NORTHEAST CAPE HTRW REMEDIAL ACTIONS

FINAL REMOVAL ACTION REPORT

Northeast Cape, Saint Lawrence Island, Alaska

Contract No. W911KB-06-D-0007
Task Order 0007

June 2012

Prepared for:

US Army Corps of Engineers
Alaska District

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ACRONYMS AND ABBREVIATIONS

′	minutes
°	degrees
°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	micrograms per liter
AAC	Alaska Administrative Code
AC&WS	Aircraft Control and Warning Station
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AHAs	Activity Hazard Analyses
AK	Alaska Test Method
ANCSA	Alaska Native Claims Settlement Act
APP	Accident Prevention Plan
AST	aboveground storage tank
Bering Air	Bering Air, Inc.
bgs	below ground surface
Bristol	Bristol Environmental Remediation Services, LLC
BTEX	benzene, toluene, ethylbenzene, and xylenes
CDQR	Chemical Data Quality Report
CFR	Code of Federal Regulations
CLIN	Contract Line Item Number
CQC	contractor quality control
CQCP	Contractor Quality Control Plan
CQCSM	Contractor Quality Control Systems Manager

ACRONYMS AND ABBREVIATIONS (continued)

DI	deionized
DO	dissolved oxygen
DRO	diesel range organics
ECO-Land	ECO-Land, LLC
ELAP	Environmental Laboratory Accreditation Program
EMT	emergency medical technician
EPA	U.S. Environmental Protection Agency
ft^2	square feet
Global	Global Services, Inc.
GRO	gasoline range organics
HTRW	hazardous, toxic, and radioactive waste
IDW	investigation-derived waste
LDU	lower decision unit
MDU	middle decision unit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MNA	monitored natural attenuation
MOC	Main Operations Complex
MS	matrix spike
MSD	matrix spike duplicate
MW	monitoring well
NALEMP	Native American Lands Environmental Mitigation Program
NE Cape	Northeast Cape
NOM	naturally occurring materials
NSI	Northland Services, Inc.
PAHs	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
PLO	Public Land Order

ACRONYMS AND ABBREVIATIONS (continued)

PM	Project Manager
POL	petroleum, oil, and lubricants
QA	quality assurance
QAR	Quality Assurance Representative
QC	quality control
RA	removal action
RI	remedial investigation
RPD	relative percent difference
RRO	residual range organics
SOP	Standard Operating Procedure
SOW	Scope of Work
SS	Site Superintendent
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
SVOC	semivolatile organic compound
SWPPP	Storm Water Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
Tech Memo	Technical Memorandum
TestAmerica	TestAmerica Laboratories, Inc.
TOC	total organic carbon
TSCA	Toxic Substances Control Act
UDU	upper decision unit
USACE	US Army Corps of Engineers
USAF	U.S. Air Force
UVOST	Ultra-Violet Optical Screening Tool
VOC	volatile organic compound
WP	Work Plan

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EXECUTIVE SUMMARY

This Remedial Action Report presents the results of a removal action (RA) performed at the Northeast Cape (NE Cape) Formerly Used Defense Site on Saint Lawrence Island, Alaska. Bristol Environmental Remediation Services, LLC (Bristol), and its team of subcontractors performed the work for the US Army Corps of Engineers (USACE), Alaska District, under Contract No. W911KB-06-D-0007, Task Order 0007.

The Scope of Work (SOW) for the 2011 contract period included:

- Preparing plans and reports
- Mobilizing/demobilizing to/from the NE Cape site in 2011 and 2012
- Excavating, processing, and disposing of petroleum-contaminated soils to a depth not exceeding 15 feet, or 2 feet below groundwater, whichever occurs first at the Main Operations Complex (MOC), specifically Sites 10, 11, 13, 15, 19, and 27
- Excavating and disposing of polychlorinated biphenyl- (PCB-) contaminated soils from Site 13 (Heat and Power Plant) and Site 31 (White Alice Communications Station)
- Collecting nine background soil samples in the vicinity of Site 21 (Wastewater Treatment Tank) for arsenic analyses. Excavating and disposing of arsenic-contaminated soils from Site 21
- Conducting monitored natural attenuation (MNA) sampling of petroleum-contaminated sediment and surface water at Site 8 (petroleum, oil, and lubricants [POL] Spill site)
- Transporting and disposing of 21 bulk bags containing PCB-contaminated soil generated during the 2010 removal action that are staged on the concrete pad at Building 98
- Monitoring groundwater in nine monitoring wells at the MOC
- Removing dangerous poles, wires, and other miscellaneous debris from tundra areas sitewide, where clearly identified
- Delineating extent and magnitude of sediment and soil contamination at Site 28 Drainage Basin through the use of new and existing data
- Excavating and removing spilled roofing tar south of the MOC

- Stabilizing, as detailed in the approved Storm Water Pollution Prevention Plan (SWPPP), disturbed site areas prior to demobilization or within a timely manner
- Inspecting Site 7 and Site 9 landfills to determine the status of the cover, cap stability, and whether necessary repairs are needed
- Preparing a hazardous, toxic, and radioactive waste (HTRW) RA Report, which includes survey and as-built drawings, data review, and discussion of all remedial action work to include soil excavation and removal, waste disposal documentation, sample results, debris removal, and other relevant project details

Bristol successfully completed contract line items, except for pole removal, which will be addressed in 2012, and was able to handle additional soil removal tasks when PCB-contaminated soil volumes were discovered in excess of the original SOW.

Bristol received the USACE's Notice to Proceed on December 27, 2010. Draft Planning Documents were submitted on May 17, 2011. Freight was loaded onto two Northland Services, Inc., barges at the Port of Anchorage in May 2011. The barges departed Anchorage in late May and arrived near Nome, Alaska, in mid-June 2011. The first landing craft arrived at Kitnagak Bay and landed at Cargo Beach on June 27, 2011. Logistical operations and on-site mobilization activities began June 27, 2011, and continued until the temporary construction camp was completed on July 13, 2011.

Bristol used a combined field scientific team, survey crew, and craft labor crew, which included local residents, at the project site from June 27, 2011, through October 13, 2011. During this period, Bristol and its subcontractors:

- Upgraded and repaired the airstrip and access roads to work sites
- Constructed and maintained temporary camp facilities capable of housing approximately 40 people
- Removed 34 tons of miscellaneous metal debris from various areas across the site
- Excavated and loaded 3,838.3 tons of PCB-contaminated soil into 371 bulk bags
- Characterized, transported, and disposed of 1,679.16 tons (166 bulk bags) of PCB-contaminated soil from Sites 13 and 31 that was not TSCA-regulated, including 21 bulk bags (weighing approximately 197 tons) that were left over from

2010 soil removal activities; 212 bulk bags weighing 2,211.48 tons remain on the island

- Excavated, characterized, transported and disposed of 146.18 tons of hazardous PCB-contaminated soil from Sites 13 and 31
- Excavated and loaded 8,091 tons of POL-contaminated soil into 785 bulk bags;
- Characterized, transported, and disposed of 5,560.17 tons of POL-contaminated soils from the MOC; 239 bulk bags, weighing 2,529.11 tons, remain on the island;
- Excavated, characterized, transported, and disposed of 14.8 tons of arsenic-contaminated soil from Site 21
- Excavated, characterized, and disposed of 207.19 tons of tar and tar-contaminated soil from an area south of the MOC
- Loaded 752 Department of Transportation- (DOT-) approved bulk bags (including 21 bags left over from 2010), weighing 7,607.50 tons, onto nineteen landing craft for ultimate transport to the disposal facility in Arlington, Oregon
- Conducted soil sampling to determine background arsenic concentrations at Site 21 and submitted the results in a technical memorandum (Tech Memo) to USACE
- Collected surface water and soil samples at Site 8 in an ongoing study to monitor natural attenuation at the site
- Collected groundwater samples from nine monitoring wells located in or near the MOC
- Collected 231 soil and sediment samples from the Site 28 drainage basin and presented the results in a Tech Memo submitted to USACE, detailing the extent of contamination across the site
- Added fertilizer and grass seed to the Sites 7 and 9 landfills, which were capped in 2009 and 2010, respectively, and conducted a stabilization analysis of borrow pit material to ensure that it met state regulations
- Collected fixed-laboratory analytical samples from 749 locations within the excavations at Sites 13 and 31
- Collected fixed-laboratory analytical samples from 29 locations within the J1A excavation and 32 locations within the A1 excavation
- Collected and analyzed 1,188 PCB samples and 426 diesel range organics/residual range organics (DRO/RRO) samples in the on-site field laboratory

- Staged equipment, including camp and supplies, on-island, during winter 2011/2012 at the runway and the MOC; bulk bags were staged at the MOC and Site 6

Over the course of 108 days in 2011, Bristol maintained a close working relationship with its subcontractors and the USACE to successfully fulfill all contract specifications.

1.0 SITE DESCRIPTION

1.1 LOCATION

Saint Lawrence Island is located in the northern Bering Sea off the western coast of Alaska. Northeast Cape (NE Cape) lies approximately 135 air miles southwest of Nome, Alaska (Figure 1). The project site, which originally encompassed 4,800 acres, falls between Kitnagak Bay to the northeast, Kangighsak Point to the northwest, and the Kinipaghulghat Mountains to the south (Figure 2). The site is located at 63 degrees (°) 20 minutes (') north latitude and 168° 59′ west longitude, in Township 25 South, Range 54 West, Kateel River Meridian.

1.2 CLIMATE

Saint Lawrence Island has a cool, moist, subarctic maritime climate, with some continental influences during winter when much of the Bering Sea is capped with ice pack. Winds and fog are common, and precipitation occurs approximately 300 days per year as light rain, mist, or snow. Annual snowfall is approximately 80 inches per year. Total annual precipitation is about 16 inches per year, and more than half falls as light rain between June and September. Summer temperatures average between 34 degrees Fahrenheit (°F) and 48°F, with a record high of 65°F. Winter temperatures range from -2°F to 10°F, with an extreme low of -30°F. Freeze-up normally occurs in October or November, and breakup normally occurs in June.

Winds are generally in a northerly to northeasterly direction from September to June and southwesterly in July and August. Winds exceeding 11 miles per hour occur 70 percent of the time. In the winter, winds average 23 miles per hour. The average wind speed is 18 miles per hour. Gusts in the NE Cape area have measured as high as 110 miles per hour (US Army Corps of Engineers [USACE], 2002).

1.2.1 Weather Conditions during the Project Field Season

Weather conditions during the July through September 2011 field season were typical of a summer subarctic maritime climate. Variable winds, light precipitation or fog, and temperatures ranging from the mid 30s to the mid 50s were typical of the daily weather in lowland and lower mountain areas. Periodic violent storms with high, sustained winds in excess of 50 miles per hour and high precipitation were encountered, as well as periods of clear, calm conditions. Wind was often the most significant factor affecting work conditions during the 2011 field season and was, at times, responsible for knocking out the satellite communications system. High winds also complicated bulk bagging and lining operations due to the difficulty of handling the necessary materials under such conditions.

Bristol was on site during a minor snowfall event on October 1, 2011. Approximately one-half inch of snow accumulated on the ground but was mostly melted by the day's end. Snow had fallen prior to this day, but with no measureable accumulations in the camp and worksite vicinities. Another light snowfall was covering the ground on the morning of October 8, 2011. Work progress was not affected by snowfall during the 2011 field season.

1.3 TOPOGRAPHY

The lower mountain area consists mainly of flat coastal plains that gradually turn into rolling tundra toward the base of the Kinipaghulghat Mountains. The mountains rise abruptly to a maximum elevation of approximately 1,850 feet above mean sea level. Elevations across the work areas ranged from sea level to approximately 300 feet above mean sea level.

1.4 GEOLOGY

Saint Lawrence Island consists of isolated bedrock highlands of igneous, metamorphic, and older sedimentary rocks surrounded by unconsolidated surficial deposits overlying a relatively shallow erosional bedrock surface. In the immediate vicinity of the lower mountain area south of the Main Operations Complex (MOC), shallow, unconsolidated surficial materials overlie quartz monzonitic rocks of the Kinipaghulghat Pluton. The pluton forms the mountainous work area south of the MOC, including Kangukhsam Mountain. The Suqitughneq River drainage in the Kinipaghulghat Pluton has created an erosional valley and alluvial fan of unconsolidated sediments. Granitic bedrock materials are exposed at the coast north of the site at Kitnagak Bay, suggesting that quartz monzonitic bedrock underlies the unconsolidated materials at a relatively shallow depth on a wave-cut erosional platform.

The unconsolidated materials exhibit an alluvial soil profile in areas that have not been disturbed by man. In general, silts near the surface, which overlie more sand-dominated soils, characterize the soil stratigraphy at the site. The silt may contain varying quantities of clay, sand, and gravel and may vary from zero to 10 feet in thickness. The silt is dark brown to dark green and sometimes exhibits a mottled texture. In some areas, the silt exhibits an aqua green or blue color. Dark brown silts are observed in outcrops. The sand at depth contains varying degrees of silt, gravel, and cobbles and varies from 2 feet to more than 20 feet in thickness. These deeper, coarse-grained materials are generally unsorted and are likely to be of glaciofluvial origin. The depth to bedrock at the lower elevation areas of the site is unknown.

Beach material is primarily cobble (1-inch stones), with some sand. Some areas have large boulders and rocks (USACE, 2002).

1.5 SURFACE WATER AND GROUNDWATER

Because of the relatively remote and undeveloped nature of Saint Lawrence Island, there are little data about regional groundwater. Bedrock materials south of the site (and underlying the unconsolidated deposits) are not expected to store and transmit significant quantities of groundwater. Typically, these types of granitic rocks are impermeable and transmit groundwater only through localized fractures and weathered soil zones at the surface.

The primary potential aquifer at the NE Cape site is the unconsolidated alluvial material that underlies the area, although a deeper, confined aquifer may also exist. The mountainous area to the south provides an ideal recharge area for the unconsolidated materials, providing runoff from rain and snowmelt during the summer. Based on the topography and geology of the site, the regional groundwater flow direction is expected to be from the mountainous recharge area south of the site, flowing north, eventually discharging to the Bering Sea. Groundwater elevations observed in monitoring wells in and around the MOC suggest a groundwater flow to the north-northwest. Water depths at the MOC are deeper to the south and become shallower progressing north to the Site 28 drainage basin.

Key factors influencing the flow of groundwater at the site are the permafrost and frozen soils, which render the unconsolidated materials effectively impermeable in some areas. The U.S. Geological Survey has classified Saint Lawrence Island as an area of moderately thick to thin permafrost (Ferrians, 1965). Although the depth of permafrost at Saint Lawrence Island is unknown, the base of permafrost on the mainland at Nome (135 air miles to the northeast) is estimated to be at a depth of 120 feet. The deeper, unconsolidated deposits at the site are probably permanently frozen, and the shallow soils represent the active layer, where soils are thawed only during portions of the year. Frozen soils have a profound effect in retarding groundwater flow during most of the year.

In addition to the Bering Sea north of the NE Cape facility, surface water in the vicinity of the work area consists of small streams, small- to moderate-sized lakes, and marshy areas. Surface water generally flows northward from the more southerly located highland area. Small surface water bodies are common throughout the area. The primary stream drainage in the area, the Suqitughneq River, is fed by runoff from the prominent drainage of the Kinipaghulghat Mountain valley in the lower mountain area. Several smaller tributaries, originating from small unnamed lakes (USACE, 2002), feed this stream drainage as it flows north to Kitnagak Point. The Suqitughneq River was impacted by a diesel fuel spill in the 1960s.

1.6 AIR QUALITY

Air quality in the area is good. There are minimal sources of air emissions at the site because of its remote nature. The occasional boat motor, vehicle engine, or fire has a negligible effect. Air emissions at the site increase during remedial action work because more equipment and vehicles are at the site. Winds typical of the area disperse emissions (USACE, 2002).

1.7 VEGETATION

The NE Cape area has several major habitat types, including moist tundra dominated by heaths, grasses, sedges, mosses, and lichens, with shrubs that include bearberry, dwarf birch, narrow-leaf Labrador tea, and willow. These plants typically grow in 1 to 3 feet of undecayed organic mat over saturated and frozen soil. Alpine tundra plants (dwarf, prostrate plants that include heaths and tundra species adapted to dry, thin soil conditions) grow on the slopes and exposed ridges of the nearby mountains. The NE Cape area has many low-lying areas with lakes, bogs, and poorly drained soils (USACE, 2002).

1.8 FISH AND WILDLIFE

Large mammals are generally not abundant on Saint Lawrence Island. Polar bears may be on the island any time during the year but are most often present when the ice pack is nearshore. Some years, polar bears become stranded on the island throughout the summer when the ice pack moves out earlier than usual. A population of approximately 1,000 reindeer inhabits the island. Arctic foxes, cross foxes, red foxes (less common), wolves (rarely), and several small mammals (tundra shrews, arctic ground squirrels, Greenland collared lemmings, red-backed voles, and tundra voles) also inhabit the island. Animals usually seen in or around the work sites are small mammals such as ground squirrels and foxes.

Marine mammals are present in the vicinity of the NE Cape area as seasonal migrants in the offshore and nearshore marine waters, at haul-out sites, and in association with the advancing and retreating ice pack. No haul-out sites are within the work area. During the summer, walrus, sea lions, and spotted seals may be present in offshore waters. During the ice season, ringed seals, bearded seals, walrus, and spotted seals can be found in nearshore and offshore leads and open water. Bowhead, gray, minke, killer, right, humpback, blue, and beluga whales inhabit offshore waters.

The only breeding seabird colony known to exist at the NE Cape facility consists of about 60 glaucous gulls and 60 herring gulls at Seevookhan Mountain, about 5 miles southeast of the NE Cape site. Several other species of birds have been sighted in the vicinity of the NE Cape site, including common ravens, snow buntings, whistling swans, Lapland longspurs, sand hill cranes and gulls.

Ten primary species of fish reside in the streams and tundra ponds of Saint Lawrence Island. These include blackfish, nine-spined stickleback, grayling, whitefish, Arctic char, and Dolly Varden trout. Five of the six species of Pacific salmon occur around the island and rear in many of the larger drainages.

1.9 Community Profile

The nearest community on Saint Lawrence Island to the project site is the Village of Savoonga, approximately 60 miles northwest of the site, with a population of approximately 800 people, according to elders from Savoonga. There are no permanent residents at the NE Cape site, but there is a small subsistence hunting and fishing camp in the area that is infrequently inhabited in the summer by residents of Savoonga and Gambell. The island is accessible by boat, regularly scheduled airlines (to Gambell and Savoonga), and chartered air flights out of Nome. There is no regularly scheduled commercial access to the project site (USACE, 2002).

1.10 SUBSISTENCE ACTIVITIES

Savoonga is a traditional Siberian Yup'ik village, with a subsistence lifestyle. Whale, seal, walrus, and reindeer compose 80 percent of islanders' diets. The economy is largely based upon subsistence hunting of walrus, seal, fish, and whale, with some cash income. Berries and edible plants are also harvested. Subsistence fishing for halibut takes place in the vicinity of NE Cape.

1.11 HISTORY

Saint Lawrence Island was established as a reindeer reserve by Executive Order on January 7, 1903. The present project site was acquired by the U.S. Air Force (USAF) on January 16, 1952, under Public Land Order (PLO) 970, which removed 21,013 acres from the reserve. In 1952, the USAF Aircraft Control and Warning Station (AC&WS) was formally activated by assignment of the 712th AC&WS Squadron and the 698th Security Squadron. The original site was designed to support 212 personnel. Throughout its existence, the NE Cape facility has been a surveillance station, providing radar coverage for the Alaskan Air Command and, later, for the North American Air Defense Command, as part of an Alaska-wide system constructed to reduce potential vulnerability to bomber attacks across the polar regions.

The White Alice Station area remained in operation with minimal military staff until 1972. All lands were then withdrawn from the military under PLO 5187 for classification under Section 17(d)(1) of the Alaska Native Claims Settlement Act (ANCSA) of 1971, which entitled local community village corporations to select and receive specific tracts of federal land. Interim Conveyance No. 203 (June 1979) conveyed unsurveyed lands of Saint Lawrence Island to Sivuqaq, Inc., and Savoonga Native Corporation, known today as Kukulget, Inc. Surveyed land, easements, and land-use permits effective before conveyance were excluded from the transfer.

In 1982, transfer of the White Alice Station area, south of the MOC, to the U.S. Department of the Navy was initiated. However, this transaction was not formally completed and was superseded by ANCSA. The Navy conducted a removal action (RA) under its Comprehensive Long-Term Environmental Action Navy, program. The action included removal of specified hazardous items and containerized hazardous and toxic waste.

In 2000, the White Alice Station was reclassified as a Formerly Used Defense Site- (FUDS-) eligible property. In response, the USACE included the area in the ongoing cleanup program for NE Cape (USACE, 2002).

1.11.1 Previous Studies and Actions

Environmental investigations and cleanup activities at NE Cape began in the mid 1980s, with the goal of locating and identifying areas of contamination and gathering enough information to develop a cleanup plan. Remedial investigations (RIs) were initiated at NE Cape during the summer of 1994. Additional sampling was performed during subsequent investigations: Phase II RI (Montgomery Watson, 1996 and 1999); Phase III RI (Montgomery Watson Harza, 2003); and Phase IV RI (Shannon &Wilson, Inc., 2005). The studies divided the concerns among 34 separate sites. The results of the RIs showed that contaminants were present at some but not all sites. Bristol Environmental & Engineering Services Corporation performed removal actions in both 2003 and 2005. In 2009, Bristol Environmental Remediation Services, LLC (Bristol), returned to the island to construct a landfill cap, remove petroleum, oil, and lubricants- (POL-) containing drums, and perform a chemical oxidation trial. Bristol again returned to NE Cape during the summer of 2010 to excavate POL-contaminated soils from Sites 1, 3, 6, and 32; to excavate polychlorinated biphenyl- (PCB-) contaminated soils from Sites 13, 16, 21, and 31; to excavate arsenic-contaminated soils from Site 21; to cap the Site 9 landfill; and to continue monitoring Site 8 for natural attenuation.

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2.0 CONTRACT SPECIFICATIONS

2.1 SCOPE OF WORK

The contract Scope of Work (SOW) for 2011 consisted of the following activities:

- Preparing plans and reports
- Mobilizing/demobilizing to/from the NE Cape site
- Excavating, processing, and disposing of petroleum-contaminated soils at the MOC to a depth of up to 15 feet below ground surface (bgs) or 2 feet below groundwater, whichever occurs first, specifically Sites 10, 11, 13, 15, 19, and 27
- Excavating and disposing of PCB-contaminated soils from Site 13 (Heat and Power Plant) and Site 31 (White Alice Communications Station)
- Collecting nine background soil samples in the vicinity of Site 21 (Wastewater Treatment Tank) for arsenic analyses. Excavating and disposing of arsenic-contaminated soils from Site 21
- Conducting monitored natural attenuation (MNA) sampling of petroleum-contaminated sediment and surface water at Site 8 (POL Spill Site)
- Transporting and disposing of 21 bulk bags containing PCB-contaminated soil that were staged on the concrete pad at Building 98 following 2010 activities
- Monitoring groundwater in nine monitoring wells at the MOC
- Removing dangerous poles, wires, and other miscellaneous debris from tundra areas, where clearly identified
- Delineating extent and magnitude of sediment and soil contamination at Site 28 Drainage Basin through the use of new and existing data
- Excavating and removing spilled roofing tar south of the MOC
- Stabilizing, as detailed in the approved Storm Water Pollution Prevention Plan (SWPPP), disturbed site areas prior to demobilization or within a timely manner
- Inspecting Site 7 and Site 9 landfills to determine the status of the covers and cap stability and assess the need for repairs.
- Preparing a hazardous, toxic, and radioactive waste (HTRW) RA report, including survey and as-built drawings, data review, and discussion of all remedial action work to include soil excavation and removal, sediment removal, waste disposal documentation, sample results, debris removal, and other relevant project details. Comment sheets for the draft report are included in Appendix A.

Descriptions of field activities and results are included in Section 6.0.

2.2 CONTRACT LINE ITEMS

The USACE identified the work to be conducted as a series of Base and Optional Contract Line Item Numbers (CLINs). Optional CLINs identified unit-priced work performed in addition to that identified in the Base CLINs. The USACE awarded the Base and Optional CLINs to Bristol on December 27, 2010. The Base CLINs are summarized in Table 2-1, and Optional CLINs are summarized in Table 2-2.

The actual quantities of work performed are also summarized in Table 2-2. Four contract modifications have been made throughout the course of work and are described in Section 2.3.

Table 2-1 Base CLINs

Base CLINs	Description
0001	Project Management
0002	Planning Documents
0003	Chemical Data Quality
0004	Field Implementation
0005	HTRW Action Report
0006	Options

Notes:
CLINs = Contract Line Item Numbers
HTRW = Hazardous, Toxic, and Radioactive Waste

Table 2-2 Optional CLINs

Item/Option	Description	Quantity per Option	Number of Options Available	Options Exercised
0006AA/Optional Task 4.6.1	Arsenic-Contaminated Soil Removal	Lump Sum	1	1
0006AB/Optional Task 4.6.2	Additional Arsenic-Contaminated Soil	1 ton	10	4.8
0006AC/Optional Task 4.6.3	Sediment/Soil Sampling at Site 28	Lump Sum	1	1
0006AD/Optional Task 4.6.4	Roofing Tar Removal	40 tons	1	1
0006AE/Optional Task 4.6.5	Additional Roofing Tar	1 ton	10	0
0006AF/Optional Task 4.6.6	Miscellaneous Debris/Drums/Poles	Lump Sum	1	1
0006AG/Optional Task 4.6.7	Additional Miscellaneous Debris/Drums/Poles	1 ton	10	8.7
0006AH/Optional Task 4.6.8	Additional POL-Contaminated Soil	2,000 tons	6	6
0006AJ/Optional Task 4.6.9	Additional PCB-Contaminated Soil	10 tons	10	10
0006AK/Optional Task 4.6.10	POL Liquids	1 gallon	50	0
0006AL/Optional Task 4.6.11	Additional Monitoring Well Abandonment	1 well	5	0
0006AM/Optional Task 4.6.12	2012 Mobilization/Demobilization	Lump Sum	1	1
0006AN/Optional Task 4.6.13	Background Arsenic	Lump Sum	1	1
0006AO/Optional Task 4.6.14	PCB Wipe Sampling of Concrete at Sites 13 and 31	Lump Sum	1	1
0006AP/Optional Task 4.6.15	Additional PCB-Contaminated Soil	Lump Sum	1	1
0006AQ/Optional Task 4.6.16	Additional Roofing Tar-Contaminated Soil	Lump Sum	1	1
0006AR/Optional Task 4.6.17	Site 9 Surface Water Sampling and Reporting	Lump Sum	1	1

Notes:

CLINs = Contract Line Item Numbers

PCB = polychlorinated biphenyl

POL = petroleum, oil, and lubricants

2.3 PROJECT MODIFICATIONS

There were four modifications to the contract, as follows:

- Modification 01 incorporated a revised SOW dated March 17, 2011. Option 0006AM was exercised, thus extending the period of performance through April 30, 2012. This modification also added Optional Task 4.6.13 (Item Number 0006AN) regarding background sampling for arsenic.
- Modification 02 incorporated Federal Acquisition Regulation (FAR) clause 52.217-7 for increased quantity. The period of completion was changed from April 30, 2012, to April 30, 2013 to allow for overwintering of the camp.
- Modification 03 exercised one unit from CLIN 0006AH, increasing the total exercised options within this line item from five to six. This modification increased the exercised optional quantities from 10,000 tons to 12,000 tons.
- Modification 04 added the following Optional Tasks:
  - 4.6.14 (Item Number 0006AO) – PCB Wipe Sampling of Concrete at Sites 13 and 31.
  - 4.6.15 (Item Number 0006AP) – Additional PCB-Contaminated Soil.
  - 4.6.16 (Item Number 0006AQ) – Additional Roofing Tar-Contaminated Soil.
  - 4.6.17 (Item Number 0006AR) – Site 9 Surface Water Sampling and Reporting.

3.0 PROJECT PLANNING, KEY PERSONNEL, AND SUBCONTRACTORS

3.1 PROJECT PLANNING

Project planning began on December 27, 2010, when Bristol received USACE's Notice to Proceed for the project. The following sections describe the planning documents prepared for this project and the field activities that deviated from the planning documents.

3.1.1 Planning Documents

The following planning documents were prepared by Bristol and approved by the USACE:

- Work Plan (WP)
- Quality Assurance Project Plan (QAPP)
- Contractor Quality Control Plan (CQCP)
- SWPPP
- Site Safety and Health Plan (SSHP)
- Accident Prevention Plan (APP)
- Waste Management Plan (WMP)

Draft planning documents were submitted to the USACE on May 17, 2011, and the final planning documents were submitted on August 5, 2011. An addendum to the WP was submitted to USACE on September 21, 2011, regarding field excavation closure plans. Another WP addendum was submitted on November 21, 2011, regarding PCB wipe-sampling of concrete and surface water samples collected at Site 9. All field work was done in accordance with the prepared planning documents, except as noted in Section 3.1.2.

3.1.2 Deviations from the Planning Documents

Differing site conditions and unforeseen circumstances necessitated some deviations from the work stated to be performed in the planning documents. Descriptions of the significant deviations from the planning documents follow:

- **Stockpiled Soil at Pad 98 –** The WP stated that Bristol would place liner underneath soils stockpiled on the concrete foundation of former Building 98. No liner was placed on the concrete where machinery was operating, but instead berms were constructed along the edges of the concrete foundation. Liner was placed on top of these outer berms. A liner was placed on the gravel pad located in the southeast corner of Pad 98 to collect water runoff from the adjacent concrete. Roofing tar was used to seal the liner to the surrounding concrete in this location. A water impoundment was installed directly south of Pad 98 to contain treated wastewater that collected on the liner.
- **Tar Excavation Area –** The original area of the tar removal was believed to be approximately 2,500 square feet (ft^2). Ultimately, the area was approximately 5,000 ft^2; thus more tar was excavated and more confirmation samples were collected than originally planned.
- **Metal Debris Disposal –** Three containers of metal were originally planned for recycling at Bloch Steel in Seattle, Washington; however, due to radiation levels, the steel was disposed of at Columbia Ridge Landfill in Arlington, Oregon. The radiation tests are a part of standard tests performed by the trucking company that was shipping the metal to a recycling center. The radiation levels exceeded the maximum allowable levels regulated by the state of Washington for recycling. Radiation levels were attributed to naturally occurring radiation from the surrounding geology that was contained within minor pieces of concrete attached to the metallic debris.
- **Waste Characterization Sample Collection –** The WP stated that waste characterization samples would be collected in sample jars, but all PCB and diesel range organics (DRO)/residual range organics (RRO) waste characterization samples were collected in Ziploc® bags and submitted to the field laboratory.
- **Investigation-Derived Waste (IDW) Disposal –** It was stated in the WP that wastewater contaminated with metals or PCBs would be transferred to a 55-gallon drum for disposal. Instead, wastewater (wash water) from the PCB sites was loaded into bulk bags containing PCB-contaminated soil. Approximately 75 gallons of wash water used for decontamination was loaded into bulk bags that contained PCB-contaminated soil. Decontamination water was used at two boot-wash areas (one each at sites 13 and 31) and in 5-gallon buckets used for decontaminating sampling equipment.
- **RSK-175 (Methane) analysis**–All methane samples by method RSK-175 were supposed to be analyzed by TestAmerica-Denver. SDG 580-27518 (MOC groundwater) had methane samples analyzed at TestAmerica-Savannah, which was not stated in the QAPP. The contractor was not notified of the laboratory change

in the analysis. TestAmerica-Savannah is a DoD Environmental Laboratory Accreditation Program- (ELAP-) accredited laboratory; its certification is located in Appendix B.

3.1.3 Permits and Regulatory Notifications

Federal and state permits required for this project were included in the WP. Copies of the permits and letters are provided in Appendix C. The following permits and regulatory notifications, including the Quarry Operating Agreement, apply to the 2011 activities on Saint Lawrence Island for the NE Cape HTRW RA project:

- On July 22, 2011, the Alaska Department of Environmental Conservation (ADEC) sent an email to the USACE tentatively approving the 2011 NE Cape HTRW Remedial Actions Work Plan and Sampling and Analysis Plan. A letter approving the final WP was sent to the USACE on November 28, 2011.
- Material Supply and Quarry Operating Agreement between Bristol and Kukulget, Inc., effective July 1, 2011.
- State of Alaska, Department of Fish and Game (ADF&G), Division of Habitat, Fish Habitat Permit FH11-III-0190 on June 29, 2011, authorizes withdrawal of up to 3,000 gallons of water per day from the Suqitughneq River.
- The Alaska Department of Natural Resources (ADNR), Division of Mining, Land & Water "Letter of Entry for state tidelands within Kitnagak Bay, Saint Lawrence Island," dated May 18, 2009, granted the USACE authorization to enter upon state tidelands for the express purpose of conducting barge landings for the continued assessment and cleanup of the NE Cape.
- State of Alaska Department of Environmental Conservation, Division of Water, Wastewater Discharge Authorization Program, permit number AKR10DL58.
- ADF&G Fish Habitat FH09-III-0102 permit was issued on April 22, 2009, for equipment stream crossing, Northeast Cape White Alice Site Removal Action (Saint Lawrence Island), Township 25 South, Range 54 West, Quangeghsaq River.
- ADF&G Fish Habitat FH09-III-0103 permit was issued on April 22, 2009, and Amendment 1, issued on June 5, 2009, for placing of riprap in, performance of maintenance activities in, and water withdrawal from the Suqitughneq River, Northeast Cape White Alice Site Removal Action (Saint Lawrence Island), T25S, R54W.
- ADNR, Division of Mining, Land & Water, Temporary Water Use Authorization Permit TWUP A2011-81 dated July 13, 2011.

- Department of the Army Right of Entry for Environmental Assessment and Response for Saint Lawrence Island, Alaska Property Identification Number DACA85-8-08-0134 between the USACE, Kukulget Incorporated, and Sivuqaq Incorporated, dated June 17, 2008.

3.2 KEY PERSONNEL

The project duties assigned to key home office and field management personnel are described in the following sections.

