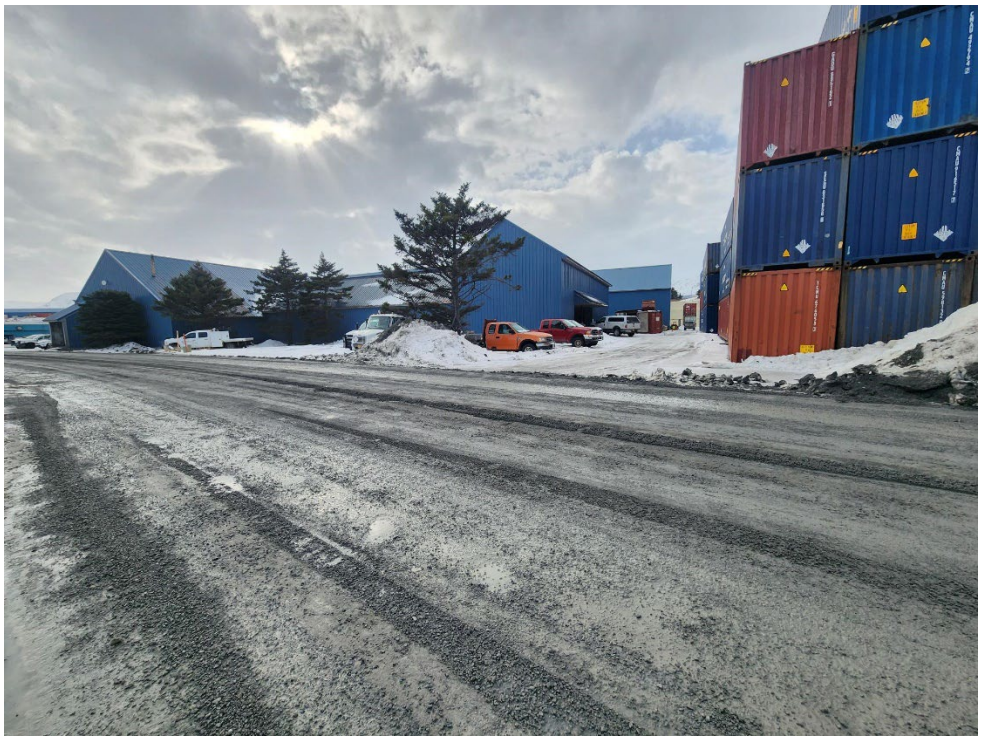
Photo 1	
View North Along East Point Road (Site on left-hand-side)	

Photo 2	
View West of Site	

MONTROSE ENVIRONMENTAL

Site Photos – February 23, 2024

Photo 3	
View North of Site	

Photo 4	
View South Along East Point Road (Site on right-hand-side)	

MONTROSE ENVIRONMENTAL

Site Photos – February 23, 2024

Photo 5	
View of Remedial Excavation Area from Northern Corner of Site	

MONTROSE ENVIRONMENTAL

Appendix C

2014 Building 551 Characterization of PCB in Soil and Workplan for Characterization of PCB in Soil

Qawalangin Tribe of Unalaska
Native American Lands Environmental Mitigation Program

Building 551:
Characterization of PCB in Soil

Prepared for:
Qawalangin Tribe
205 W Broadway Ave. Unalaska, AK 99685

Prepared by:

PO Box 865 Haines, AK. 907/303-7899

October 9, 2014

Table of Contents

ATTACHMENTS

Acronyms

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
CFR	Code of Federal Regulations
CA	Cooperative Agreement
CSM	Conceptual Site Model
EPA	Environmental Protection Agency
NHL	National Historic Landmark
NALEMP	Native American Lands Environmental Mitigation Program
OC	Ounalashka Corporation
PCB	Polychlorinated Biphenyls
QT	Qawalangin Tribe
SPIP	Strategic Project Implementation Plan
SB	Subsurface samples
START	Superfund Technical Assessment and Response Team
SS	Surface samples
USACE	United States Army Corps of Engineers
DoD	United States Department of Defense

1.0 INTRODUCTION

The Qawalangin Tribe (QT) produced this characterization report for the United States Department of Defense (DoD) Native American Lands Environmental Mitigation Program (NALEMP) administered by the United States Army Corps of Engineers (USACE), Alaska District. This program addresses DoD impacts on Native lands. Unalaska has about 5,000 residents and is located about 800 miles from Anchorage, Alaska. Refer to Figure 1 for map. The Qawalangin Tribe performed this work through Cooperative Agreement (CA) NALEMP-FY13-02 W912DY-13-2-0302 with the DoD. This is the Tribe's fifth CA with DoD and negotiations are currently underway for the sixth Cooperative Agreement.

Characterization was conducted to satisfy Alaska Department of Environmental Conservation (ADEC) requirements outlined in Title 18 Alaska Administrative Code (AAC) 75.341 and 75.345 as well as Federal requirements outlined in 40 Code of Federal Regulations (CFR) Part 761.61 Subparts N and O. The property between Building 551 and East Point Road in Dutch Harbor was characterized to determine distribution of soil contaminated with Polychlorinated Biphenyls (PCB) above the ADEC cleanup level of 1 mg/kg per 18 AAC75, Article 3. A workplan was submitted May 7, 2014 and consistent with 18 AAC 75.335 was approved by ADEC May 13, 2014. The workplan and approval letter are included as Attachment A. Fieldwork was conducted July 3-5, 2014.

Figure 1: Location and vicinity of Building 551 in Dutch Harbor, Alaska.

1.1 PROJECT TEAM

Tribal Administrator (Qawalangin Tribe) – Robin Waldron: Robin Waldron manages NALEMP for QT and is the contract manager for Chilkat Environmental.
robin.qawalangin@gmail.com (907) 581-2920

NALEMP Program Manager (USACE AK District) – Andrea Elconin: Ms. Elconin manages this NALEMP Project and provides assistance to Tribes while they perform Cooperative Agreements.
Andrea.B.Elconin@usace.army.mil (907) 753-568

USACE Environmental Engineer (USACE AK District) – Thomas Reed: Mr. Reed is familiar with Building 551 from past projects and was consulted for workplan development.
Thomas.J.Reed@usace.army.mil (907) 753-5642

ADEC Regulatory Representative – Meredith Savage: Meredith is an Environmental Program Specialist III with ADEC Contaminated Sites Program. She is the lead regulatory authority for this project. ADEC approved the workplan for this characterization May 13, 2014.
meredith.savage@alaska.gov (907) 269-7578

ADEC Regulatory Representative – John Halverson: John is the Environmental Program Manager for the ADEC Contaminated Sites Program. He has managed the Building 551 site until recently when Meredith Savage took over as Project Manager. John provided technical support for workplan methodology and will be provided all project documents
john.halverson@alaska.gov (907) 269-7545

Principal Investigator (Chilkat Environmental) – Elijah Donat: Elijah is the Principal Investigator. His responsibilities include preparing the workplan, conducting fieldwork and preparing this report. Chilkat Environmental was selected by the Tribe to conduct this characterization. Environmental Engineer, Elijah Donat is a qualified Environmental Professional as defined in 18 Alaska Administrative Code (AAC) 75.990 and has a BS in Environmental Science, a BA in Federal Indian Law and an MS in Environmental Engineering. He has 14 years of experience as a Principal Investigator in Alaska. Mr. Donat has prepared many NALEMP documents including: 38 Phase 1 Assessments, 33 workplans, 4 SPIP's and 19 cleanup reports. Elijah has extensive experience working with ADEC and has managed investigation, characterization, cleanup and successful closure for 38 ADEC contaminated sites.
elijah@chilkatenvironmental.com (907) 303-7899

Senior Scientist (Chilkat Environmental) – Bruce Wright: Bruce provided technical support for the project. Bruce was trained as an Ecologist and has 35 years of experience as a scientist in Alaska. His responsibilities include supporting workplan development, managing fieldwork, safety supervision during fieldwork and input on the final report.
bruce@chilkatenvironmental.com (907) 354-8358

Environmental Scientist (Chilkat Environmental) – Jacklynn Ruggirello: Jacklynn is the owner of Chilkat Environmental and has a BS in Biology. She has been managing NALEMP projects in Alaska for over 10 years. Jacklynn supports document preparation and coordinates Chilkat Environmental staff.
jackylnn@chilkatenvironmental.com (907) 314-0877

Environmental Technician (**Chilkat Environmental) – Kevin Forster:** Kevin has worked for Chilkat Environmental for 6 years and is responsible for preparing graphics and collection of required information for images. For this project Kevin coordinated with the project team to make sure all known utilities and right of way considerations were documented in the workplan.
kevin@chilkatenviornmental.com (907) 303-7899

Environmental Technician (**Chilkat Environmental) – Eric Forster:** Eric has worked for Chilkat Environmental statewide for 5 years. For this project Eric was responsible for manually removing shot rock and providing decontamination for Principal Investigator.
eric@chilkatenvironmental.com (907) 303-7899

Lands Manager (**Ounalashka Corporation) – Denise Rankin:** Ounalashka Corporation (OC) owns the property under investigation. Denise is responsible for providing landowner permission and will be provided the final characterization report.
Rankin@ounalashka.com (907) 582-1276

Leasee (Delta Western Inc.) – Bev Nieman: Bev is the environmental contact for Delta Western. The subject property is leased by OC to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees. The property across East Point Drive features Delta Western Offices and the fuel dock. The subject property is included in Maritime Security Zone and Chilkat Environmental obtained permission from Delta Western for investigators to be on site. Delta Western was provided the workplan and will be provided this report.
bevn@DeltaWestern.com (206) 357-1722

Planning Director (**City of Unalaska) – Erin Reinders:** City of Unalaska has jurisdiction over the utility and road right of way parallel East Point Road and was helpful for workplan development. The Tribe will provide the city with the final characterization report.
ereinders@ci.unalaska.ak.us (907) 581-4181

Planning Administrator (**City of Unalaska) – Anthony Grande:** City of Unalaska has jurisdiction over the utility and road right of way parallel East Point Road. Anthony has been very helpful providing information such as plats. The Tribe will provide the city with the final characterization report.
agrande@ci.unalaska.ak.us (907) 581-4181

TelAlaska: Buried communication utilities. Investigators contacted by phone prior to fieldwork as directed on signage and received permissions. The Tribe will provide TelAlaska the final characterization report.
(800) 478-3121

Electric Cooperative: Buried electric supply utilities. Investigators contacted by phone prior to fieldwork as directed on signage and received permissions. The Tribe will provide the city the final characterization report. The city manages the Electric Cooperative. (907) 581-1260

2.0 SITE DESCRIPTION AND BACKGROUND

Unangan history dates back at least 9,000 years. The Aleutian Islands are amongst the longest inhabited Native Lands in North America. Russian contact in the mid-1700's brought significant change to the Unangan. The first Russians arrived in Unalaska in 1759, claiming lands for the Russian Empire. At the time of Russian contact about 3,000 Aleuts lived in 24 settlements on Unalaska and Amaknak Islands. Unalaska became a Russian trading port for the fur seal industry in 1768.

The Aleutian Islands provided access to vast marine resources and therefore were an especially desirable place to live for the Unangan, later termed Aleut. Deep easterly currents from the Pacific Ocean promote upwelling systems that are of crucial importance for the productivity of the region. The coastal areas were extremely rich in edible plants and animals: seaweeds, shellfish, birds, fish, seals, and whales. The relationship of the Unangan people with the environment is extraordinary and is the foundation of their continuous occupation.

The Department of War created its first military outpost on Amaknak Island in 1911. Though it was just a Navy coaling station this began the US military legacy. In 1940, the US Army established a top-secret military defense station on Amaknak Island. During peak military activities in 1942 and 1943, the Navy, Army, and Marines reportedly had combined forces of 65,000 personnel on Amaknak and Unalaska Islands. The Japanese attacked many times by air but most notably on June 4, 1942 when they bombed Fort Mears hitting the contractor ship the Northwestern, which was docked across the street from Building 551. Three pole-mounted transformers may have been damaged in front of the building. Historic photos 1-5 demonstrate the area before, during and after bombing.

Photo 1: Historic photo prior to bombing.
Navy Mess Hall, also known as Building 551, is identified. Delta Western currently uses the Main NAS Dock. The MV Northwestern is tied along shore. Four wooden oil tanks are visible near barracks. View looking south.

Photo 2: Historic photo prior to bombing.
Navy Mess Hall at left Northwestern is tied along shore. Wood stave oil tanks and three transformers on poles are visible. View looking north.

Photo 3: Historic photo during bombing.
Northwestern is burning along shore across from Building 551. View looking south.

Photo 4: Historic photo during bombing.
MV Northwestern is burning along shore across from Building 551. View looking east.

Photo 5: Historic photo after bombing.
MV Northwestern is damaged and supply building destroyed across from Building 551. Three transformers still on poles in front of Building 551 may have been damaged. View looking west.

It is likely the transformers in front of Building 551were damaged during this act of war because they were replaced the later the same year as documented in USACE video account. Based on transformer size we estimate maximum volume of spilled PCB containing dielectric oil was less than 75 gallons however it is possible that PCB's in the electrical equipment associated with the electrical supply shed or the power-generating vessel was released as a result of the bombing. Following wartime events, a complete military withdrawal was concluded by 1947, leaving most of the facilities intact.

Many of the former military improvements are now historic landmarks, including; the Dutch Harbor Naval Operating Base and Fort Mears National Historic Landmark (NHL), the Sitka Spruce Tree Plantation NHL, and the affiliated WWII National Historic Area. Several of the other remaining military buildings are now privately owned by commercial industries including facilities supporting fishing and fish processing and shipping.

Still there are hundreds of dilapidated military buildings that remain on Native-owned lands that pose health and safety hazards. Tribal members are exposed to these hazards during subsistence and recreational activities. Similarly, environmental contamination concerns abound throughout the community as a result of military activities.

Under the Tribe's first cooperative agreement with DoD in 2001, the Tribe prepared a Strategic Project Implementation Plan (SPIP) to coordinate cleanup of approximately 20 DoD impacted sites on Native Corporation lands that the Tribe was concerned about. The second cooperative agreement in 2002 was carried out for the Tribe to provide consultation on historic properties. Our third CA was prepared to address anti-personnel Rommel Stakes located at: Peace of Mind Bay, Agamgik Bay, Uniktali Bay and Ugadaga Bay. Tribal staff performed investigations to document original rows of stakes and consolidated them into piles for later removal. The workplan for this effort was prepared 11.15.05 but extreme weather and logistical challenges encouraged extension of the period of performance until the final report was submitted January 2007.

The fourth CA in 2012 was developed to prepare a revised Strategic Project Implementation Plan completed May of 2013. Our fifth and current 2013 CA was prepared to confirm Rommel Stake pile locations, consolidate piles and remove them for proper disposal. The Tribe was also awarded additional resources under the 2013 CA to characterize PCB contamination at Building 551. The property subject to this investigation is owned by Ounalashka Corporation (OC), leased to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees.

Investigation of the subject property between Building 551 and East Point Road was requested by ADEC. This request was prompted by a thesis submitted by a graduate student as part of a study of 39 sites on 17 Aleutian Islands conducted in 1994 and 1995 by the University of California, Santa Cruz. The report is titled, *Levels of Organochlorine Contamination in Blue Mussels, Mytilus Trossulus, from the Aleutian Archipelago.* The report presents analysis of a composite sample comprised of 30-50 individual blue mussels collected adjacent the Delta Western Dock across East Point Drive from Building 551. PCB was encountered at 2,800 ppb dry weight. Only one sample was collected within Dutch Harbor during this study but the alarmingly high results prompted the Environmental Protection Agency (EPA) Dutch Harbor Sediment Expanded Site Inspection Report prepared by the EPA Region 10 Superfund Technical Assessment and Response Team (START) in 2000. This study analyzed harbor sediments, fish, sea lion fat and Blue Mussels for PCB and other contaminants. The study also investigated surface and subsurface soils at Building 551 as well as other surrounding buildings that similarly housed PCB containing transformers such as the power plant and booster station.