3.2.1 Key Home Office Personnel

Project Manager, Molly Welker

Molly Welker, the Project Manager (PM), was responsible for ensuring project tasks were completed on schedule and within budget, recommending and justifying project modifications, implementing methods of tracking materials and resources, coordinating work with subcontractors, and complying with normal safety procedures and regulatory requirements. Ms. Welker was responsible for submitting monthly status reports to USACE. Monthly status reports are included in Appendix D, and correspondence with USACE is provided electronically in the Supplemental Data.

Health and Safety Manager, Clark Roberts, C.I.H.

Clark Roberts, Certified Industrial Hygienist (C.I.H.), reviewed the Safety and Health Program for this project. He worked with Bristol's Site Safety and Health Officer (SSHO) to monitor project compliance with Bristol's Corporate Safety and Health Program and the SSHP. For this project, he was responsible for the following:

- Reviewing and editing the SSHP and APP
- Being available for emergencies
- Providing consultation as needed to ensure the SSHP and APP were fully implemented

Regulatory Compliance Manager and Transportation and Disposal Coordinator, Tyler Ellingboe

Tyler Ellingboe was responsible for overseeing regulatory compliance for identifying, handling, packaging, manifesting, transporting, and disposing of wastes generated on the project. He worked with the Site Superintendent (SS) and the PM to track waste shipments.

3.2.2 Key Field Personnel

SS/SSHO, Charles (Chuck) Croley

Chuck Croley was responsible for managing, scheduling, coordinating, and executing all of Bristol's on-site activities, including providing oversight of Bristol's subcontractors. He was responsible for compliance with Bristol's and USACE's safety and health programs. Mr. Croley conducted daily safety meetings addressing site hazards and concerns and was the liaison between field and office personnel regarding safety issues and incidents. He was responsible for conducting accident investigations and preparing accident reports. He reported directly to the PM.

Contractor Quality Control Systems Manager (CQCSM), Russell James

Russell James was responsible for management of Contractor Quality Control (CQC) and had the authority to act in all CQC matters for the project. He worked with the SS and the PM to implement the CQCP. Mr. James was Bristol's liaison with the USACE's Quality Assurance Representative (QAR). Copies of all daily quality control (QC) reports are provided electronically with the Supplemental Data.

Environmental Samplers, Eric Barnhill and Lyndsey Kleppin

Barnhill and Kleppin were the ADEC-qualified Environmental Samplers for collection and processing of environmental samples. Copies of field notes are provided in Appendix H.

3.3 SUBCONTRACTORS

Table 3-1 lists the major subcontractors utilized during the 2011 field season.

Table 3-1 Major Subcontractors

Subcontractor	Assignment
Bering Air	Aircraft charters
Eco-land, Inc.	Surveying
Fairweather, Inc.	Infirmary and emergency medical services
Global Services, Inc.	Camp services
Northland Services, Inc.	Marine transportation
Security Aviation	Aircraft charters
TestAmerica Laboratories, Inc.	Fixed-based analytical testing laboratory
Waste Management, Inc.	Solid, RCRA and TSCA soil disposal

Notes:
RCRA = Resource Conservation and Recovery Act
TSCA = Toxic Substances Control Act

4.0 LOGISTICS

4.1 MOBILIZATION / DEMOBILIZATION

Preparations for mobilization began in April 2011 with the staging of specialized equipment, material, and shipping containers (Conexes) in Alaska and in the continental United States. Items purchased outside of Alaska were consolidated in Seattle, Washington, and transported by Northland Services, Inc. (NSI), to Anchorage, Alaska, in May 2011. These items were consolidated with the heavy construction equipment, the construction camp, fuel, and other items assembled by Bristol in Anchorage. Over 800 tons of freight was loaded onto two NSI barges at the Port of Anchorage in early May 2011. The barges departed Anchorage in mid May for Nome, Alaska.

Bering Air, Inc. (Bering Air), made reconnaissance flights to NE Cape on June 14 and 27, 2011. The purpose of the flights was to assess whether the sea ice in Kitnagak Bay would allow the landing craft to land at Cargo Beach and to assess the condition of the airstrip. Based on the observations made during these flights, Bristol mobilized to NE Cape on June 27, 2011.

Landing craft were used for hauling freight between Nome and Cargo Beach. The first landing craft arrived at Cargo Beach on June 28, 2011. A total of three landing craft hauled equipment to NE Cape. Off-loading of all the freight was completed on July 3, 2011. The Cargo Beach landing location is marked on Figure 3, along with all other NE Cape work sites utilized during the project. Photos of the beach operations and other site activities are displayed in the photograph log presented in Appendix E.

Five crew members from Global Services, Inc. (Global), and a satellite technician arrived on June 30, 2011. The temporary construction camp was assembled and the Global setup crew departed the site on July 13, 2011.

Additional personnel and subcontractors arrived from July 13 through July 16, 2011. By July 16, 2011, Bristol had completed improvements to the roads and setup of the NE Cape infrastructure. Removal work began on July 16, 2011. At that time, there were approximately 30 personnel in camp.

Personnel demobilization began on September 16, 2011, with the departure of five field personnel. Additional personnel were demobilized on September 23, September 26, and October 3, 2011. Global arrived on site on October 3, 2011, to begin deconstruction of the camp. Field activities were completed and all personnel were off site by October 13, 2011.

Several landing craft arrived throughout the duration of the project to transport bulk bags off island; the first arrived on July 23, 2011. Nineteen landing craft arrived at NE Cape between July 23 and October 9, 2011, to transport soil and equipment off island.

Heavy equipment, camp components, and vehicles were left at the site over winter in an effort to reduce mobilization/demobilization costs associated with barge transportation and increase the length of the working field season in 2012. Because additional work will be performed in 2012, the USACE approved leaving necessary equipment on site. Sea ice in Kitnagak Bay is often the determining factor for when the field crew can mobilize to NE Cape. It is usually early July before the ice at Cargo Beach allows for landing craft operations to be conducted at the site. The landing craft are vital for delivering the appropriate cargo needed for setting up the construction camp and for delivering equipment. Having equipment staged on site throughout the year will allow for mobilization independent of sea ice conditions, so mobilization should take place earlier in 2012. The hydraulic concrete removal extension for the excavator arm was shipped off-island in 2011 because it is not anticipated to be needed for operations in 2012.

4.2 TEMPORARY CONSTRUCTION CAMP

The temporary construction camp was set up on an existing gravel pad adjacent to the airstrip and was designed to house approximately 40 people. Living quarters consisted of 12 individual Weatherport® tents, each capable of housing four people. Two trailers were on site, one of which was used for the field laboratory, the other was maintained as the medical facility.

Camp facilities included shared sleeping quarters; a medical dispensary; a recreation room; a dining facility; showers, laundry, and toilet facilities; a food storage Conex; satellite telephone and television system; and offices for Bristol, subcontractors, and USACE personnel. A medic/Emergency Medical Technician (EMT) III was on site at all times in order to provide emergency medical services. The camp was fully operational between July 13 and October 3, 2011.

4.3 AIR SUPPORT

Security Aviation, of Anchorage, Alaska, and Bering Air, of Nome, Alaska, provided air support services during the 2011 summer season. A Cessna Conquest, owned and operated by Security Aviation, was used to transport USACE personnel in order to comply with U.S. Department of Defense (DoD) Directive 4500.53 and the DoD Commercial Review Board. Passenger flights for non-USACE personnel were typically made using King Air, Beechcraft, or Navajo aircraft, owned and operated by Bering Air out of Nome, Alaska. Over 50 round-trip flights were chartered during the 2011 summer season.

4.4 SITE VISITS

Visitors arrived on site on two occasions during the course of work in 2011. The first visit occurred on August 27, 2011, when 16 people from the Village of Savoonga visited the site via boat. Visitors included four members of the Indian Reorganization Act Council and four members of the Kukulget Village Corporation. On September 12, 2011, Curtis Dunkin from ADEC visited the site for approximately 2.5 hours to check on the status of the field operations.

4.5 EQUIPMENT

A list of the major equipment used by Bristol and their subcontractors can be found in the Daily Quality Control Reports, which are provided electronically with the Supplemental Data. Major equipment consisted of tracked excavators, heavy loaders, crew-cab pickup trucks, rock trucks, road maintenance equipment, and utility vehicles. The equipment was serviced, maintained, and repaired on site by a heavy-equipment mechanic.

4.6 BACKFILL AND BORROW MATERIAL

Borrow material used at the project site was obtained at the borrow area located approximately 2,000 feet south-southeast of the former White Alice antenna array. A total of 5,928 cubic yards of material was removed over the duration of the project. The material was used primarily for backfill and road repair.

4.7 HEALTH AND SAFETY

Bristol personnel arrived on the island on June 27, 2011; the safety and health management and communications system for NE Cape was established immediately upon arrival. The medic/EMT III arrived on site on July 13, 2011.

Regular and continual communication regarding safety issues was provided and maintained with the USACE QAR, the Bristol SS/SSHO, CQCSM, and PM.

Field personnel, subcontractors, government personnel, and visitors were provided a briefing by the SSHO or administrative assistant immediately upon arrival, and safety meetings were held on a daily basis. Part of Bristol's safety routine involved the daily Toolbox Safety Meeting, which was held each morning before the start of work. These meetings were about project-related work to be performed each day at the NE Cape site.

Minimum safety gear for all personnel included hard hat, reflective vest, steel-toe boots, safety glasses, and work gloves.

Bristol's subcontractors were completely integrated into the health and safety program. Bristol, ECO-Land, LLC (ECO-Land), and Global closely coordinated operations in all areas. Key subcontractor involvement with all parties included complying with one SSHP that covered all workers. All workers, including subcontractor workers, attended the mandatory daily Toolbox Safety Meetings. This included subcontractor employees assigned to NE Cape for short-term or overnight durations.

The Bristol SSHO performed safety and health walk-through inspections each day at the various work sites. The purpose of these inspections was to stay abreast of current site activities and conditions, look for existing or potential site safety issues/concerns, ensure appropriate use of personal protective equipment (PPE), and reinforce safe work practices. The daily safety inspections also provided topics/information for incorporation into the daily Toolbox Safety Meeting to keep the subject matter relevant to NE Cape conditions. In particular, issues such as high-wind conditions, slippery-step conditions, equipment safety, and cold-weather conditions were duly noted and presented at the morning safety meetings.

In all, Bristol developed 13 Activity Hazard Analyses (AHAs) for specific tasks and operations at NE Cape. The AHAs were presented in the SSHP and are as follows:

- Barge-loading operations
- Barge-unloading operations
- Debris removal and staging
- Drum removal
- Excavation less than 4 feet in depth
- Excavation greater than 4 feet and backfilling
- Fueling of vehicles and equipment

- POL and PCB soil removal disposal
- Pole removal
- Site restoration
- Surface soil sampling
- Subsurface soil sampling
- Wire removal

Bristol invested over 20,000 employee-hours during the field effort for this project.

4.8 WASTE HANDLING AND DISPOSAL

During the 2011 field season, Bristol excavated more than 12,000 tons of contaminated soil, which was loaded into triple-layered, U.S. Department of Transportation-approved bulk bags and staged for subsequent transport off island. In addition to contaminated soil, Bristol loaded Conex containers with miscellaneous debris encountered throughout the site, especially from excavation areas. In total, 1,203 bulk bag containers were filled between July 16 and September 30, 2011. Table 4-1 lists the weights of all soil excavated and handled during the 2011 field season.

Bristol shipped 752 bulk bags loaded with PCB-, POL-, and arsenic-contaminated soil off island on 19 separate landing craft voyages between the dates of July 23 and October 9, 2011. The landing craft schedule is presented in Table 4-2 along with the weights of the bags that were loaded onto each craft. Fourteen of these bulk bags were manifested as hazardous waste due to the soils having PCB concentrations in excess of 50 parts per million (ppm), and two bulk bags were manifested and disposed of as hazardous waste due to high concentrations of arsenic. Certificates of disposal are provided to the USACE in the Supplemental Data folder associated with this report. There are currently 451 bulk bags containing PCB- and POL-contaminated soil staged at the NE Cape site and 80 bulk bags remaining in Nome. These bags will be transported to the disposal facility during the 2012 field season.

Table 4-1 Excavation Amounts

Site	Weight (tons)	Containers	Bags Used
MOC Tank Footprints	638.1	67	67
MOC POL - J1A and A1	7,452.9	718	718
Site 13 (including 11 hazardous bags)	2,419.8	236	236
Site 31 (including 3 hazardous bags)	1,418.5	135	135
Site 21 Arsenic	14.8	2	2
Roofing Tar	207.2	24	48
Bags left over from 2010	197.0	21	21
2011 PCB Totals	3,838.3	371	371
2011 POL Totals	8,091.0	785	785
2011 Combined PCB and POL Totals	11,929.3	1,156	1,156
2011 Totals - All Material	12,151.3	1,182	1,206
Totals Including 21 Bags from 2010	12,348.2	1,203	1,227

Notes:
PCB = polychlorinated biphenyls
MOC = Main Operations Complex
POL = petroleum, oil and lubricants

Table 4-2 Landing Craft Schedule

No.	Date	Landing Craft	No. of Bags	Net Weight (tons)
1	7/23/2011	Sam Taalak	46	435.2
2	7/31/2011	Sam Taalak	50	498.0
3	8/6/2011	Sam Taalak	50	506.1
4	8/10/2011	Sam Taalak	50	492.1
5	8/11/2011	Sam Taalak	46	474.5
6	9/1/2011	Nunanik	38	388.6
7	9/28/2011	Nunanik	32	302.3
8	9/30/2011	Sam Taalak	16	160.4
9	10/2/2011	Sam Taalak	40	434.8
10	10/3/2011	Nunanik	36	367.4
11	10/4/2011	Sam Taalak	40	425.8
12	10/5/2011	Nunanik	36	373.0

Table 4-2 Landing Craft Schedule (continued)

No.	Date	Landing Craft	No. of Bags	Net Weight (tons)
13	10/5/2011	Greta	40	421.3
14	10/6/2011	Sam Taalak	40	404.5
15	10/7/2011	Nunanik	36	345.3
16	10/7/2011	Greta	40	404.2
17	10/8/2011	Sam Taalak	40	392.6
18	10/9/2011	Nunanik	36	366.5
19	10/9/2011	Greta	40	414.6
		Totals	752	7,606.9

Note: Landing Craft 8, on 9/30/2011, contained the PCB and arsenic hazardous waste containers

In addition to contaminated soil from direct excavations, Bristol was responsible for a number of other wastes associated with the mobile laboratory, construction camp, debris removal, and unexpected wastes discovered during the course of fieldwork, including the following:

- Laboratory wastes included hexane, acetone, methylene chloride, and sulfuric acid. All laboratory wastes are currently on site and will be disposed of following the 2012 field season.
- Miscellaneous metal and debris that were collected during the field season were loaded into three Conex shipping containers for transportation and disposal off site.
- Two drums discovered at the MOC during POL excavations that each contained approximately 10 gallons of POL liquid. The drums were packed into two 85 gallon overpack containers that currently remain on site.

Wastes were classified in accordance with Title 40 Code of Federal Regulations, Part 261 (40 CFR 261); 40 CFR 761; and 40 CFR 61, Subpart M. Each hazardous waste was evaluated to identify all applicable treatment standards in 40 CFR 268, Land Disposal Restrictions. Wastes shipped off island were placarded in accordance with 49 CFR 172, Subpart F. Labels and placards were affixed to all sides of Toxic Substances Control Act- (TSCA-) regulated PCB bulk bags, arsenic-contaminated soils bulk bags, and the Conex container holding the waste drums. Waste manifests, bills of lading, certificates of weight, and certificates of disposal are submitted electronically in the Supplemental Data. Waste profiles are provided in Appendix F.

Table 4-3 lists the wastes and their associated treatment during the 2011 season. Hazardous waste details are presented in Table 4-4.

Table 4-3 Waste Disposal Summary

Waste Type	Final Treatment / Disposal	Disposal Facility	Approximate Disposal Quantity
Miscellaneous Debris	Disposal in Subtitle D Landfill	Columbia Ridge Recycling & Landfill - Arlington, OR	34.0 tons
PCB-Contaminated Soil, <50 ppm PCBs	Disposal in Subtitle D Landfill	Columbia Ridge Recycling & Landfill - Arlington, OR	1,679.2 tons
POL-Contaminated Soil, Non-RCRA	Disposal in Subtitle D Landfill	Columbia Ridge Recycling & Landfill - Arlington, OR	5,560.2 tons
PCB-Contaminated Soil, TSCA, >50 ppm	Disposal in Subtitle C Landfill	Chemical Waste Management of the Northwest - Arlington, OR	146.2 tons
Arsenic-Contaminated Soil, RCRA	Disposal in Subtitle C Landfill	Chemical Waste Management of the Northwest - Arlington, OR	14.8 tons
Bulk Tar and Tar-Contaminated Soil	Disposal in Subtitle D Landfill	Columbia Ridge Recycling & Landfill - Arlington, OR	207.2 tons

Notes:

< = less than
> = greater than
PCB = polychlorinated biphenyls
POL = petroleum, oil, and lubricants
ppm = parts per million
RCRA = Resource Conservation and Recovery Act
OR = Oregon
TSCA = Toxic Substances Control Act

Table 4-4 Hazardous Waste Handling Details

Bag ID	Manifest No.	Weight (lbs)	Contents	Landing Craft	Date Off-Island	Destination
H13-10	003952651 FLE	18,900	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-9	003952650 FLE	20,760	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-2	009352643 FLE	18,160	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-1	003952642 FLE	21,280	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-3	003952644 FLE	18,200	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-5	003952646 FLE	21,740	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H31-3	003952641 FLE	22,260	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-11	003952652 FLE	22,700	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H31-2	003952640 FLE	21,640	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-6	003952647 FLE	20,720	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-8	003952649 FLE	20,160	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-4	003952645 FLE	20,820	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H13-7	003952648 FLE	20,340	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
H31-01	003952639 FLE	24,680	PCB Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
21-01A	004376108 FLE	12,460	Arsenic Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
21-01B	004376109 FLE	16,040	Arsenic Soil	Sam Taalak	9/30/2011	CWMN, Arlington, OR
	Total	160.43 tons				

Notes:

CWMN = Chemical Waste Management of the Northwest

PCB = polychlorinated biphenyls

5.0 CHEMICAL DATA COLLECTION, ANALYSIS, AND REVIEW

5.1 PRIMARY AND QUALITY ASSURANCE LABORATORIES

TestAmerica Laboratories, Inc. (TestAmerica-) Tacoma was Bristol's primary analytical laboratory for the project and analyzed the majority of the project samples. Terri Torres, the Client Service Manager, acted as the program Laboratory Quality Assurance (QA) Officer for the project. Due to capacity issues at TestAmerica-Tacoma, some analyses were subcontracted to TestAmerica-Denver, which is also DoD ELAP and ADEC Contaminated Sites Laboratory Approval Program certified for sample analyses.

5.2 FIELD LABORATORY

Bristol utilized an on-site field laboratory for screening soils to aid in excavation activities. The laboratory was capable of analyzing soils for DRO/RRO using Alaska Test Method AK102/103 and for PCB soils and wipes using a modified U.S. Environmental Protection Agency (EPA) method 8082.

Bristol utilized the field laboratory to the maximum extent possible, especially as PCB soil excavations increased in size. Bristol originally planned to process approximately 900 samples, but at project's end had analyzed 426 POL samples 1,188 PCB samples.

Field-screening results from the on-site laboratory were used to direct the excavation of contaminated soil but were not used to determine whether site cleanup levels had been met. Wipe samples were also submitted to the field laboratory to demonstrate that concrete was not above regulatory limits before it was broken up and used as backfill. If mobile laboratory concentrations were greater than 80 percent of DRO, RRO, or PCB cleanup levels, then the excavation was expanded and additional field-screening samples were collected. Once the excavation was believed to be complete based on field-screening results below 80 percent of cleanup levels, confirmation samples were collected and submitted to TestAmerica in Tacoma, Washington, and Denver, Colorado, to confirm that the remaining soil was below site cleanup levels. The field-screening laboratory was not certified for any analyses.

If field-screening samples collected from a PCB excavation were less than 0.8 milligrams per kilogram (mg/kg), discrete grid-based confirmation samples were collected and sent to the TestAmerica-Tacoma laboratory. PCB samples for compositing were collected as discrete samples and submitted to TestAmerica, where samples were composited at the contractor's direction prior to extraction and analysis. Pre-stockpile samples for PCBs were composited by the field-screening laboratory to determine whether PCBs were present at the soil surface before liner and excavated backfill were placed at the stockpile locations. PCB bulk waste samples were composited by environmental field personnel and submitted to the field laboratory. PCB excavation samples were analyzed discretely in order to identify areas with PCB concentrations above cleanup levels.

All POL samples were analyzed as discrete samples, with the exception of bulk waste samples, which were composited by environmental personnel in the field before being submitted to the field laboratory. The off-site disposal facilities accepted field-screening results for waste disposal purposes.

5.2.1 POL Screening Analysis

The POL screening samples were analyzed for DRO and RRO using a gas chromatograph equipped with dual flame-ionization detectors and procedures outlined in Appendix D of the ADEC Underground Storage Tank Procedures Manual for AK102 and AK103 (ADEC, 2002). The POL screening results are listed in Tables S1 through S6, provided electronically with the Supplemental Data. Screening results were used to indicate site locations that either required further excavation or were tentatively thought to have reached cleanup goals. Confirmation samples were collected at locations where screening indicated that cleanup goals had been met. The confirmation samples were submitted to TestAmerica for analysis.

5.2.2 PCB Screening Analysis

The PCB screening samples were analyzed as Aroclors using a gas chromatograph equipped with dual electron capture detectors and procedures outlined in EPA Method 8082. Samples were extracted using a rapid extraction method outlined in the Standard Operating Procedure (SOP) for PCBs Field Testing for Soil and Sediment Samples (EPA, 2002). The screening method used in the field was slightly modified from the EPA field testing method; a 1:1 hexane acetone solvent mixture was used instead of a 10:8:2 mixture of hexane, methanol, and water. Water was added after sonication to facilitate the separation of the hexane from the acetone. When water was added to the initial extract, the solvents physically separated, leaving the hexane as the top layer, which contained the PCBs. The method was also modified in the field because organic materials were present at the sites. The addition of both diatomaceous earth and sodium sulfate to the samples produced emulsions in the sample extracts, so samples were air dried in weigh dishes after the initial sample weight was recorded, to minimize potential for the emulsions. The PCB field laboratory-screening results are listed in Tables S7 through S15, provided electronically with the Supplemental Data. All other extraction and analysis steps followed the SOP prepared for NE Cape.

5.3 CHEMICAL DATA QUALITY REVIEW

AECOM reviewed and evaluated the project and QA laboratory data and completed the Data Verification Report on January 30, 2012. The report is included as Appendix B of this report.

The laboratory data tables presented in Appendix G are flagged in accordance with the recommendations presented in the Data Verification Report.

The ADEC Certificates of Approval for Contaminated Sites Analysis are also included in Appendix B. ADEC checklists are provided electronically with the Supplemental Data.

The analytical data generated during the NE Cape Remedial Actions conducted from July through September 2011 are usable for project purposes. The assessment evaluated whether program objectives and data quality goals were met and reviewed sample receipt conditions, extraction and analytical procedures, sampling procedures, and correspondence to method criteria and project data quality objectives (DQOs). The following conclusions were drawn based on the assessment of the analytical data:

- Sample receipt conditions were acceptable based on temperatures upon receipt and chain-of-custody correspondence to the submitted sample sets.
- Holding times were met, with the following exceptions:
  - One soil PCB sample
  - Two semivolatile organic compound (SVOC) tar samples

  Results reported outside hold time requirements were qualified as estimated with a low bias (QL).
- Extraction and analytical procedures were acceptable based on method blanks, laboratory control samples (LCSs)/laboratory control sample duplicates, matrix spike/matrix spike duplicates (MS/MSDs), and surrogates, except as noted below:
  - Gasoline range organics (GRO), DRO, and pyrene were detected in method blanks. Associated results with sample concentrations <10x the blank concentration were B qualified.
  - All PCB results in six soil samples and one water sample and all polynuclear aromatic hydrocarbons (PAHs) results in two water samples were qualified as estimated with a low bias (QL) due to low surrogate recoveries.
  - Detected RRO results in two soil samples, detected PCB results in three soil samples, and detected PAH results in five tar samples were qualified as estimated with a high bias (QH) due to high surrogate recoveries.
  - Five soil results for 1,1,1,2-Tetrachloroethane and two water results for benzene, toluene, ethylbenzene, and xylenes (BTEX) were qualified as estimated with a low bias due to a matrix effect (ML) due to low MS or MSD recoveries.
  - Four detected soil results for RRO with silica gel cleanup were qualified as estimated with a high bias due to a matrix effect (MH) due to high MS or MSD recoveries.

  - Multiple PCBs with shared peaks were detected in 18 samples. Individual PCB concentrations were qualified to indicate a potential matrix effect with an unknown bias (MN).
  - One water methane result was qualified as estimated with a high bias (QH) due to an associated high LCS recovery
  - Ten total chromium results in water were qualified as estimated with an unknown bias (QN) due to a high relative percent difference (RPD) observed with laboratory duplicates.
- Imprecision was observed in field duplicates samples for DRO/RRO, several PAHs, and total organic carbon (TOC). If the action/cleanup level was well above the uncertainty, results were not qualified. Two DRO and two RRO results were within the uncertainty of the action/cleanup level and were qualified as QN.
- Imprecision was observed in field duplicate samples for PCB-1260. Results were reviewed on a site-by-site basis. The majority of duplicate sample result RPDs were outside control limits (≥50 percent) for both sites 13 and 31, and all detected PCB-1260 field duplicates were qualified (QN) due to heterogeneity at both sites.
- A comparison of soil duplicate PCB results to screening criteria showed that detections ranging from 0.4 mg/kg to 3.5 mg/kg had the potential to provide a misleading conclusion since, in several duplicate pairs for both sites 13 and 31, reported result pairs showed one above the screening criteria of 1 mg/kg while the duplicate result was below.

Based on this review, the analytical data generated during the NE Cape Remedial Action at Sites 8, 9, 13, 21, 31, the MOC, and the Tar Removal Area are complete, correct, consistent, and compliant with method procedures and QC requirements and are usable as qualified.

5.4 ANALYTICAL METHODS FOR SOIL AND SEDIMENT

A number of soil and sediment samples were collected from different sites for various applications. Confirmation soil samples were collected from the PCB and POL excavation sites either when field-screening results indicated contaminant concentrations were below cleanup levels, or when weather conditions dictated the end of the field season. Confirmation soil samples were collected from Site 21 and the roofing-tar area following excavation activities. Soil samples were collected from Site 8 to evaluate contamination levels and also as part of an ongoing study to monitor natural attenuation. Sediment and soil samples were collected from Site 28 to further define contamination and characterize site conditions. Site-specific sampling events and their corresponding analytical methods are summarized below in Table 5-1. Table 1, which is presented in Appendix G, details each analyte, analytical method and its associated cleanup levels for soil and sediment.

Table 5-1 Analytical Methods for Soil and Sediment

Sampling Event	Parameter	Analytical Method
Confirmation Samples from POL Excavations (MOC A1 and J1A)	DRO/RRO	AK 102/103
Confirmation Samples from PCB Excavations (Site 13 and Site 31)	PCBs	EPA 8082
Site 21 Confirmation and Background Samples	Arsenic	EPA 6020
Site 28 Characterization	GRO, BTEX, PAHs, DRO/RRO, PCBs, RCRA 8 Metals, Nickel, Vanadium and TOC	AK101, SW8260B, AK102/103, SW8082A, SW6020A, SW7471B, 9060
Roofing Tar Confirmation Samples	PAHs	SW8270C-SIM
Site 8	DRO/RRO, PAHs, TOC	AK 102/103, EPA 8270C SIM, EPA 9060

Notes:

AK = Alaska Test Method
BTEX = benzene, toluene, ethylbenzene, and xylenes
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
MOC = Main Operations Complex
PAHs = polynuclear aromatic hydrocarbons
PCB = polychlorinated biphenyls
POL = petroleum, oil, and lubricants
RCRA = Resource Conservation and Recovery Act
RRO = residual range organics
SIM = selective ion monitoring
TOC = total organic carbon

5.5 ANALYTICAL METHODS FOR GROUNDWATER AND SURFACE WATER

Surface water samples were collected from Site 8 and Site 9 during the 2011 field season at NE Cape. Samples were also collected from treated water impoundments in the MOC prior to their being discharged to the ground surface. Groundwater samples were collected from nine monitoring wells at the MOC. Site-specific parameters and analytical methods for ground and surface water are summarized in Table 5-2. Table 2 in Appendix G presents the analytes associated with each analytical method and their corresponding cleanup levels.

Table 5-2 Analytical Methods for Water

Sampling Event	Parameter	Analytical Method
MOC Groundwater	Metals/Mercury, PCBs, BTEX, PAHs, GRO, DRO/RRO, Methane	EPA 6020/7470A, EPA 8082, EPA 8260B, EPA 8270C SIM, AK 101, AK 102/103, RSK-175
Site 8	PAHs, DRO/RRO, Methane	EPA 8270C SIM, AK 102/103, RSK-175
Treated Water from Impoundment Sumps	BTEX, PAHs	SW8260B, SW8270C-SIM
Site 9	VOCs	EPA 8260B

Notes:

AK = Alaska Test Method
BTEX = benzene, toluene, ethylbenzene, and xylenes
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
MOC = Main Operations Complex
PAHs = polynuclear aromatic hydrocarbons
PCBs = polychlorinated biphenyls
RRO = residual range organics
SIM = selective ion monitoring
VOCs = volatile organic compounds

5.6 ANALYTICAL METHODS FOR WASTES

Waste characterization samples were collected for all wastes that were shipped off island. Soil samples were collected from the bulk bags that were loaded with POL-, PCB-, and arsenic-contaminated soils. Waste characterization samples collected from bulk bags containing POL and PCB soils were analyzed in the field laboratory, while arsenic samples were sent to TestAmerica in Tacoma, Washington, for analysis. Waste characterization samples were also collected from the bulk tar that was excavated from the spilled roofing tar area and analyzed for semivolatiles. Waste characterization matrices and analytical methods are listed in Table 5-3.

Table 5-3 Analytical Methods for Wastes

Sample	Parameter	Analytical Method
POL Soils	DRO/RRO	AK 102/103
PCB Soils	PCBs	EPA 8082
Arsenic	Metals – Arsenic only	EPA 6020
Tar	Semivolatiles	EPA 8270C

Notes:

AK	=	Alaska Test Method	PCBs	=	polychlorinated biphenyls
DRO	=	diesel range organics	POL	=	petroleum, oil, and lubricants
EPA	=	U.S. Environmental Protection Agency	RRO	=	residual range organics

5.7 CLEANUP AND WASTE DISPOSAL CRITERIA

Waste disposal criteria were based on the following regulations:

- Title 18 of the Alaska Administrative Code, Chapters 60 – Solid Waste Management; 62 – Hazardous Waste; 75 – Oil and Other Hazardous Substances Pollution Control; and 78 – Underground Storage Tanks (18 AAC 60, 62, 75, and 78
- 29 CFR 1910 and 1926 – Health and Safety for General Industry and Construction
- 33 CFR 138 – Financial Responsibility for Water Pollution
- 40 CFR 60, 61, 260-270, 279, 300-303, and 761 – EPA – Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); and TSCA
- 46 CFR 150, 151, and 153 – U.S. Coast Guard, Department of Homeland Security
- 49 CFR 171-178 – Hazardous Materials Transportation.

Cleanup levels are presented in Tables 1 and 2 of Appendix G. The referenced criteria for soil, sediment, surface water, and groundwater are derived from the following sources and regulations:

- The document titled *Scope of Work, 2011 Northeast Cape HTRW Remedial Actions, Formerly Used Defense Site F10AK0969-03, Northeast Cape, Alaska*, Revision 3, dated December 10, 2010. This document was furnished to Bristol by the USACE and contained a table in Section 1.2 that listed various cleanup levels within different media.

- Cleanup levels for soil and sediment not listed in the SOW were obtained from 18 AAC 75.341, Table B1, Method 2 – Soil Cleanup Levels. The most stringent pathway is referenced.
- Cleanup levels for groundwater were obtained from 18 AAC 75.345, Table C, groundwater cleanup levels.

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6.0 FIELD ACTIVITIES

All fieldwork was performed in accordance with the prepared planning documents, except as noted in Section 3.1.2. Field notes are included in Appendix H.

6.1 ACCESS IMPROVEMENTS

Approximately 4 miles of gravel roads connect the various work areas at the site. There are four stream crossings, consisting of three culverts and one bridge, within the work areas at NE Cape. Access improvements along the road system were initiated upon arrival and continued as needed during the project. The roads were generally in good condition and, in most cases, only required grading and minor backfilling to reestablish and maintain their usability. Bristol used a water truck on site periodically to suppress dust. The water withdrawal area is labeled on Figure 3.

6.2 21 PCB BAGS ON PAD 98

Part of the SOW for 2011 included shipping bulk bags that were filled during the 2010 field season but never transported off island. These bags were left over winter on the foundation of former Building 98, located at Site 14. The PCB-contaminated soil loaded in these 21 bags was excavated from Sites 13 and 31. In total, 18 bags contained soil from Site 13, and three contained soil from Site 31. These 21 bags were weighed and loaded onto the Sam Taalak landing craft on July 23, 2011, and have been disposed of at Columbia Ridge Landfill in Arlington, Oregon. Certificates of disposal are included electronically with the Supplemental Data.

6.3 FIELD SURVEY

ECO-Land was on site throughout the duration of field activities in 2011. One of their first tasks upon arrival was surveying the MOC to produce a topographic map. This pre-construction survey was completed prior to the start of any construction activities and is shown on Figure 4 along with other site details. Elevation contours were produced for every 0.5-foot change in elevation. Once excavation activities are complete in the MOC, another topographic survey will be conducted that will show the post-construction conditions of the site.

The survey crew was utilized on a daily basis for multiple activities. In addition to performing a topographic survey of the MOC, the survey crew also produced a topographic survey of the Site 28 Drainage Basin, located the boundaries of the POL plumes in the MOC, and surveyed physical site features such as concrete foundations and road centerlines. All excavation boundaries, confirmation sample locations, various field-screening sample locations, and monitoring wells were surveyed by ECO-Land. Horizontal survey points reference the North American Datum of 1983, Alaska State Plane Zone 9, and are recorded in U.S. survey feet. Vertical control references the North American Vertical Datum of 1988.

Survey data are supplied electronically in the Supplemental Data.

6.4 ENVIRONMENTAL SAMPLING

Bristol collected numerous samples from different media during the project for various reasons. Soil samples were collected from bulk bags for waste characterization purposes; confirmation soil samples were collected from PCB and POL excavations; soil, sediment, groundwater, and surface water samples were collected from Sites 8 and 28 to help further characterize the sites and monitor for natural attenuation; and surface water samples were collected from treated water impoundments and Site 9. All samples were collected in accordance with ADEC draft Field Sampling Guidance (ADEC, 2010) and Bristol's SOPs, which are included electronically in a subfolder of the Supplemental Data. The following sections describe the general procedures involved with the samples that were collected throughout the project.

6.4.1 Decontamination Procedures

New tubing used in all water-sampling pumps was used for a specific well or decision unit grid and then properly disposed of. The Monsoon® pump, when used, was decontaminated between each well by disassembling the pump and cleaning it in an Alconox solution, followed by a rinse with tap water and deionized (DI) water. The YSI water-quality meter and flow-through cell were cleaned in a similar fashion with Alconox and a double rinse.

New nitrile gloves were donned for every sample collected on site. Spoons and trowels were washed in an Alconox solution, followed by a rinse of fresh tap water and DI water.

When the excavator was utilized for soil sampling, it was given a thorough dry brushing between each sample. Excavator bucket samples were taken from soil not directly in contact with the bucket surface.

6.4.2 PCB Field-Screening Soil Sample Collection

PCB soil screening samples were collected from excavations at Sites 13 and 31, as well as from areas adjacent to the excavations that were used for overburden stockpiles. Field samples were collected in Ziploc bags using a stainless-steel spoon and were submitted to the field laboratory. Samples were collected from the bucket of an excavator when excavation conditions prevented safe entry. The excavator bucket was decontaminated between samples by removing soil particles with a dry brush. Extensive field-screening samples were collected at Sites 13 and 31 during excavation activities.

PCB field-screening locations were based on a 25 ft^2 grid. The grid was marked every 5 feet using marking paint, and the individual sampling sites within the grid were staked with pin flags. Samples were collected from each grid, marked with a unique sample ID, and submitted to the field laboratory for analysis.

6.4.3 POL Field-Screening Soil Sample Collection

Following excavation, field-screening samples were collected every 10 feet along excavation sidewalls and floors using a stainless-steel spoon or trowel and were placed into Ziploc bags. When excavation conditions prevented safe entry into the excavation, samples were collected from the bucket of an excavator. The excavator bucket was decontaminated between samples by removing soil particles with a dry brush. Bags were marked with a unique sample ID and submitted to the field laboratory for DRO/RRO analysis.

Judgmental samples were collected from subsurface horizons most likely to be contaminated, including the groundwater interface, tops of confining layers (or bottoms of relatively porous layers), or depths at which a nearby Ultra-Violet Optical Screening Tool (UVOST®) probe indicated relatively high concentrations of POL contamination.

6.4.4 POL Confirmation Soil Sample Collection

Confirmation sampling protocols commensurate with the ADEC draft Field Sampling Guidance were followed (ADEC, 2010). Samples were collected at a rate of one per 20 linear feet along sidewalls. Two floor samples were collected for the first 250 ft^2, plus one for each additional 250 ft^2. Laboratory/confirmation samples were collocated with corresponding field laboratory samples. Confirmation samples were collected with the aid of an excavator bucket. Samples were collected from the bucket by the sampler, who donned a new pair of nitrile gloves prior to collecting each sample. The excavator bucket was decontaminated between samples by removing soil particles with a dry brush. Samples were collected into appropriately sized glass jars, labeled with a unique ID and necessary analytical notes, and shipped to TestAmerica.

6.4.5 PCB Confirmation Soil Sample Collection

Samples were collected every 5 feet along the excavation floor and sidewalls. The confirmation soil samples were collected using stainless-steel spoons and trowels; excavator bucket sampling by a clean nitrile glove-covered hand was employed in areas where the excavation was unsafe for entry. When samples were collected from the excavator bucket, the bucket was dry-decontaminated prior to sample collection. Samples were collected into 4-ounce glass jars, labeled, and shipped to TestAmerica.

6.4.6 Waste Characterization Sample Collection

Waste characterization samples were collected from all wastes that were shipped off island. Soil samples were collected from bulk bags that were loaded with POL-, PCB-, tar-, or arsenic-contaminated soils.

POL and PCB waste characterization samples were collected from bulk bags. Each POL and PCB waste characterization sample consisted of seven discrete samples collected with a stainless-steel scoop from each of a series of seven bulk bags. The discrete samples were collected from both sides of individual bulk bags into a stainless-steel bowl and homogenized. The homogenized soil was then placed into a Ziploc bag, given an ID that corresponded to the group of bags from which the samples were collected, and submitted to the field laboratory.

PCB bulk bags holding soil from locations where field-screening results indicated concentrations above 50 mg/kg were not composited with other bags; these bags had a waste characterization sample collected discretely.

The arsenic waste characterization sample was a homogenization of discrete samples taken from two bulk bags. The arsenic sample was collected using a stainless-steel scoop, placed into a 4-ounce jar, and shipped to TestAmerica for analysis.

The tar waste characterization sample consisted of one discrete piece of tar collected from the roofing tar site. The tar was collected using a clean nitrile glove-covered hand, placed into 16-ounce jars, and shipped to TestAmerica for analysis.

6.4.7 Groundwater Sample Collection

Wells were sampled with a Monsoon centrifugal pump using a low-flow sampling protocol in accordance with Section IV of the ADEC draft Field Sampling Guidance (ADEC, 2010). Water quality parameters were collected using a YSI 556 meter with flow-through cell, and turbidity was measured using a portable Hach turbidimeter. Groundwater samples were collected directly from ⅛-inch, high-density polyethylene (HDPE) tubing into the appropriate collection vessel after stabilization of water quality parameters. The IDW generated from sampling the wells was collected in 5-gallon buckets and processed through a granular activated carbon (GAC) filter prior to being discharged onto the ground. Wastewater was processed and discharged at the sample site. Copies of the groundwater purging and sampling field forms are provided in Appendix H.

6.4.8 Surface Water Sample Collection

Surface water samples from the outfall to the Suqitughneq River at Site 8 were collected using a clean, non-preserved, 2-liter amber jar, which was slowly dipped into the water source and then used to fill the sample containers.

Surface water samples from Site 8 decision units were collected using a peristaltic pump. Surface water was pumped directly into sample containers while water-quality parameters were collected using a YSI water-quality meter submerged directly into the water.

6.5 MOC Groundwater Sampling, Results, and Discussion

Nine primary water samples and one duplicate were collected from the selected monitoring wells in the MOC from July 15 to July 18, 2011. Water-quality parameters were measured using a YSI water-quality meter with flow-through cell. Groundwater samples were analyzed for BTEX, PCBs, GRO, DRO, metals (total and dissolved), PAHs, and methane and were shipped under chain-of-custody to TestAmerica in Tacoma, Washington, for analysis. HACH® kits were used in the field laboratory to collect the natural attenuation parameters for manganese, ferrous iron, sulfate, nitrate, and alkalinity. The natural attenuation parameters from 2010 and 2011 are presented in Table 3 in Appendix G. Figure 5 shows the potentiometric groundwater surface and the monitoring wells that were sampled during field activities. Groundwater levels were measured on July 14, 2011, and indicate groundwater flow was predominantly north to northwest.

Figure 6 shows the groundwater monitoring wells that were sampled at the MOC and highlights those that contained contaminant concentrations in excess of cleanup levels. Full laboratory analytical results for MOC groundwater monitoring wells are presented in Table 4, located in Appendix G. Two wells contain contaminant concentrations exceeding cleanup levels: monitoring well (MW) 88-4 and MW 88-5. The wells exceed cleanup levels for DRO at 2.3 milligrams per liter (mg/L) and 7.5 mg/L, respectively. Both wells also exceed the benzene cleanup criterion of 0.005 mg/L, having concentrations of 0.0094 mg/L and 0.020 mg/L, respectively. Well 88-5 contains RRO at a concentration of 2.0 mg/L, which exceeds the cleanup criterion of 1.1 mg/L. Well 88-4 contains arsenic at a concentration of 0.011 mg/L, just slightly above the cleanup criterion of 0.010 mg/L.

A comparison of the 2011 groundwater sample results with past results showed that the three wells that had contained concentrations of DRO exceeding cleanup levels (MW 88-4, 88-5, and 88-10) all showed lower concentrations of DRO during the 2011 sampling event than in previous years. Benzene concentrations have historically fluctuated and appear to have increased over time in MW 88-5, from 0.0093 mg/L in 2004 to 0.020 mg/L in 2011. Table 6-1 (below) includes sample results that have exceeded cleanup criteria from the 2004, 2010, and 2011 sampling events.

Monitoring wells 88-4 and 88-5, which contained concentrations of DRO exceeding cleanup criteria, had the lowest dissolved oxygen (DO) concentrations. Additionally, MWs 88-4 and 88-5 contained the highest concentrations of ferrous iron, alkalinity, and methane. Ferrous iron, methane, and alkalinity are metabolic byproducts of microbial respiration. The wells with the lowest contaminant concentrations had comparatively high DO, suggesting that microbes are depleting oxygen to aerobically degrade DRO. The high concentrations of methane in MWs 88-4 and 88-5 indicate anaerobic degradation of DRO by methanogenic microbes. These factors are an indication that natural attenuation is occurring, and the results are consistent with results from the 2010 sampling event.

6.6 SITE 8 PIPELINE BREAK MNA

Site 8 (Figure 7) is a wetland with dense, grassy surface vegetation containing little soil or peat development, that slopes southward and narrows toward the Suqitughneq River. A spring is located at the lower end of the site near the Suqitughneq River.

Two soil samples were collected at Site 8 in 2004. The first sample was located approximately 50 feet below the historical pipeline break, and the second sample was located 100 feet below the break. Figure 7 shows the approximate location of the pipeline break. Historical (2004) results indicated DRO was present at concentrations of 6,700 mg/kg and 19,500 mg/kg in samples 04NE08SD103 and 04NE08SD102, respectively. Surface water samples were also collected near the spring and outfall in 2004, but contaminants were not detected.

Table 6-1 MOC Wells with Exceedances from 2004, 2010, and 2011

	Matrix	**Water**	**Water**	**Water**	**Water**	**Water**	**Water**
	Method	**8260B**	**AK101**	**AK102**	**AK103**	**RSK-175**	**6020**
	Analyte	Benzene	GRO (C6-C10)	DRO (nC10-<nC25)	RRO (nC25-nC36)	Methane	Lead-Total
	Cleanup Level	0.005	1.3	1.5	1.1	NA	0.015
	Unit	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L
Well ID	**Year**						
88-4	**2004**	**0.0337**	1.25	**3.89**	**1.46**	---	0.0041 B
	2010	0.0024	0.24	**3.3**	0.43 M	2100	0.002
	2011	**0.0094**	0.4	**2.3**	0.55	2100	0.0013 J
88-10	**2004**	0.0004 U	0.0357	1.38	0.549 U	---	0.0376
	2010	0.00015 U	0.044 U	**1.6**	0.036 J	0.4 M	0.0015 J
	2011	0.00045 U	0.044 U	0.54	0.15	1.8	0.00083 J
88-5	**2004**	**0.0093**	**1.5**	**11.3**	**2.28**	---	0.0089
	2010	**0.0093**	0.19	**12**	**1.6**	99 M	0.0029 J
	2011	**0.020**	0.24	**7.5**	**2**	630	0.0019 J

Notes:
B = Analyte detected in method blank at less than 10 times the sample concentration
J = Result is an estimate
M = Matrix effect was present
U = non-detect
--- = not sampled
< = less than
µg/L = micrograms per liter
AK = Alaska Test Method
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
mg/L = milligrams per liter
NA = not applicable
PCBs = polynuclear aromatic hydrocarbons
POL = petroleum, oil, and lubricants
GRO = gasoline range organics
RRO = residual range organics

In 2010, a multiyear study commenced for MNA, during which three decision units were created and sampled along with a spring-generated stream that flows into the Suqitughneq River from the wetland where the three decision units were located. MNA surface water results from the 2010 sampling event are presented in Table 5 (Appendix G); results from the 2011 sampling event are presented in Table 6 (Appendix G).

In addition to the surface water and soil samples collected for MNA parameters, two surface water locations were sampled from within this drainage area and submitted to

TestAmerica for DRO/RRO and PAH analyses. Surface water results from these two locations are presented in Table 7 (Appendix G) and are discussed in the following section.

6.6.1 Site 8 MNA Surface Water Sampling

The three decision units created for soil and MNA sampling based on field observations and the approximate location of the pipeline break in 2010 were; 1) an upper decision unit (UDU), which is upgradient of the source area; 2) a middle decision unit (MDU) encompassing the source area; and 3) a lower decision unit (LDU) located downgradient of the source area. A sample grid was developed for each decision unit. The decision units, sampling grids, and site details are shown in Figure 7. Each grid was divided into four sections wide by ten sections long, for 40 possible sample points and grid squares measuring approximately 10 feet by 10 feet. A random number generator was used to select the eight grids from which surface water and soil samples would be collected. The MNA water samples were collected using a peristaltic pump, and water-quality parameters were simultaneously collected using a YSI 556 multi-parameter meter. Surface water samples were analyzed on site with a HACH portable spectrometer for natural attenuation parameters, including manganese, iron, sulfate, alkalinity, and nitrate (Table 6 in Appendix G). Surface water samples were shipped under chain-of-custody to TestAmerica in Tacoma, Washington, for methane analysis (Table 6 in Appendix G). The measured natural attenuation and water-quality parameters for 2010 and 2011 are presented in Tables 5 and 6, respectively (Appendix G).

The LDU was sampled August 4, 2011, followed by the MDU and UDU on August 5, 2011. A rainfall event occurred the morning of August 4, which caused a minor rise in the water levels of the Suqitughneq River. Water levels in the LDU did not appear to be significantly changed by the rain event.

Surface water samples were collected from two locations within this drainage on July 23, 2011, and analyzed for DRO/RRO and PAHs. One sample location, 11NC08WA01, was situated near the drainage's confluence with the Suqitughneq River, where a small, spring-fed stream originates. The other sample was collected approximately midway between the confluence of the Suqitughneq River and the pipeline break location. PAH analytes were not detected in the surface water samples, and DRO/RRO results were below cleanup levels. Sample results are presented in Table 7, located in Appendix G.

6.6.2 Site 8 Soil Sampling

Eight discrete soil samples were collected from the same grid locations as the MNA surface water samples for each of the three decision units. Sample results from each decision unit are presented in Table 8, located in Appendix G. Soil from each of the eight grids in each decision unit was composited into a single sample and submitted to the laboratory for analysis. Soil samples were collected using a T-handled auger with 4-inch-diameter core barrel. The upper vegetative mat was removed to expose the underlying soil, which was augured down to a depth of approximately 1 foot bgs. Soil was collected from the bottom of the auger using a gloved hand and placed into a stainless-steel bowl. The eight samples were then composited, and a sample was taken from the mixture, jarred, and labeled. A field duplicate was collected from the LDU composite after homogenization. Samples were analyzed for PAHs, TOC, and DRO/RRO (with and without silica gel cleanup). Contaminant concentrations for all analytes were either not detected or were below site-specific cleanup levels. Results are presented in Table 8 (Appendix G).

6.6.3 Site 8 MNA Conclusions and Discussion

Site 8 surface water quality and MNA parameters from the LDU were collected on August 4, 2011, and parameters for the MDU and UDU were collected on August 5, 2011. No petrogenic sheen was noted in any of the surface waters within the decision units.

The UDU is located upgradient of the source area and is intended as a background unit for MNA parameters. The average DO concentration in the UDU is historically higher than the middle or lower decision units. Average DO concentration in the UDU in 2011 was 6.46 mg/L, with a range of 3.11 to 9.16 mg/L. Methane was detected in all of the surface water samples, with concentrations ranging from 0.0011 mg/L to 0.350 mg/L. The average methane concentration for surface water samples collected within the UDU was 0.0325 mg/L.

No fuel odor was noted during soil sample collection in the UDU. All analyses for soil sample 11NC08SS001, collected in the UDU, were below cleanup levels for PAHs and below site-specific cleanup levels of 9,200 mg/kg for DRO and RRO. The DRO concentration was 58 mg/kg, and the RRO concentration was 380 mg/kg. Following silica gel cleanup (ADEC, 2006), the DRO concentration was reduced to 36 mg/kg and the RRO concentration decreased to 320 mg/kg, which implies that biogenics could be contributing to the DRO and RRO results. Five PAHs were also detected in the UDU but at concentrations up to two orders of magnitude lower than the middle and lower decision units. Total organic carbon was reported at 81,000 mg/kg, which is expected based on the high amount of vegetation and seasonal organic deposition into the wetland area. The analytical results for Site 8 soils are presented in Table 8 (Appendix G).

The MDU is situated directly below the approximate location of the pipeline break. It is believed the pipeline broke on the shoulder of the adjacent road and the contents emptied into the wetland area; however, there is little documentation regarding the release. The impacted area was confirmed in 2010 based on fuel odor being detected during soil sample collection. Surface water DO concentrations in 2011 averaged 5.56 mg/L and ranged from 3.72 mg/L to 8.03 mg/L. Methane was detected in all of the surface water samples collected in the MDU, ranging from 0.0077 mg/L to 0.170 mg/L, with an average concentration of 0.0368 mg/L.

A fuel odor was noted during soil sample collection in the MDU. Soil sample 11NC08SS002, collected in the MDU, was below cleanup levels for all analyses. The DRO concentration was 1,800 mg/kg, and the RRO concentration was 1,100 mg/kg. Following silica gel cleanup, the DRO concentration remained at 1,800 mg/kg, and the RRO concentration increased to 1,800 mg/kg, implying that biogenics are not contributing to the DRO and RRO results. Nine PAHs were also detected in the MDU and all were below cleanup levels. Total organic carbon was reported at 110,000 mg/kg, which is expected based on the high amount of vegetation and seasonal deposition into the wetland area.

The LDU is downgradient from the MDU, adjacent to the Suqitughneq River. The DO had an average concentration of 6.31 mg/L, with a range of 3.53 to 7.57 mg/L. The DO concentrations are sufficient for aerobic degradation of petroleum hydrocarbons and natural organic materials. No fuel odor was noted during soil sample collection in the LDU. Soil sample 11NC08SS003 and duplicate sample 11NC08SS004, collected in the LDU, did not contain analytes in concentrations exceeding cleanup levels. The DRO concentration was 1,500 mg/kg, and the RRO concentration was 820 mg/kg. Eleven PAHs were detected in the two samples. Methane concentrations in samples collected from the LDU ranged from 0.0069 mg/L to 0.350 mg/L, with an average of 0.0751 mg/L.

None of the natural attenuation parameters taken at Site 8 varied significantly between the three decision units. Field results for manganese, ferrous iron, sulfate, and nitrate were near or less than the manufacturer-stated method detection limits, so their results are not definitive for assessing MNA. The DO levels indicate that conditions are amenable for oxidative degradation of hydrocarbons, as well as naturally occurring materials (NOM) that are present at the site. Total organic carbon results in all decision units support the presence of NOM at concentrations far exceeding DRO concentrations. No petrogenic sheen or stressed vegetation was noted in any locations throughout Site 8. Plated biogenic sheen, which broke up when disturbed, was observed in all decision units.

The most useful evaluation of MNA as a selected remedy is the reduction of contaminants of concern. The 2010 soil sample results, presented in Table 9 (Appendix G), indicated that the site had some impacted soil slightly above cleanup levels. Sample 10NC08SB02 (MDU) contained 2-Methylnaphthalene at a concentration of 7.5 mg/kg, above the cleanup level of 6.1 mg/kg. The duplicate sample from the MDU, 10NC08SB03, contained 2-Methylnaphthalene at a concentration of 7.6 mg/kg and DRO at a concentration of 9,300 mg/kg (the site-specific cleanup level for DRO is 9,200 mg/kg). 2011 sampling using the same grid design indicated that analytes were not present at concentrations exceeding site-specific cleanup levels. The 2011 field duplicate results exceeded the 50 percent RPD limit for 1-Methylnaphthalene, 2-Methylnaphthalene, naphthalene, DRO, and RRO. The reason for the high RPDs is unclear, as the field duplicates were collected as composites, mixed, and placed in separate sample containers after mixing.

6.7 SITE 28 CONTAMINATION DELINEATION

Site 28 consists of a wetland drainage that lies immediately north of the MOC. The site has been impacted by fuel releases and various other spills and releases. Soil and sediment samples were collected in 2011 to further characterize the site and assist in determining the extent and magnitude of contamination.

Bristol completed the field sampling tasks at Site 28 and has provided the results in *Northeast Cape HTRW Remedial Actions Site 28 Technical Memorandum, Northeast Cape, Saint Lawrence Island* (Bristol, 2012), which was due to USACE 90 days following initiation of field activities. The draft technical memorandum was submitted to USACE on October 28, 2011. Comments have been received from USACE and addressed by Bristol. Bristol received ADEC approval of the response to comments on February 29, 2012 (included in Appendix A), and submitted the final tech memo on March 6, 2012. Please refer to the technical memorandum for additional information regarding Site 28.

6.8 CONTAMINATED SOIL REMOVAL PROCEDURES

The majority of the work performed during the 2011 HTRW Remedial Action involved excavating, packaging, sampling, and transporting contaminated soils. To achieve these tasks, Bristol employed the use of excavators, heavy loaders, and bulk bags.

The bulk bag loading process utilized a metal support frame that held the bags in place during loading operations. In most cases, contaminated soil was loaded directly into the bulk bags using an excavator. A mechanical rock screening plant (screen plant) was on site to sort out large-diameter rocks (rocks exceeding 2 inches) in an effort to maximize removal of DRO-contaminated soil while minimizing weight. However, due to the high moisture content of the silty clay matrix surrounding the larger rocks, the screen plant was only minimally utilized. It was not possible to effectively remove the fine material from the larger material utilizing the screen plant.

Once a bag was filled, a sub-sample was collected and composited with as many as six (for a total of seven sub-samples) other grab samples to make one composite sample. The sub-sample consisted of soil that was collected from each end of a container (two per bulk bag) and placed into a stainless-steel bowl using a clean stainless-steel trowel. The soil was homogenized in the bowl, placed in a Ziploc bag, and submitted to the field laboratory for analysis. DRO/RRO and PCB samples were submitted to the field laboratory for waste characterization analysis. Waste characterization samples collected from bags loaded with arsenic-contaminated soil and tar were submitted to TestAmerica for analysis.

A small labor crew was used to set up bags in the loading frames and prepare the bags for transport after they were filled with contaminated material. A heavy loader with a lifting frame attached to the forks was used to lift the bags from the loading frames and weigh and transport the bags to their respective staging areas. All bags were marked with a distinct ID and their corresponding weight. Upon arrival at the Cargo Beach staging area, the bags were loaded onto shipping flats. Two bulk bags were loaded onto each flat, which could be transported by a single heavy loader onto a landing craft for transport off island.

6.9 POL EXCAVATIONS

Data collected during the 2010 field season using Ultraviolet Optical Screening Tool (UVOST) technology was used to plan and guide POL excavation activities at the MOC. During the planning phases of the project, Bristol delineated ten plumes where the UVOST indicated that DRO existed at concentrations exceeding cleanup levels. During the 2011 field season, excavation was initiated on two of these plumes, J1A and A1, the perimeters of which were delineated by the on-site survey team. In addition to these two plumes, Bristol also removed soil from the vicinity of the former bulk fuel tanks where the tank footprints were clearly visible on the ground surface. Figure 4 shows the J1A and A1 plumes, as well as the location of the former aboveground storage tanks (ASTs). In total, during field operations at NE Cape in 2011, Bristol excavated 8,091 tons of POL soils loaded into 785 bulk bags.

6.9.1 Bulk Fuel Tank Footprints

Surface soil staining was clearly visible where three former ASTs were located. The staining was due to a tar like substance that was used as a corrosion control on the base of ASTs. Bristol was tasked with removing the soil in this area where staining was visible, which resulted in approximately 1.5 feet of material being excavated at each former tank location. The soil was removed using a tracked excavator, which loaded the material directly into a bulk bag. Waste characterization samples were collected from the bulk bags (1 sample per 7 bags) and field laboratory samples were collected from the excavation. None of the samples exceeded site-specific cleanup levels for DRO or RRO. Field laboratory sample results related to the excavation beneath the former ASTs are provided electronically with the Supplemental Data. Sixty-seven bulk bags weighing

638.1 tons were loaded with material from the former AST locations and disposed of at Columbia Ridge Recycling and Landfill in Arlington, Oregon. The locations of the former ASTs are noted in Figure 4.

6.9.2 MOC POL Excavation J1A

The boundary of the J1A excavation area (shown in Figures 4 and 8), as indicated by the UVOST, was delineated by ECO-Land. The northern portion of this delineated excavation boundary extended into the Site 28 wetland. The decision was made with the QAR that excavation would not extend into the wetland, thus restricting removal activities to the area on the MOC referred to as "the pad." A silt fence was erected along the northern extent of the J1A excavation to prevent the migration of sediment into the wetland during excavation activities.

The first step in the excavation process involved the removal of overburden (soil containing DRO/RRO concentrations below cleanup levels). Two feet of overburden, consisting of peaty gravel with organic silt, was removed from the J1A area and stockpiled on a liner that was placed in the northwestern section of the MOC (shown in Figure 4). The stockpiles from this overburden were sampled according to ADEC draft Field Sampling Guidance (ADEC, 2010) and analyzed in the field laboratory to determine DRO/RRO concentrations in the soil. All samples indicated DRO/RRO concentrations below site-specific cleanup levels of 9,200 mg/kg. Soil containing DRO in concentrations above 9,200 mg/kg (as indicated by 2010 UVOST data) was placed directly into bulk bags and analyzed in the field laboratory for waste characterization purposes.

Bristol was scoped to excavate to a depth of 15 feet, or 2 feet below groundwater (encountered at 8 feet bgs), whichever occurred first, so a system was developed for dewatering saturated soils. Soils removed from below groundwater were first drained in the excavator bucket, followed by placement into a lined impoundment area. Soils were allowed to drain on the liner surrounded by a berm in the area of the former bulk fuel tanks. Finally, these wet soils were mixed with drier POL-impacted soils from the A1 excavation on the concrete foundation for former Building 98. Loading frames were set up adjacent to the foundation to allow the mixed soils to be loaded directly from the concrete pad into bulk bags.

The remainder of the J1A area was excavated to a depth of 2 feet below groundwater. In order to gauge the depth of the excavation below groundwater, the excavator bucket was used as a guide. A mark was made on the side of the bucket at a point 2 feet from the tips of the teeth. When this mark was even with the surface of the groundwater, it indicated that the active bottom of the excavation was located 2 feet below the groundwater surface. The excavator operator systematically removed all soils below groundwater to this level.

Field laboratory screening samples were collected immediately above groundwater at 10-foot intervals along the excavation sidewalls to define the lateral extent of DRO/RRO contamination. Where the excavation floor was exposed, field-screening samples were also collected at 10-foot intervals. Field laboratory sample locations with DRO results exceeding 7,360 mg/kg (80 percent of the site-specific DRO/RRO cleanup level of 9,200 mg/kg) were further excavated and resampled. When field-screening values indicated concentrations below 7,360 mg/kg, confirmation sampling commenced (locations are shown in Figure 8, and results are presented in Table 10 [Appendix G]). Confirmation sampling took place at 20-foot linear intervals along the excavation sidewalls. Field-screening locations, confirmation sample locations, and the excavation limits were surveyed by ECO-Land. A total of 93 field-screening samples and 27 primary confirmation samples were collected. Samples 11NCMOCSS012 through 017, which were collected along the northern extent of the excavation near the silt fence, contained DRO in concentrations exceeding cleanup levels. Sample 11NCMOCSS017, the northernmost sample location, contained a DRO concentration of 29,000 mg/kg. Sample locations and results are shown in Figure 8 and in Table 10 of Appendix G.

Due to the impending winter weather, backfill of the excavation was initiated before confirmation sample results could be received from some locations. In these areas, a liner was placed along the excavation sidewall to denote the backfill boundary, had additional excavation been required. Following receipt of sample results, it is only the northern edge of the excavation, where the boundary between the pad and the wetland lies, that currently contains locations above cleanup levels. The areas where liner was placed are shown in green in Figure 8.

6.9.3 MOC POL Excavation A1

At excavation unit A1, shown in Figures 4 and 9, 8 feet of overburden was removed and stockpiled on liner (same location as J1A overburden). The A1 area was excavated to a depth of 15 feet, the approximate depth to groundwater. Two floor samples were taken on the area of the excavation floor that was above groundwater. Field laboratory screening samples were taken at 10-foot intervals along the excavation perimeter to define the lateral extent of DRO contamination. The 2010 UVOST data indicate that the highest contaminant concentrations lie below the groundwater level of 15 feet. Field-screening and confirmation samples were taken at a depth of approximately 13 feet bgs to avoid collecting wet samples, which may have been impacted by groundwater in the excavation where sheen was present. Field-screening sample locations exceeding 7,360 mg/kg DRO were further excavated and resampled. Confirmation sampling took place at 20-foot linear intervals along the perimeter of the excavation where field-screening results indicated contaminant concentrations in soil were below cleanup levels. Field-screening and confirmation sample locations were surveyed by ECO-Land. A total of 83 field-screening samples and 32 confirmation samples were collected.

Table 11, located in Appendix G, presents DRO data for the MOC POL Excavation A1. Figure 9 shows that one confirmation sample remains with a DRO concentration exceeding the site-specific cleanup level. Samples 11NCMOCSS029, 11NCMOCSS031, and 11NCMOC045 contained DRO concentrations greater than the cleanup level of 9,200 mg/kg and were over-excavated and subsequently resampled following the receipt of the sample results. As the field season was winding down, Bristol was still attempting to locate DRO contamination in the A1 excavation, but time constraints forced the collection of confirmation samples so that backfill operations could begin. Confirmation samples were collected, and the sidewalls of the excavation were lined in all areas where sample results were still pending. Only one sidewall sample location, 11NCMOCSS068, which contained a DRO concentration of 12,000 mg/kg, remains in the northwest portion of the excavation. Further excavation will be required to remove the DRO contamination from this site. Figure 9 shows the extents of the A1 excavation and all sample locations.

The A1 excavation was backfilled with clean borrow material. The sidewall where sample 11NCMOCSS068 is located was draped with a liner to distinguish the boundary between clean fill and DRO-contaminated soil. Figure 9 shows the location of the liner. Future identification of this sample location will be facilitated by the installation of this demarcation liner. Sample results are presented in Table 11 (Appendix G).

6.9.4 G and H Excavations

In the deepest parts of excavations A1 and J1A, Bristol encountered groundwater, which was producing saturated soil. Part of the dewatering strategy involved placing these soils on a liner for a period of time and then mixing them with dry POL-contaminated soils. There came a point in the process where all of the soil being removed from J1A and A1 was saturated, so the decision was made to initiate excavation on plumes G and H in hopes that the contaminated soil removed from the G and H areas would be dry enough to mix with the saturated soils from J1A and A1. Figure 10 shows the excavation extents and notes the depth to groundwater in the G and H plumes. Excavation began on the G and H plumes, and relatively shallow groundwater infiltrated the excavations. The excavation at the H plume showed groundwater at approximately 5.2 feet bgs. Two UVOST points were installed within the H plume area in 2010, 10NC27 UV-110 and 10NC27 UV-111. UV-110 indicated that DRO contamination exceeding cleanup levels begins at 7.5 feet bgs (based on a 9.2 percent Laser-Induced Fluorescence [LIF] response), and UV-111 did not show indications of contaminants that exceeded cleanup levels until a depth of approximately 10.5 feet was reached. Groundwater infiltrated the excavation at approximately 5 feet bgs in the H plume near UVOST location 10NC27 UV-110. Since the top of the contaminated zone of soil is located approximately 2.5 feet below groundwater in this area, no soil was removed. Likewise at 10NC27 UV-111 (also located within the H plume), the contaminated zone of soil was in excess of 2 feet below groundwater. One UVOST point was installed within the G1 plume (10NC27 UV-108) and indicated a contaminated zone located approximately 11 feet bgs. Excavations in and near plume G1 were infiltrated with groundwater at approximately 7 feet bgs. Since the contaminated zone of soil is in excess of 2 feet below groundwater in plume G1, no soil was removed from this location. The depth to contamination in the G2 plume is 8 feet bgs, and excavations encountered groundwater at approximately 7 feet bgs. UVOST locations 10NC27 UV-93 and UV-94 are located within the G2 plume and show a depth to contamination of 8 feet and 9 feet bgs, respectively. No soil was excavated from this area in 2011, but excavation may be possible in 2012 if groundwater conditions are similar or if the groundwater table is lower. Plumes G and H should be reevaluated in the future to determine whether excavation is necessary or feasible.

6.9.5 Soil Dewatering Procedures

Saturated soils removed from below groundwater were dewatered by allowing the soils to drain on a liner, which was surrounded by a berm, in the area of the former bulk fuel tanks. Saturated soils from the J1A excavation were placed on this liner in an attempt to dewater them, but very little water drained from the saturated stockpile (less than 100 gallons). After a few days on the liner, the soils were loaded into a rock truck via excavator arm, moved to the concrete foundation at former Building 98, and mixed with dry soils. This mixture was then loaded into bulk bags.

The dewatering area was sloped such that water collected in a corner. This water was then treated by being pumped through a water-scrubber into a water impoundment area. The water-scrubbing material is made from a natural fiber, cellulose material that selectively absorbs hydrocarbons while repelling water. Two impoundment areas were constructed: one close to the J1A excavation and another directly south of the concrete foundation of former Building 98 (shown in Figure 4). Sample results are presented in Table 12 (Appendix G). Water remained in the impoundment area until samples were collected and shipped to TestAmerica. Upon receipt, the analytical results were compared to limitations set forth in the State of Alaska Wastewater General Permit 2009DB0004. Since the treated water was below criteria, it was discharged to the ground surface. Soils did not drain well on the liner, and most of the water that collected in the impoundment area was rainwater. On August 29, 2011, the wastewater impoundment adjacent to the former AST footprints (near the J1A excavation) was punctured by underlying pieces of metal. An estimated 1,000 gallons of water leaked onto the ground surface before the leak was detected. The water that leaked from the impoundment had been treated through the water-scrubber, but it had not yet been sampled. Subsequent wastewater samples treated through the water-scrubber in a similar manner did not exceed the wastewater discharge criteria set forth in the Wastewater General Permit.