Six samples were collected for the START report between the Former Mess Hall (Building 551) and East Point Road. At each of the three sample sites one sample was collected from 0-6 inches below ground surface and another sample collected from 3 to 4 feet deep. Sample locations are illustrated in Figure 2, including samples; UP9SS/UP9SB, UP10SS/UP10SB and UP11SS/UP11SB.

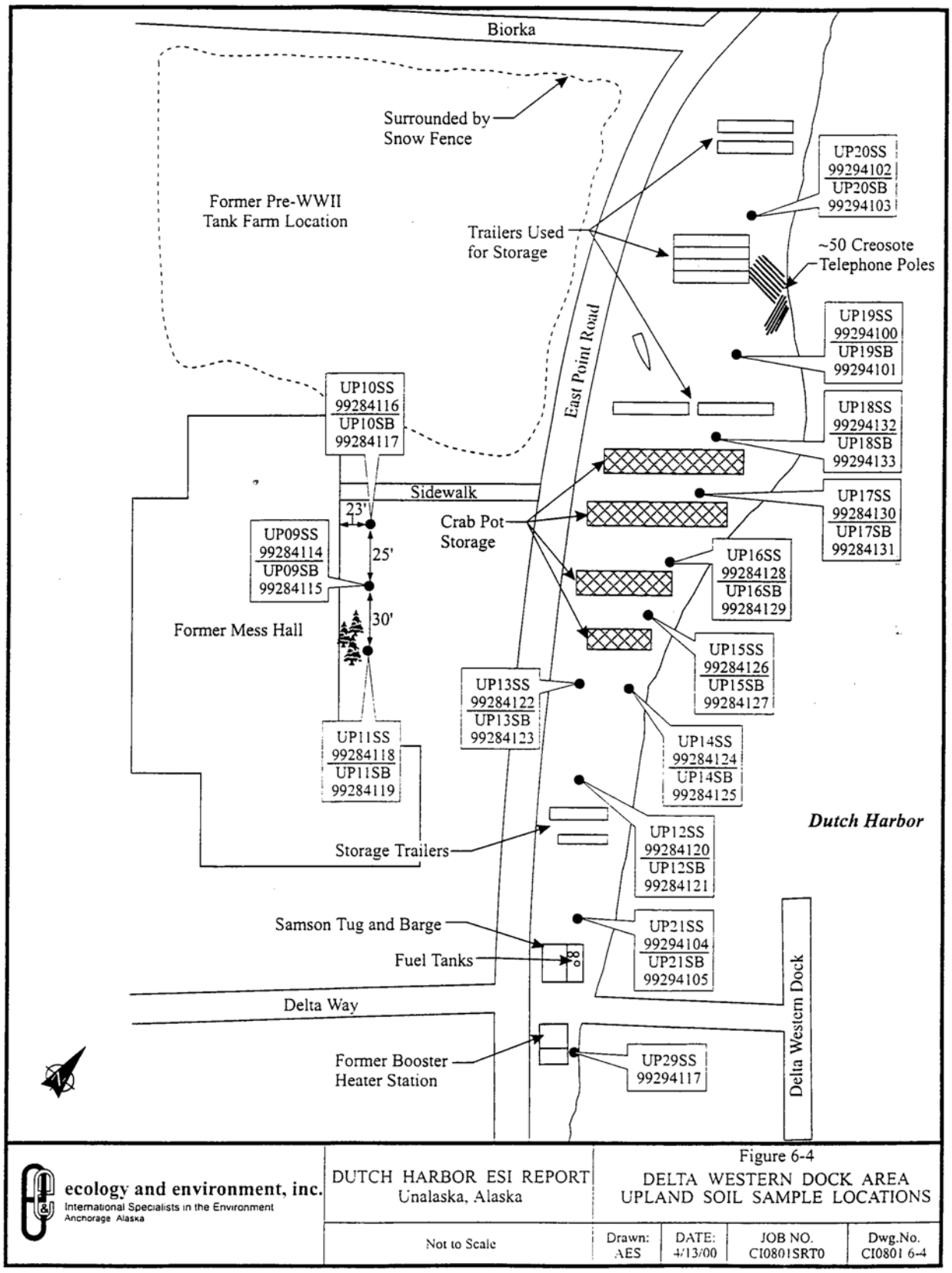


Figure 2: Sample location drawing taken from EPA START report

Surface samples (SS) encountered PCB Aroclor 1260 above 1 mg/kg state cleanup level, including; 7.1 mg/kg for UP09SS; 29 mg/kg for UP10SS and 12 mg/kg for UP11SS. Subsurface samples (SB) presented mixed results and questionable representativeness. Sample UP09SB was below reporting limits for PCB, UP10SB was below cleanup level at 0.73 mg/kg and UP11SB was above cleanup at 4.6 mg/kg. Investigators documented descriptions of the soil collected in sample jars for analysis. UP09SS and UP09SB were each described as dark brown gravel loam. UP10SS/UP10SB and UP11SS/UP11SB were all described as dark brown loam with minor pebbles. These descriptions failed to describe the soil being characterized and instead solely described the soil that was containerized for analysis. Loam is a common description for soil that is relatively equal parts sand, silt and clay. In other words soil dominated by fine particles. Laboratory samples were collected by START from the fine particle soil portion because rocks are not processed by the analytical methods. While this is customary it is also expected to document the portion of the soil represented by this fine particle fraction and this did not occur. Between 2000 when the EPA investigation was completed and 2010 no significant changes are known to have occurred at the site. In 2011-2012 Delta Western placed about 16 inches of shot rock over the former lawn at the subject property. The purpose of this placement of fill was to cap exposure to employees because the area is used for employee parking and it was understood that PCB's had been observed at the site by EPA. This protective cap is still in place and required manual removal at sample sites for characterization by Chilkat Environmental in 2014.

3.0 Site Controls, Health and Safety

Prior to characterization the investigative team obtained maritime security permissions from Delta Western. Permission for site activity was coordinated with City of Unalaska and Ounalashka Corporation and notifications were provided for buried utilities. During fieldwork activity the right of way along East Point Road was marked with traffic cones and the remainder of the site boundary marked with "Do Not Enter" tape. Chilkat Environmental staff was present at all times suspect soil was uncovered. Immediately after samples were acquired the shot rock was replaced to cap potential exposure to the potentially PCB contaminated soil lens. No petroleum contamination was detected at the depths achieved by this investigation.

4.0 Sampling and Decontamination Procedures

Investigators marked out 82 grids including 66 grids measured at 3 meters square and 16 partial grids. There is a rock fill layer installed around 2012 that caps the site and ranges from 0 to 36 inches in depth. This material was not sampled because it was applied after contamination occurred. Surface samples were collected from each grid center at 0 - 6 inches below the surface of fine soil positioned beneath varied depths of fill material. Five samples were also collected from below the 1-foot soil lens and into the limited fine particles within the beach rock substrate. No samples were collected from the shot rock overburden. The actual number of samples compared to the planned number of samples is presented in Table 1 below. Shot rock overburden was removed manually to prevent mixing. Samples were collected using soil augers, and stainless steel sampling tools from 0 to 6 inches deep in the 1-foot lens of fine particle soil. Investigation derived soil was reburied where it originated and shot rock replaced. Additional grids were added to comprehensively distribute samples.

Sampling Plan	Shot Rock Fill	0-6 inches	12-24 inches	Total Samples
PCB samples	0	82 (72)	5 (5)	87
Duplicates	0	8 (7)	1 (1)	9

Table 1: Actual Samples Compared to Planned Samples

Photo 1: Clearing shot rock at sample locations

Photo 2: Expose fine grain soil without redistributing

Photo 3: Further expose fine grain soil without redistributing

Photo 4: Auger into fine grain soil and store fines in stainless steel bowl.

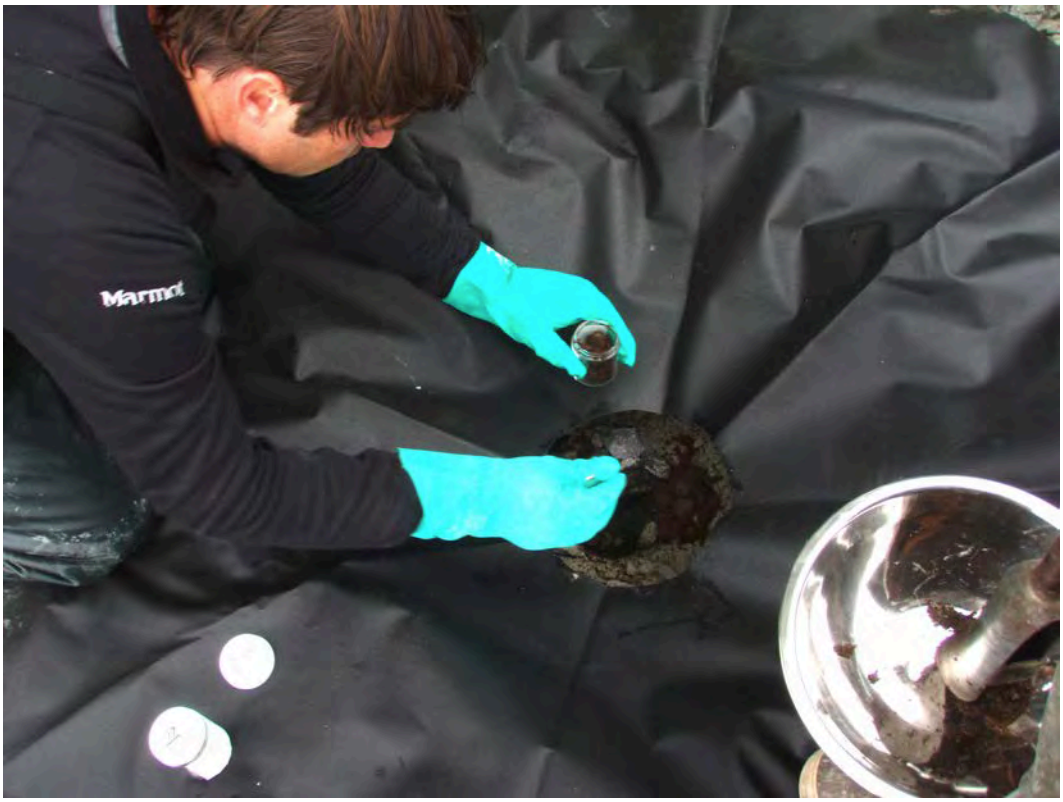


Photo 5: Sample fine grain soil 0-6 inches below shot rock fill

Photo 6: Cap jar over pit to direct spillage

Photo 7: Place fines from bowl into auger pit and use spoon to clean auger of soil

Photo 8: Place fines from bowl into auger pit and use spoon to clean auger of soil

Photo 9: Spray clean spoon, gloves, auger, tarp and bowl with Alconox and water

Photo 10: Spray clean spoon, gloves, auger, tarp and bowl with Alconox and water

Photo 11: Spray clean spoon, gloves, auger, tarp and bowl with Alconox and water

Photo 12: Spray clean spoon, gloves, auger, tarp and bowl with Alconox and water

Photo 13: Spray clean spoon, gloves, auger, tarp and bowl with Alconox and water

Photo 14: Deliver sample jars to ice chest

Photo 15: Spray clean gloves and tarp after sample jars are placed in ice chest

5.0 Quality Assurance / Quality Control

Samples were collected July 3-5 and stored on gel ice in ice chests over this duration. Samples were air mailed July 7 and received by the laboratory July 9 at 3 ºC. Laboratory Reports 407133 and 407134 from ADEC approved laboratory Friedman and Bruya were received July 24, 2014. Two reports were requested and reflect the contents of the two ice chests.

Samples were analyzed by EPA method 8082(a) with results reported by dry-weight as per 40 CFR 761.274. 97. No data were flagged for data quality problems. All results were for Aroclor 1260 and no other Aroclors were observed. Samples 39 and 55 had results of < 2 mg/kg due to matrix interference. These two non-detect results are above the ADEC cleanup level of 1 mg/kg, which was also the goal for minimum. Four samples experienced interference but still satisfied minimum detection. These include 80 (< 0.2), 81 (< 0.02), 82 (< 0.02), and Blind F (< 0.2). Quality assurance and control elements are discussed below including; precision, accuracy representativeness, comparability and completeness.

Precision

Precision is the amount of agreement between repeated measurements. Precision is expressed in terms of analytical variability and will be measured as the relative percent difference (RPD) between results for nine blind duplicates. RPD goal for this project is 50%. Precision calculation for laboratory data analyses using matrix spike/matrix spike duplicates and laboratory control sample/laboratory control sample duplicates are included in the laboratory report. 87 samples were collected and 9 duplicates performed to satisfy one in ten duplicates per sample matrix. RPD% for duplicates is calculated in Table 2 below.

Sample ID	Date	Blind Dup	Result	RPD%
14	7/3/14		0.55	41.76%
Blind A	7/3/14	14 Dup	0.36	
17	7/3/14		0.63	30.87%
Blind B	7/3/14	17 Dup	0.86	
27	7/3/14		5.7	3.57%
Blind C	7/3/14	27 Dup	5.5	
36	7/3/14		0.19	5.41%
Blind D	7/3/14	36 Dup	0.18	
46	7/4/14		2.4	45.16%
Blind E	7/4/14	46	3.8	
55	7/4/14		<2	NA
Blind F	7/4/14	55 Dup	<0.2	
65	7/4/14		1.3	**59.46%**
Blind G	7/4/14	65 Dup	2.4	
75	7/5/14		5.4	**68.29%**
Blind H	7/5/14	75 Dup	11	
85	7/5/14		0.9	20%
Blind I	7/5/14	85 Dup	1.1	

Table 2: Relative Percent Difference (RPD%).
Results stated in mg/kg. *The RPD% soil goal for blind field duplicates is 50%. One RPD% could not be calculated because results were non-detect and the sample had matrix interferences. Two duplicates failed the RPD% goal. These exceedences are not anticipated to impact data usability. Results likely describe variability in soil PCB concentration as opposed to variation in field sampling methods. Refer to Data Quality Review Checklists attached to each laboratory report provided in Attachment B.*

Accuracy

Accuracy is the amount of agreement between a measured value and the true value. This was measured as the percent recovery of matrix spike samples, laboratory control samples, surrogate samples, blank samples and initial and continuing calibration included in the laboratory report (Attachment B).

Sensitivity

The laboratory report presents detection limits for each result and has documented results between the detection limit and limit of quantitation to indicate the uncertainty in the value reported. The limits of quantitation reported by the laboratory reflect the lowest standard used for the initial calibration curve for each target analyte, as adjusted for sample-specific factors, including moisture content, serial dilutions, and dilutions. Two samples produced results of < 2 mg/kg due to sample matrix interference. Samples 39 and 55 do not satisfy minimum method detection limit of 1 mg/kg because after dilution matrix interferences prevented these non-detect results from reaching sensitivity of better than < 2 mg/kg.

Representativeness
Representativeness is a qualitative parameter that expresses the degree to which sample data accurately and precisely represent the conditions under study. Representativeness for this project is sanctioned by ADEC approval of the sampling design May 13, 2014. (Attachment A)

Comparability
Comparability is the degree to which data from one study can be compared with data from other similar studies. This goal was achieved by using standard techniques to collect and analyze representative samples and reporting results in appropriate units.

Completeness
Completeness is the percentage of usable measurements that satisfy method detection limits compared to the number of measurements requested in the workplan. 77 samples and 8 blind duplicates were planned for a total of 85 planned samples. Additional samples were collected to accurately distribute grids. The completeness goal for this project is 90%. 87 samples were collected and 9 duplicates performed. Two samples produced results of < 2 mg/kg due to sample matrix interference. Samples 39 and 55 did not satisfy minimum method detection limit of 1 mg/kg. Completeness of 112% exceeds the completeness goal by 22%.