All impounded water was treated and discharged prior to Bristol's demobilization from the work site. Impoundment berms were cut down prior to demobilization, and liners were left in place so that the impoundment area could drain over winter and be rebuilt in

2012. Confirmation sampling of the area underneath the impoundment liners will be conducted when the liners are removed.

6.10 PCB EXCAVATIONS

Bristol was originally scoped to remove 1,100 tons of PCB-contaminated soil from Sites 13 and 31. As field work progressed, it became apparent that PCB-contaminated soil remained beyond those contracted limits. Modifications were made to the contract to allow for the removal of additional soil from these two sites. Upon completion of the field season, Bristol had excavated 3,838.3 tons of PCB-contaminated soil from Sites 13 and 31 and loaded it into 371 bulk bags; 1,679.2 tons of PCB-contaminated soil was shipped to Columbia Ridge Recycling and Landfill and disposed of in a Subtitle D landfill; 145.6 tons of PCB-contaminated soils with concentrations exceeding 50 mg/kg were transported to Chemical Waste Management of the Northwest, in Arlington, Oregon, for disposal. It was not possible to remove all PCB contamination during Bristol's time at NE Cape this season. Results from confirmation soil samples collected in 2011 will serve to guide soil removal activities in 2012. Confirmation soil sample locations containing PCB concentrations in excess of cleanup levels will be excavated in 2012.

6.10.1 Site 13 Heat and Power Plant

The 2010 NE Cape field season ended with three excavations at Site 13 being lined and backfilled with clean fill from the on-site borrow area. Removal of the clean overburden was the first task to be performed prior to sampling and additional excavation in 2011. The second task for the Site 13 area consisted of collecting concrete PCB wipe samples to determine whether unearthed concrete was contaminated with PCBs.

Operations at Site 13 began with removal of the clean overburden/backfill to a lined area southwest of the existing excavations. Prior to stockpiling material, the area, approximately 5,000 ft^2, was sampled in 5-foot grids following TSCA sample requirements.

Two hundred discrete samples collected from this area were composited into 48 samples and submitted to the field laboratory for PCB analysis. Results will be discussed later in this section.

Removal of the clean overburden was performed using a tracked excavator equipped with a flat-edged cleanout bucket. The overburden was placed into a rock truck, moved to the stockpile area, and placed on the liner. The removal was directed so as much overburden was removed above the liner as was practicable without destroying the liner and comingling the overburden with contaminated soils underneath. Overburden directly atop the liner, which could not be removed without cross-contamination from the soils beneath, was loaded into a bulk bag along with the liner, thus exposing the approximate final extents of the 2010 excavation.

Analytical sample results and field laboratory results received at the end of the 2010 NE Cape project from the Site 13 excavation were used as guides to begin soil removal activities in 2011. The two southernmost excavations and many locations in the northern excavation were slated for immediate removal. Sample results from two composite groups (16 locations) in the northern excavation had relatively low concentrations of PCBs, but the possibility existed for at least one of the discrete samples composing each composite to contain PCB concentrations above cleanup levels. The first field-sampling activity consisted of sampling these sites to define the discrete locations of PCB contamination, thus eliminating the removal of uncontaminated material. A 5-foot sample grid was established in these areas, and discrete samples were collected and submitted to the field laboratory. Of the 16 possibilities, three discrete locations had PCB concentrations that warranted additional excavation because field laboratory results were above 0.8 mg/kg (80 percent of the ADEC 1 mg/kg cleanup criteria), with PCB concentrations of 0.83 mg/kg, 0.89 mg/kg, and 7.39 mg/kg.

The three initial field-screening locations and all other areas slated for removal were excavated 1.5 to 2.0 feet, and discrete field-screening samples were collected and submitted to the field laboratory. The results from the field laboratory required additional excavation of locations that had results above the onsite laboratory action level of 0.8 mg/kg. This process of alternately excavating and sampling continued until either the area was deemed below contamination levels, followed by the collection of confirmation samples, or until time constraints forced an end to field-screening and bulk-bagging operations. By the end of the 2011 field season, Bristol was working in four distinct excavation areas, two of which were fresh excavations opened due to PCB concentrations from soils sampled underneath the lined overburden stockpile area southwest of the concrete pad for the former Heat and Power Plant (see Figure 11). Eleven of the samples collected from the stockpile area contained PCB concentrations exceeding field laboratory action levels; 1.5 feet of material was removed from these locations and samples were collected from the freshly exposed area.

There came a point near the end of the field season when confirmation samples were collected regardless of field-screening results. The field-screening process resulted in the collection and subsequent field laboratory analysis of 784 PCB samples from Site 13. A total of 363 confirmation samples (comprising discrete samples and composite samples), including field duplicates, were collected and submitted to TestAmerica. Confirmation sample results are presented in Table 13 (Appendix G), and sample locations are shown in Figure 11. Confirmation samples at Site 13 were collected on September 3, 4, 13, 21, and 22, 2011. The sample locations and results depicted in Figure 11 represent the state of the remaining in-situ soils at Site 13. Confirmation samples were analyzed both discretely and as part of composite groups. Composite groups comprised samples from adjoining locations where field laboratory results had not detected PCB concentrations or had detected them at levels well below the cleanup level. In 39 composite samples, the discrete samples within the composite were subsequently analyzed discretely following receipt of the composite sample's result. These discrete samples were made possible because the lab retained sample material from each discrete location. In the field, a discrete sample was collected at 5-foot intervals and sent to TestAmerica. If a sample was intended to be part of a composite group, then it was noted on the chain-of-custody form, and the compositing was performed at the lab. The sample jars composing the composite groups (each corresponding to a discrete location) were retained by the laboratory in case additional material was needed for further analyses. Individual samples composing a composite were reanalyzed discretely if, given the PCB concentration of the composite sample, the statistical possibility existed for one or more of the individual samples to contain a PCB concentration exceeding the cleanup level. The threshold value for reanalysis was equal to the cleanup level (1 mg/kg) divided by the number of samples making up the composite sample (n). For example, if five samples made up one composite, then the value at or above which discrete analysis of each sample becomes necessary is 1 mg/kg divided by 5 (which equals 0.2 mg/kg). The number varies depending on the number of samples forming the composite; the lower the number of samples in a composite, the higher the value; the higher the number of samples in a composite, the lower the value.

Twenty-four field duplicates were collected and submitted for analyses as both discrete and composite samples. Due to the number of composite samples requiring reanalysis when the threshold concentrations were exceeded, the 10 percent duplicate frequency was not met. In addition, the number of samples exceeding the less than 50 percent RPD threshold was greater than 40 percent of the total field duplicates collected for Site 13. The field duplicate RPD exceedances are believed to be due to site heterogeneity.

Analysis results noted that 68 of the samples analyzed at Site 13 contained soil PCB concentrations that exceeded ADEC cleanup levels. PCB concentrations in samples exceeding cleanup levels ranged from 1 mg/kg to 270 mg/kg. Three samples, 11NC13SS287, 11NC13SS326, and 11NC13SS388, contained PCB concentrations in excess of 50 mg/kg, with concentrations of 230 mg/kg, 81 mg/kg, and 270 mg/kg, respectively. Confirmation sample locations with PCB concentrations that exceed cleanup levels will continue to be excavated in 2012.

The northwest corner of the northernmost excavation at Site 13 is encroaching into a fuel-impacted area referred to as plume A2, as shown in Figure 9 of the NE Cape Remedial Actions Work Plan (Bristol, 2011) (outlined here in Figure 11). Samples collected from locations within this area contain PCB concentrations that exceed cleanup levels. Bristol did not attempt to remove POL-contaminated soils in plume A2 during 2011 excavation activities, as this area was exclusively excavated for PCB removal. PCBs remain the primary contaminant of concern in this location and should be excavated preferentially to the POL-contaminated soil. After analytical samples confirm PCB concentrations below cleanup levels, then the POL contaminated soils can be excavated. Generally, PCBs are relatively immobile and hydrophobic, preferentially binding with soil particles over groundwater; but fuels may act as a solvent and facilitate mobilization of PCBs in soil (Bench, 2003). This provides a preferential pathway and increases the likelihood that the excavation will be expanded even further in the direction of the fuel contamination.

Time constraints and the unexpected high volume and magnitude of PCB-contaminated soil were factors that contributed to the inability to remove all contamination in 2011. Additional remedial actions will be required at Site 13 in order to remove the remaining PCB-contaminated soils. Before leaving the site, all excavations were lined with a Typar liner and loaded with just enough fill material to hold down the liner. Reduction in fill material over the liner will reduce the potential for cross-contamination when the excavations are reopened in 2012. Finally, prior to Bristol's demobilization from the site, the excavations were surrounded by bulk bags, creating a barrier to both people and animals.

6.10.1.1 Site 13 Overburden Stockpile

The lined stockpile area (Figure 11, dashed line box) that was sampled prior to placement of overburden material from Site 13 was eventually excavated due to PCB concentrations in excess of cleanup levels. This area was not believed to contain PCB-contaminated soils, but had not been sampled in previous investigations. In keeping with the WP, Bristol collected “pre-stockpile” samples on July 19, 2011, and proceeded with lining the area and stockpiling soil. Results from the field laboratory were received after the stockpile had been placed atop the liner; those results indicated PCB-contaminated soils beneath the liner. As a result, the stockpile had to be moved to allow access to the area for excavation. However, before the 235 cubic yards of stockpiled soil that was overlying this area could be moved and used as backfill, samples were collected according to Table 2A in the ADEC Draft Field Sampling Guidance (ADEC, 2010) and submitted to the field laboratory. This amount of stockpiled soil, according to the ADEC guidance document, required four laboratory samples, none of which exceeded cleanup levels. The Site 13 stockpile was moved on August 31, 2011, via rock truck and subsequently used as backfill.

6.10.1.2 Site 13 Concrete Wipe Samples

Through the course of operations in 2010 and 2011, small chunks of concrete and large portions of what appeared to be concrete headers, footers, and foundation pieces were unearthed and removed from the Site 13 excavations. In order for these concrete pieces to be used as backfill, they had to be sampled for PCBs to confirm they did not contain PCB concentrations in excess of cleanup levels. To accomplish this task, loose pieces of concrete and segments of wall that remained in the ground were wipe-sampled and submitted to the field laboratory.

The PCB wipe-sampling followed EPA-recommended methods for determining the presence of PCBs on smooth surfaces. The procedures for concrete wipe-samples were described in a Work Plan Addendum to the 2011 NE Cape Remedial Actions Work Plan. Thirty-five samples were collected from exposed concrete that had contacted PCB-contaminated soil with PCB concentrations exceeding cleanup levels. All of the concrete wipe-samples yielded results less than the cleanup level of 10 μg/100 square centimeters (cm^2). The loose pieces of concrete were utilized as backfill, soil confirmation samples were collected beneath any concrete that was removed, and portions of vertical concrete and foundation remained in the ground. Results from the Site 13 concrete wipe-samples are presented in Table 14 of Appendix G.

6.10.2 Site 31 White Alice Communications Station

The 2010 season ended with the excavation at Site 31 being lined and backfilled with clean fill from the on-site borrow area. Removal of the clean overburden was the first major task to be performed prior to sampling and additional excavation in 2011.

Operations at Site 31 began with removal of the clean overburden to a lined stockpile area that was created near the existing excavations on the southwest side of a former concrete footing for a White Alice antenna. Figure 12 displays a map of Site 31 showing the excavation boundary and confirmation sample locations. Before the overburden was moved, an area of approximately 1,500 ft^2 was sampled in a five-foot by five-foot grid following TSCA sample requirements. The area was then covered with a 10-mil liner, and removal of the clean overburden began.

Removal of the clean overburden was performed using an excavator equipped with a flat-edged cleanout bucket. The borrow material was moved via rock truck to the stockpile area and placed on the liner. The removal was directed such that as much overburden was removed above the liner as was practical without destroying the liner and comingling the overburden with contaminated soils underneath. As with Site 13, overburden directly atop the liner, which could not be removed without cross-contamination from the soils beneath, was loaded, along with the liner, into 16 bulk bags, thus exposing the approximate final extents of the 2010 excavation.

Once the liner and clean overburden were removed, field-screening samples were collected from the excavation and submitted to the field laboratory. The northeast portion of the excavation was slated for removal based on sample results from 2010. The process of alternately excavating and sampling continued until PCB concentrations in an area were below cleanup levels or until field time was no longer sufficient enough to continue operations. Several iterations of field-screening sampling, followed by additional excavating, were conducted before season's end, and the Site 31 excavation expanded in all directions. In total, 541 field-screening samples were collected and submitted to the field laboratory. Sixty of these 541 samples were "pre-stockpile" samples collected from the area where the lined containment was set up and the excavation overburden was stockpiled.

Field-screening results indicated that PCB concentrations remained above 1 mg/kg at various locations within the excavation, but time constraints forced confirmation sample-collection efforts so that the site could be readied for demobilization and overwintering. Confirmation sample results are presented in Table 15 (Appendix G). Confirmation samples were collected from September 16 to September 20, 2011. A total of 178 discrete samples were analyzed for PCBs by TestAmerica, in addition to 70 composite samples. Fourteen of the composite samples were above the 1/n threshold and were reanalyzed discretely by TestAmerica. PCB contamination remains throughout the Site 31 excavation in concentrations ranging from 1 mg/kg to 250 mg/kg. Sample 11NC31SS109 contained the highest PCB concentrations at 250 mg/kg. Confirmation sample locations with PCB concentrations in excess of cleanup levels will be excavated in 2012; thus, the existing excavation limits will be expanded.

Field duplicates were collected as part of the sampling and analysis quality control. Seventeen field duplicates were collected at a frequency of 7 percent. The low duplicate frequency was due to the number of composite samples failing the 1/n threshold. Eleven of the seventeen duplicate pairs also failed to meet 50 percent RPD limits, which is likely due to site heterogeneity at both PCB excavation sites.

Before Bristol personnel left the site, the excavation was lined with a Typar liner that was covered with the minimum amount of backfill necessary to hold the liner in place. Reduction in fill material over the liner will minimize overburden removal and reduce the potential for cross-contamination when the excavations are reopened in 2012. Finally, the excavation was surrounded by bulk bags to prevent entry into the excavation by people or animals.

6.10.2.1 Site 31 Overburden Stockpile

Soils beneath a lined area at Site 31 where the overburden was stockpiled contained PCB concentrations exceeding cleanup levels. Field laboratory results received on July 31, 2011, from the area designated for stockpiling overburden at Site 31, indicated PCB concentrations in excess of the cleanup level of 1 mg/kg. Fifteen composite samples were collected on July 20, 2011, at 60 sample locations from this area and were submitted to the field laboratory. The area required excavation, but since results were received after the stockpile had been placed atop the liner, the stockpile had to be relocated to allow access to the ground surface beneath the stockpile.

Before the stockpile could be relocated, the 235-cubic-yard stockpile of overburden was sampled as was done at Site 13. Four samples were collected and submitted to the field laboratory. One of these samples contained PCB concentrations in excess of 1 mg/kg. The samples were collected utilizing an excavator bucket to expose soil located approximately 1.5 feet below the stockpile surface. Soil from the vicinity of the PCB-contaminated area was loaded into a bulk bag, and the stockpile was resampled. Three iterations of removal and sampling occurred until the field laboratory results indicated PCB concentrations below cleanup levels. The stockpile was then moved on August 31, 2011, via rock truck and ultimately used as backfill in a POL excavation. Excavation of the underlying area commenced following the removal of the stockpile.

Soils underlying the lined stockpile area were initially excavated to approximately 1.5 feet, and additional excavations were necessary based on field laboratory screening results. The two excavations at Site 31 ultimately expanded to become one excavation.

6.10.2.2 Site 31 Concrete Wipe-Samples

During excavation activities at Site 31, PCB-contaminated soil was excavated that was directly adjacent to the concrete foundation. To ensure that the concrete was not also contaminated with PCBs, concrete wipe-samples were collected using the procedures described in Section 6.10.1.2 and submitted to the field laboratory. Seventeen wipe-samples were collected from concrete at Site 31, none of which contained PCB concentrations in excess of cleanup levels. Results from the Site 31 concrete wipe-samples are presented in Table 16 of Appendix G.

6.11 SITE 21 ARSENIC EXCAVATIONS

In 2010, Bristol centered its excavation on historical sample location 94NE21167SS and excavated an area roughly 17 feet wide, 17 feet long, and 2 feet deep. After excavating 16.7 tons in 2010, soil samples were taken that demonstrated that arsenic-contaminated soil still remained above the cleanup level of 11 mg/kg.

On July 22, 2011, Bristol collected nine primary soil samples as described in the August 8, 2011, *Background Arsenic Sampling for Site 21 Technical Memorandum* (provided electronically in Supplemental Data) in order to determine the arsenic background concentrations prior to continuing to excavate the Site 21 area. The nine samples were collected upgradient from the 2010 Site 21 soil excavation, in a drainage south of the site (shown in Figure 2, provided with the Site 21 Background Tech Memo), and the results are presented in Table 17 in Appendix G. The background locations were outside of known or suspected anthropogenic sources. Analytical results and data evaluation determined a mean background concentration of 11.49 mg/kg using a 95 percent upper confidence limit. This value is consistent with the current cleanup level of 11 mg/kg, and as a result, Bristol recommended that soil in locations containing arsenic concentrations in excess of this value be excavated and removed.

On August 21, 2011, the 2010 sample locations were located, and an excavator was used to remove soil and woody debris from sample locations 10NC21SB01, 02, 05, 06, 07, and 42. Surface water was present at Site 21 in the footprint of the areas that were excavated in 2010. Excavated material was loaded into two bulk bags and removed, for a total weight of 14.8 tons. Some of the excavated soil was wet, having been excavated from beneath the surface water, and was allowed to drain in the excavator bucket prior to being loaded into a bulk bag. Following soil removal, eight discrete confirmation soil samples were collected from the excavation, the locations of which are shown in Figure 13. Confirmation samples were collected from the sidewalls and the excavation floor utilizing an excavator bucket (due to the excavation being flooded with surface water). Samples collected from the floor of the excavation were collected from below the surface water. All eight samples exceeded the 11 mg/kg cleanup level, having arsenic concentrations ranging from 22 mg/kg to 180 mg/kg (Table 18 in Appendix G). The site was not backfilled due to the fact that the excavation lies in a wetland that was inundated with water.

6.12 SPILLED ROOFING TAR EXCAVATION

At an area south of the MOC, there was an area of approximately 5,000 ft^2 with partial cover of varying thicknesses of spilled roofing tar. The tar was discovered during remedial actions in 2010. Part of Bristol's SOW for 2011 included the removal of this tar, expected to be approximately 40 tons.

Cleanup of the area began by gathering all of the visible tar into one area using an excavator. The tar was then double-bagged. The double bagging was performed in an attempt to ensure containment of the tar in the event that the bags encountered high enough temperatures in transit to make the tar partially fluid.

After the tar was cleaned from the area, one bulk tar sample and 22 confirmation soil samples from the removal area were collected and sent to TestAmerica, Tacoma, for analysis. The bulk tar sample collected for waste characterization purposes was submitted for Toxicity Characteristic Leaching Potential (TCLP) SVOCs. Due to matrix effects, the sample was not able to be filtered as part of the TCLP extraction, and the waste samples were re-extracted by EPA preparation method 3550B. The tar waste results were non-detect for SVOCs. Confirmation soil samples were also analyzed for PAHs. None of the confirmation soil sample results exceeded cleanup levels. Waste characterization results are presented in Table 19, and the confirmation soil sample results can be found in Table 20, located in Appendix G.

The soil sample results were all below state and/or site-specific cleanup levels. The area of excavation and the confirmation soil sample locations are shown in Figure 14.

6.13 CONCRETE REMOVAL

The concrete foundations for former buildings 108 (Auto Storage) and 110 (Power Plant) were in the vicinity of excavation sites. The foundation for Building 110 was overlying POL plumes B and E, as well as being directly situated adjacent to the Site 13 PCB excavation. The foundation for former Building 108 was located on the eastern sides of the G and H plumes. These two foundations were removed utilizing a hydraulic concrete hammer and then used as backfill for POL excavations J1A and A1. The concrete from the former Building 110 foundation (adjacent to Site 13) was sampled for PCBs as described in Section 6.10.1.2 prior to being used as backfill. In addition to the two building foundations from former buildings 108 and 110, concrete from a utilidor that extended south from former Building 110 was sampled for PCBs, removed, and utilized as backfill in POL excavations.

6.14 DEBRIS REMOVAL

Bristol was scoped to remove miscellaneous debris scattered throughout the NE Cape site. Debris was gathered concurrently with all other field operations and loaded into Conex containers. Much of the debris was encountered during concrete removal activities in the MOC. Intermingled in the concrete foundations were sections of pipe and rebar that had to be separated from the concrete before the concrete was utilized as backfill. The metal pieces were cut away from the concrete using a gas-powered chop saw and transferred to a debris staging area prior to being placed into a container. Approximately 33 tons of debris were loaded into three containers and shipped to Columbia Ridge Landfill for disposal.

6.15 SITE 9 SURFACE WATER SAMPLING

In 2010, surface water samples were collected from the drainage that flowed through the Site 9 Housing and Operations Landfill. Three surface water sampling events occurred during 2010 field operations, and the samples were analyzed for GRO, DRO/RRO, volatile organic compounds (VOCs), PAHs, PCBs, and metals. During the final sampling event conducted following completion of the landfill cap, samples were submitted to the laboratory for full VOC analyses, but due to laboratory error, the samples were only analyzed for BTEX within holding times (the remaining VOC analyses were analyzed outside of holding times). To fill the data gaps, Bristol collected surface water samples in 2011 from the same locations as those collected in 2010.

The 2010 sample locations were easily found due to the fact that the survey laths were still standing in the four sample locations. Samples were collected from three locations along the stream and one location in the Suqitughneq River. Bristol packaged the samples and transported them under chain-of-custody to TestAmerica for VOCs analysis. None of the analytes were detected. Results are presented in Table 21, located in Appendix G, and sample locations are shown in Figure 15.

6.16 SITES 7 AND 9 STABILIZATION AND REVEGETATION

Sites 7 and 9 (shown in Figure 3) were reseeded and fertilized to assist the vegetation that is currently growing on the surface to take root and facilitate site stabilization. A seed mixture was utilized consisting of 70 percent Tufted Hairgrass and 30 percent Red Fescue and planted at a rate of 1 pound per 1,000 ft^2. Fertilizer was applied at a rate of 500 pounds per acre.

A stabilization analysis was conducted by Bristol Engineering Services Corporation and is detailed in the monthly status report dated September 13, 2011 (Appendix D). The stabilization analysis concluded that the borrow material used to cap the landfills at Sites 7 and 9 meets non-vegetative permanent stabilization requirements set forth in the 2011 Alaska Construction General Permit. Permanent stabilization at Sites 7 and 9 has been achieved.

6.17 COMMUNITY SUPPORT

There were many positive side effects associated with the field work for NE Cape that directly aided the local community's financial and public health. Members of the Savoonga and Gambell communities would frequent the camp offering hand-made crafts or artifacts for sale, which many of the field crew were eager to buy. A local artist was regularly fielding requests for ivory carvings from the on-site work crew. Additionally, Bristol employed four members of the Savoonga community throughout the majority of the field efforts.

The presence of the NE Cape camp facilitated logistical support for a Native American Lands Environmental Mitigation Program (NALEMP) project at the Native Village of Northeast Cape. The crew working on this NALEMP project was able to receive support from the Bristol NE Cape field team, especially regarding mobilization, demobilization, food, and lodging. The presence of the Bristol crew helped to ensure the success of the NALEMP project's field efforts.

The construction camp contained a banquet hall and a medic facility that were often visited by the local community. Visitors could take advantage of the medical personnel and medications that were maintained on site. In years past, the NE Cape construction camp played an integral role in the emergency care of a sick individual, providing shelter and communications with Nome for a speedy evacuation. The satellite communication system enabled visitors, including those hunting or fishing for subsistence, to contact family members and friends back home to provide updates on their status. Finally, the NE Cape camp facilities provide one additional safe haven for anyone who might get caught in poor conditions while away from home.

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FIGURES

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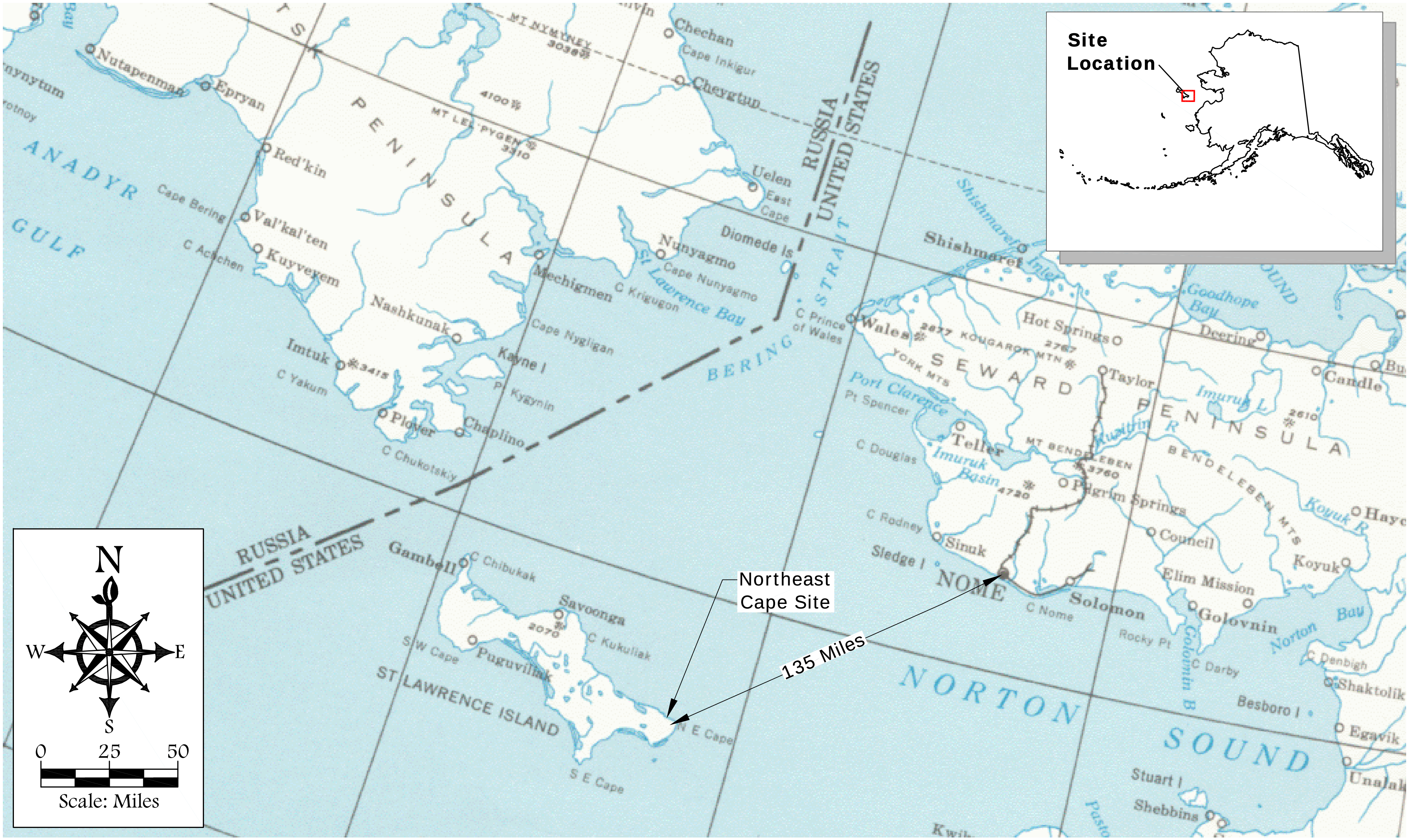

Source: USGS National Atlas Sheet Number 42-43

Legend:

HTRW	Hazardous, Toxic, and Radioactive Waste

FIGURE 1
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NORTHEAST CAPE HTRW REMEDIAL ACTIONS
VICINITY MAP

Bristol
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DATUM: NAD 83	DATE	12/30/11
PROJECTION: STATE PLANE AK 9	DWN.	NAP
Project No. 34110008	SCALE	SHOWN
	APPRVD.	MW

Legend:

HTRW Hazardous, Toxic, and Radioactive Waste

FIGURE 2
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NORTHEAST CAPE HTRW REMEDIAL ACTIONS
LOCATION MAP

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DATUM: NAD 83		DATE	12/30/11
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Project No. 34110008		SCALE	SHOWN
		APPRVD.	MW

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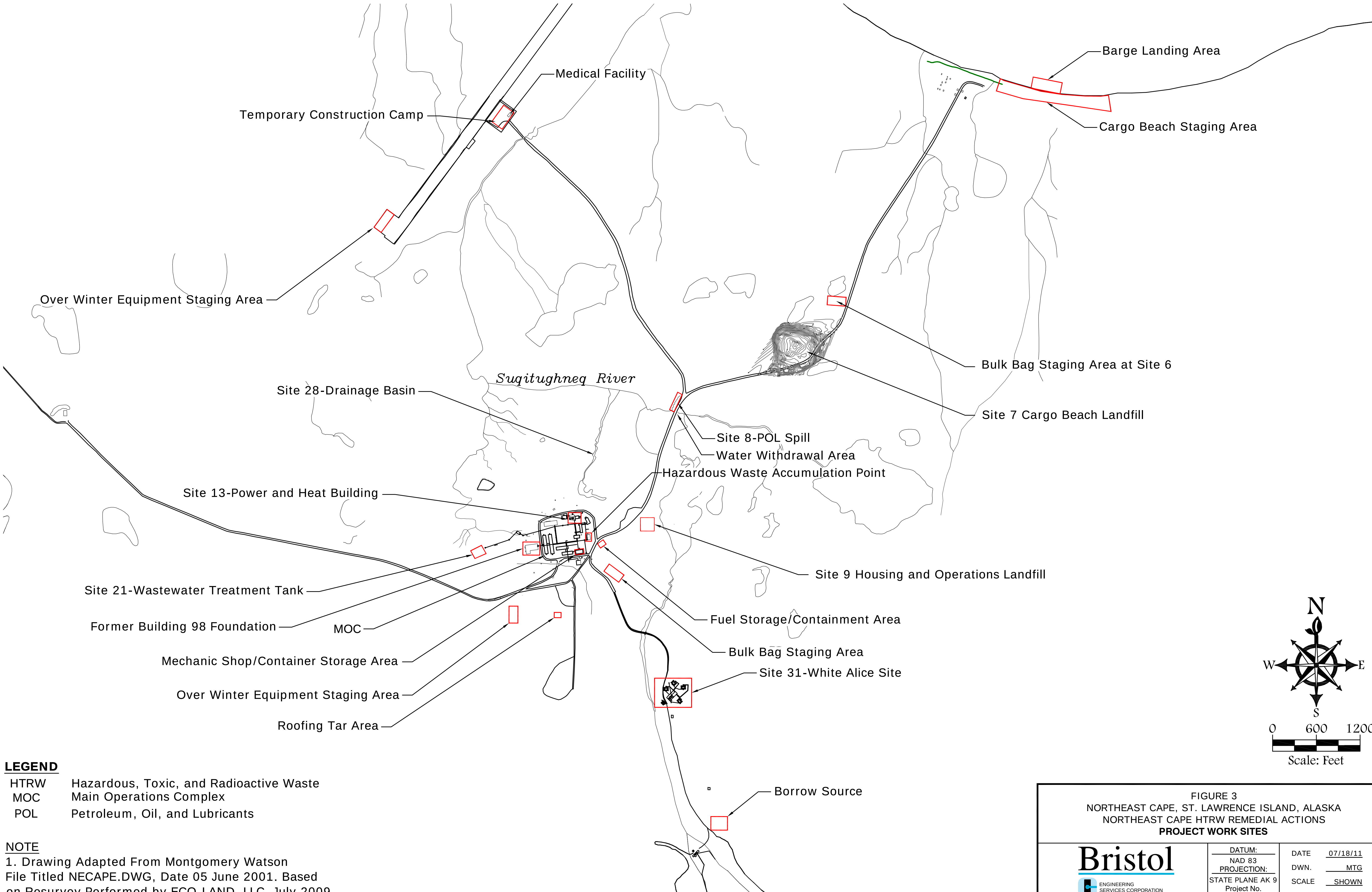

LEGEND

HTRW	Hazardous, Toxic, and Radioactive Waste
MOC	Main Operations Complex
POL	Petroleum, Oil, and Lubricants

NOTE

1. Drawing Adapted From Montgomery Watson File Titled NECAPE.DWG, Date 05 June 2001. Based on Resurvey Performed by ECO-LAND, LLC, July 2009

FIGURE 3
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NORTHEAST CAPE HTRW REMEDIAL ACTIONS
PROJECT WORK SITES

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DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 07/18/11
DWN. MTG
SCALE SHOWN
APPRVD. MW

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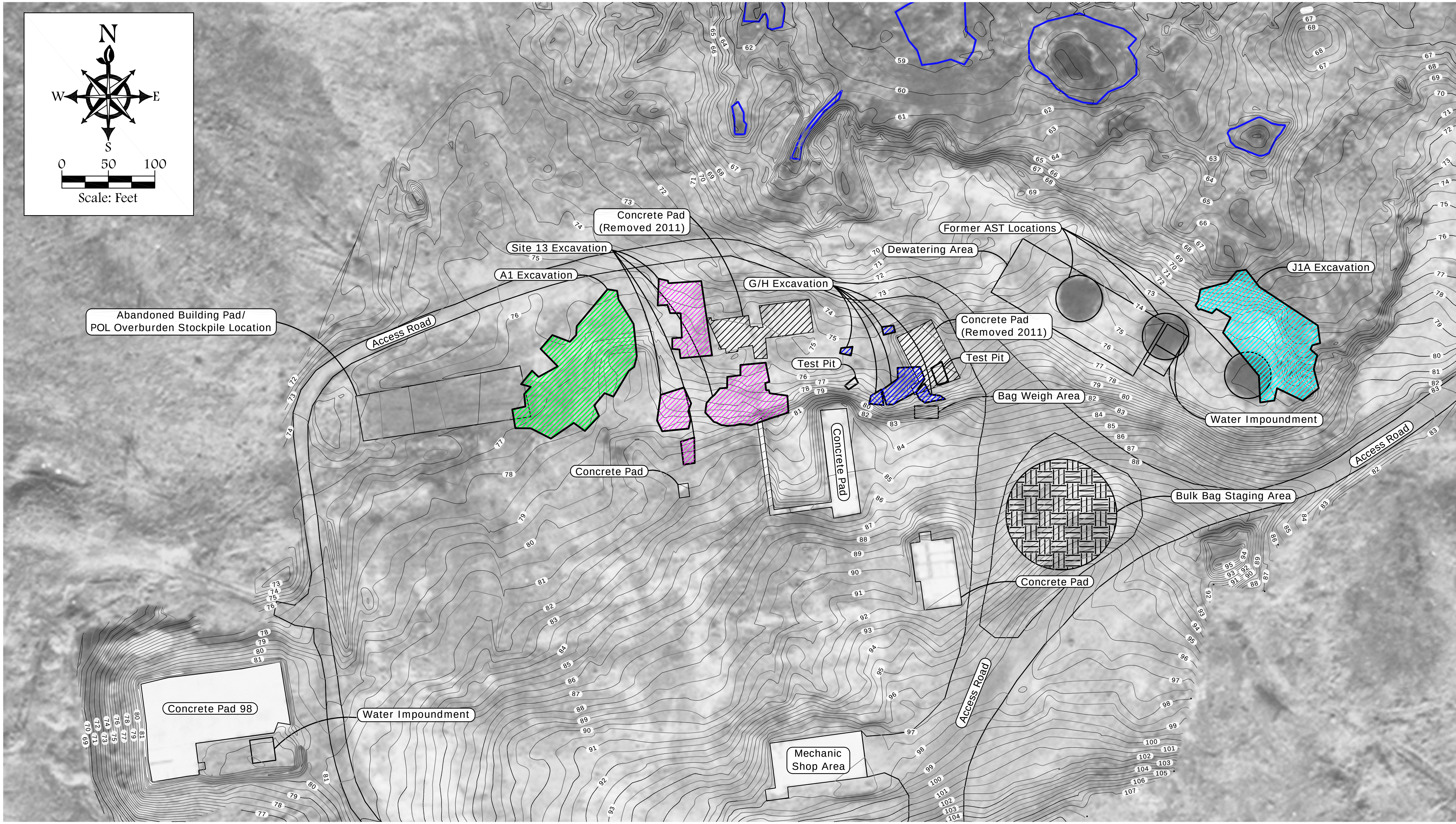

Legend

AST	Aboveground Storage Tank
HTRW	Hazardous, Toxic, and Radioactive Waste
POL	Petroleum, Oil, and Lubricants
(blue outline)	Ponding
(black hatch)	Concrete Pad (Removed 2011)
(green hatch)	A1 Excavation
(blue hatch)	G/H Excavation
(cyan hatch)	J1A Excavation
(magenta hatch)	Site 13 Excavation

FIGURE 4
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
MOC DETAIL MAP AND PRE-CONSTRUCTION SURVEY TOPOGRAPHY

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DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 12/20/11
DWN. NAP
SCALE SHOWN
APPRVD. MW

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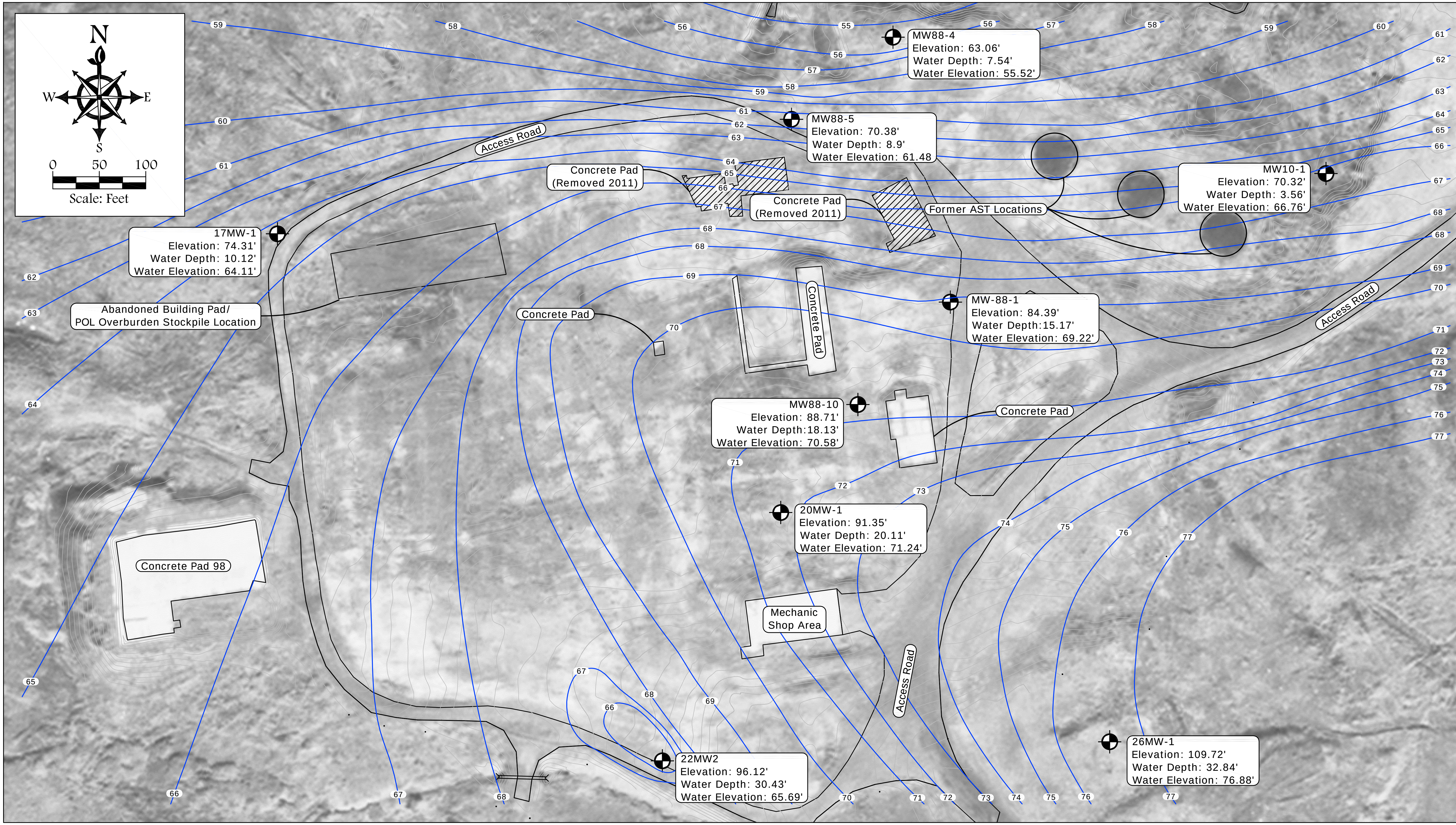

Legend

'	Foot/Feet
AST	Aboveground Storage Tank
HTRW	Hazardous, Toxic, and Radioactive Waste
POL	Petroleum, Oil, and Lubricants
MOC	Main Operations Complex
⊕	Monitoring Well Location
65 ———	Ground Water Contour

FIGURE 5
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
MOC POTENTIOMETRIC SURFACE MAP

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DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE	12/20/11
DWN.	NAP
SCALE	SHOWN
APPRVD.	MW

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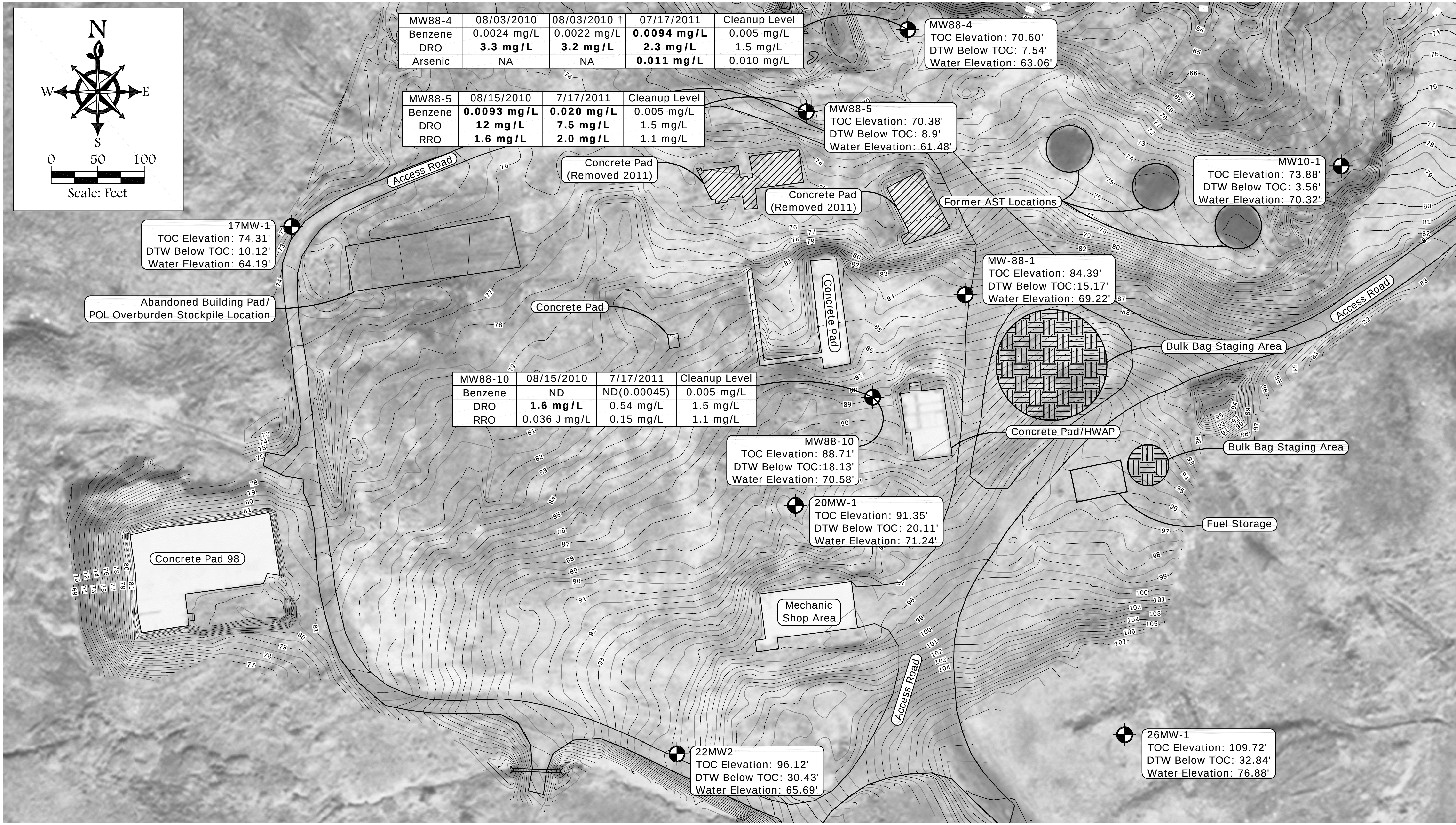

MW88-4	08/03/2010	08/03/2010 †	07/17/2011	Cleanup Level
Benzene	0.0024 mg/L	0.0022 mg/L	**0.0094 mg/L**	0.005 mg/L
DRO	**3.3 mg/L**	**3.2 mg/L**	**2.3 mg/L**	1.5 mg/L
Arsenic	NA	NA	**0.011 mg/L**	0.010 mg/L

MW88-5	08/15/2010	7/17/2011	Cleanup Level
Benzene	**0.0093 mg/L**	**0.020 mg/L**	0.005 mg/L
DRO	**12 mg/L**	**7.5 mg/L**	1.5 mg/L
RRO	**1.6 mg/L**	**2.0 mg/L**	1.1 mg/L

MW88-10	08/15/2010	7/17/2011	Cleanup Level
Benzene	ND	ND(0.00045)	0.005 mg/L
DRO	**1.6 mg/L**	0.54 mg/L	1.5 mg/L
RRO	0.036 J mg/L	0.15 mg/L	1.1 mg/L

Legend

' Foot/Feet
AST Aboveground Storage Tank
HTRW Hazardous, Toxic, and Radioactive Waste
POL Petroleum, Oil, and Lubricants
Monitoring Well Location
secondary topographic contours
73 primary topographic contours and ground elevation

Note:
Water elevations are from 2011
Topo units are in feet, elevations are based on the North American Vertical Datum of 1988

mg/L milligrams per liter
DRO diesel range organics
DTW depth of water
J the analyte was identified; the quantitation is an estimate
NA not analyzed
ND not detected
RRO residual range organics
TOC top of casing

FIGURE 6
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
MOC MONITORING WELL LOCATIONS AND SAMPLE RESULTS

Bristol
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DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 06/25/12
DWN. NAP
SCALE SHOWN
APPRVD. MW

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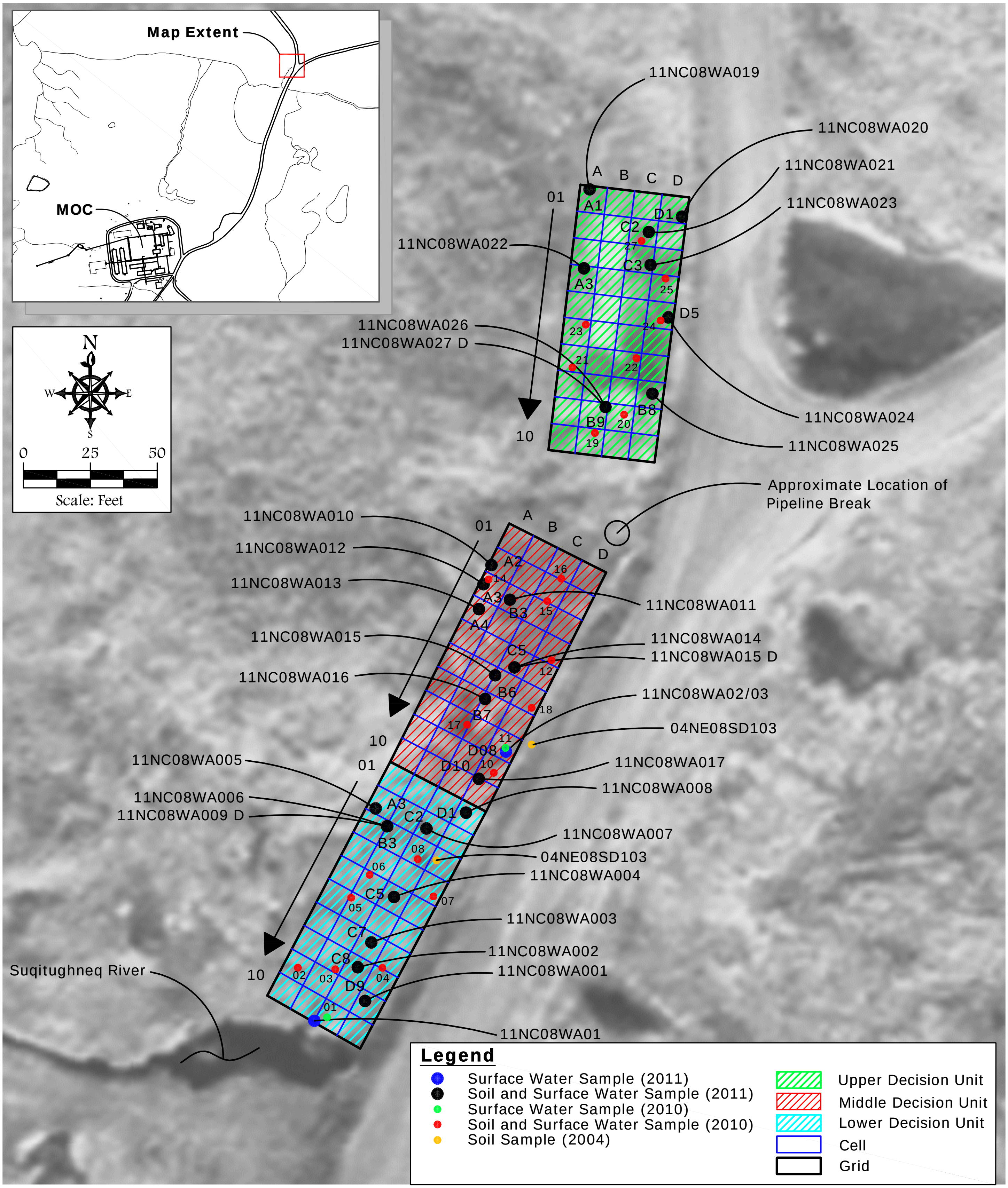

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Note:

Grid size = 40' x 100'
Cell size = 10' x 10'
D = duplicate
' = Foot/Feet
MOC = Main Operations Complex
HTRW = Hazardous, Toxic, and Radioactive Waste

Soil sample locations in each decision unit were homogenized and composited into one sample per unit.

FIGURE 7
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
SITE 8 NATURAL ATTENUATION MONITORING AREA

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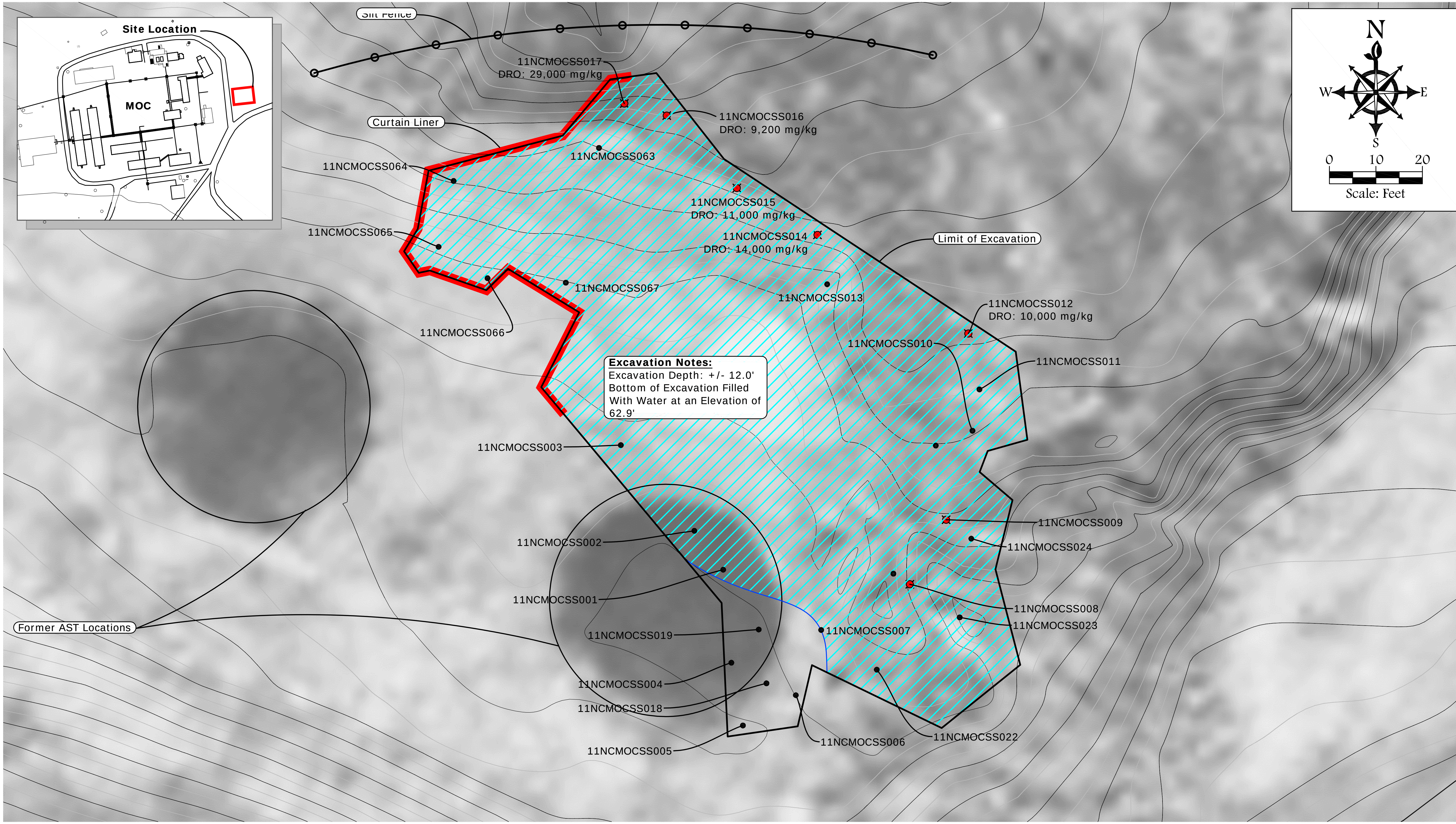
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713

DATUM:	NAD 83
PROJECTION:	STATE PLANE AK 9
Project No.	34110008
DATE	06/25/12
DWN.	NAP
SCALE	SHOWN
APPRVD.	MW



Note:
Samples 11NCMOCSS009 and 11NCMOCSS008 were excavated following receipt of sample results.
mg/kg = milligrams per kilogram
DRO = diesel range organics

Legend

'	Foot/Feet		Water in Excavation
AST	Aboveground Storage Tank		Curtain Liner
HTRW	Hazardous, Toxic, and Radioactive Waste		Sample Location Below Cleanup level
MOC	Main Operations Complex		Sample Location Exceeding Cleanup Level
POL	Petroleum, Oil, and Lubricants		

FIGURE 8
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
MOC POL EXCAVATION J1A

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ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713

DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 12/20/11
DWN. NAP
SCALE SHOWN
APPRVD. MW

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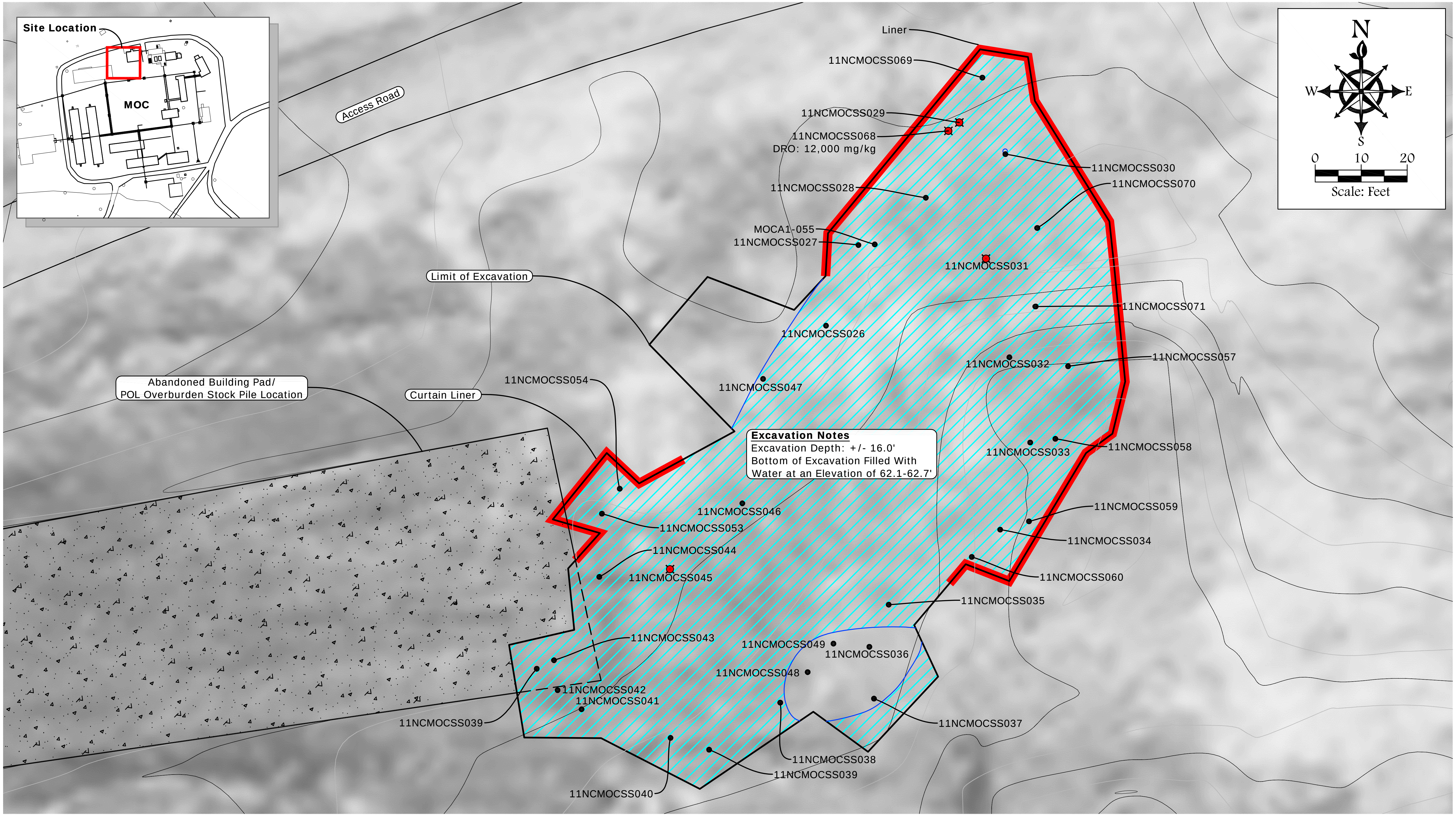

Note:
Samples 11NCMOCSS029, 11NCMOCSS031, and 11NCMOCSS045 were excavated following receipt of sample results.

mg/kg = milligrams per kilogram
DRO = diesel range organics

Legend

'	Foot/Feet		Water in Excavation
HTRW	Hazardous, Toxic, and Radioactive Waste		Curtain Liner
MOC	Main Operations Complex		
POL	Petroleum, Oil, and Lubricants		
●	Sample Location Below Cleanup Level		
⊗	Sample Location Exceeding Cleanup Level		

FIGURE 9
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
MOC POL EXCAVATION A1

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DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 12/20/11
DWN. NAP
SCALE SHOWN
APPRVD. MW

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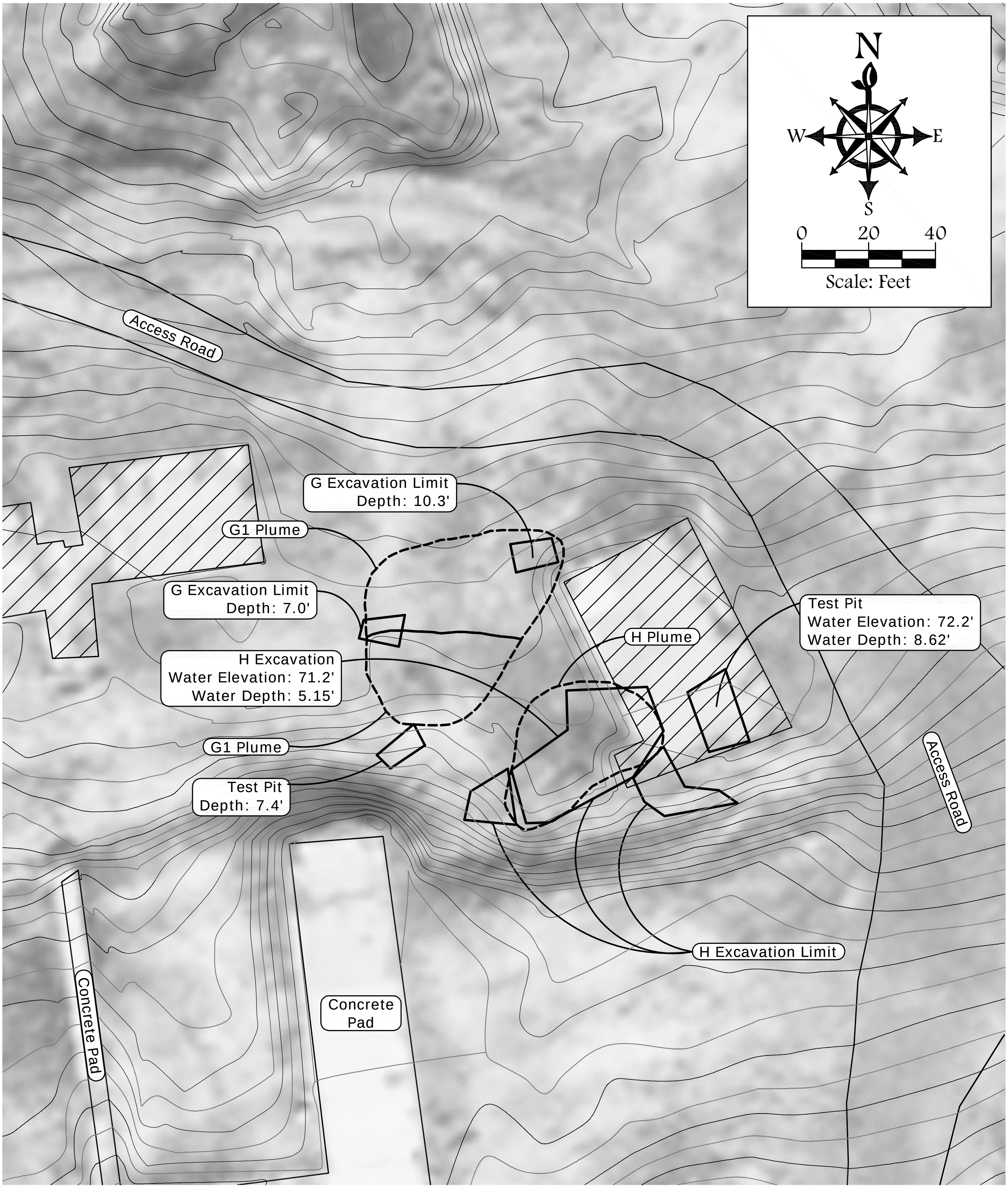

Note:
G and H excavation areas were opened, but no soil was removed due to groundwater.