5.1 Investigation Derived Waste

Investigation derived waste was not produced. Soil exposed for sampling was reburied where it originated and shot rock replaced above it. Production of PCB contaminated garbage was avoided by cleaning gloves and sampling equipment at each sampling location with pressurized Alconox© solution and rinse water.

6.0 Results

Samples were collected July 3-5, 2014, stored on ice, air mailed July 7, and received by the laboratory July 9 at 3 ºC. Laboratory Report 407133 and 407134 were received from ADEC approved laboratory Friedman and Bruya Inc. July 24, 2014. Two reports were provided reflecting the contents of the two ice chests. The laboratory reports and data quality review checklists are included as Attachment B. Samples were analyzed by EPA method 8082(a) with results reported by dry-weight as per 40 CFR 761.274. 97. All results were Aroclor 1260 and no other Aroclors were observed. All data is considered usable. Figure 3 provides the final grid layout with categorized results. Figure 4 provides detailed results. Table 3 provides results in spreadsheet format and includes date, time, depth of fill, description of the sample matrix, identification of blind duplicates and identification of deep sample grid locations and soil composition. Table 4 provides this same information for the five subsurface samples.

Figure 3: Grid layout with results above 1 mg/kg

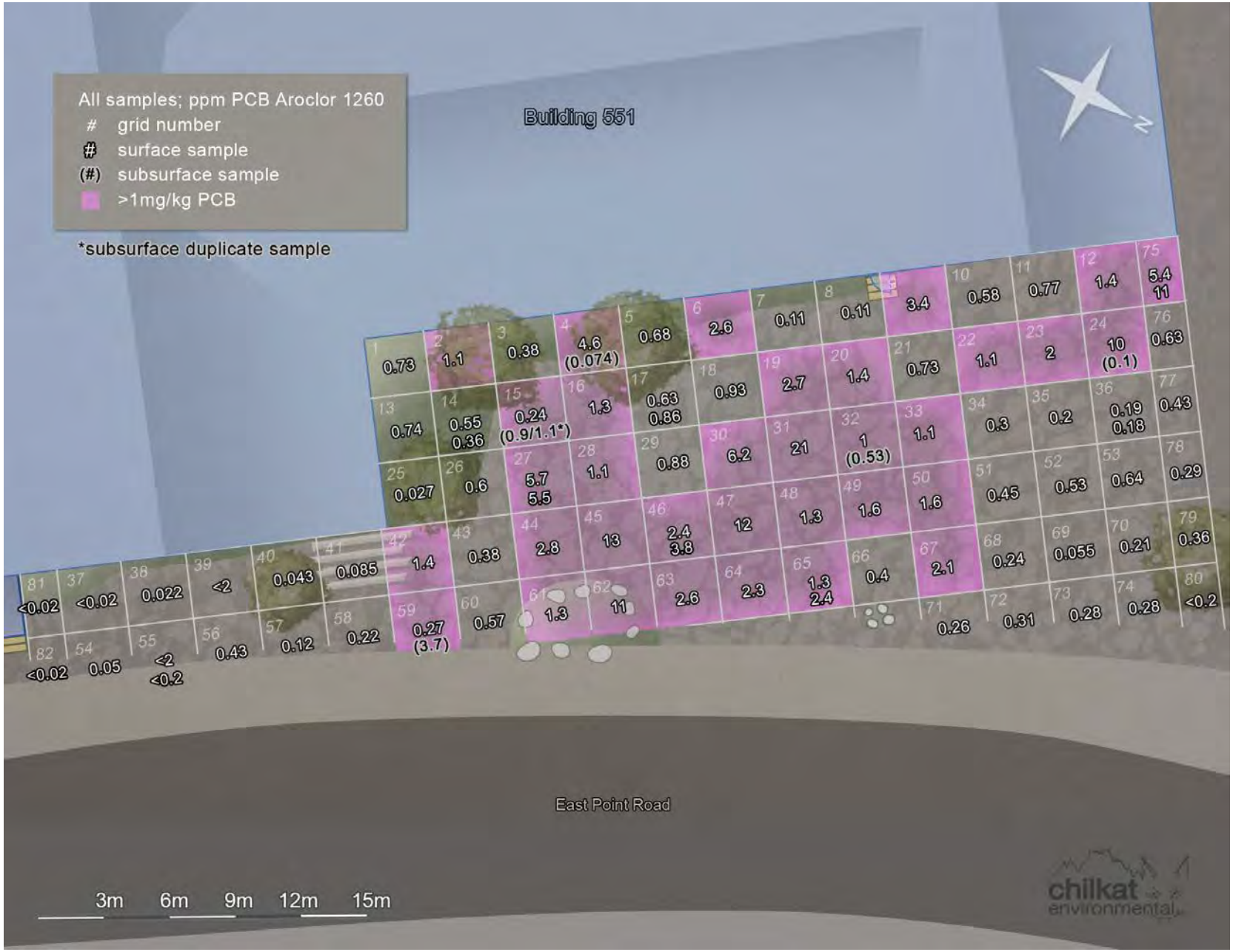


Figure 4: Grid layout with detailed results

Sample ID	Depth of Fill	Duplicate	PCB	Description
1	0		0.73	loam
2	0		1.1	loam
3	0		0.38	loam
4	0		4.6	loam
5	0		0.68	loam
6	0		2.6	loam
7	0		0.11	loam
8	16		0.11	loam
9	16		3.4	loam
10	8		0.58	loam
11	8		0.77	loam
12	16		1.4	loam
13	0		0.74	loam
14	16		0.55	loam
Blind A	16	14 Dup	0.36	loam
15	16		0.24	loam
16	16		1.3	loam
17	16		0.63	loam
Blind B	16	17 Dup	0.86	loam
18	16		0.93	loam
19	24		2.7	loam
20	24		1.4	loam
21	24		0.73	loam
22	24		1.1	loam
23	18		2	loam
24	6		10	Sand and gravel matrix without loam
25	0		0.027	loam
26	20		0.6	loam
27	24		5.7	loam
Blind C	24	27 Dup	5.5	loam
28	24		1.1	loam
29	16		0.88	loam
30	18		6.2	loam
31	18		21	loam
32	16		1	loam
33	18		1.1	loam
34	18		0.3	loam
35	16		0.2	loam
36	6		0.19	loam
Blind D	6	36 Dup	0.18	loam
37	12		<0.02	Sand and gravel matrix without loam

Table 3: PCB results and sampling notes.
Depth of fill is in inches and results are stated in mg/kg. Table continued below. Results above 1 mg/kg are highlighted.

Sample ID	Depth of Fill	Duplicate	PCB	Description
38	8		0.022	Sand and gravel matrix without loam
39	8		<2	Sand and gravel matrix without loam
40	4		0.043	loam
41	5		0.085	unstratified sand, gravel and 50% loam, disturbed fill
42	4		1.4	loam with styrofoam pellets
43	16		0.38	loam
44	16		2.8	loam
45	16		13	loam
46	16		2.4	loam
Blind E	16	46	3.8	loam
47	16		12	loam
48	16		1.3	loam
49	16		1.6	loam
50	16		1.6	loam
51	16		0.45	loam
52	16		0.53	loam
53	6		0.64	loam
54	6		0.05	Sand and gravel matrix without loam
55	6		<2	Sand and gravel matrix without loam
Blind F	6	55 Dup	<0.2	Sand and gravel matrix without loam
56	16		0.43	unstratified sand, gravel and 20% loam, disturbed fill
57	16		0.12	unstratified sand, gravel and 20% loam, disturbed fill
58	16		0.22	unstratified sand, gravel and 20% loam, disturbed fill
59	20		0.27	unstratified sand, gravel and 20% loam, disturbed fill
60	16		0.57	unstratified sand, gravel and 20% loam, disturbed fill
61	5		1.3	Utility island, loam
62	5		11	Utility island, loam
63	5		2.6	unstratified sand, gravel and 10% loam, disturbed fill
64	6		2.3	unstratified sand, gravel and 30% loam, disturbed fill
65	16		1.3	loam
Blind G	16	65 Dup	2.4	loam
66	16		0.4	70% gravel, 20% loam and 10% clay
67	16		2.1	unstratified sand, gravel and 10% loam, disturbed fill
68	16		0.24	loam
69	6		0.055	loam
70	8		0.21	loam
71	36		0.26	Utility Corridor with empty space and clay bottom
72	18		0.31	unstratified sand, gravel and 10% loam, disturbed fill
73	16		0.28	unstratified sand, gravel and 50% loam, disturbed fill
74	16		0.28	loam under tree
75	6		5.4	unstratified sand, gravel and 75% loam, disturbed fill
Blind H	6	75 Dup	11	unstratified sand, gravel and 75% loam, disturbed fill
76	18		0.63	unstratified sand, gravel and 25% loam, disturbed fill
77	12		0.43	unstratified sand, gravel and 10% loam, disturbed fill
78	12		0.29	unstratified sand, gravel and 50% loam, disturbed fill
79	17		0.36	loam
80	14		<0.2	loam
81	16		<0.02	unstratified sand, gravel and 10% loam, disturbed fill, building corner, sink hole
82	16		<0.02	unstratified sand, gravel and 10% loam, disturbed fill

Table 3 Continued: PCB results and sampling notes.
Depth of fill is in inches and results are stated in mg/kg. Results above 1 mg/kg are highlighted.

Sample ID	Depth of Fill	Duplicate	PCB	Description	GRID
83	16		0.53	16" fill and 3.5 ft loam mixed with coal chunks, sample depth 54 inches	32
84	16		3.7	Beach rock 80%, 10% clay and 10% loam, sample depth 40 inches	59
85	0		0.9	Beach Rock 90% and sand,gravel 10% at tree with no overburdon and 1.5 ft loam, sample 2 ft	15
Blind I	0	85 Dup	1.1	Beach Rock 90% and sand,gravel 10% at tree with no overburdon and 1.5 ft loam, sample 2 ft	15
86	0		0.07	Beach Rock 90% and sand,gravel 10% with no overburdon and 1.5 ft loam, sample 2 ft	4
87	14		0.1	Beach rock 80%, 10% clay and 10% sand,gravel, sample depth 28 inches	24

Table 4: PCB results for subsurface samples and sampling notes.
Depth of fill is in inches and results are stated in mg/kg. Results above 1 mg/kg are highlighted.

Thirty-four of eighty-two grids were above 1 mg/kg. The contaminated soil lens is about one foot deep but effort to recover this material would produce over excavation. For the purpose of volume estimation contaminated soil depth for surface samples is calculated at 1.5 feet. Grids are 3 meters square rendering about 5.4 yds^3 each. The total volume of soil contaminated above 1 mg/kg is estimated at 180.9 yds^3.

As called for in the workplan 5 deep samples were advanced below the fine soil layer. Substrate descriptions are detailed in Table 4. Four of the five samples were 80- 90% rock. Fines were collected from the surfaces of rocks. Subsurface sample 83 representing Grid 32 atypically presented 4.5 feet of fines. This sample was collected at the beach rock interface and was below cleanup level with the result of 0.53 mg/kg. Two of the five deep samples exceed cleanup level. These include Sample 84 representing Grid 59 with a result of 3.7 mg/kg and Sample 85 (Blind I) with a result of 1.1 representing Grid 15. These deep sample grids 15 and 59 were each below cleanup level for surface samples and likely would not contribute to excavation volume because subsurface soil is likely not recoverable from the dominant rocky matrix. This difference reduces the volume of soil contaminated by 10.8 yds^3 to a revised of 170.1 yds^3.

7.0 Conclusions / Recommendations

The subject property presents an estimated 170.1 yds^3 of soil contaminated with PCB above ADEC cleanup level of 1 mg/kg with the highest result of 21 mg/kg. There is a 1.5-foot layer of shot rock covering the contaminated soil lens. This barrier does not control off-site migration to the intertidal environment where humans could ingest it through wild foods. Preparation of a Remedial Action Workplan for ADEC approval is recommended to direct a single cleanup action, sampling at extent of excavation and reporting for closure of PCB concerns at this site.

8.0 Signature of Qualified Professional

Qualified Environmental Professional, Elijah Donat MS PMP, prepared this 31-page report with 176-page attachment file.

10/9/14
Elijah Donat MS PMP
Principal Investigator

Attachment A:

Characterization Workplan and ADEC approval

Qawalangin Tribe of Unalaska

Native American Lands Environmental Mitigation Program

Building 551/Navy Mess Hall:
Workplan for Characterization of PCB in Soil

Prepared for:

Qawalangin Tribe
205 W Broadway Ave.
Unalaska, AK

Prepared by:

chilkat environmental

Box 865 Haines, AK
907/303-7899

May 7, 2014

Table of Contents

Acronym List

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
CFR	Code of Federal Regulations
CA	Cooperative Agreement
DI	Deionized Water
EPA	Environmental Protection Agency
FUDS	Formerly Used Defense Site
NHL	National Historic Landmark
NALEMP	Native American Lands Environmental Mitigation Program
OC	Ounalashka Corporation
PPE	Personal Protective Equipment
PID	Photoionization Detector
PCB	Polychlorinated Biphenyls
QT	Qawalangin Tribe
ROW	Right of Way
SPIP	Strategic Project Implementation Plan
SB	Subsurface samples
START	Superfund Technical Assessment and Response Team
SS	Surface samples
TSCA	Toxic Substances Control Act
USACE	United States Army Corps of Engineers
DoD	United States Department of Defense

1.0 Introduction

The Qawalangin Tribe (QT) prepared this workplan for the United States Department of Defense (DoD) Native American Lands Environmental Mitigation Program (NALEMP). This program addresses DoD impacts on Native lands. Our community has about 5,000 residents on Unalaska and Amaknak Islands located about 800 miles from Anchorage. Refer to Figure 1 below for location and vicinity map. The Qawalangin Tribe is performing this work through a Cooperative Agreement (CA) NALEMP-FY13-02 W912DY-13-2-0302 with the DoD. This is the Tribe's fifth CA with DoD and is administered through the United States Army Corps of Engineers (USACE), Alaska District.

The USACE has been performing remedial actions on the Amaknak Island Formerly Used Defense Site (FUDS) #F10AK0841 for many years at a cost of over $50 million. Over the next 3 years USACE plans to address transformers and former fuel infrastructure at Rocky Point. The Tribe is thankful for these efforts. However, some impacts are not eligible for USACE cleanup because FUDS program determined that Building 551, Navy Mess Hall, contamination is from of an act of war. It is reported that three transformers were damaged by Japanese air raid and that the ground beneath the transformers is contaminated as a result. This impact is eligible for NALEMP so the Tribe and USACE have coordinated to prioritize this characterization. Similar to most of the remaining military impacts in our community, this site is on Ounalashka Corporation (OC) lands. OC and QT are anxious to see our lands cleaned up because current impacts present significant liability, limit potential land uses, present safety concerns and long-term health concerns.

The scope of work for this project is to conduct characterization between Building 551 and East Point Road to determine distribution of soil contaminated with PCB above the ADEC cleanup level of 1 mg/kg per 18 AAC75 Article 3. Characterization will be performed consistent with 40 CFR 761 Subparts N and O such that if results are over 50 mg/kg the data will also satisfy EPA requirements. Fieldwork is planned for the summer of 2014 and the report will be provided by winter 2014. This workplan details the investigative methods and reporting requirements to accomplish the scope of work consistent with 18 AAC 75.335.

Figure 1: Location and vicinity of Building 551 in Dutch Harbor, Alaska.

2.0 Background

Unangan history dates back at least 9,000 years in the Aleutian Islands that are uniquely the longest inhabited Native Lands in North America. Russian contact in the mid-1700's brought significant change to the Unangan. The first Russians arrived in Unalaska in 1759, claiming our lands for the Russian Empire. At the time of Russian contact about 3,000 Aleuts lived in 24 settlements on Unalaska and Amaknak Islands. Unalaska became a Russian trading port for the fur seal industry in 1768.