Legend

'	Foot/Feet
HTRW	Hazardous, Toxic, and Radioactive Waste
POL	Petroleum, Oil, and Lubricants
(hatched box)	Concrete Pad (Removed 2011)

FIGURE 10
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
MOC POL EXCAVATIONS G AND H

Bristol
ENGINEERING SERVICES CORPORATION
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DATUM: NAD 83	DATE	12/20/11
PROJECTION: STATE PLANE AK 9	DWN.	NAP
Project No. 34110008	SCALE	SHOWN
	APPRVD.	MW

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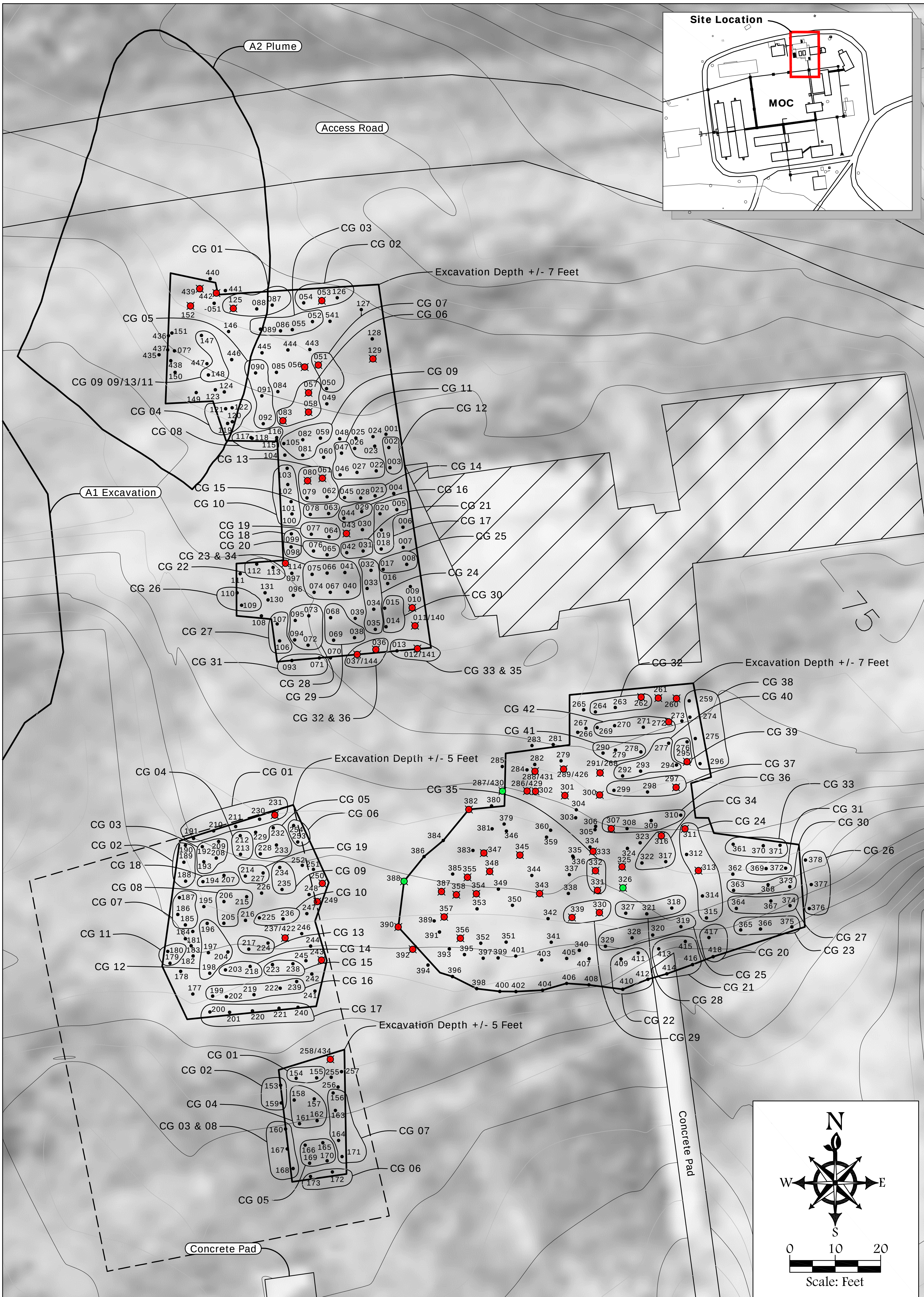

Note:
Soil sample IDs are preceded by 11NC13SS.
All excavations were lined in 2011.
mg/kg = milligrams per kilogram

Legend

CG	Composite Group
HTRW	Hazardous, Toxic, and Radioactive Waste
MOC	Main Operations Complex
●	Soil Sample Location below Cleanup Level
● (red)	Soil Sample PCB Concentrations Exceed 1 mg/kg
● (green)	Soil Sample PCB Concentrations Exceed 50 mg/kg
(hatched)	Concrete Pad (Removed 2011)
(dashed)	Stock Pile Area

FIGURE 11
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
SITE 13 PCB EXCAVATION AREA

Bristol
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DATUM: NAD 83	DATE	12/20/11
PROJECTION: STATE PLANE AK 9	DWN.	NAP
Project No. 34110008	SCALE	SHOWN
	APPRVD.	MW

Legend

●	2011 Soil Sample Location below Cleanup Level
● (red)	2011 Soil Sample PCB Concentrations Exceed 1 mg/kg
● (yellow)	2011 Soil Sample PCB Concentrations Exceed 50 mg/kg
170	Side Wall Soil Sample Location
CG	Composite Group
HTRW	Hazardous, Toxic, and Radioactive Waste
MOC	Main Operations Complex
PCB	polychlorinated biphenyls

Excavation Area

Concrete Pad

Note:
Soil sample IDs are preceded by 11NC13SS.
mg/kg = milligrams per kilogram

FIGURE 12
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
SITE 31 PCB EXCAVATION AREA

Bristol
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713

DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 06/25/12
DWN. NAP
SCALE SHOWN
APPRVD. MW

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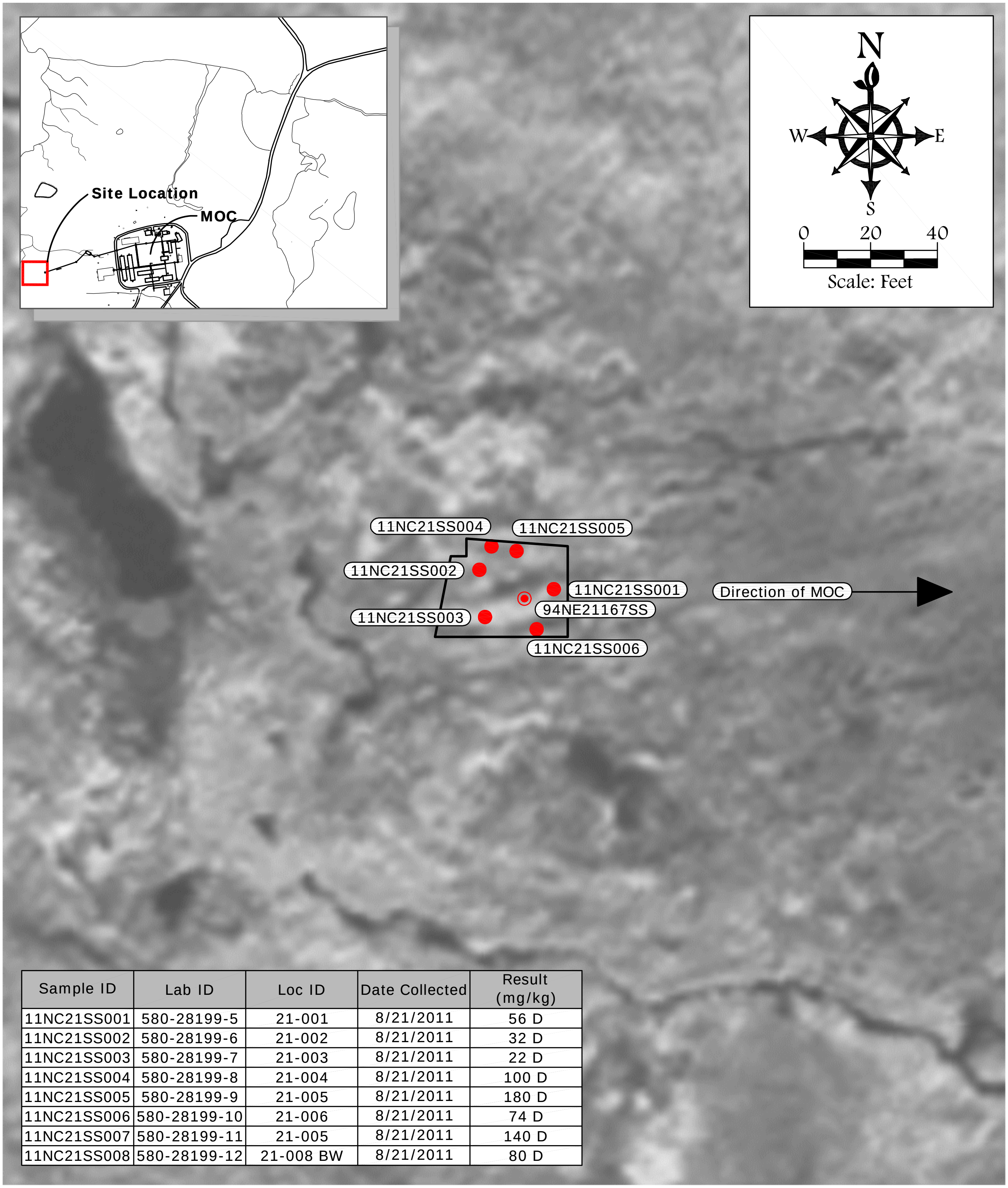


Sample ID	Lab ID	Loc ID	Date Collected	Result (mg/kg)
11NC21SS001	580-28199-5	21-001	8/21/2011	56 D
11NC21SS002	580-28199-6	21-002	8/21/2011	32 D
11NC21SS003	580-28199-7	21-003	8/21/2011	22 D
11NC21SS004	580-28199-8	21-004	8/21/2011	100 D
11NC21SS005	580-28199-9	21-005	8/21/2011	180 D
11NC21SS006	580-28199-10	21-006	8/21/2011	74 D
11NC21SS007	580-28199-11	21-005	8/21/2011	140 D
11NC21SS008	580-28199-12	21-008 BW	8/21/2011	80 D

Note:

All samples exceed the site-specific cleanup level of 11 mg/kg.

mg/kg = milligrams per kilogram

Legend

BW	Bulk Waste Sample
D	Sample was Analyzed at a Dilution
HTRW	Hazardous, Toxic, and Radioactive Waste
MOC	Main Operations Complex
●	Sample Location
◉	Previous Sample Location
▭	Removal Area

FIGURE 13

Northeast Cape, St. Lawrence Island, Alaska

Northeast Cape HTRW Remedial Actions

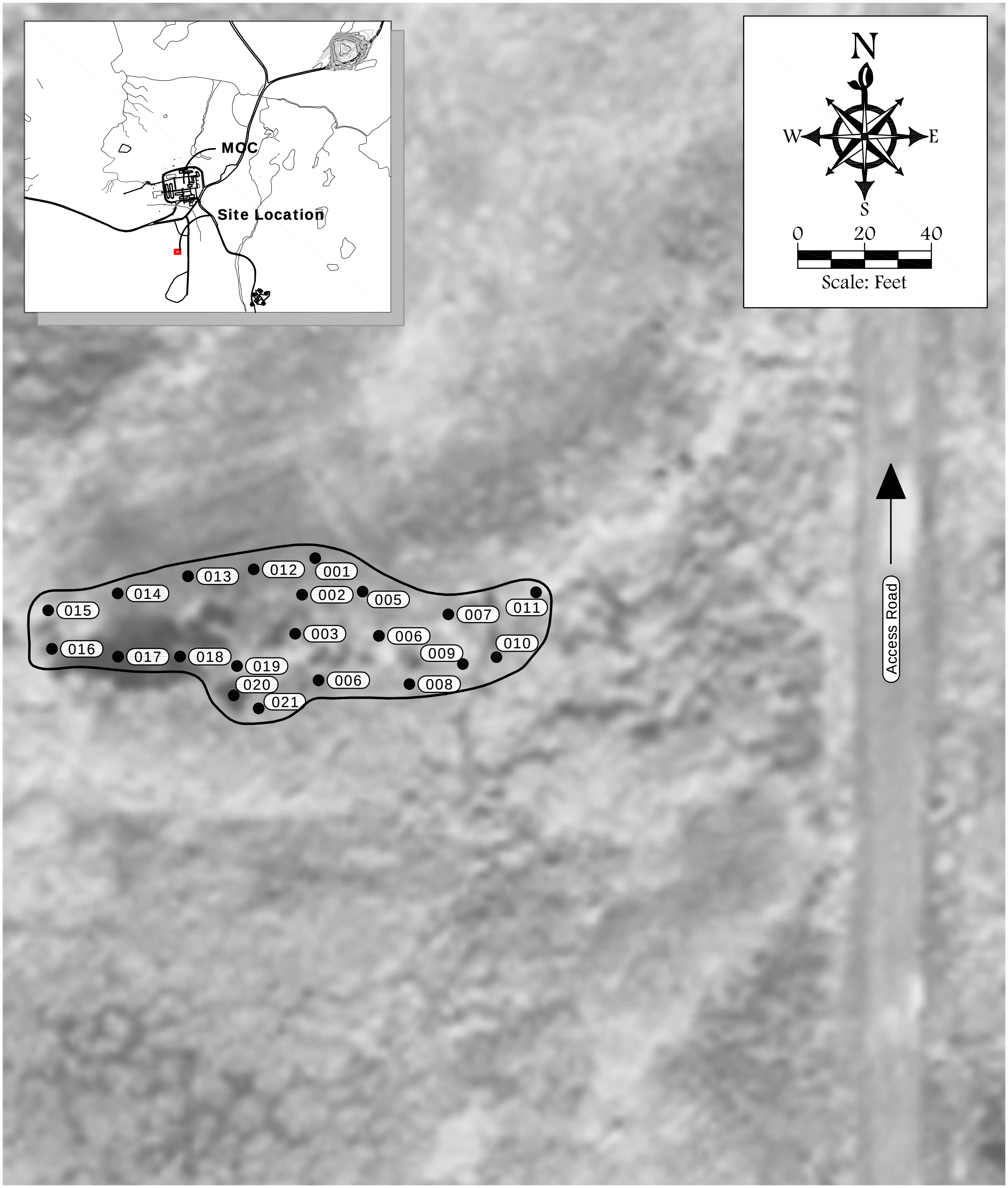
SITE 21 ARSENIC EXCAVATION

Bristol
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713

DATUM: NAD 83
PROJECTION: STATE PLANE AK 9
Project No. 34110008

DATE 12/20/11
DWN. NAP
SCALE SHOWN
APPRVD. MW

Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-DEC11\FIGURE-13.DWG - Layout: 34110008-FIG3-DEC10
User: NPEACOCK Feb 02, 2012 - 10:55am Xrefs: - Images: EASTCAPE-STLAWRENCE_ORTHO_MOSAIC_AK83-9F.TIF



Note:
Tar sample IDs are preceded by 11NCTARSS.

Legend

HTRW	Hazardous, Toxic, and Radioactive Waste
MOC	Main Operations Complex
●	Sample Location
▭	Removal Area

FIGURE 14
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
SPILLED ROOFING TAR AREA

Bristol
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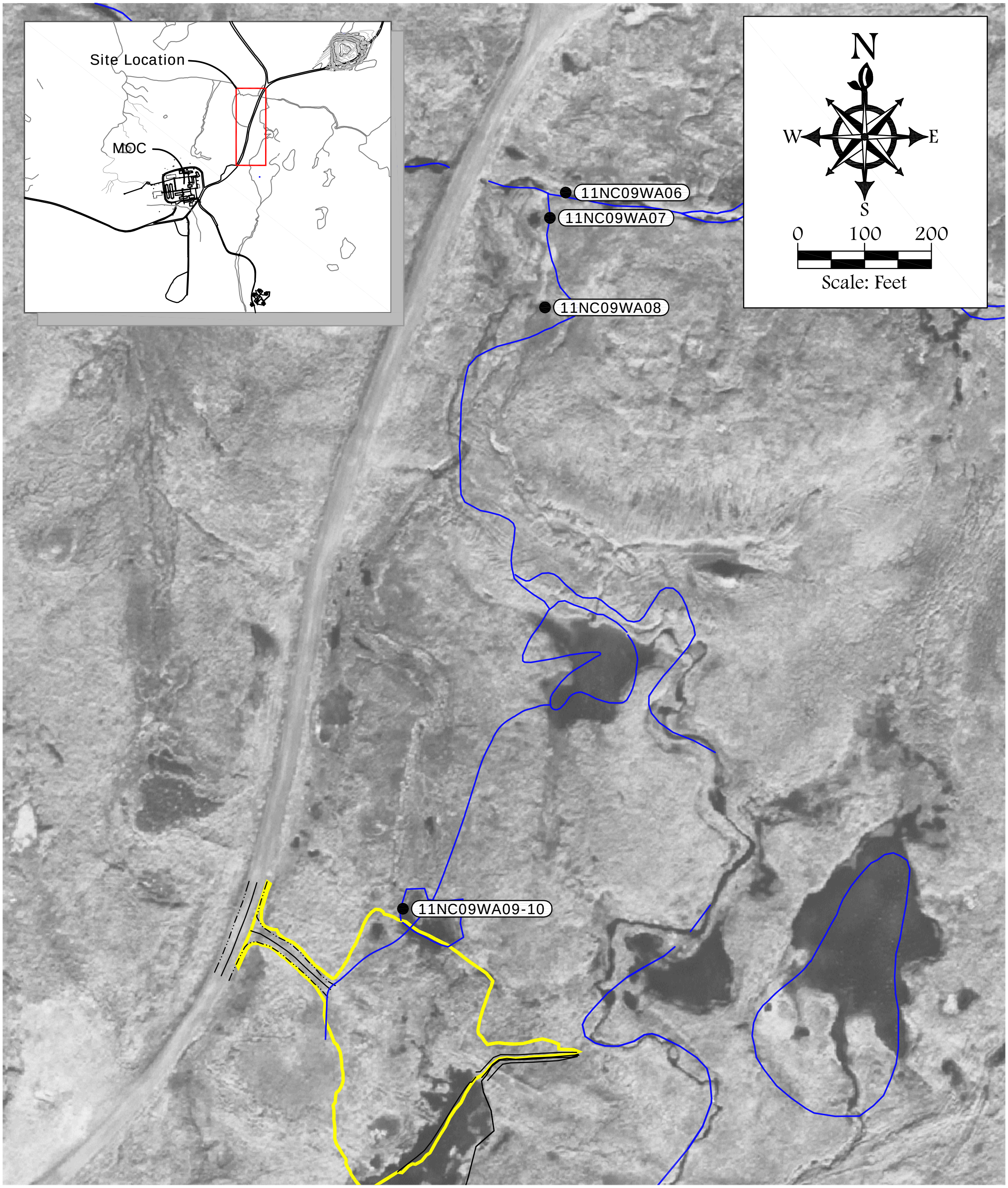
DATUM: NAD 83		DATE	12/20/11
PROJECTION: STATE PLANE AK 9		DWN.	NAP
Project No. 34110008		SCALE	SHOWN
		APPRVD.	MW



Legend

MOC	Main Operations Complex
HTRW	Hazardous, Toxic, and Radioactive Waste
●	Water Sample Location
(blue line)	Hydrology
(yellow line)	Cap Boundary
(solid line)	Road Centerline
(dash-dot line)	Road Edge

FIGURE 15
Northeast Cape, St. Lawrence Island, Alaska
Northeast Cape HTRW Remedial Actions
SITE 9 SURFACE WATER SAMPLE LOCATIONS

Bristol
ENGINEERING SERVICES CORPORATION
Phone (907) 563-0013 Fax (907) 563-6713

DATUM: NAD 83	DATE	12/20/11
PROJECTION: STATE PLANE AK 9	DWN.	NAP
Project No. 34110008	SCALE	SHOWN
	APPRVD.	MW

Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-DEC11\FIGURE-15.DWG - Layout: 34110008-FIG15-DEC10
User: NPEACOCK Feb 02, 2012 - 10:59am Xrefs: - Images: EASTCAPE-STLAWRENCE_ORTHO_MOSAIC_AK83-9F.TIF

APPENDIX A

Comment Sheets

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

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File: 475.38.013

February 29, 2012

Carey Cossaboom
USACE Alaska District (PM-C)
P.O. Box 6898
JBER, AK 99506-6898

Re: ADEC Approval of the Responses to Comments (RTCs) on the Draft 2011 Northeast Cape Site 28 Technical Memorandum (TM)

Dear Mr. Cossaboom:

Thank you for providing the Alaska Department of Environmental Conservation's Contaminated Sites program (ADEC) with RTC's on the draft 2011 Site 28 TM which were received by ADEC via email on January 27, 2012. Thank you also for providing ADEC with electronic copies of the laboratory reports and ADEC checklists which were received on February 17, 2012. ADEC has completed its review of the RTC's as well as the supplemental electronic files and has determined that ADEC's comments and revision requests have been adequately addressed. ADEC accepts all responses to comments, which are attached to this letter for inclusion in the final TM.

Please contact me at 907.269.3053 or curtis.dunkin@alaska.gov if you have any questions regarding this letter.

Sincerely,

Curtis Dunkin
Environmental Program Specialist

C/c Molly Welker – BERS, Inc. (via email)

G:\SPAR\SPAR-CS\38 Case Files (Contaminated Sites)\475 West Coast (Other)\475.38.013 Northeast Cape St Lawrence Island FUDS DERP\475 38 013 draft 2011 NEC site28 TM adec approval RTCs letter 2-29-12.docx

Alaska Department of Environmental Conservation (ADEC)
Contaminated Sites Program
Document Reviewed: Draft 2011 Site 28 Technical Memorandum
Commenter: Curtis Dunkin-ADEC **Date Submitted:** January 18, 2012 ADEC-Accepted RTCs Comments on Jan. 30, 2012

#	Page #	Section	ADEC Comment	Response
1.	14	4.2.2.2	Last sentence of first bullet in this section, the reference of 15% for the difference from 3,200 to 1,700 mg/Kg is incorrect for the silica gel cleanup reduction of the RRO result (the difference of 1,500 is not equivalent to 15% of 3,200).	The text incorrectly stated the silica gel result. It was 2,700 mg/kg, which is 84.4% of 3200, which gives the 15% reduction. The text has been corrected. **ADEC-Accepted**
2.	14-15	4.2.3-4.2.4 and Silica Gel Cleanup Chromatograms	Will silica gel cleanup comparisons be proposed to determine whether the cleanup level has been achieved or will the background silica gel cleanup chromatograms alone be proposed as the basis for clean determinations? Either way, all chromatograms from the 2011 site characterization effort should be provided in the technical memorandum; including the chromatograms with silica gel cleanup from samples taken within the drainage as well as both sets (w/ and w/o silica gel cleanup) of the chromatograms from all four background samples – not just the one sample provided in figures 13 and 14.	Based on conversations with the USACE the revised draft tech memo figures and tables used the silica gel cleanup comparisons to determine whether the cleanup level were achieved. All chromatograms and full lab reports will be provided electronically to the USACE and ADEC for review. The background sample results will be used to show the magnitude of potential bias due to biogenics and will not be used to set any cleanup levels. **ADEC-Accepted**
3.	16	4.4	Are naturally occurring background levels of metals in the site 28 drainage basin being considered and if so how will these be determined and evaluated (given metals were not analyzed for in the background samples)?	Bristol has not been scoped to evaluate naturally occurring background levels of metals. **ADEC-Accepted**
4.	17	4.6 and Figure 17	The Zone 1 soil removal estimate is unclear as discussed in the narrative and depicted in Figure 17 and should be revised. It states	The 15 foot depth and 13,000 to 22,000 tons of potential contamination

			that the '…estimate incorporates the area from the 2010 UVOST investigation…but does not take in to account…the off-pad estimates from the 2010 UVOST results.' All of the area depicted as Zone 1 is considered off-pad. Is the soil removal estimate 13,000-22,000 tons from the 2010 UVOST investigation area, plus an additional 14,095 cubic yards as stated in Figure 17; or are these the total estimates for Zone 1? This information needs to be elaborated on in the narrative and reconciled with the information presented in the figure(s) for clarity. Is three feet bgs, as stated in Figure 17 being used as an estimate due to the overall average estimated depth to groundwater observed at the site? This needs to be explained in the narrative.	was based on interpretation of the 2010 UVOST results – that volume was not used to calculate the Zone 1 removal estimate. The 14,095 cubic yards for Zone 1 was the total estimate for Zone 1, with an assumed removal depth of 3 feet throughout Zone 1 based on the depth of contamination found during the 2011 Site 28 investigation. The text has been modified for clarification. NOTE: Figure 17 has been separated into two figures: Figure 17 showing potential sediment removal areas and Figure 18 showing potential soil removal areas. Some removal volumes have now changed and the new estimate for Zone 1 is 13,311 cubic yards for Zone 1, and is still based on a 3 feet removal depth. **ADEC-Accepted**
5.	17	4.6	Does the soil removal estimate for the Zone 1 area north of transect 4 include the entire area to 3ft bgs, or only for areas adjacent to transects 3, 5, and 6 and sample 11NC28SS011? This should be clearly explained in the narrative.	The removal estimate for Zone 1 assumes a 3-foot depth throughout the whole zone. **ADEC-Accepted**
6.	17	4.6	Although the Zone 2 removal estimate was confined to the drainage area with standing and flowing water, actual removal volumes and confirmation samples will need to be determined and managed as the removal action progresses in each zone. The extent of removal required by ADEC will involve all contaminated soil and sediment exceeding the ADEC and/or site-specific cleanup level down to 2ft below the water table – not just for the areas with standing and	The text and figures showing removal areas have been revised (e.g., Figure 17 has been split into two separate figures for sediment (Fig. 17) and soil (Fig. 18)). Zone 2 on Figure 18 assumes a 4 foot excavation depth for contaminated soil. Zone 2 is not

			flowing water. Perhaps this would also be better explained if the narrative and figures more accurately described/defined what is meant by 'bank topography' in regards to the boundary for Zone 2.	limited to areas of standing and flowing water: the western boundary of the zone follows the bank that is topographically higher than the drainage basin, and the eastern boundary loosely follows some ponds and the stream channel. NOTE: Based on the 2012 Scope of Work, the focus at Site 28 will be further sediment characterization and a Phase I Sediment Removal Study to target the upper 24" of contaminated sediment in the standing and flowing water where the sediment is continuously submerged and not associated with living vegetated mat. **ADEC-Accepted**
7.	Table	Table	What is the difference between the orange and red shaded cells? This needs to be stated in the legend.	Orange represents sediment and red represents soil samples that exceed cleanup levels. Separate tables for each matrix will be included in the final report and the shading will be defined in the table notes. **ADEC-Accepted**
8.		Misc. Figures depicting cleanup level exceedances	Many of the soil sample locations that are all green or all red do not depict whether the upper 6 inches of the sample was determined to be sediment (i.e. Transect 1 has two sample locations within the area where surface water is depicted however there is no distinction whether or not the upper 6 inches was sediment). Other figure(s) don't have any reference to sediment cleanup levels (i.e. figure 16).	All figures have been revised. Sediment sample locations have been hatched. There are many samples that were collected in surface water locations that contain a lot of veg mat/peat and no sediment. **ADEC-Accepted**

9.		Proposed Road	Has landowner approval been requested for the proposed road? Could construction of the proposed road (disturbance, culvert installation, backfilling) result in new preferential pathways and subsequent contaminant migration?	The road has not been approved by the landowner and is not being considered at this time for construction based on the USACE revising the 2012 Scope of Work. The sediment removal areas and minimally invasive excavation approaches will be evaluated in 2012. **ADEC-Accepted**
10.	19	5.0	What is the proposed plan to stabilize the areas within the drainage after removal actions occur? Have the 'sedimentation pond and other appropriate controls' as required by the decision document been taken in to consideration? Will these be implemented prior to commencing removal actions in the drainage? Will dewatering alone eliminate the potential down gradient migration of contaminated sediment and water? In what manner and location(s) would the dewatered and treated water be discharged?	A Site 28 Phase I Sediment Removal using sediment controls to minimize downstream suspended sediment migration is part of the 2012 Scope of Work. Only the top 24" of contaminated sediment will be removed and therefore no stabilization is planned. All of the dewatering and discharge issues will be clarified in the 2012 Work Plan. **ADEC-Accepted**
11.	19	5.0	Monitoring of ground and surface waters during all activities associated with future removal actions should be added to this section. ADEC will require that future work plans for remediating the site 28 drainage to include water monitoring at the beginning of, during, and at the end of each season of work.	In the 2012 Scope of Work surface water samples will be collected from 3 locations in Site 28: pre, during, and post-sediment removal. **ADEC-Accepted**
12.		Figure 17	What is meant by the header "DIESEL evaluation failed) in the reference information at the top right of Figure 17?	This header for the file path information is automatically created by AutoCAD when pulling in all the layers to create the figure. We believe this header is related to the UVOST data that was pulled into Figure 17. Bristol will attempt to remove this from the figure in the Final Report.

				ADEC-Accepted
13.			**End of ADEC Comments**	

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

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File: 475.38.013

January 6, 2012

Carey Cossaboom
USACE Alaska District (PM-C)
P.O. Box 6898
JBER, AK 99506-6898

Re: ADEC Approval of the 2011 Northeast Cape (NEC) Excavation and Site Closure Actions

Dear Mr. Cossaboom:

Thank you for providing the Alaska Department of Environmental Conservation's Contaminated Sites program (ADEC) with a copy of the draft Excavation Closure Plan which was a draft work plan addendum to the final 2011 Northeast Cape HTRW Remedial Action (RA) Work Plan. ADEC received the draft closure plan via email on September 21, 2011. Due to time restraints and the onset of increasingly inclement weather, correspondence to determine and implement an ADEC-approved excavation closure plan was conducted via email and telephone communications over a matter of a few weeks during the end of September and the beginning of October 2011.

In the summer of 2011, the Army Corps of Engineers (Corps) awarded a modification to the current contract with the current environmental contractor Bristol Environmental Remediation Services, LLC, which allowed BERS to over winter equipment and excavated contaminated materials at NEC since BERS would be continuing with the ongoing HTRW removal actions in 2012. This letter summarizes the excavation closures and other remedial actions (listed below) which were requested and/or approved by ADEC in October, 2011; and were not included/documented in the ADEC-approved final 2011 NEC RA Work Plan.

1. All 2011 PCB-contaminated Soil Excavations: ADEC requested that the Corps line all surface areas of exposed PCB excavations where contamination levels still exceeded ADEC cleanup levels, and to back fill enough clean material on the liner(s) to keep them in place and secure until the continuation of excavation work (currently planned for the spring of 2012). ADEC also approved the Corps' proposal to encircle

the edges of the open excavation areas with bulk bags filled with contaminated soil in order to form a protective perimeter intended to exclude humans and wildlife from falling into the open excavations. ADEC also approved the Corps to leave these bulk bags on site over the winter. Bags are intended for offsite disposal as soon as spring conditions allow in 2012 (also see #4 below).

2. All 2011 POL-contaminated Soil Excavations: ADEC approved the Corps to place curtain liners at the interface of POL-contaminated soil that remains above the site-specific cleanup level of 9,200 mg/Kg DRO and to backfill the extent the excavation area with clean material (below the cleanup level of 9,200 mg/Kg DRO.
3. All Staged/Stored Bulk Bags at Northeast Cape: ADEC requests that surface soils within all footprint areas of bulk bags (not staged/stored on a concrete pad over the winter of 2011/2012), be sampled for the subject contaminants after removal in the spring of 2012 in the same manner as the Cargo Beach sampling in item 7 below. All observed breaches to bulk bags and/or releases of contents will require further cleanup and confirmation sampling to ensure that no contamination above the ADEC and/or site-specific cleanup levels are left behind.
4. Site G1/H1: ADEC approved the Corps to replace the material (spoils) generated from digging test pits at these sites back into the excavation based on the assertion that no contaminated soil was encountered during excavation of the test pits. ADEC did not concur with nor approve the recommendation that no further excavation occur in this area in the future due to the perched groundwater that was encountered during excavation of the test pits. More information and consideration regarding the hydrology and other dynamics at these sites is required for the purpose of determining the best path forward.
5. Bulk Bags Not Shipped Offsite in 2011: ADEC approved the Corps to stage roughly 400 super sacks (bulk bags) containing either POL- or PCB-contaminated soil at NEC due to the fact that logistics, time constraints, and inclement weather did not allow for all bulk bags to be shipped offsite in the 2011 season. ADEC requested that all bags be labeled and placarded to clearly identify and warn people traveling through the site of the bags' contents.
6. Landowner Concurrence With ADEC-approved 2011 Site Closure Actions: ADEC requested that the Corps inform the landowners in writing of the 2011 site closure actions stated above to determine whether or not they had any objections or concerns to the proposed actions 1-4 above; and that upon confirmation from the Corps of the landowners' approval, ADEC approved the Corps implementing the site closure actions.
7. Cargo Beach (CB) Sampling: ADEC requested as part of the 2011 Work Plan that the Corps conduct post-season characterization sampling of the entire footprint(s) of any area(s) at the CB where contaminated materials were staged, loaded, or off loaded during the 2011 as well as

all future field seasons. Due to the large volume of staged contaminated soil being overwintered at NEC, for which offsite disposal is planned in the spring of 2012, ADEC approved the Corps to postpone the sampling of CB until the loading for offsite disposal is completed in the spring of 2012. ADEC continues to provide input to the Corps on the ongoing development of the draft sampling and analysis plan for CB.

8. Future Reports, Work Plans, Technical Memorandums and Other Documents: The final 2011 NEC Work Plan (submitted to ADEC in September 2011 post contract modification) stated that a final removal action report would be submitted in 2013 with no reference to other work plans or reports. ADEC requests that draft and final documents for all ongoing and future site work at NEC continue to be submitted to ADEC such that ADEC has the opportunity to review, comment, and approve the subject documents prior to any work, changes to work plans, and/or final reporting being implemented.
9. ADEC and the Corps discussed the issues outlined in this letter on Nov. 29, 2011 after the NEC RAB meeting in Savoonga, AK. ADEC informed the Corps that it would not require separate draft and final addendums to the 2011 work plan for the excavation and site closure activities. Instead, it was agreed that this letter would serve as ADEC's formal summarized approval of the 2011 site excavation and closure activities, and that all of the 2011 site work and activities, including all of the excavation and site closure actions would be documented in adequate detail in the draft 2011 NEC Removal Action Report.
10. ADEC requests that this letter be inserted in both the pending draft 2011 NEC RA Report as well as the draft 2012 NEC RA Work and Sampling and Analysis Plans.

Please contact me at 907.269.3053 or curtis.dunkin@alaska.gov if you have any questions regarding this letter.

Sincerely,

Curtis Dunkin

Curtis Dunkin
Environmental Program Specialist

Cc: Molly Welker – BERS – (via email)

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

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File: 475.38.013

May 14, 2012

Carey Cossaboom, Project Manager
U.S. Army Corps of Engineers Alaska Dist.
CEPOA-PM-C-FUDS
P.O. Box 6898
JBER, AK 99506-6898

Re: ADEC Review Comments on the Draft 2011 Northeast Cape HTRW Removal Action Report

Dear Mr. Cossaboom:

Thank you for providing the Alaska Department of Environmental Conservation's Contaminated Sites program (ADEC) with a copy of the Draft 2011 Northeast Cape HTRW Removal Action Report which is dated February 2012 and was received by ADEC on February 22, 2011. Thank you also for providing ADEC a copy of the electronic and supplemental data which was received by ADEC on April 6, 2012. ADEC has completed its review of the draft report and is submitting the attached comments for your review.

Please contact me at 907.269.3053 or curtis.dunkin@alaska.gov if you have any questions regarding this letter.

Sincerely,

Curtis Dunkin
Environmental Program Specialist

cc: Molly Welker – BERS – (via email)

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Alaska Department of Environmental Conservation (ADEC)
Contaminated Sites Program
Document Reviewed: Draft 2011 Northeast Cape Removal Action Report
Commenter: Curtis Dunkin-ADEC **Date Submitted:** May 14, 2012

#	Page #	Section	ADEC Comment	Response
1.	ES-1	Executive Summary	Bullet point starting w/ 'Transporting and disposing of 21 bulk bags…' state that the staged bags were generated during the 2010 removal action.	
2.	ES-2	Executive Summary	Last bullet on this page replace 'non-hazardous' with 'PCB-contaminated soil [that was not TSCA-regulated (< 50 mg/Kg?)'.	
3.	ES-3	Executive Summary	Third to last bullet from bottom of the page re: J1A excavation samples; state whether these were field or fixed laboratory samples.	
4.	5	1.8	Revise third sentence of this section to state: 'A population of approximately 1000 reindeer inhabits the island.	
5.	6	1.8	Sand hill cranes (which ADEC observed on site inspections conducted in August 2010 and September 2011) should be added as observed bird species inhabiting the island..	
6.	13	3.1.2	A bullet should be added to the deviations section (or a new section added) that states the reasons and decisions related to the overwintering of resources (equipment, facilities, etc.) at NEC and reference the section(s) where this is discussed in more detail in the document i.e. section 4.1.	
7.	14	3.1.2	Metal Debris Disposal: states that '…due to radiation levels, the steel was disposed of at CRL…'. Radiation testing was not part of the work plan nor was ADEC previously informed that radiation was a concern at NEC. The draft report does not include any other discussion regarding this issue which should be thoroughly discussed. IDW: State how many gallons of PCB-contaminated waste water was generated and disposed of in the super sacks in the 2011 removal action effort?	
8.	14	3.1.3	First bullet of this section, revise ADEC's tentative approval date of the work plan and SAP to 2011 from 2010.	

9.	17	3.2.2	Environmental Samplers: change ADEC-certified to ADEC-qualified.	
10.	20	4.1	See comment # 6 above. Re: the last sentence of this section referencing the 19 landing craft, was equipment shipped off island? Question is in regards to ADEC's understanding that equipment was overwintered on site. Was equipment and/or supplies or other resources off loaded from the landing craft onto the site? If so this should be stated.	
11.	31	5.2.2	Re: the modifications to the field laboratory analysis method for screening PCBs in soils, if such modifications are to be implemented in future removal action efforts, then ADEC will require a correlation study that demonstrates that the modifications result in accurate field screening laboratory analysis results. Also, in relation to modifications discussed in this section, the field screening concentration of 0.8 mg/Kg for PCBs in soil that has been utilized in previous years should be reconsidered (whether or not it should be lowered) for future removal action efforts. This reconsideration is also supported by the high RPDs as noted in other comments below.	
12.	32	5.4	Revise the first sentence of this section to state '…POL excavation sites [either] when field…'.	
13.	34	5.6	Revise second sentence of this section to state '…POL- and PCB-contaminated soils…'.	
14.	42	6.5	The statement beginning with 'The three wells that historically contained concentrations…', should be revised for clarity; i.e. '…contained the lowest [historically] observed…'.	
15.		Figures 5 and 6	It would be helpful to color code the monitoring wells depicted in these figures which have historically had any contaminant exceedance, and then to depict the 2011 analysis results for those contaminants which were historically exceeded (as is depicted for the 2011 exceedances on Figure 6).	
16.	45	Sections 6.6, 6.6.1 and 6.6.2	Regarding the statement 'Water levels in the LDU did not appear to be significantly changed by the rain event.', more comparative discussion is necessary in these sections regarding the differences in dates, precipitation events, and possible other differences in conditions associated with 2011 and all other previous sampling and monitoring events. Differences in conditions between monitoring events could have significant impact when comparing results from the multi-year study. On	

			what basis or evaluation is the state above made re: the water levels in the LDU? The last statement of this section, omit 'site-specific' and simply state below cleanup levels. There are no site-specific cleanup levels for surface water.	
17.		Appendix E Table 8	The column labeled as 'Site-Specific Cleanup Level' should be revised to 'Cleanup Level'; site-specific cleanup levels are noted in the table. The cleanup level should not be noted as 'not specified' (NS) for the contaminant 1-Methylnapthalene and instead the actual ADEC Method Two cleanup level of 6,200 ug/Kg should be inserted. The results data for the w/ silica gel cleanup results should be reevaluated whether the data was entered incorrectly in the table or whether there are other issues/errors with for example the laboratory method or reporting process. Nearly all analysis results w/ silica gel cleanup are significantly higher than the w/o silica gel cleanup. This should be also further discussed in the related narrative sections. The high RPD as stated in table 8 should be discussed further in related narrative sections. Although it was not stated in the 2010 results at the time of review, the RPD in the duplicate sample taken from the MDU was also moderate to high.	
18.		Figure 7	Assuming that the purple and black circles depict 2011 water and soil samples respectively, the sample year should be inserted in the legend in association w/ the circle. Insert 'Soil' to adequately reference the 2011 Soil Sample Location. Insert the appropriate matrix sampled next to the orange and yellow dots. Since this is the second year of sampling for the multi-year study, a comparative figure should be added or the current figure amended such that all historical water and soil analysis results obtained from samples taken w/in these decision units which exceeded respective cleanup levels should be depicted.	
19.	46	6.6.3	State the maximum saturation value for DO in water at six degrees Celsius (12.43?). When was the MNA data collected for the UDU in relation to the data collected from the MDU and LDU? Was any valid data for MNA parameters collected for the UDU in 2011? The third sentence of second paragraph, revise '…are contributing…' to '…could be contributing…'. Re: the statement that fuel odor was detected in 2010, more discussion re: the 2011 observations need to be included in this section. Was a sheen and odor observed	

			during sampling activities/due to disturbing the sediment in 2011?	
20.	47	6.6.3	Second to last sentence in second paragraph on this page, revise to state '...exceeding [site-specific] cleanup levels.' Also state the site-specific cleanup levels. Make this revision elsewhere in the document where appropriate. Were the samples taken from the upper, lower and middle decision units considered to be sediment or soil? Statement in third paragraph on this page needs to be reconsidered/revised re: '...NOM at concentrations far exceeding DRO concentrations.' Silica gel analysis resulted in increased concentrations of DRO and RRO contaminants. TOC data cannot be applied in determinations of the relationship/rations of POL contaminants and NOM. A better correlation study is necessary in order to make any reliable evaluation statements regarding the influence of NOM on analysis results.	
21.	48	6.7	Re: the draft and final tech memo, include that ADEC received and commented on the draft report as well as the date which the final report was submitted.	
22.	50	6.9.1	Is it known what or whether there were COC(s) associated with the stained soil below the ASTs? State the disposal fate of the 67 bulk bags. Were screening and/or confirmation samples taken in the area(s) associated with the removed 'stained soil'? What was the rationale for removing 18"?	
23.	50	6.9.2	Regarding the references to the indications of whether soil was or was not contaminated above the alternative cleanup level based on the 2010 UVOST investigation, while conducting excavations of overburden and/or the soils above UVOST-indicated clean soils, was any further field screening and/or sampling conducted to confirm that soils were indeed below the cleanup level? This should be better explained here and in other appropriate sections of the document.	
24.	52	6.9.2	References should be made for the figure which depicts the sampling location for this excavation area.	
25.	54	6.9.4	The statement in the last paragraph of this section '...future excavations are not necessary at the G plume' should be revised to state 'future excavation and removal efforts at the G plume need to be reevaluated for whether further action is feasible and/or required'.	
26.		Figure 10	The water depths and elevations encountered should be depicted for the excavations and test pits conducted in the G and H Plume areas.	

			In general re: the concrete that was removed in 2011 and previous years from various sites (i.e. as depicted on Figures 10, 11, and others) a brief section should be added to the report that summarizes all of the concrete foundations that have been removed in the 2009, 2010, and 2011 removal action efforts for the purpose of characterizing and/or excavating underlying soil. Currently there is only one brief statement in section 6.13 that states '…debris was encountered during concrete removal activities in the MOC'.	
27.	54	6.9.5	Re: moving dewatered soils from the impoundment area to the concrete foundation at former building 98, the narrative should include more detail re: how the soil was removed from liner and transported to the foundation. The narrative should also include details regarding whether or not the dewatering area was left in place over winter and provide information regarding post-deconstruction soil sampling requirements. Did any breaches in the liner occur during soil dewatering activities?	
28.	55	6.10	Last sentence of this section, clarify whether this refers to excavating and removing the contaminated soil and/or shipping the contaminated soil off site.	
29.	57	6.10.1	Second paragraph on this page, it appears that the 39 composite samples were composed of samples from the 279 discrete samples; this should be stated for clarity. State the dates in the narrative on which the confirmation and composite soil samples were collected. Also state in the narrative that the soil PCB concentrations depicted on Figure 11 represent the status of the site 13 soils at the end of the 2011 removal action so to clarify that these are the conditions which will be encountered at the beginning of the 2012 field season. See comment # 31 below regarding request to include more discussion in the narrative about the composite samples and their analysis results. The narrative should briefly explain the process in which 'discrete samples within the composite were subsequently analyzed discretely' (i.e. how a portion of the original discrete sample material was retained from the material that went into the composite sample). Narrative states that 273 confirmation and 39 composite samples were submitted and analyzed, however Table 13'report table' has 363 total samples, including 20 duplicate samples, 87 composite samples, and 256 primary samples listed. The	

			Table 13 'for GIS' table has 362 total samples listed, and the 5 samples listed in the 'MED compliant' table are neither included in the report table, nor discussed in the narrative sections of the document. Revise first sentence of third paragraph on this page to state: 'Analysis results determined that sixty-eight of the total number of confirmation samples taken had soil PCB concentrations that exceeded the ADEC cleanup level. On pages 57-58, re: the discussion of excavation of PCB-contaminated soils encroaching into Plume A2, was the soil screened and sampled for POL contaminants? Was any soil from this area stockpiled? A brief statement/explanation should be made in regards to how co-mingled contamination (POL and PCBs) in this area are managed. ADEC is concerned that the comingling of fuel and PCB contaminants could have resulted in the mobilization of PCBs within and down gradient of the A2 Plume area. Future sampling and removal action efforts will need to address this issue at this site and any similar sites (.i.e. mobilization of PCB contaminants could have occurred and migrated via a preferential pathway).	
30.		Figure 11	Insert '2011' in front of each of the three soil sample depictions in the legend. A new color depiction should be added for PCB sample locations where analysis results exceeded 200 mg/Kg. Regarding samples # 287 (including the duplicate #430) and #388 depicted on this figure (which had PCB concentrations of 230 and 270 mg/Kg respectively) the narrative should include more detail about the profile of the locations where these samples originated (surface, sidewall, etc.) due to the fact that these samples are depicted on the edge of the excavation boundary. The same should be discussed for all samples that exceeded cleanup level that are located on the edge of the excavation boundary. It would be helpful on this figure (since it includes what appears to be contour lines) to change the access road boundaries to a different color than black to better call out this feature from the contours and the plume and excavation boundaries.	
31.	Appendix E	Table 13	The depiction of duplicate samples with a purple background needs to be stated in the legend for this table. There are several duplicate samples labeled as 'dup' which are not shaded purple in the table and should be.	

			All total PCB results which exceed the cleanup level of 1 mg/Kg should be shaded red – regardless of whether the sample is a duplicate or primary. Several of the composite samples do not have the composite constituents listed in column M. The dilution issues and the results of the composite sample analysis need to be further discussed in more detail in the respective narrative sections of the reports (not just in the DQCR/Appendix D). See comment # 29 above re: inconsistencies in the narrative and table 13.	
32.	58	6.10.1.1 (and 6.10.2.1)	More details should be provided in this section re: the dates and sequence of removing the stockpiled soil and subsequently excavating the underlying soils which were later determined to be contaminated w/ PCBs above cleanup level. The sampling of soils in this area should be explained in more detail. Was this area previously sampled and thought to be clean? State the cubic yards and/or tonnage of contaminated soil that was excavated for disposal off site in 2011. Were the samples from the site 13 overburden stockpile submitted to and analyzed by the field laboratory or the off-site laboratory? Note section 6.10.1.1 does not reference either, and section 6.10.2.1 only refers to field laboratory samples (site 31).	
33.	59	6.10.1.2	Insert reference to Table S10 when referring to the Field Lab subfolder in the last sentence of this section.	
34.	59-62	6.10.2	This section only discusses field laboratory samples and results for site 31 and there is no discussion re: the confirmation and composite samples that were collected and shipped off site for analysis (as was discussed in the narrative for site 13). See similar comments in # 29 above. Table 14 in Appendix E needs to also be referenced in this section. Were there also discrete samples that made up composite samples that were discretely analyzed after the composite sample was determined to be above 1000/n as was the case for site 13?	
35.		Table 14	The depiction of duplicate samples with a purple background needs to be stated in the legend for this table. There are several duplicate samples labeled as 'dup' which are not shaded purple in the table and should be. All total PCB results which exceed the cleanup level of 1 mg/Kg should be shaded red – regardless of whether the sample is a duplicate or primary.	

			Several of the composite samples do not have the composite constituents listed in column M.	
36.		Figure 12	Insert '2011' in front of each of the three soil sample depictions in the legend. A new color depiction should be added for PCB sample locations where analysis results exceeded 200 mg/Kg. Figure 12 does not have the stockpile area depicted as listed in the legend and stated in the narrative and needs to be inserted onto Figure 12, and then referenced in the second paragraph on page 60. The narrative should include more detail about the profile of the locations where the samples which are depicted on the edge of the excavation boundary originated (surface, sidewall, etc.).	
37.	61	6.10.2.1	Due to the fact that sample analysis results for the site 31 overburden stockpile exceeded the cleanup level and multiple rounds of sampling and removal (bagging for disposal off site) were conducted, a new figure should be developed that depicts the footprint of the stockpile, and the iterations of sampling locations areas where removal actions occurred. The narrative in this section should also state the rationale utilized for determining '…soil from this area was loaded…'.	
38.	62	6.10.2	Revise first sentence on this page: '…initially excavated [to] approximately 18…'.	
39.	62	6.10.2.2	Reference the S15 Table in Field Lab Supplemental data.	
40.	63	6.11	Did excavation in 2011 only occur w/in the 2010 footprint or was it expanded? Re: the statement in the last sentence of this section '…the excavation area was a wetland that was inundated with water.'; was standing/surface water present prior to beginning excavation in 2010 and/or 2011? Was excavated soil dewatered/dried out before bagging? How long did it take for standing water to cover the excavation area(s)? Was excavation conducted to 2 feet below the surface of standing water? All of these issues should be better clarified in the narrative. Third sentence of last paragraph of this section, revise to state: '…removal, [eight] discrete [confirmation] soil samples…'. Note: ADEC recommends that further site characterization be conducted at site 21 prior to proceeding with further removal actions and excavation activities.	
41.	General	Figures and Respective	For the purpose of demonstrating the reason(s) for why the current excavation boundaries are what they are (i.e. previous soil sample analysis results determined	

		Narrative Sections	that surface and/or subsurface soils outside of these boundaries are below cleanup levels) it would be helpful to depict previous soil sample analysis results and sample locations that were utilized to facilitate this determination. Or, if the expansion of the boundary is suspected in 2012 and future removal actions (i.e. the excavation will continue to expand in the direction of boundary samples for which analysis results exceed cleanup level) then this should be stated/clarified in appropriate sections.	
42.	65	6.15	The Sept. 13, 2011 monthly status report referenced in this section only refers to the stabilization analysis. The analyses for sites 7 and 9 and the borrow pit should be included and accurately referenced in the document and supplemental data.	
43.	General	Site Visits	A sub section should be added to section four that summarizes the miscellaneous site visits and/or inspections conducted by non-Bristol and non-Corps personnel; i.e. any representatives from other agencies, villages, etc. ADEC conducted a site visit/inspection on September 12, 2011.	
44.	Appendix C	Photo # 32	Shows a concrete slab and wood frame in the bottom of site 13 excavation. Was this concrete wipe sampled to determine possible contamination; was it removed and disposed of and was sampling under the concrete conducted?	
45.	Appendix C	Photo # 36	Photo description should include the name of the excavation site to which this utility corridor was located in the southwestern section. What sampling was conducted in this area? This should be discussed in more detail in the appropriate narrative section(s).	
46.			**Appendix D: Data Verification Report Comments**	
47.	6	2.0	Table 2-0.1 Site 8: Insert 'surface' into the Field Sample title column to be consistent with other tables.	
48.	33	2.1	Site 8 Lab Work Order 580-27633-2: All sample analysis data from the one of three coolers in which both the cooler receipt temperature and the temperature blank readings exceeded 6 deg. C need to be qualified. ADEC does not consider rounding these numbers down to the nearest whole number as acceptable; as suggested in this summary. ADEC can approve not qualifying data when the cooler receipt temperature exceeds 6 deg. C when samples and blanks are below the 6 deg. C parameter, as is the case for Lab Work Order 580-28786 referenced on page 35.	

49.		General	There are numerous instances in the data verification report in which the sample dates and times noted on sample containers did not match the info provided to the lab on the CoC; subsequently the lab entered the CoC info as the default sample date and time. Respective ADEC checklists state that the discrepancies were corrected via correspondence w/ the laboratory, however ADEC was not able to locate documentation of the correspondence in the draft electronic data. Please reference the location of or provide the subject correspondence for ADEC review in the RTCs. Otherwise, the oldest of the two dates and/or times from the sample container or the CoC should be utilized.	
50.	48	2.7.8	Re: the laboratory reporting the lower of the two results and not applying additional qualifiers, the difference between the two results for the subject samples should be discussed further. It is not acceptable to report the lower of the two results based on a matrix interference for PCBs in soil. In all cases, the higher result should be reported and additional qualifiers should be applied.	
51.	55	2.13.1	Site 8: Why was there no field duplicate pair sampled submitted for surface water samples collected for DRO/RRO and PAHs? This should be further noted in associated and appropriate tables and narrative sections throughout the document. Sites 13 and 31: The field duplicate frequency should not be evaluated comprehensively for the totals of discrete and composite samples; rather it should be calculated for the type of sample the duplicate was collected (either discrete or composite). A duplicate sample frequency of a minimum of 10% should have been collected for both discrete and composite samples. Explain in this section (as well as in all associated and appropriate tables and narrative sections) why this was not done. RPDs for all duplicate and primary samples were very poor as noted in this section and in the summary of the data validation report. This is a significant data quality issue that needs to be stated in the respective narrative sections of the report (as requested for sites 8, 13, and 31 above).	
52.	60	2.13.1	Correct the spelling in legend of Table 2-13.1: residual rang[e] organics.	
53.	68	3.0	Re: the last bullet of this section on this page, it should be determined and stated	

			here that these sample results will be qualified as an estimate with an unknown bias (QN) due to imprecision in field duplicate samples; similarly as the other PCB samples.	
54.			**End of ADEC Comments**	

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007

DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Teresa Lee** **PHONE: 753-2788**	**Action taken on comment by:**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
1.				
2.				
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12.				
13.	EDD	There are 8082A prime value duplicates when there should not be. Please revise. If you have trouble finding the SDG's I am referring to with this issue, please feel free to give me a call. I can quickly pull the data up and run the query in COELT.	This is SDG 280-20410 in the COELT file.	
14.	EDD	SDG 280-20054-2's NPDL files are named incorrectly with the dates incorporated (ex. NPDLCL 10-14-11.TXT). These need to be renamed to the appropriate file name for the final(ex. NPDLCL.TXT). 280-20054-1 Narrative file simply says "None". 580-28782-2 - All COELT files missing. In LABREP No 580-27882-1 and 280-20411-1, the extraction method is listed as METHOD. The EDD's for these SDGs will need to be revised with the actual extraction method reported in the EDD.	280-20054-2 needs NPDL files renamed, remove date. It also needs the narrative file. 280-28782-2 was incorrectly named by Bristol. It has been corrected. 580-27882-1 needs the extraction method (Tacoma). 280-20411-1 (Denver) needs the extraction methods listed.	

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Teresa Lee** **PHONE: 753-2788**	**Action taken on comment by:**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
15.	EDD	For the following SDGs, the narrative file was named incorrectly (EDFNARR.txt instead of NPDLNARR.txt): 280-20410 280-20411 280-20446 280-20698	Please change EDF (COELT) narrative file names chances to NPDLNARR.txt	
16.	EDDs	The moisture content analysis is not documented as it should be in all of the EDDs. Please review, request the lab to revise, and resubmit those affected.	Please add moisture content to all EDDs.	
17.				
18.				
19.				
20.	CDQR 2.7	When listing the extraction batches where an MS/MSD was not run, 280-86671 is identified. However, when I pull up the data, it shows that this batch did have an MS/MSD run with it. Please review and revise.	Email sent to TA-Denver on 3/30 for clarification on samples in extraction batch.	
21.				
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U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Teresa Lee** **PHONE: 753-2788**	**Action taken on comment by:**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
30.		Our senior chemist, Mike Utley looked at the CCV's per my request and no significant issues were found, however, in so doing, he noted the following: "I did find one significant issue - while reviewing the hardcopies, I noted that the sample chroms indicate that the "operator has disabled compound identification" for most of the aroclors except 1260 and occasionally 1254. This doesn't appear to the result from dilutions or other screening techniques. It appears to be ubiquitous throughout the dataset. I recommend that we have the contractor contact the laboratory for an explanation of this issue." Please contact the laboratory for an explanation as suggested.		
31.		----- End of Comments ----		

REVIEW COMMENTS

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DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 29, 2012** **REVIEWER: Aaron Shewman** **PHONE: 753-5558**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
1.	GENERAL	I compared the HTRW Reporting requirements contained in Task 5 of the SOW rev 3 dated 10 Dec 2010 to the draft RA Report submitted by Bristol. The following were missing: 1) cover letter signed and sealed by an Alaska Professional Engineer certifying that all services were performed in accordance with the contract. 2) Waste profile sheets Please include the above items in the final report submittal.	This information will be provided in the final	A: Need cover letter Waste sheets are in Supplemental file, need to include hard copy?
2.	Table 6-1 Page 43	The value "9.4" for well 88-4 should be in bold text.	The change was made and the value was bolded in the report.	A:Done- Table6-1 on p. 47
3.	Page 46 Section 6.6.3	First paragraph, last sentence. Please also provide the average methane concentration for the UDU. Third paragraph. Please provide the range of methane values for the MDU	Ranges and averages of Methane concentrations for all decision units was added to the text in this section as recommended.	A: Done Page numbers and sections don't match 6.6.3 on p. 50
4.	Page 47 Section 6.6.3	As with the UDU and MDU, please provide the range and average for methane results for water samples collected in the LDU.	Change was made as requested.	A: Done
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9.				
10.				
11.				

REVIEW COMMENTS **PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007**
DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Carey Cossaboom** **PHONE: 753-2689**	**Action taken on comment by: Bristol**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
1.	Pg. 4, 1st full par., last sen.	You should supplement the data of the last sentence with some actual observations from Figure 5 data within this report.	The following sentences were added: Groundwater elevations observed in monitoring wells in and around the MOC suggest a groundwater flow to the north-northwest. Water depths at the MOC are deeper to the south and become shallower progressing north to the Site 28 drainage basin.	A: done
2.	Pg. 8	Next to last sentence: " …perform a chemical oxidation trial." We were beyond study according to Govt. reckoning.	Change was made as requested.	A: done
3.	Pg. 12, 2nd bullet	The period of completion was changed to allow for overwintering of the camp.	The sentence now reads: The period of completion was changed from April 30, 2012, to April 30, 2013 to allow for overwintering of the camp.	A: done
4.	Pg. 14, 2nd bullet	Please explain the radiation levels. Is this something that should concern the local stakeholders?	The following sentence was added: Radiation levels were attributed to naturally occurring radiation from the surrounding geology.	Add," ,common in granitic rocks such as those found at Kangukhsam Mountain." -Need to add
5.	Table 4-1	Weight should include units (tons)	The units were added to the column heading.	A: done
6.	Pg. 39, Sec. 6.4.3, 3rd sen.	"Laboratory/confirmation samples were collocated with field samples as closely as possible." Strange wording, does this capture the thought?	The sentence now reads: Laboratory/confirmation samples were collocated with corresponding field lab samples.	A: done on p.42
7.	Pg. 42, top par.	Since you mention Figure 5, might as well add that the apparent GW flow direction was predominantly N to NW on the days the well information was read.	A sentence was added describing groundwater flow direction.	A: on top page 46?
8.	Pg. 42, 2nd full par. start	"The three wells that have historically contained concentrations of DRO exceeding cleanup levels showed lower concentrations of DRO during the 2011 sampling event than in previous years."	The sentence was modified as requested.	A: done p. 46
9.	Table 6-1	Method 8260B values 33.7 and 9.4 should be **Bold.**	The changes were made as requested.	A: done p. 47
10.	Pg. 44, 1st sen.	"Historical (2004) results …"	The change was made as requested.	A: done p. 48

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Carey Cossaboom** **PHONE: 753-2689**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
11.	Pg.45, Sec. 6.6.2, 3rd sen.	" …T-handled auger with a 4-inch diameter? core barrel."	The sentence was modified for clarification.	A: done p. 50
12.	Pg. 54, 2nd sen.	Why were these excavations backfilled w/o removing soil? You mention that GW was encountered at 5-6 ft bgs. And that the planned excavation depth ranged from 6 to 10 feet. If water was encountered at 5-6 feet, the excavation could have been taken to 7-8 feet (2 feet below GW). This should have reached the uppermost contamination in some parts of the pit.	This section has been expanded and rewritten for clarification. Each plume and corresponding UVOST logs were discussed separately. In the H plume, groundwater was encountered at approximately 5 feet bgs. UVOST location 110 (near the center of the plume) indicates contamination at approximately 7.5 feet bgs (more than 2 feet below groundwater), so no soil was removed. Similarly in G1, the upper layer of contamination is more than 2 feet below groundwater. In plume G2, water was encountered at approximately 7 feet bgs and the uppermost zone of contaminated soil resides approximately 8 feet bgs. This allows for 1 foot of soil removal in the zone from 8 to 9 feet bgs in 2012 if conditions are similar to those observed in 2011. No soil was removed in 2011 from plume G2. Figure 10 has been updated for clarification on depths to contamination and groundwater.	A: done p. 59-60
13.	Pg. 65, Sec. 6.15, last sen.	"…which is provided electronically in the Correspondence Folder within the Supplemental Data folder." It's actually easier to state the results presented in this monthly report than it is to reference the location of the results.	The paragraph now reads: A stabilization analysis was conducted by Bristol Engineering Services Corporation and concluded that the borrow material used to cap the landfills at Sites 7 and 9 meets non-vegetative permanent stabilization requirements set forth in the 2011 Alaska Construction General Permit. Permanent stabilization at Sites 7 and 9 has been achieved.	A: done p. 72
14.	Figure 5	Can you put the dates that the water level elevations were recorded?	Dates have been added. The water levels were measured on 7/14/2011. Ice obstructed MW88-10, which was measured on 7/18/2011.	A: Add to figure
15.	Figure 7	Legend should include date of Surface Water Sample (2011), just like the historic samples shown.	The year has been added to the legend.	A: Add to figure

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Carey Cossaboom** **PHONE: 753-2689**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
16.	Figures 8 & 9	Please change the color of the Curtain Liner to green. Not RED!	The color has been changed to green.	A: Change to GREEN
17.		SEE MED CHECKLIST FOR ELECTRONIC COMMENTS		

Alaska Department of Environmental Conservation (ADEC)
Contaminated Sites Program
Document Reviewed: Draft 2011 Northeast Cape Removal Action Report
Commenter: Curtis Dunkin-ADEC **Date Submitted:** May 14, 2012 ADEC Review of RTCs June 21, 2012

#	Page #	Section	ADEC Comment	Response
1.	ES-1	Executive Summary	Bullet point starting w/ 'Transporting and disposing of 21 bulk bags…' state that the staged bags were generated during the 2010 removal action.	The statement was added as requested **ADEC-Accepted**
2.	ES-2	Executive Summary	Last bullet on this page replace 'non-hazardous' with 'PCB-contaminated soil [that was not TSCA-regulated (< 50 mg/Kg?)'.	The statement was added as requested **ADEC-Accepted**
3.	ES-3	Executive Summary	Third to last bullet from bottom of the page re: J1A excavation samples; state whether these were field or fixed laboratory samples.	This clarification was added as requested (they are fixed lab samples) **ADEC-Accepted**
4.	5	1.8	Revise third sentence of this section to state: 'A population of approximately 1000 reindeer inhabits the island.	This sentence was adjusted as recommended. **ADEC-Accepted**
5.	6	1.8	Sand hill cranes (which ADEC observed on site inspections conducted in August 2010 and September 2011) should be added as observed bird species inhabiting the island..	Sand hill cranes was added to the list of birds at NE Cape **ADEC-Accepted**
6.	13	3.1.2	A bullet should be added to the deviations section (or a new section added) that states the reasons and decisions related to the overwintering of resources (equipment, facilities, etc.) at NEC and reference the section(s) where this is discussed in more detail in the document i.e. section 4.1.	A paragraph was added to the end of section 4.1 outlining the decisions for overwintering equipment. This was not a deviation to the planning documents. **ADEC-Accepted**
7.	14	3.1.2	Metal Debris Disposal: states that '…due to radiation levels, the steel was disposed of at CRL…'. Radiation testing was not part of the work plan nor was ADEC previously informed that radiation was a concern at NEC. The draft report does not include any other discussion regarding this issue which should be thoroughly discussed. IDW: State how many gallons of PCB-contaminated waste water was generated and disposed of in the super sacks in the 2011 removal action effort?	The radiation tests are a part of standard tests performed by the trucking company that was shipping the metal to a recycling center. The radiation levels exceeded the maximum allowable levels regulated by the state of

				Washington for recycling. Radiation levels were attributed to naturally occurring radiation from the surrounding geology that was contained within minor pieces of concrete attached to the metallic debris. Approximately 75 gallons of wash water used for decontamination was loaded into bulk bags which contained PCB-contaminated soil. Decontamination water was used at two boot wash areas (one each at Sites 13 and 31) and in 5-gallon buckets utilized for decontaminating sampling equipment. **ADEC-Accepted – add responses to report narrative**
8.	14	3.1.3	First bullet of this section, revise ADEC's tentative approval date of the work plan and SAP to 2011 from 2010.	Change was made as requested **ADEC-Accepted**
9.	17	3.2.2	Environmental Samplers: change ADEC-certified to ADEC-qualified.	Change was made as requested **ADEC-Accepted**
10.	20	4.1	See comment # 6 above. Re: the last sentence of this section referencing the 19 landing craft, was equipment shipped off island? Question is in regards to ADEC's understanding that equipment was overwintered on site. Was equipment and/or supplies or other resources off loaded from the landing craft onto the site? If so this should be stated.	This section has been modified to clarify the overwintering rationale. All of the main heavy equipment remained on-island. The hydraulic concrete removal extension for the excavator was shipped back to the rental facility because it will not be needed in 2012. **ADEC-Accepted**
11.	31	5.2.2	Re: the modifications to the field laboratory analysis method for screening PCBs in soils, if such modifications are to be implemented in future removal action efforts, then ADEC will require a	Correlation studies have been discussed but nothing

			correlation study that demonstrates that the modifications result in accurate field screening laboratory analysis results. Also, in relation to modifications discussed in this section, the field screening concentration of 0.8 mg/Kg for PCBs in soil that has been utilized in previous years should be reconsidered (whether or not it should be lowered) for future removal action efforts. This reconsideration is also supported by the high RPDs as noted in other comments below.	definitive has been decided by the USACE. Comment acknowledged. The USACE will fund a laboratory review to assess this. **ADEC-Accepted**
12.	32	5.4	Revise the first sentence of this section to state '…POL excavation sites [either] when field…'.	Change was made as requested. **ADEC-Accepted**
13.	34	5.6	Revise second sentence of this section to state '…POL- and PCB-contaminated soils…'.	Change was made as requested. **ADEC-Accepted**
14.	42	6.5	The statement beginning with 'The three wells that historically contained concentrations…', should be revised for clarity; i.e. '…contained the lowest [historically] observed…'.	Change was made as requested. **ADEC-Accepted**
15.		Figures 5 and 6	It would be helpful to color code the monitoring wells depicted in these figures which have historically had any contaminant exceedance, and then to depict the 2011 analysis results for those contaminants which were historically exceeded (as is depicted for the 2011 exceedances on Figure 6).	Sample results were added to the figure which show results from previous years. **ADEC-Accepted**
16.	45	Sections 6.6, 6.6.1 and 6.6.2	Regarding the statement 'Water levels in the LDU did not appear to be significantly changed by the rain event.', more comparative discussion is necessary in these sections regarding the differences in dates, precipitation events, and possible other differences in conditions associated with 2011 and all other previous sampling and monitoring events. Differences in conditions between monitoring events could have significant impact when comparing results from the multi-year study. On what basis or evaluation is the state above made re: the water levels in the LDU? The last statement of this section, omit 'site-specific' and simply state below cleanup levels. There are no site-specific cleanup levels for surface water.	The only difference besides sampling dates for the samples collected in the different DUs was a noted precipitation event. A visual observation by the field sampler was made that no significant change in water level was observed after this rain event. **ADEC-Accepted – add responses to report narrative** "site-specific" was deleted from the end of the section. **ADEC-Accepted**
17.		Appendix E Table 8	The column labeled as 'Site-Specific Cleanup Level' should be revised to 'Cleanup Level'; site-specific cleanup levels are noted in the table. The cleanup level should not be noted as 'not specified' (NS) for the contaminant 1-	The table has been changed as recommended. **ADEC-Accepted** The results of DRO/RRO

			Methylnapthalene and instead the actual ADEC Method Two cleanup level of 6,200 ug/Kg should be inserted. The results data for the w/ silica gel cleanup results should be reevaluated whether the data was entered incorrectly in the table or whether there are other issues/errors with for example the laboratory method or reporting process. Nearly all analysis results w/ silica gel cleanup are significantly higher than the w/o silica gel cleanup. This should be also further discussed in the related narrative sections. The high RPD as stated in table 8 should be discussed further in related narrative sections. Although it was not stated in the 2010 results at the time of review, the RPD in the duplicate sample taken from the MDU was also moderate to high.	with and without silica gel cleanup have been reviewed and are correct on the tables. It is unknown why the results are higher with silica gel. The high RPDs have been addressed in the appropriate sections and also in the CDQR. **ADEC-Accepted**
18.		Figure 7	Assuming that the purple and black circles depict 2011 water and soil samples respectively, the sample year should be inserted in the legend in association w/ the circle. Insert 'Soil' to adequately reference the 2011 Soil Sample Location. Insert the appropriate matrix sampled next to the orange and yellow dots. Since this is the second year of sampling for the multi-year study, a comparative figure should be added or the current figure amended such that all historical water and soil analysis results obtained from samples taken w/in these decision units which exceeded respective cleanup levels should be depicted.	Sample year was inserted into the legend. The MDU exceeded DRO and 2-Methylnaphthalene in 2010, but did not in 2011. The sample locations were composited into a single sample, so no particular point is visible on the figure. The 2010 results were noted in section 6.6.3, Conslusions and discussions. **ADEC-Accepted**
19.	46	6.6.3	State the maximum saturation value for DO in water at six degrees Celsius (12.43?). When was the MNA data collected for the UDU in relation to the data collected from the MDU and LDU? Was any valid data for MNA parameters collected for the UDU in 2011? The third sentence of second paragraph, revise '…are contributing…' to '…could be contributing…'. Re: the statement that fuel odor was detected in 2010, more discussion re: the 2011 observations need to be included in this section. Was a sheen and odor observed during sampling activities/due to disturbing the sediment in 2011?	Incorrect values for DO were recorded in the tables. The correct values have been added after double-checking the field notes and conclusions have been revised as appropriate. The DO sensor appears to not have been an issue after all. Valid data was collected for MNA parameters. **ADEC-Accepted** Third sentence was revised as recommended. **ADEC-**

				Accepted Fuel odor was noted in the MDU during soil sample collection, but not in the other DUs. Dates of the sampling events was added to the text. The LDU was sampled on 8/4/11, the MDU and UDU were sampled on 8/5/11. **ADEC-Accepted**
20.	47	6.6.3	Second to last sentence in second paragraph on this page, revise to state '…exceeding [site-specific] cleanup levels.' Also state the site-specific cleanup levels. Make this revision elsewhere in the document where appropriate. Were the samples taken from the upper, lower and middle decision units considered to be sediment or soil? Statement in third paragraph on this page needs to be reconsidered/revised re: '…NOM at concentrations far exceeding DRO concentrations.' Silica gel analysis resulted in increased concentrations of DRO and RRO contaminants. TOC data cannot be applied in determinations of the relationship/rations of POL contaminants and NOM. A better correlation study is necessary in order to make any reliable evaluation statements regarding the influence of NOM on analysis results.	The cleanup levels were clarified. Samples collected from Site 8 were considered soil samples. **ADEC-Accepted** Statement of third paragraph revised and silica gel reference removed. NOM concentrations exceeding DRO concentrations remain in paragraph as this is believed true. **ADEC-Accepted – however this statement should also reference the RPD variances discussed in comment #17 above** Silica gel results are not used thus far at any location to show that cleanup goals have been achieved. No TOC to DRO correlations have been made other than statement that TOC concentrations do greatly exceed DRO concentrations. **ADEC-Accepted**
21.	48	6.7	Re: the draft and final tech memo, include that ADEC received and commented on the draft report as well as the date which the final report was submitted.	Information was added as requested. The ADEC RTC approval letter dated 2/29/12

				was added to Appendix A. **ADEC-Accepted**
22.	50	6.9.1	Is it known what or whether there were COC(s) associated with the stained soil below the ASTs? State the disposal fate of the 67 bulk bags. Were screening and/or confirmation samples taken in the area(s) associated with the removed 'stained soil'? What was the rationale for removing 18"?	The USACE requested that Bristol remove ~18" of the stained soil; based on previous experience with AST footprints in Alaska where a tar-like substance was typically used as a corrosion control for the base of the ASTs. And it typically penetrates less than 18" from the soil surface . Waste characterization samples were collected from the bulk bags (1 sample per 7 bags) as was done in all other excavation areas. Field lab samples were collected from the excavation. See tables S4 and S5 for field lab sample results related to excavations underneath the former ASTs. None of the sample exceeded site-specific cleanup levels for DRO or RRO. **ADEC-Accepted – add responses to report narrative**
23.	50	6.9.2	Regarding the references to the indications of whether soil was or was not contaminated above the alternative cleanup level based on the 2010 UVOST investigation, while conducting excavations of overburden and/or the soils above UVOST-indicated clean soils, was any further field screening and/or sampling conducted to confirm that soils were indeed below the cleanup level? This should be better explained here and in other appropriate sections of the document.	Stockpile sampling was conducted and samples were analyzed in the field lab for DRO/RRO to confirm that the stockpiled soil was below site-specific cleanup levels prior to being used as backfill. Waste characterization sampling was conducted (1 sample per 7 bags) on all POL soils excavated from the MOC.