The Aleutian Islands provided access to vast marine resources and therefore were an especially desirable place to live for the Unangan, later termed Aleut. Deep easterly currents from the Pacific Ocean promote upwelling systems that are of crucial importance for the productivity of the region. The coastal areas were extremely rich in edible plants and animals: seaweeds, shellfish, birds, fish, seals, and whales. The relationship of our people to the environment is extraordinary and is the foundation of our continuous occupation.

The Department of War created its first military outpost on Amaknak Island in 1911. Though it was just a Navy coaling station this began the US military legacy. In 1940, the US Army established a top-secret military defense station on Amaknak Island. During peak military activities in 1942 and 1943, the Navy, Army, and Marines reportedly had combined forces of 65,000 personnel on Amaknak and Unalaska Islands. The Japanese attacked many times by air but most notably in 1942 the bombing caused significant damage to facilities and loss of life. Following wartime events, a complete military withdrawal was concluded by 1947, leaving most of the facilities intact.

Dutch Harbor is currently a support base for several industries including commercial fishing and processing, shipping, and offshore oil exploration. Many of the former military improvements are now historic landmarks, including; the Dutch Harbor Naval Operating Base and Fort Mears National Historic Landmark (NHL), the Sitka Spruce Tree Plantation NHL, and the affiliated WWII National Historic Area.

Hundreds of dilapidated military buildings remain on OC lands that pose a health and safety hazard. Our Tribal members are exposed to these hazards because we use the land for subsistence and recreation. Similarly, environmental contamination concerns such as petroleum and PCB contaminated soil and water still abounds throughout our community as a result of military activities.

Under our first cooperative agreement with DoD in 2001, the Tribe prepared a Strategic Project Implementation Plan (SPIP) to coordinate cleanup of approximately 20 DoD impacted sites on Native Corporation lands that the Tribe was concerned about. The second cooperative agreement in 2002 was carried out for the Tribe to provide consultation on historic properties.
Our third CA was prepared to address anti-personnel Rommel Stakes located at: Peace of Mind Bay, Agamgik Bay, Uniktali Bay and Ugadaga Bay. Tribal staff performed investigations to document original rows of stakes and consolidated them into piles for later removal. The workplan for this effort was prepared 11/15/05 but extreme weather and logistical challenges encouraged extension of the period of performance until the final report was submitted January 2007.
The fourth CA in 2012 was developed to prepare a revised SPIP completed May of 2013. Our fifth and current 2013 CA was prepared to confirm the Rommel Stake pile locations, consolidate piles and remove them for proper disposal. The Tribe was also awarded additional resources

under the 2013 CA to characterize PCB contamination at Building 551. The purpose of this workplan is to detail the investigative and reporting procedures that will be used to characterize the vertical and horizontal extent of soil contaminated with PCB above 1 mg/Kg in front of Building 551, the Former Navy Mess Hall. Building 551. The property subject to this investigation is owned by Ounalashka Corporation (OC), leased to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees.

2.1 Building 551 Investigation History

On June 4, 1942 the Japanese bombed the contractor ship the Northwestern adjacent Building 551. Three pole-mounted transformers may have been damaged. Historic photos 1-5 demonstrate the area before, during and after bombing.

Photo 1: Historic photo prior to bombing.
Navy Mess Hall, also known as Building 551, is identified. The Main Dock is currently used by Delta Western. The MV Northwestern is tied along shore. Four wood stave oil tanks are visible near barracks. View looking south.

Photo 2: Historic photo prior to bombing.
Navy Mess Hall at left Northwestern is tied along shore. Wood stave oil tanks and three transformers on poles are visible. View looking north.

Photo 3: Historic photo during bombing.
Northwestern is burning along shore across from Building 551. View looking south.

Photo 4: Historic photo during bombing.
MV Northwestern is burning along shore across from Building 551. View looking east.

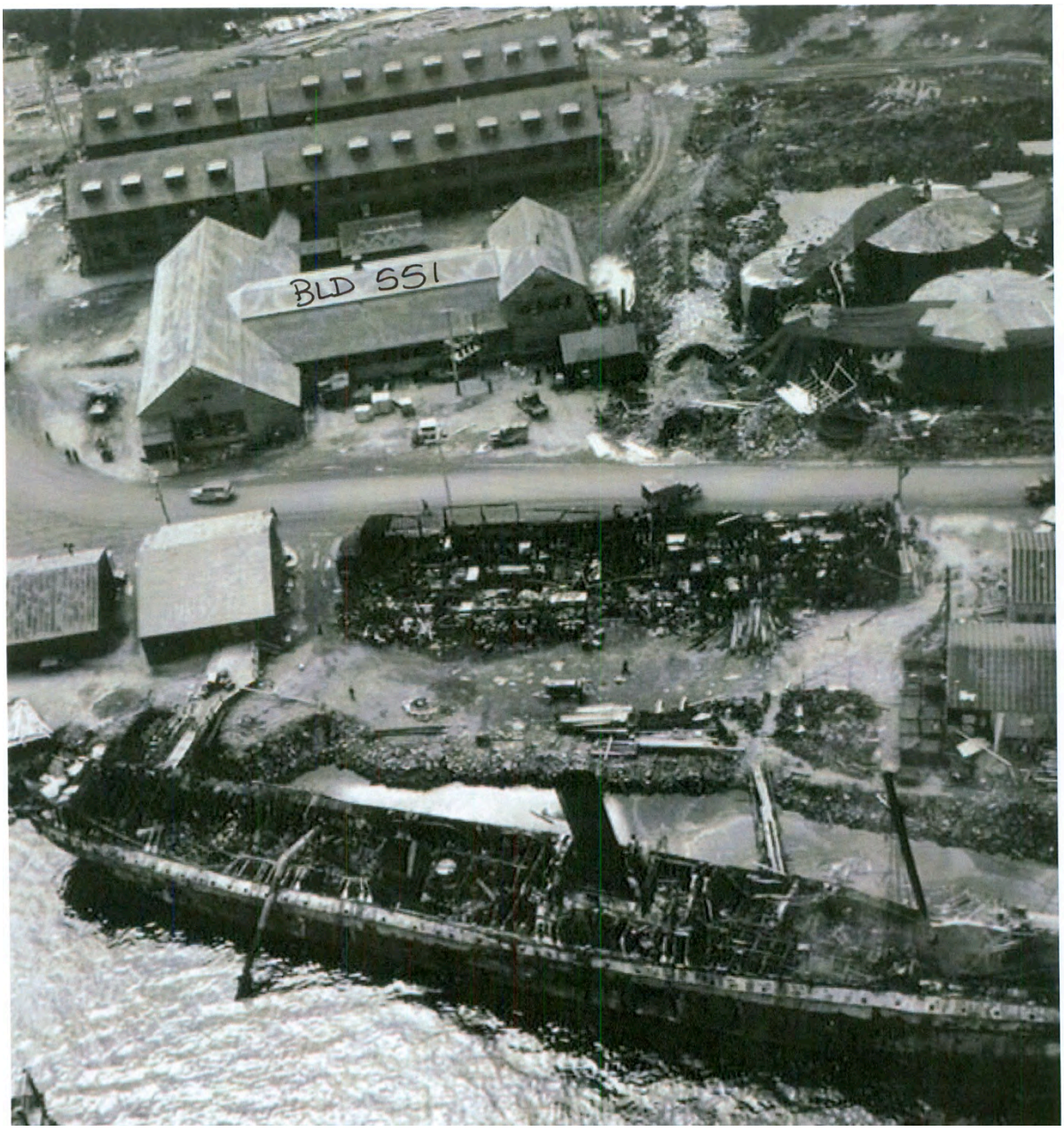


Photo 5: Historic photo after bombing.
MV Northwestern is damaged and supply building destroyed across from Building 551. Three transformers are still on poles in front of Building 551 but may have been damaged. View looking west.

It is likely the transformers were damaged during this act of war because they were replaced the same year as documented in video account. Based on the size of transformers we assume that the

maximum volume of spilled PCB containing dielectric oil was less than 75 gallons. Despite the transformers being damaged and replaced the site was not characterized for PCB until 58 years later when requested by ADEC. There are currently no transformers at this location.

This request by ADEC was prompted by a thesis submitted by a graduate student as part of a study of 39 sites on 17 Aleutian Islands conducted in 1994 and 1995 by the University of California, Santa Cruz. The report is titled, *Levels of Organochlorine Contamination in Blue Mussels, Mytilus Trossulus, from the Aleutian Archipelago.* The report discusses analysis of a composite sample comprised of 30-50 individual blue mussels collected adjacent to the Delta Western Dock. PCB was encountered at 2,800 ppb dry weight. This dock is directly across the street from Building 551. Only one sample was collected within Dutch Harbor during this study but the alarming results prompted the EPA Dutch Harbor Sediment Expanded Site Inspection Report prepared by the EPA Region 10 Superfund Technical Assessment and Response Team (START) in 2000. This study analyzed harbor sediments, fish, sea lion fat and blue mussels for PCB and other contaminants. The study also investigated surface and subsurface soils at Building 551 as well as other surrounding buildings that similarly housed PCB containing transformers such as the power plant and booster station.

Six samples were collected for the START report between the Former Mess Hall (Building 551) and East Point Road. At each of the three sample sites one sample was collected from 0-6 inches below ground surface and another sample collected from 3 to 4 feet. Sample locations are illustrated in Figure 2, including samples; UP9SS/UP9SB, UP10SS/UP10SB and UP11SS/UP11SB.

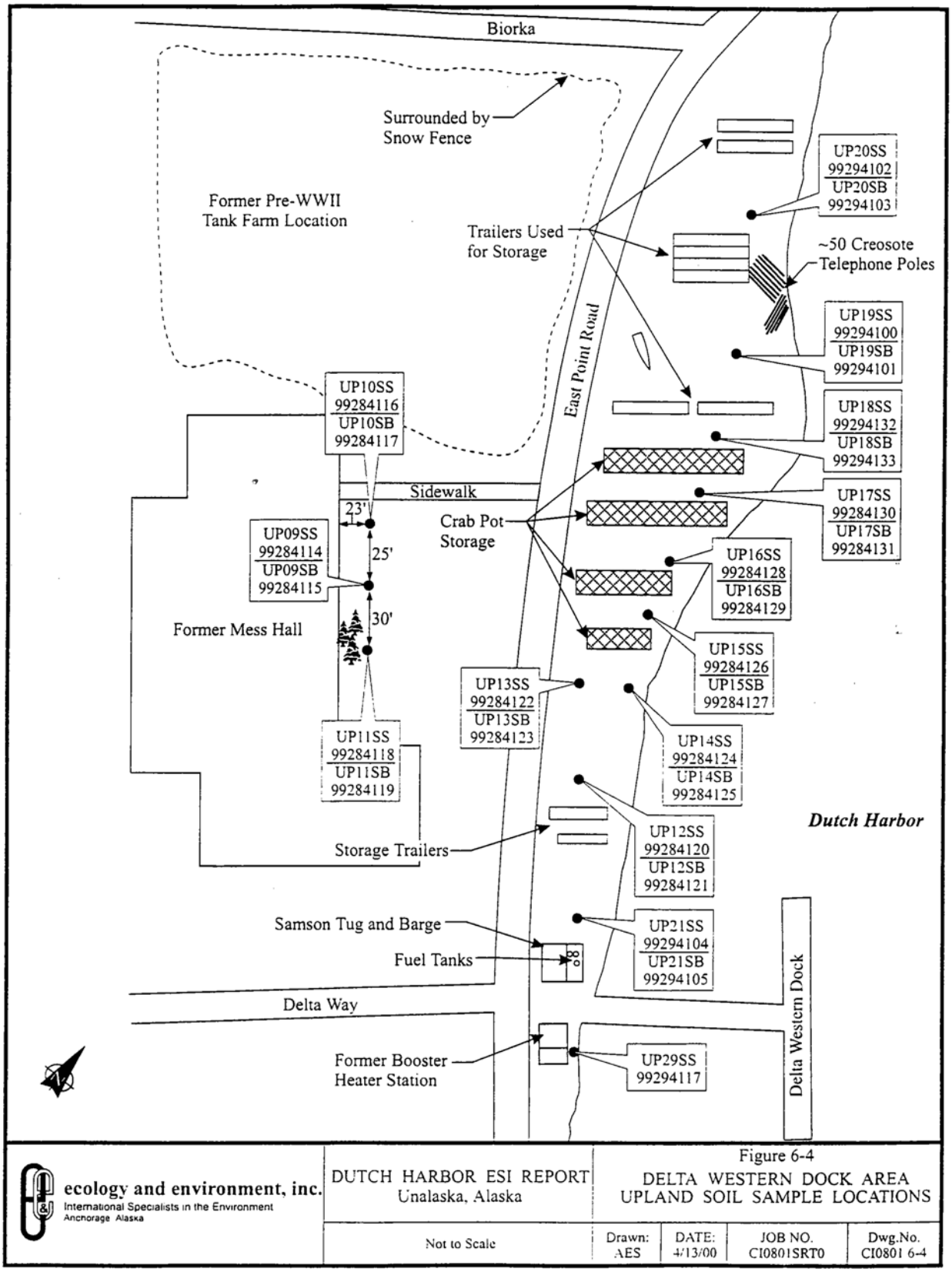


Figure 2: Sample location drawing taken from EPA START report

Surface samples (SS) encountered PCB Aroclor 1260 above 1 mg/kg state cleanup level, including; 7.1 mg/kg for UP09SS; 29 mg/kg for UP10SS and 12 mg/kg for UP11SS. Subsurface samples (SB) presented mixed results and questionable representativeness. Sample UP09SB was below reporting limits for PCB, UP10SB was below clean up level at 0.73 mg/kg and UP11SB was above cleanup at 4.6 mg/kg. Investigators documented descriptions of the soil collected in sample jars for analysis. UP09SS and UP09SB were each described as dark brown gravel loam. UP10SS/UP10SB and UP11SS/UP11SB were all described as dark brown loam with minor pebbles. These descriptions failed to describe the soil being characterized and instead solely described the soil that was containerized for analysis. Loam is a common description for soil that is relatively equal parts sand, silt and clay. In other words soil dominated by fine particles. Laboratory samples were collected by START from fine particle soil portion because rocks are not processed by the analytical methods. While this is customary it is also expected to document the portion of the soil represented by this fine particle fraction and this did not occur. To inform this workplan Chilkat Environmental conducted a preliminary investigation October 2013.

2.2 October 2013 Preliminary Investigation

Chilkat Environmental Senior Scientist, Bruce Wright and Principal Investigator, Elijah Donat visited the site to collect photographs and learn soil composition. Investigators observed that Delta Western employees currently use the site for parking. An average 9-14 inches depth of shot rock has been distributed across the site effectively capping human exposure to the PCB contaminated soil. Investigators used hand tools to determine depth of cover in 5 locations. At three of these locations the cover material was removed to gain access to the contaminated soil lens. In each case a 1-foot lens of fine soil was encountered topped with lawn and grass root layer that was killed from placement of shot rock cap. The fine soil contained minor pebbles but could be described as loam because it presented relatively equal parts sand, silt and clay. Beneath this layer of topsoil for a depth of at least 3 feet investigators encountered a rocky matrix with average particle size over 3 inches. Refer to Photo 6. This rocky matrix featured less than 2% fines by volume and some of this material had fallen from the upper soil lens. Site photos 6-13 are presented below.

Photo 6: Rocky substrate encountered 1 foot below ground surface beneath fine soil lens

Photo 7: Front of Building 551 featuring recent gravel cover. View looking northwest.

Photo 8: Front of Building 551 showing utilities and roadway. View looking northwest.

Photo 9: Front of Building 551 featuring utilities, roadway and entrance. View looking southwest.

Photo 10: View from Building 551 featuring Delta Western offices looking east.

Photo 11: Front of Building 551 looking southwest.

Photo 12: Call before digging signage: communication

Photo 13: Call before digging signage: power

3.0 Project Team

Tribal Administrator (Qawalangin Tribe) – Robin Waldron: Robin Waldron manages NALEMP for QT and is the contract manager for contracts with Chilkat Environmental.
robin.qawalangin@gmail.com (907) 581-2920

NALEMP Program Manager (USACE AK District) – Andrea Elconin: Ms. Elconin manages this NALEMP Project and provides assistance to Tribes while they perform Cooperative Agreements.
Andrea.B.Elconin@usace.army.mil (907) 753-568

USACE Environmental Engineer (USACE AK District) – Thomas Reed: Mr. Reed is familiar with Building 551 from past projects and will be consulted for workplan development.
Thomas.J.Reed@usace.army.mil (907) 753-5642

ADEC Regulatory Representative – Meredith Savage: Meredith is an Environmental Program Specialist III with ADEC Contaminated Sites Program. She is the lead regulatory authority for this project. The Toxic Substances Control Act (TSCA) as administered by the Environmental Protection Agency (EPA) regulates Polychlorinated Biphenyls (PCB's). The applicability of TSCA to a particular PCB cleanup is dependent upon when the spill, release or disposal occurred, the concentration of PCBs in the original source material, and the current concentration of PCBs in the material being cleaned up. If PCBs are present at 50 mg/kg or higher in the soil, TSCA applies regardless of the release date and source concentration. ADEC regulates response to releases of oil and hazardous substances including PCB's. ADEC approval of this investigation workplan is required and they will make the determination about whether to include EPA review.
meredith.savage@alaska.gov (907) 269-7578

ADEC Regulatory Representative – John Halverson: John is the Environmental Program Manager with ADEC Contaminated Sites Program. He has managed the Building 551 site until recently, has provided technical support for workplan methodology and will be provided all project documents
john.halverson@alaska.gov(907) 269-7545

Principal Investigator (Chilkat Environmental) – Elijah Donat: Mr. Donat will serve as Principal Investigator. His responsibilities include preparing the workplan, conducting fieldwork and preparing the report. Attachment A summarizes Mr. Donat's qualifications. Chilkat Environmental was selected by the Tribe to prepare this workplan. Environmental Engineer, Elijah Donat is a qualified Environmental Professional as defined in 18 Alaska Administrative Code (AAC) 75.990 and has a BS in Environmental Science, a BA in Federal Indian Law and an MS in Environmental Engineering. He has 14 years of experience as a Principal Investigator in Alaska. Mr. Donat has prepared many NALEMP documents including: 38 Phase 1 Assessments, 33 workplans, four SPIP's and 19 cleanup reports.
elijah@chilkatenvironmental.com (907) 303-7899

Senior Scientist (Chilkat Environmental) – Bruce Wright: Mr. Wright will provide technical support for the project. His responsibilities include supporting workplan development, managing fieldwork, safety supervision and supporting final report preparation.
bruce@chilkatenvironmental.com (907) 354-8358

Lands Manager (Ounalashka Corporation) – Denise Rankin: Ounalashka Corporation owns the property under investigation. Denise is responsible for providing landowner permission.
Rankin@ounalashka.com (907) 582-1276

Leasee (Delta Western Inc.) – Bev Nieman: Bev is the Environmental contact for Delta Western. The company has repeatedly hired Chilkat Environmental and has a good working relationship with the Principal Investigator. Chilkat has no current contracts with Delta Western and perceives no conflict of interest for this project. The subject property is leased by OC to Western Pioneer Fuels and used by subsidiary Delta Western Inc. as a parking area for employees. The property across East Point Drive features Delta Western Offices and the fuel dock. The subject property is included in Maritime Security Zone and requires permission from Delta Western for people to be on site. Delta Western will be provided all final project documents.
bevn@DeltaWestern.com (206) 357-1722

Planning Director (City of Unalaska) – Erin Reinders: City of Unalaska has jurisdiction over the utility and road right of way parallel East Point Road. Erin is responsible for providing landowner permission.
ereinders@ci.unalaska.ak.us (907) 581-4181

Planning Administrator (City of Unalaska) – Anthony Grande: City of Unalaska has jurisdiction over the utility and road right of way parallel East Point Road. Anthony has been very helpful providing information such as ROW plats.
agrande@ci.unalaska.ak.us (907) 581-4181

TelAlaska: Buried communication utilities. Investigators will call prior to fieldwork as directed on signage. (800) 478-3121

Electric Cooperative: Buried electric supply utilities. Investigators will call prior to fieldwork as directed on signage. (907) 581-1260

4.0 Scope of Work

The scope of work for this project is to conduct characterization between Building 551 and East Point Road to determine distribution of soil contaminated with PCB above the ADEC cleanup level of 1 mg/kg per 18 AAC75 Article 3. Characterization will be performed consistent with 40 CFR 761 Subparts N and O such that if results are over 50 mg/kg the data will also satisfy EPA requirements. Fieldwork is planned for the summer of 2014 and the report will be provided by fall 2014. This workplan details the investigative methods and reporting requirements to accomplish the scope of work.

5.0 Field Sampling Plan

As detailed in 40 CFR 761.265, three-meter square grids will be used to distribute samples. Refer to Figure 3. Grids will be marked using a combination of string, ground paint and survey whiskers. As required by TSCA for each type of remediation waste more than three samples will be performed. Types of waste include: fine soils beneath new shot rock and rocky substrate beneath fine soils. Soil samples will be collected from the center of approximately 72 grids including one sample for each of 14 partial grids. In addition to primary samples, another 5 samples will be collected from below the 1-foot soil lens and into the limited fine particles within the beach rock substrate. While preliminary information indicates these fine particles constitute less then 2% of the rocky non-soil matrix this data will be used to inform site controls.

Shot rock overburden will be removed manually at sampling locations and temporarily stored on geotech material to prevent mixing. Samples will be collected using drain spade shovel, soil augers, and stainless steel sampling tools from 0 to 6 inches deep in the 1-foot lens of fine particle soil. Investigation derived soil waste will be reburied where it originated and shot rock replaced.

While CFR 761.283 makes consideration for composite sampling, individual samples are proposed. While up to 9 discrete sources per composite are permissible by 761.289 each composite is not to exceed representation of two grids collected at the same depth. Investigators find the benefits of compositing samples for this project are outweighed by the impact of additional disturbance to the site and reduced data precision. One field duplicate will be performed per ten laboratory samples and will be labeled as blind to the laboratory. Refer to Table 1 for summary of field sampling plan.

Sampling Plan	Upper foot shot rock	0-6 inches	12-24 inches
PCB samples	0	72	5
Duplicates	0	7	1

Table 1: Summary of field sampling plan

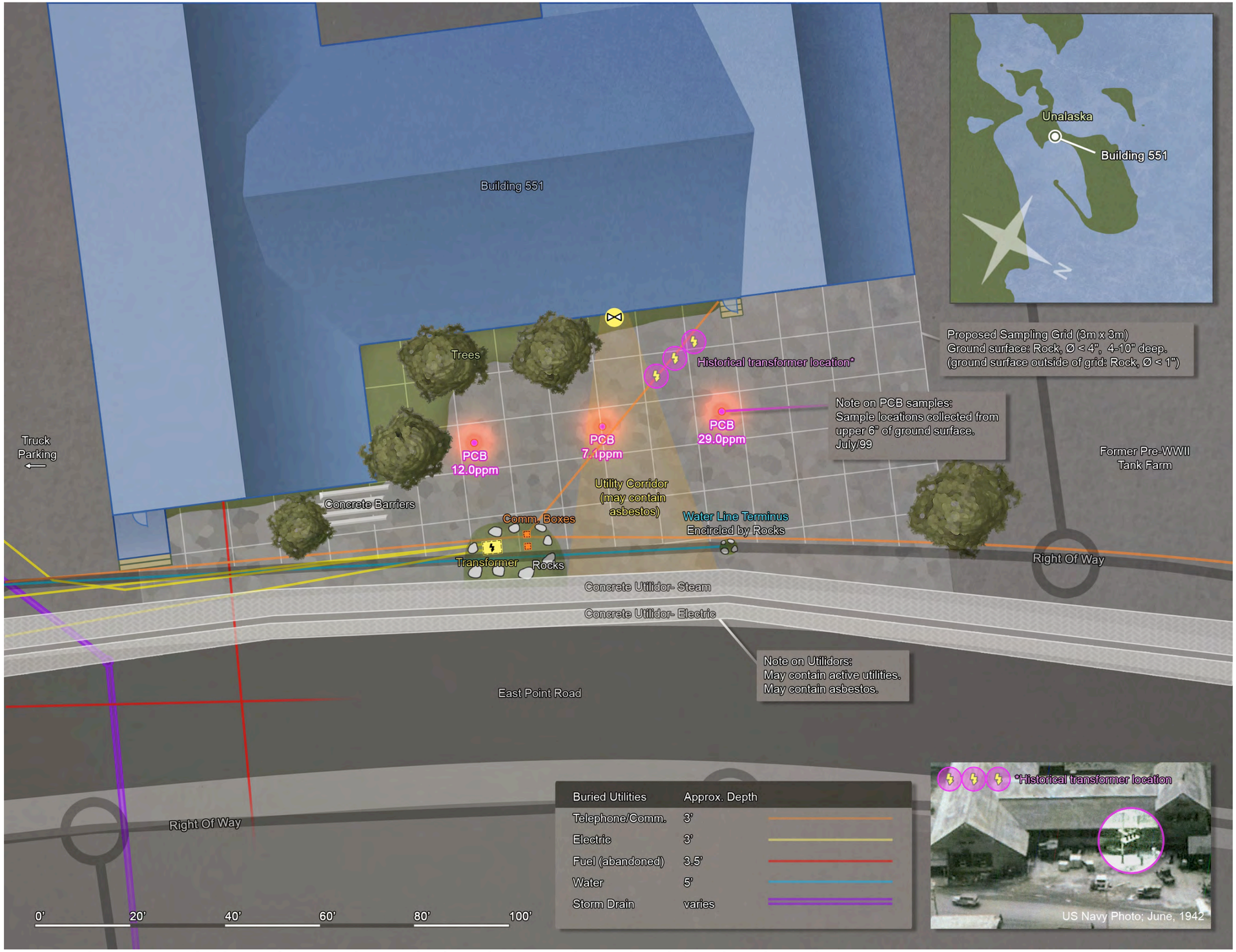


Figure 3: Characterization plan drawing featuring utilities, Right of Way, historic sampling results and planned sampling grid.

5.1 Quality Assurance / Quality Control

Soil will be collected in 4oz. amber jars with no preservative and kept at 4 ± 2 ºC through air shipment to Friedman and Bruya Laboratory with complete chain of custody and custody seal. This laboratory is certified to perform PCB in soil by EPA method 8082(a) with results reported by dry-weight as per 761.274. Laboratory procedures ensure information is defensible and satisfies method requirements. The laboratory report will include completed chain of custody, laboratory narrative and a Data Quality Review Checklist to document satisfaction of sample container, preservation and laboratory requirements. 77 samples and 8 blind duplicates are planned. Quality assurance and control elements are presented below including; precision, accuracy representativeness, comparability and completeness.

Precision
Precision is the amount of agreement between repeated measurements. Precision is expressed in terms of analytical variability and will be measured as the relative percent difference (RPD) between results for eight blind duplicates. RPD goal for this project is 50%. Precision calculation for laboratory data analyses using matrix spike/matrix spike duplicates and laboratory control sample/laboratory control sample duplicates will be included in the laboratory report.

Accuracy
Accuracy is the amount of agreement between a measured value and the true value. This will be measured as the percent recovery of matrix spike samples, laboratory control samples, surrogate samples, blank samples and initial and continuing calibration included in the laboratory report.

Sensitivity
The laboratory report will present detection limits for each result and will flag accordingly any results between the detection limit and limit of quantitation to indicate the uncertainty in the value reported if this was observed. The limits of quantitation reported by the laboratory reflect the lowest standard used for the initial calibration curve for each target analyte, as adjusted for sample-specific factors, including moisture content, serial dilutions, and dilutions.

Representativeness
Representativeness is a qualitative parameter that expresses the degree to which sample data accurately and precisely represent the conditions under study. Representativeness for this project is sanctioned by ADEC approval of the sampling design.

Comparability
Comparability is the degree to which data from one study can be compared with data from other similar studies. This goal was achieved by using standard techniques to collect and analyze representative samples and reporting results in appropriate units.

Completeness
Completeness is the percentage of usable measurements that satisfy method detection limits compared to the number of measurements requested in the workplan. 77 samples and 8 blind duplicates are planned for a total of 85 planned samples. The completeness goal for this project is 90%.

5.2 Site Controls, Health and Safety

Prior to characterization activities the investigative team will obtain required maritime security permissions from Delta Western. Permission for site activity will also be documented for the City of Unalaska and Ounalashka Corporation and proper notifications provided for buried utilities. During fieldwork activity the ROW along East Point Road will be marked with traffic cones and the remainder of the site boundary will be marked with "Do Not Enter" tape. Chilkat Environmental staff will be present at all times suspect soil is uncovered. Immediately after samples are acquired the shot rock will be replaced to cap potential exposure to the potentially PCB contaminated soil.

PCB and petroleum analytes present in the soil are an exposure hazard and will not come in contact with skin. Personal Protective Equipment (PPE) will be used to prevent exposure. PPE will include butyl rubber suit, and gloves. Contaminants in soil are not volatile and respirators are not called for but will be on hand in case petroleum contamination is encountered. Photo Ionization Detector (PID) will be used to monitor organic vapors in work area to inform PPE requirements. Asbestos is known to be present in association with utilidors as identified in Figure 3. If suspected asbestos is encountered during sample pit excavation particle masks will be donned, location documented and care taken to rebury any exposed material in its original position. Exposure of asbestos is not anticipated but if encountered the soil sample will still be collected.

Senior Scientist, Bruce Wright, will serve as safety supervisor and will assist technicians as needed with PPE requirements. Any fine particle soil observed on the technician's PPE will be cleaned off to prevent accidental contact.

Safety concerns include traffic on East Point Drive that will be controlled by traffic cones. During investigation the Safety Supervisor will ensure technicians are facing the street when exposed to this hazard and will inform them each time a vehicle approaches. Work will not be performed in the roadway. All field crew will don bright reflective safety vests and sport hard hats while equipment is operating.

Sample collection at grids near utilities will be carried out similar to other samples but with increased caution and attention to ensure the conduit is not encountered. Environmental technicians will push aside the shot rock while not fully exposing the fine particle soil layer primarily under investigation soil. Hand tools will be used to access this 1-foot soil lens that is potentially recoverable as contaminated soil. Samples near utilities will not exceed 1-foot depth below the shot rock to avoid utilities by the margin of 2 to 3 feet depth based on existing information.

In case of emergency 911 services are provided locally. The Iliuliuk Health clinic is nearby at 34 Lavelle Court. The clinic can be reached at (907) 581-1202. They are open Monday to Friday 0830 to 1800, Saturdays 0830 to 1300 and are closed Sundays though emergency services are still provided.

5.3 Investigation Derived Waste

This workplan does not anticipate production of Investigation Derived Waste. Shot rock overburden will be removed manually at sampling locations and temporarily stored on geotech material to prevent mixing. The soil exposed for sampling be reburied where it originated and shot rock replaced. Production of PCB contaminated solid waste is not anticipated. Alconox solution and rinse water will be used in spray bottles to clean PPE and sampling equipment at the location each sample is collected such that disposable waste is not produced.

5.4 Sampling and Decontamination Procedures

Sample sites will be accessed using manual labor to remove the upper lens of shot rock without violating the fine particle soil. Once the soil is exposed a 3-inch soil augur will be used to access the soil column. The soil augur and shovels will be scoured after each sample site using a dry brush to prevent movement of soil between test pits. Once accessed, the 4 oz. of soil will be collected from the exposed augur hole using stainless steel sampling spoons. One spoon will be used to expose fresh soil that has not come in contact with the augur. The second spoon will be used to acquire the soil sample. Fine particle soil displaced during investigation will be contained and returned to the soil to avoid redistribution. Decontamination will be conducted for sampling spoons after each sample is collected at that sampling location.

Decontamination will be carried out using Alconox© and water. Decontamination will begin with use of a dishwashing brush to remove soil particles at the sampling location. Once particles are removed the spoons will be scrubbed in Alconox solution deployed from a spray bottle and rinsed.

5.5 Reporting Requirements

A characterization report will be prepared to satisfy state requirements outlined in 18 AAC 75.341 and 18 AAC 75.345 and federal requirements outlined in 40 CFR Part 761.61. The report will provide sampling results and compare laboratory results to applicable standards to provide specific recommendations for management of the site. The report will include a detailed site drawing to describe the extent of contamination, ADEC Data Quality Review Checklist, Laboratory Narrative, Conceptual Site Model, Ecoscoping Model and photolog. The draft report will be provided to USACE-AK and ADEC for review and comments will be addressed in a final report. A preliminary conceptual site model is provided below.

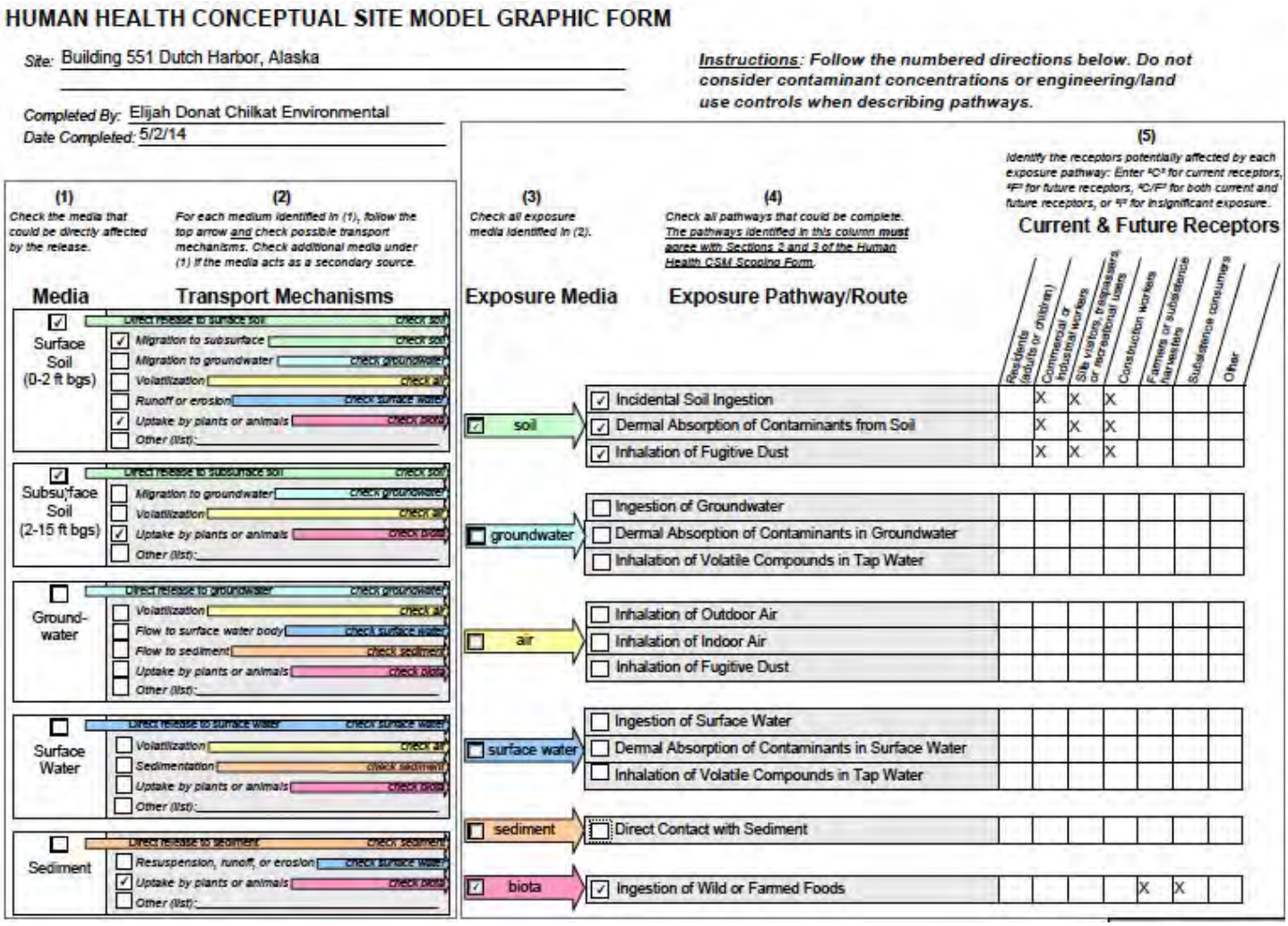


Figure 4: Preliminary conceptual site model indicates soil and biota exposure pathway.

6.0 References

EPA, 1985. Verification of PCB Spill Cleanup by Sampling and Analysis. August 1985. Environmental Protection Agency, Office of Toxic Substances.

EPA, 1986. Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup. May 1986. Environmental Protection Agency, Office of Toxic Substances.

EPA, 2000. Dutch Harbor Sediment Expanded Site Inspection Report. June, 2000. Environmental Protection Agency. Superfund Technical Assessment and Response Team.

ADEC, 2009. Site Characterization Workplan and Reporting Guidance for Investigation of contaminated Sites. September 2009. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program.

ADEC, 2010. Draft Field Sampling Guidance. May 2010. Alaska Department of Environmental Conservation, Division of Spill Prevention and Response, Contaminated Sites Program.

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

555 Cordova Street
Anchorage, Alaska 99501
Phone: 907.269.7503
Fax: 907.269.7649
dec.alaska.gov

File No: 2542.38.024

May 13, 2014

Elijah Donat
Chilkat Environmental
Box 865
Haines, AK 99827

Re: Building 551/Navy Mess Hall: Workplan for Characterization of PCB in Soil

Dear Mr. Donat;

The Alaska Department of Environmental Conservation (ADEC) received an electronic copy of the above named report on May 7, 2014; ADEC has reviewed the report and accepts it as final.

If you have any questions regarding this letter, please contact me at (907) 269-7578 or at Meredith.Savage@alaska.gov.

Sincerely,

Meredith Savage
Environmental Program Specialist

Attachment B:

Laboratory Reports 407133 and 407134 with Data Quality Review Checklists

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 24, 2014

Elijah Donat, Project Manager
Chilkat Environmental
PO Box 865
Haines, AK 99827

Dear Mr. Donat:

Included are the results from the testing of material submitted on July 9, 2014 from the Building 551 Dutch Harbor, F&BI 407133 project. There are 57 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
CHL0724R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 9, 2014 by Friedman & Bruya, Inc. (ADEC laboratory approval number UST-007) from the Chilkat Environmental Building 551 Dutch Harbor, F&BI 407133 project. The samples were received at 3 °C in good condition and were refrigerated upon receipt. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Chilkat	Date Sampled	Percent Moisture
407133 -01	1	07/03/14	27
407133 -02	2	07/03/14	39
407133 -03	3	07/03/14	38
407133 -04	4	07/03/14	25
407133 -05	5	07/03/14	25
407133 -06	6	07/03/14	17
407133 -07	7	07/03/14	47
407133 -08	8	07/03/14	38
407133 -09	9	07/03/14	19
407133 -10	10	07/03/14	46
407133 -11	11	07/03/14	51
407133 -12	12	07/03/14	40
407133 -13	13	07/03/14	37
407133 -14	14	07/03/14	32
407133 -15	15	07/03/14	46
407133 -16	16	07/03/14	38
407133 -17	17	07/03/14	43
407133 -18	18	07/03/14	35
407133 -19	19	07/03/14	42
407133 -20	20	07/03/14	31
407133 -21	21	07/03/14	37
407133 -22	22	07/03/14	38
407133 -23	23	07/03/14	46
407133 -24	24	07/03/14	42
407133 -25	25	07/03/14	51
407133 -26	26	07/03/14	29
407133 -27	27	07/03/14	29
407133 -28	28	07/03/14	38
407133 -29	29	07/03/14	31
407133 -30	30	07/03/14	36
407133 -31	31	07/03/14	44
407133 -32	32	07/03/14	32
407133 -33	33	07/03/14	47
407133 -34	34	07/03/14	26
407133 -35	35	07/03/14	46
407133 -36	36	07/03/14	34

CASE NARRATIVE (continued)

Laboratory ID	Chilkat	Date Sampled	Percent Moisture
407133 -37	37	07/03/14	11
407133 -38	38	07/04/14	22
407133 -39	39	07/04/14	36
407133 -40	40	07/04/14	29
407133 -41	41	07/04/14	32
407133 -42	42	07/04/14	46
407133 -43	43	07/04/14	19
407133 -44	44	07/04/14	17
407133 -45	Blind A	07/04/14	34
407133 -46	Blind B	07/04/14	41
407133 -47	Blind C	07/04/14	23
407133 -48	Blind D	07/04/14	23

PCBs (soil) - Analysis Method 8082A, Extraction Method 3550B

The 8082A matrix spike duplicate sample 407133-34 was compromised during the extraction process. There was insufficient sample volume to reextract the sample, therefore a laboratory control sample duplicate was extracted outside of the 24 hour analytical batch window.

Sample 39 was diluted due to interfering compounds present in the sample. The reporting limits were raised accordingly.

All other quality control requirements were acceptable.

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	1	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-01 1/5
Date Analyzed:	07/11/14	Data File:	03.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	87	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.73

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	2	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-02 1/50
Date Analyzed:	07/14/14	Data File:	09.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	155 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	1.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	3	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-03 1/5
Date Analyzed:	07/11/14	Data File:	05.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.38

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	4	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-04 1/50
Date Analyzed:	07/14/14	Data File:	10.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	235 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	4.6

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	5	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-05 1/50
Date Analyzed:	07/14/14	Data File:	11.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	110 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.68

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	6	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-06 1/5
Date Analyzed:	07/11/14	Data File:	08.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.6

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	7	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-07 1/5
Date Analyzed:	07/12/14	Data File:	37.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	102	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.11

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	8	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-08 1/5
Date Analyzed:	07/12/14	Data File:	38.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	65	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.11

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	9	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-09 1/50
Date Analyzed:	07/14/14	Data File:	12.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	150 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	3.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	10	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-10 1/50
Date Analyzed:	07/14/14	Data File:	13.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	120 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.58

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	11	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-11 1/50
Date Analyzed:	07/14/14	Data File:	14.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	130 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.77

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	12	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-12 1/50
Date Analyzed:	07/14/14	Data File:	15.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	115 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	1.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	13	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-13 1/5
Date Analyzed:	07/12/14	Data File:	39.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.74

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	14	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-14 1/5
Date Analyzed:	07/12/14	Data File:	40.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	114	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.55

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	15	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-15 1/5
Date Analyzed:	07/12/14	Data File:	41.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	82	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.24

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	16	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	407133-16 1/50
Date Analyzed:	07/14/14	Data File:	16.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	200 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	1.3

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	17	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-17 1/5
Date Analyzed:	07/15/14	Data File:	04.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	55	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.63

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	18	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-18 1/50
Date Analyzed:	07/15/14	Data File:	20.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	125 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.93

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	19	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-19 1/50
Date Analyzed:	07/15/14	Data File:	21.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	50 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	2.7

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	20	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-20 1/50
Date Analyzed:	07/15/14	Data File:	22.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	1.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	21	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-21 1/5
Date Analyzed:	07/15/14	Data File:	05.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	86	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.73

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	22	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-22 1/50
Date Analyzed:	07/15/14	Data File:	23.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	1.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	23	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-23 1/5
Date Analyzed:	07/15/14	Data File:	06.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	54	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.0

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	24	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-24 1/50
Date Analyzed:	07/15/14	Data File:	24.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	55 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	10

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	25	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-25 1/5
Date Analyzed:	07/15/14	Data File:	07.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	74	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.027

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	26	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-26 1/5
Date Analyzed:	07/15/14	Data File:	08.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	340 vo	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.60

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	27	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-27 1/50
Date Analyzed:	07/15/14	Data File:	25.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	180 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	5.7

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	28	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-28 1/5
Date Analyzed:	07/15/14	Data File:	09.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	121	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	29	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-29 1/5
Date Analyzed:	07/16/14	Data File:	29.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	97	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.88

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	30	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-30 1/50
Date Analyzed:	07/17/14	Data File:	10.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	6.2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	31	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-31 1/5
Date Analyzed:	07/16/14	Data File:	04.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	176 vo	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	21

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	32	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-32 1/5
Date Analyzed:	07/18/14	Data File:	11.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	43	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.0

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	33	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-33 1/50
Date Analyzed:	07/15/14	Data File:	26.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	60 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	1.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	34	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	407133-34 1/50
Date Analyzed:	07/15/14	Data File:	27.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.30

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	35	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-35 1/5
Date Analyzed:	07/18/14	Data File:	12.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	48	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.20

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	36	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-36 1/5
Date Analyzed:	07/16/14	Data File:	07.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	49	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.19

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	37	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-37 1/5
Date Analyzed:	07/16/14	Data File:	14.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	38	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-38 1/5
Date Analyzed:	07/16/14	Data File:	15.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	92	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.022

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	39	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-39 1/500
Date Analyzed:	07/17/14	Data File:	07.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	150 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<2
Aroclor 1232	<2
Aroclor 1016	<2
Aroclor 1242	<2
Aroclor 1248	<2
Aroclor 1254	<2
Aroclor 1260	<2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	40	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-40 1/5
Date Analyzed:	07/16/14	Data File:	16.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.043

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	41	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-41 1/5
Date Analyzed:	07/16/14	Data File:	17.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	91	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.085

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	42	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-42 1/5
Date Analyzed:	07/16/14	Data File:	18.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	43	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-43 1/5
Date Analyzed:	07/16/14	Data File:	19.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	92	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.38

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	44	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-44 1/5
Date Analyzed:	07/16/14	Data File:	23.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	82	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.8

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind A	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-45 1/5
Date Analyzed:	07/16/14	Data File:	24.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.36

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind B	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-46 1/5
Date Analyzed:	07/16/14	Data File:	25.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.86

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind C	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-47 1/50
Date Analyzed:	07/17/14	Data File:	04.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	5.5

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind D	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor
Date Extracted:	07/15/14	Lab ID:	407133-48 1/5
Date Analyzed:	07/17/14	Data File:	26.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.18

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	Building 551 Dutch Harbor
Date Extracted:	07/09/14	Lab ID:	04-1415 mb 1/5
Date Analyzed:	07/09/14	Data File:	05.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	04-1416 mb 1/5
Date Analyzed:	07/15/14	Data File:	14.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	Building 551 Dutch Harbor
Date Extracted:	07/10/14	Lab ID:	04-1417 mb 1/5
Date Analyzed:	07/15/14	Data File:	24.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Date of Report: 07/24/14
Date Received: 07/09/14
Project: Building 551 Dutch Harbor, F&BI 407133

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 407011-02 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.02	103	101	50-150	2
Aroclor 1260	mg/kg (ppm)	0.8	<0.02	103	103	50-150	0

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	110	70-130
Aroclor 1260	mg/kg (ppm)	0.8	111	70-130

Date of Report: 07/24/14
Date Received: 07/09/14
Project: Building 551 Dutch Harbor, F&BI 407133

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 407133-34 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Control Limits
Aroclor 1016	mg/kg (ppm)	0.8	<0.02	89	50-150
Aroclor 1260	mg/kg (ppm)	0.8	0.23	85	50-150

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	90	108	70-130	18
Aroclor 1260	mg/kg (ppm)	0.8	89	102	70-130	14

Note: The laboratory control sample duplicate was extracted outside of the 24 hour extraction window.

Date of Report: 07/24/14
Date Received: 07/09/14
Project: Building 551 Dutch Harbor, F&BI 407133

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 407133-37 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.02	103	95	50-150	8
Aroclor 1260	mg/kg (ppm)	0.8	<0.02	105	94	50-150	11

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	112	70-130
Aroclor 1260	mg/kg (ppm)	0.8	111	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

407133

SAMPLE CHAIN OF CUSTODY ME 07-09-14

DO4

Send Report To Elijah Pownt
Company Chilkat Environmental
Address PO Box 865
City, State, ZIP Haines, AK. 99827
Phone # 907/303-7899 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. Building 551 dutch harbor
PO#
REMARKS

Page # 1 of 6

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082(a)						Notes
1	01	7/3/14	1033	Soil	1							X						
2	02	"	1058	"	"							X						
3	03	"	1101	"	"							X						
4	04	"	1103	"	"							X						
5	05	"	1106	"	"							X						
6	06	"	1116	"	"							X						
7	07	"	1118	"	"							X						
8	08	"	1120	"	"							X						
9	09	"	1123	"	"							X						
10	10	"	1127	"	"							X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Pownt	Chilkat Environmental	7/8/14	1621
Received by:	Nhan Phan	FEBI	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

4070133

SAMPLE CHAIN OF CUSTODY ME 07-09-14

D04

Page # 2 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address P.O. Box 865
City, State, ZIP Haines, AK 99827
Phone # 907-303-7899 Fax #

SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg. 551 Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB PUP20						Notes
		7/3/14																
11	11		1137	SO,1	1							X						
12	12		1141									X						
13	13		1145									X						
14	14		1149									X						
15	15		1438									X						
16	16		1444									X						
17	17		1445									X						
18	18		1447									X						
19	19		1455									X						
20	20		1459									X						

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1623
Received by:	Nhan Phan	FedEx	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

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SAMPLE CHAIN OF CUSTODY ME 07-09-14-004

D04

Page # 3 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address PO Box 865
City, State, ZIP Haines, AK 99827
Phone # 907-303-7899 Fax #

SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg 551 Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCBs 8082						Notes
21	21	7/3/14	1517	Soil	1							X						
22	22		1535															
23	23		1601															
24	24		1609															
25	25		1615															
26	26		1640															
27	27		1641															
28	28		1724															
29	29		1729															
30	30		1732															

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1625
Received by:	Nhan Phan	FEBI	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

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407133

SAMPLE CHAIN OF CUSTODY ME 07-09-14 Day

Page # 4 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address PO Box 865
City, State, ZIP Haines, AK 99827
Phone # 907-303-7899 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. Bldg #551 Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082						Notes
31	31	7/3/14	17:40	soil	1							X						
32	32	7/3/14	17:51															
33	33	7/3/14	17:56															
34	34	7/3/14	18:20															
35	35	7/3/14	18:23															
36	36	7/3/14	18:25															
37	37	7/4/14	9:59															
38	38	"	11:38															
39	39	"	11:41															
40	40	"	11:44															

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Seattle, WA 98119-2029
Ph. (206) 285-8282
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1624
Received by:	Nhan Phan	FEBI	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3		

407133

SAMPLE CHAIN OF CUSTODY ME 07-09-14

D04

Page # 5 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address PO Box 865
City, State, ZIP Haines, AK 99827
Phone # 907-303-7899 Fax #

SAMPLERS (signature)
PROJECT NAME/NO. Bldg 551 Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082						Notes
41	41	7/4/14	11:49	soil	1							X						
42	42		11:53															
43	43		11:55															
44	44		11:59															
~~45~~			~~12:03~~															BAW 7/4/14
~~46~~			~~12:08~~															BAW
~~47~~			~~12:12~~															BAW
~~48~~			~~12:17~~															BAW
~~49~~			~~12:19~~															BAW
~~50~~			~~12:24~~															BAW

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Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1625
Received by:	Nhan Phan	FBI	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

407133

SAMPLE CHAIN OF CUSTODY ME 07-09-14 DOY

Page # 6 of 6

Send Report To: Elijah Donat
Company: Chilkat Environmental
Address: PO Box x 865
City, State, ZIP: Haines, AK 99827
Phone # 907-303-7899 Fax #:

SAMPLERS (signature): Bruce Wright
PROJECT NAME/NO.: Bldg #551 Dutch Harbor
PO#:
REMARKS:

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082a						Notes
blind A	45	7/3/14	[redacted]	soil	1							X						
blind B	46	7/3/14		soil	1							X						
blind C	47	7/3/14		soil	1							X						
blind D	48	7/3/14		soil	1							X						
[illegible]		7/4/14		soil	1							X				BAW		7/4/14

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1625
Received by:	Nhan Phan	FEBI	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

FORMS\COC\COC.DOC

Laboratory Data Review Checklist

Completed by:	Elijah Donar		
Title:	Principal Investigator	Date:	8.24.14
CS Report Name:	Building 551	Report Date:	7.24.14
Consultant Firm:	Chilkat Environmental		
Laboratory Name:	Friedman and Bruya	Laboratory Report Number:	407133
ADEC File Number:	2542.38.024	ADEC RecKey Number:	3659

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

( ) Yes ( ) No (•) NA (Please explain) Comments:

no samples transferred

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. Correct analyses requested?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3 C

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

no preservation

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

all good condition

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/ preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

( ) Yes (●) No ( ) NA (Please explain) Comments:

no discrepancies

e. Data quality or usability affected? (Please explain)

Comments:

no affect

4. Case Narrative

a. Present and understandable?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

Sample 39 was diluted but had interferences raising ND RL

c. Were all corrective actions documented?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

Matrix Spike for Sample 34 was compromised. Insufficient volume so LCS dup was extracted outside 24

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

b. All applicable holding times met?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

c. All soils reported on a dry weight basis?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

( ) Yes (●) No ( ) NA (Please explain) Comments:

Sample 39 was non-detect at <2ppm which is above the 1ppm cleanup level

e. Data quality or usability affected? (Please explain)

Comments:

Yes. Sample 39 cannot be said to be non-detect for cleanup level because it could be above 1 and below 2

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected? Comments:

None

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

○ Yes ◉ No ○ NA (Please explain) Comments:

v. Data quality or usability affected? (Please explain) Comments:

None

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

○ Yes ○ No ◉ NA (Please explain) Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments:

All RPD% satisfactory

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ◉ NA (Please explain) Comments:

vii. Data quality or usability affected? (Please explain) Comments:

none

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

○ Yes ○ No ◉ NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ◉ NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.). Comments:

none

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

○ Yes ○ No ◉ NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

○ Yes ○ No ◉ NA (Please explain.) Comments:

iii. All results less than PQL?

○ Yes ◉ No ○ NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

Sample 39

v. Data quality or usability affected? (Please explain.)

Comments:

None

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

87 samples and 9 duplicates

ii. Submitted blind to lab?

◉ Yes ○ No ○ NA (Please explain.) Comments:

Labeled Blind to the lab. See CoC

iii. Precision - All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

○ Yes ○ No ◉ NA (Please explain) Comments:

f. Decontamination or Equipment Blank (if applicable)

○ Yes ○ No ◉ NA (Please explain) Comments:

i. All results less than PQL?

○ Yes ○ No ◉ NA (Please explain) Comments:

ii. If above PQL, what samples are affected?

Comments:

None

iii. Data quality or usability affected? (Please explain.)

Comments:

None

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

○ Yes ○ No ◉ NA (Please explain) Comments:

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 24, 2014

Elijah Donat, Project Manager
Chilkat Environmental
PO Box 865
Haines, AK 99827

Dear Mr. Donat:

Included are the results from the testing of material submitted on July 9, 2014 from the Building 551 Dutch Harbor, F&BI 407134 project. There are 57 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
CHL0724R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 9, 2014 by Friedman & Bruya, Inc. (ADEC laboratory approval number UST-007) from the Chilkat Environmental Building 551 Dutch Harbor, F&BI 407134 project. The samples were received at 3 °C in good condition and were refrigerated upon receipt. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Chilkat	Date Sampled	Percent Moisture
407134 -01	45	07/04/14	38
407134 -02	46	07/04/14	31
407134 -03	47	07/04/14	15
407134 -04	48	07/04/14	27
407134 -05	49	07/04/14	34
407134 -06	50	07/04/14	29
407134 -07	51	07/04/14	40
407134 -08	52	07/04/14	39
407134 -09	53	07/04/14	40
407134 -10	54	07/04/14	18
407134 -11	55	07/04/14	9
407134 -12	56	07/04/14	48
407134 -13	57	07/04/14	39
407134 -14	58	07/04/14	16
407134 -15	59	07/04/14	11
407134 -16	60	07/04/14	42
407134 -17	61	07/04/14	40
407134 -18	62	07/04/14	24
407134 -19	63	07/04/14	37
407134 -20	64	07/04/14	34
407134 -21	65	07/04/14	26
407134 -22	66	07/04/14	18
407134 -23	67	07/04/14	31
407134 -24	68	07/04/14	41
407134 -25	69	07/04/14	37
407134 -26	70	07/04/14	38
407134 -27	71	07/05/14	32
407134 -28	72	07/05/14	18
407134 -29	73	07/05/14	40
407134 -30	74	07/05/14	36
407134 -31	75	07/05/14	35
407134 -32	76	07/05/14	25
407134 -33	77	07/05/14	33
407134 -34	78	07/05/14	22
407134 -35	79	07/05/14	30
407134 -36	80	07/05/14	32

CASE NARRATIVE (continued)

Laboratory ID	Chilkat	Date Sampled	Percent Moisture
407134 -37	81	07/05/14	14
407134 -38	82	07/05/14	23
407134 -39	83	07/05/14	50
407134 -40	84	07/05/14	12
407134 -41	85	07/05/14	15
407134 -42	86	07/05/14	24
407134 -43	87	07/05/14	20
407134 -44	Blind E	07/05/14	24
407134 -45	Blind F	07/05/14	7
407134 -46	Blind G	07/05/14	38
407134 -47	Blind H	07/05/14	33
407134 -48	Blind I	07/05/14	16

PCBs (soil) - Analysis Method 8082A, Extraction Method 3550B

The 8082A calibration standard failed the acceptance criteria for a matrix spike and matrix spike duplicate due to . The data were flagged accordingly. All other quality control requirements were acceptable.

The 8082A samples 55, 80, 81, 82, and Blind F were diluted due to matrix interferences. The reporting limits were raised accordingly.

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	45	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-01 1/50
Date Analyzed:	07/21/14	Data File:	16.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	13

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	46	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-02 1/5
Date Analyzed:	07/21/14	Data File:	17.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	47	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-03 1/50
Date Analyzed:	07/21/14	Data File:	18.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	12

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	48	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-04 1/5
Date Analyzed:	07/21/14	Data File:	19.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.3

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	49	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-05 1/5
Date Analyzed:	07/18/14	Data File:	23.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	87	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.6

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	50	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-06 1/5
Date Analyzed:	07/18/14	Data File:	24.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.6

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	51	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-07 1/5
Date Analyzed:	07/18/14	Data File:	25.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.45

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	52	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-08 1/5
Date Analyzed:	07/18/14	Data File:	26.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.53

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	53	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-09 1/50
Date Analyzed:	07/19/14	Data File:	30.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	105 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.64

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	54	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-10 1/5
Date Analyzed:	07/18/14	Data File:	27.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.050

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	55	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-11 1/500
Date Analyzed:	07/19/14	Data File:	31.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<2
Aroclor 1232	<2
Aroclor 1016	<2
Aroclor 1242	<2
Aroclor 1248	<2
Aroclor 1254	<2
Aroclor 1260	<2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	56	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-12 1/5
Date Analyzed:	07/18/14	Data File:	28.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.43

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	57	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-13 1/5
Date Analyzed:	07/18/14	Data File:	29.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.12

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	58	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-14 1/5
Date Analyzed:	07/18/14	Data File:	30.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.22

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	59	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-15 1/5
Date Analyzed:	07/18/14	Data File:	34.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.27

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	60	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-16 1/5
Date Analyzed:	07/18/14	Data File:	35.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	91	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.57

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	61	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-17 1/5
Date Analyzed:	07/18/14	Data File:	36.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	92	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.3

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	62	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-18 1/50
Date Analyzed:	07/21/14	Data File:	20.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	11

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	63	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-19 1/5
Date Analyzed:	07/22/14	Data File:	21.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	87	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.6

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	64	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-20 1/5
Date Analyzed:	07/18/14	Data File:	04.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.3

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	65	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-21 1/5
Date Analyzed:	07/18/14	Data File:	05.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	82	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.3

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	66	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-22 1/5
Date Analyzed:	07/18/14	Data File:	06.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	84	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.40

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	67	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-23 1/5
Date Analyzed:	07/18/14	Data File:	07.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	73	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	68	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-24 1/5
Date Analyzed:	07/18/14	Data File:	08.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	77	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.24

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	69	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-25 1/5
Date Analyzed:	07/18/14	Data File:	09.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	88	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.055

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	70	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-26 1/5
Date Analyzed:	07/18/14	Data File:	10.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.21

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	71	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-27 1/50
Date Analyzed:	07/18/14	Data File:	16.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.26

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	72	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-28 1/50
Date Analyzed:	07/18/14	Data File:	17.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.31

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	73	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-29 1/50
Date Analyzed:	07/18/14	Data File:	18.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.28

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	74	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-30 1/50
Date Analyzed:	07/18/14	Data File:	19.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.28

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	75	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-31 1/50
Date Analyzed:	07/19/14	Data File:	20.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	5.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	76	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-32 1/50
Date Analyzed:	07/19/14	Data File:	21.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.63

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	77	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-33 1/50
Date Analyzed:	07/19/14	Data File:	22.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.43

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	78	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-34 1/50
Date Analyzed:	07/19/14	Data File:	23.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.29

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	79	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-35 1/50
Date Analyzed:	07/19/14	Data File:	24.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.36

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	80	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-36 1/50
Date Analyzed:	07/19/14	Data File:	25.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	<0.2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	81	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-37 1/50
Date Analyzed:	07/19/14	Data File:	26.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	<0.2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	82	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-38 1/50
Date Analyzed:	07/19/14	Data File:	27.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	<0.2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	83	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-39 1/50
Date Analyzed:	07/19/14	Data File:	28.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	0.53

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	84	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-40 1/50
Date Analyzed:	07/19/14	Data File:	29.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	3.7

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	85	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-41 1/5
Date Analyzed:	07/17/14	Data File:	27.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	85	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.90

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	86	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-42 1/5
Date Analyzed:	07/17/14	Data File:	28.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	68	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.074

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	87	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-43 1/5
Date Analyzed:	07/17/14	Data File:	29.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	0.10

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind E	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-44 1/5
Date Analyzed:	07/17/14	Data File:	33.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	91	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	3.8

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind F	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-45 1/50
Date Analyzed:	07/17/14	Data File:	05.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	<0.2

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind G	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-46 1/5
Date Analyzed:	07/17/14	Data File:	34.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	2.4

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind H	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-47 1/50
Date Analyzed:	07/17/14	Data File:	06.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	90 ds	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.2
Aroclor 1232	<0.2
Aroclor 1016	<0.2
Aroclor 1242	<0.2
Aroclor 1248	<0.2
Aroclor 1254	<0.2
Aroclor 1260	11

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Blind I	Client:	Chilkat Environmental
Date Received:	07/09/14	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	407134-48 1/5
Date Analyzed:	07/17/14	Data File:	35.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	89	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	1.1

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/10/14	Lab ID:	04-1417 mb 1/5
Date Analyzed:	07/15/14	Data File:	24.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	mcp

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	04-1418 mb 1/5
Date Analyzed:	07/17/14	Data File:	14.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	94	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	Building 551 Dutch Harbor, F&BI 407134
Date Extracted:	07/15/14	Lab ID:	04-1419 mb 1/5
Date Analyzed:	07/17/14	Data File:	13.D\ ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm) Dry Weight	Operator:	knj

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	104	29	154

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.02
Aroclor 1232	<0.02
Aroclor 1016	<0.02
Aroclor 1242	<0.02
Aroclor 1248	<0.02
Aroclor 1254	<0.02
Aroclor 1260	<0.02

Date of Report: 07/24/14
Date Received: 07/09/14
Project: Building 551 Dutch Harbor, F&BI 407134

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 407133-37 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.02	103	95	50-150	8
Aroclor 1260	mg/kg (ppm)	0.8	<0.02	105	94	50-150	11

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	112	70-130
Aroclor 1260	mg/kg (ppm)	0.8	111	70-130

Date of Report: 07/24/14
Date Received: 07/09/14
Project: Building 551 Dutch Harbor, F&BI 407134

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 407134-03 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.02	99	100	50-150	1
Aroclor 1260	mg/kg (ppm)	0.8	13	594 b	733 b	50-150	21 b

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	105	70-130
Aroclor 1260	mg/kg (ppm)	0.8	98	70-130

Date of Report: 07/24/14
Date Received: 07/09/14
Project: Building 551 Dutch Harbor, F&BI 407134

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 407164-37 1/50 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.2	111 ca	110 ca	50-150	1
Aroclor 1260	mg/kg (ppm)	0.8	<0.2	105 ca	106 ca	50-150	1

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	112	70-130
Aroclor 1260	mg/kg (ppm)	0.8	104	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

407134

SAMPLE CHAIN OF CUSTODY ME 07-09-14

D03

Page # 1 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address PO Box 865
City, State, ZIP Haines, AK 99827
Phone # 907-301-7899 Fax #

SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg # 551, Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082a						Notes
45	01	7/4/14	12:03	Soil	1							X						
46	02	"	12:08	"	"							"						
47	03	"	12:12	"	"							"						
48	04	"	12:17	"	"							"						
49	05	"	12:19	"	"							"						
50	06	"	12:24	"	"							"						
51	07	"	12:28	"	"							"						
52	08	"	12:31	"	"							"						
53	09	"	12:30	"	"							"						
54	10	"	14:52	"	"							"						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1628
Received by:	Nhan Phan	FEBI	7/9/14	1352
Relinquished by:				
Received by:		Samples received at 3 °C		

407134

SAMPLE CHAIN OF CUSTODY ME 07-09-14

D03

Page # 2 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address PO Box 865
City, State, ZIP Haines, AK 99827
Phone # 907-301-7899 Fax #

SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg #551, Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082a						Notes
~~55~~				Soil														
55	11	7/4/14	1506	soil	1							X						
56	12		1518															
57	13		15:23															
58	14		15:37															
59	15		15:39															
60	16		15:59															
61	17		16:08															
62	18		16:11															
63	19		16:15															
64	20		16:18															

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1629
Received by:	Nhan Phan	FBI	7/9/14	1352
Relinquished by:				
Received by:		Samples received at 3 °C		

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SAMPLE CHAIN OF CUSTODY ME 07-09-14

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Page # 3 of 6

Send Report To Elijah Donat
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Phone # 907-301-7899 Fax #

SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg #551, Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082						Notes
65	21	7/4/14	16:21	soil	1							X						
66	22	7/4/14	16:32															
67	23	7/4/14	16:35															
68	24	7/4/14	16:38															
69	25	7/4/14	16:50															
70	26	7/4/14	16:58															
71	27	7/5/14	10:04															
72	28		11:11															
73	29		11:14															
74	38		11:15															

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1629
Received by:	Nhan Phan	F-B ST	7/9/14	1357
Relinquished by:				
Received by:		Samples received at 3 °C		

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SAMPLE CHAIN OF CUSTODY ME 07-09-14

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Page # 4 of 6

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SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg #551, Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082a						Notes
75	31	7/5/14	11:17	soil	1							X						
76	32		11:25															
77	33		11:27															
78	34		11:31															
79	35		11:36															
80	36		11:40															
81	37		11:45															
82	38		12:04															
83	39		14:28															
84	40		1503															

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1630
Received by:	Khan Phan	FeBI	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

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SAMPLE CHAIN OF CUSTODY ME 07-09-14

D03

Page # 5 of 6

Send Report To Elijah Donat
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Phone # 907-301-7899 Fax #

SAMPLERS (signature) Bruce W
PROJECT NAME/NO. Bldg #551, Dutch Harbor
PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	PCB 8082						Notes
85	41	7/5/14	16:02	soil	1							X						
86	42	7/5/14	16:37	soil	1							X						
87	43	7/5/14	17:04	soil	1							X						

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Elijah Donat	Chilkat Environmental	7/7/14	1631
Received by:	Nhan Phan	FedEx	7/9/14	1350
Relinquished by:				
Received by:		Samples received at 3 °C		

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SAMPLE CHAIN OF CUSTODY ME 07-09-14

Page # 6 of 6

Send Report To Elijah Donat
Company Chilkat Environmental
Address PO Box 865
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Phone # 907-301-7899 Fax #

SAMPLERS (signature) Bruce Wright
PROJECT NAME/NO. Bldg 551 Dutch Harbor PO#
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	RCRA8082a						Notes
blind E	44	7/4/14		soil	1							X						
blind F	45	7/4/14		soil	1							X						
blind G	46	7/4/14		soil	1							X						
blind H	47	7/5/14		soil	1							X						
blind I	48	7/5/14		soil	1							X						

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	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Elijah Donat	Chilkat Environmental	7/7/14	1632
Received by:		Nhan Phan			
Relinquished by:					
Received by:			Samples received at 3 °C		

Laboratory Data Review Checklist

Completed by:	Elijah Donat		
Title:	Principal Investigator	Date:	8.24.14
CS Report Name:	Building 551	Report Date:	7.24.14
Consultant Firm:	Chilkat Environmental		
Laboratory Name:	Friedman and Bruya	Laboratory Report Number:	407134
ADEC File Number:	2542.38.024	ADEC RecKey Number:	3659

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No ( ) NA (Please explain.) Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

( ) Yes ( ) No (•) NA (Please explain) Comments:

no samples transferred

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. Correct analyses requested?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

3 C

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

no preservation

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

all good condition

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/ preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

( ) Yes (●) No ( ) NA (Please explain) Comments:

no discrepancies

e. Data quality or usability affected? (Please explain)

Comments:

no affect

4. Case Narrative

a. Present and understandable?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

Sample 55,80,81, 82 and Blind F were diluted. Reporting limits raised. Only ND for 55 above cleanup.

c. Were all corrective actions documented?

(●) Yes ( ) No ( ) NA (Please explain) Comments:

One Matrix spike and spike duplicate failed acceptance criteria. Flag. Other QC requirements acceptable.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

b. All applicable holding times met?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

c. All soils reported on a dry weight basis?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

( ) Yes (•) No ( ) NA (Please explain) Comments:

Sample 55 was non-detect at <2ppm which is above the 1ppm cleanup level

e. Data quality or usability affected? (Please explain)

Comments:

Yes. Sample 55 is non-detect above cleanup level because it could be above 1 and below 2

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

ii. All method blank results less than PQL?

(•) Yes ( ) No ( ) NA (Please explain) Comments:

iii. If above PQL, what samples are affected? Comments:

None

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

○ Yes ◉ No ○ NA (Please explain) Comments:

v. Data quality or usability affected? (Please explain) Comments:

None

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

◉ Yes ○ No ○ NA (Please explain) Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

○ Yes ○ No ◉ NA (Please explain) Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

All RPD% satisfactory

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ◉ NA (Please explain) Comments:

vii. Data quality or usability affected? (Please explain) Comments:

none

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

○ Yes ○ No ◉ NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

◉ Yes ○ No ○ NA (Please explain) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

○ Yes ○ No ◉ NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain.). Comments:

none

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

○ Yes ○ No ◉ NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

○ Yes ○ No ◉ NA (Please explain.) Comments:

iii. All results less than PQL?

○ Yes ◉ No ○ NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

Sample 39

v. Data quality or usability affected? (Please explain.)

Comments:

None

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

◉ Yes ○ No ○ NA (Please explain) Comments:

87 samples and 9 duplicates

ii. Submitted blind to lab?

◉ Yes ○ No ○ NA (Please explain.) Comments:

Labeled Blind to the lab. See CoC

iii. Precision - All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

◉ Yes ○ No ○ NA (Please explain) Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

○ Yes ○ No ◉ NA (Please explain) Comments:

f. Decontamination or Equipment Blank (if applicable)

○ Yes ○ No ◉ NA (Please explain) Comments:

i. All results less than PQL?

○ Yes ○ No ◉ NA (Please explain) Comments:

ii. If above PQL, what samples are affected?

Comments:

None

iii. Data quality or usability affected? (Please explain.)

Comments:

None

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

○ Yes ○ No ◉ NA (Please explain) Comments:

Attachment C:

Conceptual Site Model

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Building 551 Dutch Harbor, Alaska

Completed By: Elijah Donat Chilkat Environmental

Date Completed: 5/2/14

***Instructions**: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.*

(1) *Check the media that could be directly affected by the release.*

(2) *For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.*

Media	Transport Mechanisms
☑ Surface Soil (0-2 ft bgs)	Direct release to surface soil → check soil
	☑ Migration to subsurface → check soil
	☐ Migration to groundwater → check groundwater
	☐ Volatilization → check air
	☐ Runoff or erosion → check surface water
	☑ Uptake by plants or animals → check biota
	☐ Other (list):
☑ Subsurface Soil (2-15 ft bgs)	Direct release to subsurface soil → check soil
	☐ Migration to groundwater → check groundwater
	☐ Volatilization → check air
	☑ Uptake by plants or animals → check biota
	☐ Other (list):
☐ Ground-water	Direct release to groundwater → check groundwater
	☐ Volatilization → check air
	☐ Flow to surface water body → check surface water
	☐ Flow to sediment → check sediment
	☐ Uptake by plants or animals → check biota
	☐ Other (list):
☐ Surface Water	Direct release to surface water → check surface water
	☐ Volatilization → check air
	☐ Sedimentation → check sediment
	☐ Uptake by plants or animals → check biota
	☐ Other (list):
☐ Sediment	Direct release to sediment → check sediment
	☐ Resuspension, runoff, or erosion → check surface water
	☑ Uptake by plants or animals → check biota
	☐ Other (list):

(3) *Check all exposure media identified in (2).*

(4) *Check all pathways that could be complete. The pathways identified in this column must agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5) *Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.*

Current & Future Receptors

Exposure Media	Exposure Pathway/Route	Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ soil	☑ Incidental Soil Ingestion		X	X	X			
	☑ Dermal Absorption of Contaminants from Soil		X	X	X			
	☑ Inhalation of Fugitive Dust		X	X	X			
☐ groundwater	☐ Ingestion of Groundwater							
	☐ Dermal Absorption of Contaminants in Groundwater							
	☐ Inhalation of Volatile Compounds in Tap Water							
☐ air	☐ Inhalation of Outdoor Air							
	☐ Inhalation of Indoor Air							
	☐ Inhalation of Fugitive Dust							
☐ surface water	☐ Ingestion of Surface Water							
	☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Inhalation of Volatile Compounds in Tap Water							
☐ sediment	☐ Direct Contact with Sediment							
☑ biota	☑ Ingestion of Wild or Farmed Foods					X	X	

Appendix D

Soil Disposal Quote from Waste Management

PRICE SCHEDULE

Disposal Pricing

Code / Description	Price	Unit	Facility
LF01 *Non Hazardous Solids for direct landfill*	$39.60	Ton	Non-TSCA Soil/CRL
LF06 *Friable Asbestos for Subtitle D Disposal (must be double bagged and wetted and non hazardous)*	$149.05	Ton	Friable ACM/CWM

Transportation Pricing

Code / Description	Price	Unit	Minimum
BCONT08 *Marine Transportation per container*	$4,840.00	Per each	
BCONT08 *Marine Transportation per container*	$6,530.00	Per each	

Assessorial

Fees and Taxes

- At Chemical Waste Management, a wastewater management fee, currently at 4.75% will be applied to the core disposal charge.
- $1.89/ton ODEQ Comingle / Beneficial Use Tax
- $5/ton Oregon DEQ fee.
- $85.00 profile fee charged to each profile submitted.

General Conditions

1. Pricing is contingent upon waste profile acceptance as proposed.
2. Your acceptance of these terms creates a binding agreement. Your tender or delivery to company of the industrial waste described in the company approved profile sheet and confirmation letter shall constitute your acceptance of these terms.
3. All charges except tax are subject to a variable fuel surcharge. Surcharge calculation is based on the national diesel average as reported by the Energy Information Administration of the US Department of Energy in its Weekly On-Highway Diesel Index.
4. Railroad schedules are dictated by the corresponding Railroad. WM will not be liable for any charges resulting in delays caused by the Railroad.
5. Pricing in this proposal is valid for a term of 30 days from the date listed above. Upon acceptance, terms of the mutually negotiated agreement will apply.
6. Material with a density < 75 pounds/cubic foot will be billed by the cubic yard.
7. Unless otherwise noted, applicable state, local and federal taxes are not included in the enclosed
8. Waste removal scheduling is dependent upon available equipment at the time of project startup.
9. Unless otherwise noted, a 10-ton/yard disposal and/or transportation minimum will apply to all bulk disposal rates at Columbia Ridge or Chemical Waste Management.
10. Unless otherwise noted, a 1-ton disposal minimum applies at all other Subtitle D landfills not listed above.
11. Demurrage charges of $200/hr will be assessed on delays exceeding ½ hour load and unload time.
12. Rinsate from tanker washout will be invoiced at quoted disposal rates.

13. Certificates of disposal (other than TSCA waste) will be charged $35.00/cert if noted at the time of profile generation.

14. Standard profile approval time is 2-5 days. 1 day expedited approval available for an additional fee of $500.

15. Transportation ordered, but not used will be invoiced at cost plus 15%.

16. Expedited delivery of manifests, LDR's or other paperwork will be $100.

17. It is the generators responsibility to deliver DOT compliant loads to WM Rail Reload Facilities. Non compliant loads will be remedied or rejected at customers expense.

18. Incidental release of hazardous material, fines and associated clean-up costs, will be charged at cost plus 10%.

19. Rail pricing does not include demurrage, retention, car-hire, cleanout, or other fees. In the event these items arise, additional charges may apply.

20. Due to an increase in pricing volatility from our suppliers, WM reserves the right to adjust our rates as necessary in accordance with the terms and conditions outlined in our mutually accepted Industrial or Master Service Agreement.

Special Conditions

$4840.00 rate is for the non-TSCA PCB Soil and is per 8.5cyd bag from Dutch Harbor to the landfill
$6,530.00 rate is for the Friable ACM and is per 8.5cyd bag from Dutch Harbor to the landfill
Rates are based on shipping 2 bags per flat (8.5cyd bags) 1 on a flat would cause an increase in the transportation rate of that load.
DEQ Rate Schedule: LF01 gets $1.89/ton, LF06 gets the 4.75% WWM fee plus the $5.00 per ton DEQ fee
Rate is from AML Dutch Harbor facility. Trucking can be provided at an additional cost

Waste Category Definitions

LF01	Must pass paint filter test, non regulated, non-TSCA, no friable asbestos, debris must be less than 2ft x 2ft x 2ft, for comingle disposal
LF06	Must be double bagged and sealed shut, must be wetted, non-TSCA