24.	52	6.9.2	References should be made for the figure which depicts the sampling location for this excavation area.	Reference to the figure was included in the text. **ADEC-Accepted – add responses to report narrative**
25.	54	6.9.4	The statement in the last paragraph of this section '…future excavations are not necessary at the G plume' should be revised to state 'future excavation and removal efforts at the G plume need to be reevaluated for whether further action is feasible and/or required'.	This section has been clarified and a sentence has been added stating that the G and H plumes should be reevaluated in the future to determine if excavation is necessary or feasible. **ADEC-Accepted**
26.		Figure 10	The water depths and elevations encountered should be depicted for the excavations and test pits conducted in the G and H Plume areas. In general re: the concrete that was removed in 2011 and previous years from various sites (i.e. as depicted on Figures 10, 11, and others) a brief section should be added to the report that summarizes all of the concrete foundations that have been removed in the 2009, 2010, and 2011 removal action efforts for the purpose of characterizing and/or excavating underlying soil. Currently there is only one brief statement in section 6.13 that states '…debris was encountered during concrete removal activities in the MOC'.	Figure 10 has been modified to more clearly detail groundwater elevations in relation to excavation depths and contamination depths. A section was added to the report to discuss concrete removal (Section 6.13). **ADEC-Accepted**
27.	54	6.9.5	Re: moving dewatered soils from the impoundment area to the concrete foundation at former building 98, the narrative should include more detail re: how the soil was removed from liner and transported to the foundation. The narrative should also include details regarding whether or not the dewatering area was left in place over winter and provide information regarding post-deconstruction soil sampling requirements. Did any breaches in the liner occur during soil dewatering activities?	The wet soils were transported via rock trucks which were loaded using an excavator. The berms were cut down prior to demobilization, but the liners left in place so that the impoundments could be rebuilt in 2012. Water should drain off these areas during the spring runoff prior to the 2012 field season. All waters were treated and discharged prior to demob. Very little water (essentially none) drained from the soils stockpiled on the liners. The vast majority of water which

				collected in the impoundments was rainwater. One of the impoundment liners was punctured post-treatment before sample results were received and approximately 1,000 gallons discharged to the ground adjacent to the J1A excavation. Samples of similarly treated water later revealed the water to be below discharge criteria. The soil underneath the impoundment area is in the vicinity of the former ASTs. Confirmation samples will be collected from this area following removal of the liners. The text has been modified to include this information. **ADEC-Accepted**
28.	55	6.10	Last sentence of this section, clarify whether this refers to excavating and removing the contaminated soil and/or shipping the contaminated soil off site.	This section was updated to include the weights that were shipped off-island. These weights can also be found in Section 4.7. **ADEC-Accepted**
29.	57	6.10.1	Second paragraph on this page, it appears that the 39 composite samples were composed of samples from the 279 discrete samples; this should be stated for clarity. State the dates in the narrative on which the confirmation and composite soil samples were collected. Also state in the narrative that the soil PCB concentrations depicted on Figure 11 represent the status of the site 13 soils at the end of the 2011 removal action so to clarify that these are the conditions which will be encountered at the beginning of the 2012 field season. See comment # 31 below regarding request to include more discussion in the narrative about the composite samples and their analysis results.	A statement was added in an attempt to clarify: A total of 363 confirmation samples (comprised of discrete samples and composite samples), including field duplicates were collected and submitted to TestAmerica. Dates have been added to the text. And more information

			The narrative should briefly explain the process in which 'discrete samples within the composite were subsequently analyzed discretely' (i.e. how a portion of the original discrete sample material was retained from the material that went into the composite sample). Narrative states that 273 confirmation and 39 composite samples were submitted and analyzed, however Table 13'report table' has 363 total samples, including 20 duplicate samples, 87 composite samples, and 256 primary samples listed. The Table 13 'for GIS' table has 362 total samples listed, and the 5 samples listed in the 'MED compliant' table are neither included in the report table, nor discussed in the narrative sections of the document. Revise first sentence of third paragraph on this page to state: 'Analysis results determined that sixty-eight of the total number of confirmation samples taken had soil PCB concentrations that exceeded the ADEC cleanup level. On pages 57-58, re: the discussion of excavation of PCB-contaminated soils encroaching into Plume A2, was the soil screened and sampled for POL contaminants? Was any soil from this area stockpiled? A brief statement/explanation should be made in regards to how co-mingled contamination (POL and PCBs) in this area are managed. ADEC is concerned that the comingling of fuel and PCB contaminants could have resulted in the mobilization of PCBs within and down gradient of the A2 Plume area. Future sampling and removal action efforts will need to address this issue at this site and any similar sites (.i.e. mobilization of PCB contaminants could have occurred and migrated via a preferential pathway).	about discrete samples from composite samples remain at the lab has also been included **ADEC-Accepted** The sample totals have been adjusted. A total of 363 confirmation samples were collected. **ADEC-Accepted** Regarding Site 13 encroaching plume A2: only PCB-contaminated soils were removed from this area. POL excavations were not started at the A2 plume. In 2012, the priority will begin with PCB soils. POL excavations in the area will begin after confirmation samples confirm the absence of PCBs (or are below cleanup levels). Disregard the 'for GIS' table. **ADEC-Accepted** Table 13 and Site 13 had 363 samples submitted for confirmation analyses, which is correct. There were24 field duplicates for site 13. The sample summary table has been revised as well. First sentence-third paragraph revised as recommended. **ADEC-Accepted**
30.		Figure 11	Insert '2011' in front of each of the three soil sample depictions in the legend. A new color depiction should be added for PCB sample locations where analysis results exceeded 200 mg/Kg. Regarding samples # 287 (including the duplicate #430) and #388 depicted on this figure (which had PCB concentrations of 230 and 270 mg/Kg respectively) the narrative should include more detail about the profile of the locations where these samples originated (surface, sidewall, etc.) due	2011 was added to the legend. The color of the symbols for the results above 50 mg/kg was changed to yellow. Figure 11 and 12 have been changed to show those samples that were

			to the fact that these samples are depicted on the edge of the excavation boundary. The same should be discussed for all samples that exceeded cleanup level that are located on the edge of the excavation boundary. It would be helpful on this figure (since it includes what appears to be contour lines) to change the access road boundaries to a different color than black to better call out this feature from the contours and the plume and excavation boundaries.	collected from the sidewall and those that were collected from the floor of an excavation. **ADEC-Accepted**
31.	Appendix E	Table 13	The depiction of duplicate samples with a purple background needs to be stated in the legend for this table. There are several duplicate samples labeled as 'dup' which are not shaded purple in the table and should be. All total PCB results which exceed the cleanup level of 1 mg/Kg should be shaded red – regardless of whether the sample is a duplicate or primary. Several of the composite samples do not have the composite constituents listed in column M. The dilution issues and the results of the composite sample analysis need to be further discussed in more detail in the respective narrative sections of the reports (not just in the DQCR/Appendix D). See comment # 29 above re: inconsistencies in the narrative and table 13.	All duplicate samples are now shaded purple (24 duplicates). Exceedances are shaded red. **ADEC-Accepted** A chemical data summary has been added to section 5.3 **ADEC-Accepted**
32.	58	6.10.1.1 (and 6.10.2.1)	More details should be provided in this section re: the dates and sequence of removing the stockpiled soil and subsequently excavating the underlying soils which were later determined to be contaminated w/ PCBs above cleanup level. The sampling of soils in this area should be explained in more detail. Was this area previously sampled and thought to be clean? State the cubic yards and/or tonnage of contaminated soil that was excavated for disposal off site in 2011. Were the samples from the site 13 overburden stockpile submitted to and analyzed by the field laboratory or the off-site laboratory? Note section 6.10.1.1 does not reference either, and section 6.10.2.1 only refers to field laboratory samples (site 31).	More details were added to these sections. All "pre-stockpile" and stockpile samples were analyzed in the field lab. Text was added to clarify this fact. **ADEC-Accepted**
33.	59	6.10.1.2	Insert reference to Table S10 when referring to the Field Lab subfolder in the last sentence of this section.	This table is now included in Appendix G as Table 14. **ADEC-Accepted**
34.	59-62	6.10.2	This section only discusses field laboratory samples and results for site 31 and there is no discussion re: the confirmation and composite samples that were collected and shipped off site for analysis (as was discussed in the narrative for site 13). See similar comments in # 29 above. Table 14 in Appendix E needs to also be referenced in this section. Were there also discrete samples that made up composite samples that were discretely analyzed after the composite sample was determined to	Table 14 has now become table 15 and is referenced in the narrative. The dates and confirmation sample numbers have been added to the text also. There were fourteen composite samples that were

			be above 1000/n as was the case for site 13?	reanalyzed because they were above the 1/n number, this was added to the text. **ADEC-Accepted**
35.		Table 14	The depiction of duplicate samples with a purple background needs to be stated in the legend for this table. There are several duplicate samples labeled as 'dup' which are not shaded purple in the table and should be. All total PCB results which exceed the cleanup level of 1 mg/Kg should be shaded red – regardless of whether the sample is a duplicate or primary. Several of the composite samples do not have the composite constituents listed in column M.	Table has been corrected. **ADEC-Accepted**
36.		Figure 12	Insert '2011' in front of each of the three soil sample depictions in the legend. A new color depiction should be added for PCB sample locations where analysis results exceeded 200 mg/Kg. Figure 12 does not have the stockpile area depicted as listed in the legend and stated in the narrative and needs to be inserted onto Figure 12, and then referenced in the second paragraph on page 60. The narrative should include more detail about the profile of the locations where the samples which are depicted on the edge of the excavation boundary originated (surface, sidewall, etc.).	The figure changes were made as requested. The stockpile area is now presented as a hatched line. The figure has been changed to show the sidewall samples. **ADEC-Accepted**
37.	61	6.10.2.1	Due to the fact that sample analysis results for the site 31 overburden stockpile exceeded the cleanup level and multiple rounds of sampling and removal (bagging for disposal off site) were conducted, a new figure should be developed that depicts the footprint of the stockpile, and the iterations of sampling locations areas where removal actions occurred. The narrative in this section should also state the rationale utilized for determining '…soil from this area was loaded…'.	The stockpile location is now shown on Figure 12. **ADEC-Accepted** The sampling occurred from the stockpile of soil that was removed in order to open up the excavation to its 2010 excavation limits. The three iterations of sampling/excavating are referring to the soil stockpile, not the ground beneath the stockpile. These sample locations, which were evenly spaced and collected approximately 1.5 feet within the stockpile, were not GPSed, but were relocated using pin flags. **ADEC-Accepted – add responses**

				to report narrative
38.	62	6.10.2	Revise first sentence on this page: '…initially excavated [to] approximately 18…'.	Change was made as requested. **ADEC-Accepted**
39.	62	6.10.2.2	Reference the S15 Table in Field Lab Supplemental data.	This table is now Table 16 in Appendix G. A reference has been added to Section 6.10.2.2. **ADEC-Accepted**
40.	63	6.11	Did excavation in 2011 only occur w/in the 2010 footprint or was it expanded? Re: the statement in the last sentence of this section '…the excavation area was a wetland that was inundated with water.'; was standing/surface water present prior to beginning excavation in 2010 and/or 2011? Was excavated soil dewatered/dried out before bagging? How long did it take for standing water to cover the excavation area(s)? Was excavation conducted to 2 feet below the surface of standing water? All of these issues should be better clarified in the narrative. Third sentence of last paragraph of this section, revise to state: '…removal, [eight] discrete [confirmation] soil samples…'. Note: ADEC recommends that further site characterization be conducted at site 21 prior to proceeding with further removal actions and excavation activities.	Samples were collected from within the 2010 excavation and the excavation was expanded. The 2010 excavation footprint was flooded with water upon arrival at the site. The wet soil was allowed to drain in the excavator bucket before it was loaded into a bulk bag. This section has been revised for clarification. **ADEC-Accepted**
41.	General	Figures and Respective Narrative Sections	For the purpose of demonstrating the reason(s) for why the current excavation boundaries are what they are (i.e. previous soil sample analysis results determined that surface and/or subsurface soils outside of these boundaries are below cleanup levels) it would be helpful to depict previous soil sample analysis results and sample locations that were utilized to facilitate this determination. Or, if the expansion of the boundary is suspected in 2012 and future removal actions (i.e. the excavation will continue to expand in the direction of boundary samples for which analysis results exceed cleanup level) then this should be stated/clarified in appropriate sections.	All sample locations which show concentrations in excess of cleanup levels will be excavated in 2012. The confirmation sample results will serve as the starting point for removal in 2012, thus excavation boundaries will be expanded. **ADEC-Accepted – add responses to report narrative**
42.	65	6.15	The Sept. 13, 2011 monthly status report referenced in this section only refers to the stabilization analysis. The analyses for sites 7 and 9 and the borrow pit should be included and accurately referenced in the document and supplemental data.	This section has been reworded per USACE comments and now reads: A stabilization analysis was conducted by Bristol Engineering Services Corporation and concluded that the borrow material used to cap the landfills at Sites 7

				and 9 meets non-vegetative permanent stabilization requirements set forth in the 2011 Alaska Construction General Permit. Permanent stabilization at Sites 7 and 9 has been achieved. **ADEC-Accepted** Reference to the Monthly Status Report has been removed. **ADEC-Accepted**
43.	General	Site Visits	A sub section should be added to section four that summarizes the miscellaneous site visits and/or inspections conducted by non-Bristol and non-Corps personnel; i.e. any representatives from other agencies, villages, etc. ADEC conducted a site visit/inspection on September 12, 2011.	A section has been added briefly describing two site visits. One from members of Savoonga and another from ADEC. **ADEC-Accepted**
44.	Appendix C	Photo # 32	Shows a concrete slab and wood frame in the bottom of site 13 excavation. Was this concrete wipe sampled to determine possible contamination; was it removed and disposed of and was sampling under the concrete conducted?	A wipe sample was taken from this concrete slab and the piece was ultimately used as backfill in a POL excavation. Confirmation samples were collected from the soils underneath the slab. **ADEC-Accepted – add responses to report narrative**
45.	Appendix C	Photo # 36	Photo description should include the name of the excavation site to which this utility corridor was located in the southwestern section. What sampling was conducted in this area? This should be discussed in more detail in the appropriate narrative section(s).	The site name (Site 13) was added to the caption. This site had confirmation samples collected at 5-foot intervals as with the rest of the excavation. Confirmation samples indicate that PCB

				contamination above cleanup levels remains in this area. **ADEC-Accepted – add responses to report narrative**
46.			**Appendix D: Data Verification Report Comments**	
47.	6	2.0	Table 2-0.1 Site 8: Insert 'surface' into the Field Sample title column to be consistent with other tables.	Surface has been added to table 2-0.1. **ADEC-Accepted**
48.	33	2.1	Site 8 Lab Work Order 580-27633-2: All sample analysis data from the one of three coolers in which both the cooler receipt temperature and the temperature blank readings exceeded 6 deg. C need to be qualified. ADEC does not consider rounding these numbers down to the nearest whole number as acceptable; as suggested in this summary. ADEC can approve not qualifying data when the cooler receipt temperature exceeds 6 deg. C when samples and blanks are below the 6 deg. C parameter, as is the case for Lab Work Order 580-28786 referenced on page 35.	Rounding reference was removed. **ADEC-Accepted** Sentence revised to state: Since the analyses were for DRO/RRO, PAHs and arsenic in soil, the associated soil sample results were not qualified. **ADEC-Accepted**
49.		General	There are numerous instances in the data verification report in which the sample dates and times noted on sample containers did not match the info provided to the lab on the CoC; subsequently the lab entered the CoC info as the default sample date and time. Respective ADEC checklists state that the discrepancies were corrected via correspondence w/ the laboratory, however ADEC was not able to locate documentation of the correspondence in the draft electronic data. Please reference the location of or provide the subject correspondence for ADEC review in the RTCs. Otherwise, the oldest of the two dates and/or times from the sample container or the CoC should be utilized.	The oldest of the 2 dates was verified. No holding times were exceeded. **ADEC-Accepted**
50.	48	2.7.8	Re: the laboratory reporting the lower of the two results and not applying additional qualifiers, the difference between the two results for the subject samples should be discussed further. It is not acceptable to report the lower of the two results based on a matrix interference for PCBs in soil. In all cases, the higher result should be reported and additional qualifiers should be applied.	The lower result was used as the second column did not distinguish 5 Aroclor peaks for 1254, only 3, so the 5 peak Aroclor 1254 quantification was used, which had a lower concentration. Affected

				samples 20054-57 and -126 exceeded UCL for 1254 and/or 1260 and further removal will take place. Samples 20698-6, -8 and -130 had non-target analyte interference so the second column, which did not have non-target interference was quantified and reported. **ADEC-Accepted**
51.	55	2.13.1	Site 8: Why was there no field duplicate pair sampled submitted for surface water samples collected for DRO/RRO and PAHs? This should be further noted in associated and appropriate tables and narrative sections throughout the document. Sites 13 and 31: The field duplicate frequency should not be evaluated comprehensively for the totals of discrete and composite samples; rather it should be calculated for the type of sample the duplicate was collected (either discrete or composite). A duplicate sample frequency of a minimum of 10% should have been collected for both discrete and composite samples. Explain in this section (as well as in all associated and appropriate tables and narrative sections) why this was not done. RPDs for all duplicate and primary samples were very poor as noted in this section and in the summary of the data validation report. This is a significant data quality issue that needs to be stated in the respective narrative sections of the report (as requested for sites 8, 13, and 31 above).	Samples WA02 and WA03 were field duplicates but not reflected on the draft table. The duplicate has been noted in the table and CDQR. **ADEC-Accepted** The duplicate frequency for composites was greater than 10%, the re-analysis of discrete samples from composites was not accounted for in duplicate frequencies. More field duplicates will be collected in 2012. **ADEC-Accepted** Site heterogeneity is believed to be the main cause of failed RPDs of field duplicates. Additional text and explanation was added to

				Sites 8,13 and 31 in their respective sections. **ADEC-Accepted**
52.	60	2.13.1	Correct the spelling in legend of Table 2-13.1: residual rang[e] organics.	Corrected **ADEC-Accepted**
53.	68	3.0	Re: the last bullet of this section on this page, it should be determined and stated here that these sample results will be qualified as an estimate with an unknown bias (QN) due to imprecision in field duplicate samples; similarly as the other PCB samples.	Based on comments from USACE chemist, only field duplicate pairs were flagged QN due to imprecision. This has been stated in the revised Section 3.0 and also added to text in the report and the CDQR. **ADEC-Accepted**
54.			**End of ADEC Comments**	

REVIEW COMMENTS | **PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007**
DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 14, 2012** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
1.	General	Why does this say FINAL on the cover sheets and in the footers? The contract requires a DRAFT and FINAL report.	This is a misnomer and is a result of our (Bristol's) in-house reference to the report. This version of the report was intended as a draft.	A
2.	General	Surface water and surface-water, "water" should always be either surface water or groundwater for clarification, field screening and field-screening, etc.	Comment Noted. Changes were made throughout the document for clarification.	A: done
3.	General	Different units are used for concentrations of soil (ug/kg and mg/kg) and water (ug/L and mg/L), and length (inches and feet), throughout the document. Tables are in one unit, report discusses results in multiple units, and figures are in another unit. I understand the reasoning for using the microgram unit some of the time, but if possible, please use the same units when discussing each associated media, and make it line up with what is used on at least the figure. As is, these differing units are very distracting to the reader and in general are a bad practice for any technical document. Please review the entire document and make changes where possible.	The report units have been unified and match those that are used on the figures. PCB lab results units are now discussed in mg/kg instead of µg/kg. The tables in appendix E will remain in the units supplied by the laboratory.	A: done
4.	General	When discussing specific sample results, please reference the appropriate Table and Figure in the first few sentences of each paragraph or section, not at the end as is done throughout the document. When specific things are being discussed in the text, the reader naturally wants to reference what is being said and where it is on a map immediately, not fumble around looking for the appropriate table/figure either mentioned much later in the text, not at all, or in the bulk of the Figures and Table sections.	Comment noted. Some figure and table references have been rearranged in the text so that they are introduced to the reader earlier.	A: done
5.	Table of Contents	Section 6.4.2 – Change title to POL Field-Screening Soil Sample Collection for consistency. Section 6.6 – Change title to Site 8 Pipeline Break MNA for accuracy/clarity. Section 6.10.2 – Change title to White Alice Communications Station for accuracy/clarity.	Changes were made as requested.	A: need to add MNA to 6.6 Add 'Communications Station' to 6.10.2 Done

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 14, 2012** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
6.	Pg ES-2	Second bullet: "Sediment removal" is listed as an action item. No sediment was removed during the 2012 HTRW RA.	The sentence was edited and the words "sediment removal" were removed.	A: done
7.	Pg ES-3	Third and fourth bullets from bottom: Is there a difference between a fixed-laboratory analytical sample and a analytical sample? If not, please keep terminology consistent.	The words "fixed-laboratory" were added for clarification to the third bullet item from the top.	A: done
8.	Pg. 4	Second paragraph: Following the second sentence, "(USGS)" is listed as a reference. There is no "USGS" reference in Section 7. Please add the appropriate reference to Section 7 and reference correctly (i.e., USGS, 1989).	The comment was referencing a USGS permafrost map. The author and date are now referenced in the text and Section 7.0 was updated accordingly.	A: done
9.	Pg. 4	Last sentence: Change "This stream" to "The Suqi River stream drainage…" for clarity. Not clear on what stream/drainage you are talking about. Also, remove last sentence "The smaller tributaries…" confusing and no map to clarify.	Changes have been made to the paragraph for clarification. The edited section now reads: Several smaller tributaries, originating from small unnamed lakes (USACE, 2002), feed this stream drainage as it flows north to Kitnagak Point. The Suqitughneq River was impacted by a diesel fuel spill in the 1960s.	A: done
10.	Table 2-2	Noticed a couple of errors. Specifically, I noticed errors in Items 0006AA and 0006AG.	Items 0006AB and 0006AG were updated to 4.8 and 8.7 options exercised, respectively.	A: need to add/double check
11.	Pg. 12	Third bullet: Spell out each individual increased quantity as in 4th bullet	This modification exercised one unit from CLIN 0006AH, increasing the total exercised options within this line item from five to six. This modification increased the exercised optional quantities from 10,000 tons to 12,000 tons.	A: done
12.	Pg. 13	Section 3.1.1: Add a blanket statement at the end of this section stating that all field work was done in accordance with the prepared planning documents, except as noted in Section 3.1.2. Stating this only once up front will prevent repetition of the same statement throughout the rest of the document.	A sentence was added as recommended.	A: done
13.	Pg. 13	Section 3.1.2, First bullet: Mention use of collection pond and adhesive to seal the liner to the concrete.	Text was added that mentions the water impoundment and the liner at Pad 98.	A: done p. 14

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Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
14.	Pg. 19	Second paragraph: Last sentence refers to photos of mobilization – there are no photos of mobilization in Appendix C. Add photos of mobilization or refer to Appendix C in a more appropriate location in the latter paragraphs when discussing field work and demobe.	The reference to Appendix C was moved to the following paragraph and now reads "Photos of the beach operations and other site activities are displayed in the photograph log presented in Appendix C."	A: done p. 21
15.	Pg. 21	Section 4.3 first paragraph: Remove semicolon following Alaska.	The semicolon was replaced with a comma.	A: done p. 23
16.	Table 4-1	No unit assigned to Weight column.	The units were added. Also addressed in Cossaboom comment 5.	A: done
17.	Pg. 24	Perhaps it would be better to state that certificates of disposal will be furnished to the Corps in their entirety as they arrive. To state a "to date" amount in a Final Report is meaningless.	The text now states: Bristol will furnish certificates of disposal to USACE in their entirety as they are received.	A: done p. 26
18.	Pg. 30	Last 2 paragraphs of Section 5.2. Please rework so that it is clear which type of field screening you are talking about. There is a comingling of PCB and POL information. One paragraph should only discuss PCB field-screening; one paragraph should only discuss POL field-screening.	The sections have been organized as recommended.	A: done p. 32
19.	Pg. 32	Section 5.4, second sentence: change last part of sentence from "or at the end of the 2011 field season" to "or when weather conditions dictated the end of the field season."	The change was made as requested.	A: done p. 34
20.	Pg. 35	Second paragraph: Change "sediments" to "sediment"	The change was made as requested.	A: done p. 37
21.	Pg. 37	Please add a blanket statement similar to Comment 12 that states all work was completed according to the Work Plan.	The statement was added to Section 6.0 as recommended.	A: done p. 39
22.	Pg. 37	Section 6.3: This is the only section that discusses surveying in the entire document and is too general. Two professional land surveyors spent the entire summer onsite surveying everything possible. Please briefly discuss everything that the surveyors accomplished in 2011. Discussion items should include but not be limited to: Tying new survey data to existing NGS monuments, tying new survey data to old survey data, establishment of new monuments (if any) , where are they, and will be officially	Additional information has been added to this section.	A: done p. 40

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
		registered, was survey accuracy documented, etc.		
23.	Pg. 38	Section 6.4.1: Wasn't an excavator used to collect some of the PCB field screen samples?	The following sentences were added to this section: Samples were collected from the bucket of an excavator when excavation conditions prevented safe entry. The excavator bucket was decontaminated between samples by removing soil particles with a dry brush.	A: done p. 41
24.	Pg. 38/39	Section 6.4.2: Discuss specifically how the floors (square feet?) and the sidewalls of the excavations were sampled for field screening of POL. Where were the samples collected along the vertical wall of the excavations? Why?	Text was added regarding sampling from the excavator bucket. A paragraph was added which states: Judgmental samples were collected from subsurface horizons most likely to be contaminated, including the groundwater interface, tops of confining layers (or bottoms of relatively porous layers), or depths at which a nearby UVOST probe indicated relatively high concentrations of POL contamination.	A: done p. 42
25.	Pg. 39	Section 6.4.3: Again, specifically discuss where and how the floor and sidewall samples were collected. 20 feet along sidewalls and 25 feet laterally (what is 25 feet laterally? Do you mean square feet? Explain). Must state that the conf. samples were collected with the soil horizon most likely to be contaminated (top of confining layers, base of porous layers, gw interface, preferential flow pathways, etc.). Please clarify. State that the bucket was dry decontaminated prior to sample collection. Fifth sentence: remove "for", replace with "prior to collecting"	This section now reads: Confirmation sampling protocols commensurate with the ADEC draft Field Sampling Guidance were followed (ADEC, 2010). Samples were collected at a rate of one per 20 linear feet along sidewalls. Two floor samples were collected for the first 250 ft^2 plus one for each additional 250ft^2. Laboratory/confirmation samples were collocated with corresponding field lab samples. Confirmation samples were collected with the aid of an excavator bucket. The samples were collected from the bucket by the sampler, who donned a new pair of nitrile gloves prior to each sample. The excavator bucket was decontaminated between samples by removing soil particles with a dry brush. Samples were collected into appropriately sized glass jars, labeled with a unique ID and necessary analytical notes, and shipped to TestAmerica.	A: done p. 42
26.	Pg. 39	Section 6.4.4: State that the bucket was dry decontaminated prior to sample collection for PCBs.	The sentence "When samples were collected from the	A: done p. 43

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
			excavator bucket, the bucket was dry decontaminated prior to sample collection" was added to Section 6.4.4.	
27.	Pg. 40	First sentence: Replace "sample came" with "samples were collected" Third paragraph: Be consistent. Replace "using a gloved hand" with "using a nitrile gloved hand". Then, where were the samples shipped? This is stated in the above paragraphs.	First sentence was changed as recommended. In third paragraph on page 40, "using a gloved hand" was replaced with "using a nitrile glove-covered hand" and text was added specifying that samples were shipped to TestAmerica for analysis.	A: done p. 43
28.	Pg. 40	Section 6.4.6: First paragraph: Please reference the ADEC Draft Field Sampling Guidance, Section IV for low flow protocol. Were samples collected following stabilization of parameters, 3 well casing volumes removed, or well purged dry? What was turbidity measured with? Was the HDPE Teflon lined? Was the purge water first ran through a particulate filter prior to the GAC? Where are the field sampling forms (need to reference)? Perhaps some of this is mentioned/clarified in the Work Plan, but wouldn't be inappropriate to mention again.	Added reference to ADEC Draft Field Sampling Guidance. Added text stating that groundwater samples were collected after the stabilization of water quality parameters. Added text saying that turbidity was measured using a portable Hach turbidimeter. The HDPE was not Teflon-lined Purge water was not run through a particulate filter prior to GAC filtering. Field forms are included electronically with the Supplemental Data; a sentence was added stating this.	A, however suggest using Teflon lined tubing in future as preferred in Section IV, Subpart C of ADEC Draft Field Sampling Guidance, 2010. Add this final comment p. 44
29.	Pg 41	Suggest moving Section 6.4.8 to before Section 6.4.1. This will clarify how everything was decontaminated prior to discussion of sample collection and prevent the reader from wondering how this was conducted in Sections 6.4.1 – 6.4.7. Then, all mention of decontamination/tubing use/nitrile glove use, etc. can be deleted from the following sections since it will have been previously explained.	Section 6.4.8 was moved to section 6.4.1.	A: done
30.	Pg. 41	Section 6.4.8: First sentence: Replace "Tubing used" with "New tubing was used…" Third sentence: Was this done prior to sampling at each well? As stated, it sounds like it was done once a day or similar. Fourth sentence: Suggest rewording to: New nitrile gloves	First sentence was changed as recommended. Third sentence has been modified to clarify that the pump was decontaminated between each well. This section is now Section 6.4.1. Fourth sentence begins "New nitrile gloves".	A: done

U.S. ARMY CORPS OF ENGINEERS	DATE: March 14, 2012 REVIEWER: Jeremy Craner PHONE: 753-2628	Action taken on comment by: Bristol

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
31.	Pg. 41/42	Section 6.5: Suggest re-titling to "MOC Groundwater Sampling, Results, and Discussion" because sampling is not the only topic discussed in this section. Second sentence: Delete, previously stated. Third sentence: Replace "Samples" with "Groundwater samples…" Second paragraph: Use both ug/L and mg/L, pick one and stick with it, at least in the text. Figure ~~5~~ 6 has both units too. Sentences 4 & 5: At end of each sentence, a concentration is in () and as stated, sounds like these are cleanup levels, but they are not cleanup levels. Please rework to clarify. Third paragraph, first sentence: Need introductory sentence. Suggest "When comparing the 2011 groundwater sample results with past results, the three wells (which ones? Please list them out)…" Fourth Paragraph, first sentence: Same as third. Restate "Monitoring wells 88-4 and 88-5 contain concentrations of DRO…"Second sentence: Add "Additionally, monitoring wells…"	Changed the title of Section 6.5 as suggested. Second sentence of Section 6.5 has been deleted. "Groundwater" added in third sentence. Text in second paragraph and Figure 6 have been changed to report results in mg/L. Cleanup levels have been corrected and text has been clarified. The suggested introductory text has been added to the first sentence of the third paragraph. Also, the three wells (88-4, 88-5, and 88-10) have been identified. The first sentence of the fourth paragraph has been changed to read: "Monitoring wells 88-4 and 88-5, which contained concentrations of DRO exceeding cleanup criteria, had the lowest…". "Additionally" was added to the beginning of the second sentence.	A: done p. 45-46
32.	Pg. 46	Section 6.6.3: First paragraph: Please state that the Max. possible DO is about 15 or 16 mg/L. The field team lead should have identified the abnormal DO concentration in the field and fixed the problem. There was ample time to recalibrate or get a new sensor if necessary. As is, there is no background level to compare the MDU and LDU DO concentrations with. In future, please review field data while in the field to make sure that the field parameters are within normal, reasonable ranges.	Text in the first paragraph has been modified to note that the maximum possible DO concentration would have been approximately 15-16 mg/L. In the future, field data will be reviewed during or soon after collection in order to minimize any data quality problems.	A: done p. 50
33.	Pg. 47	Third paragraph, first sentence: DO varies significantly only when compared to the erroneous UDU background levels. Restate to: "None of the natural attenuation parameters	Sentence changed as recommended.	A: done p. 52

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Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
		taken at Site 8 varied significantly between the three decision units. Dissolved oxygen levels collected at the UDU varied with those at the MDU and LDU, but only because those recorded for the UDU were inaccurate due to a malfunctioning DO sensor."		
34.	Pg. 48	Section 6.8: First sentence: change "excavation" to "excavating" and "transport" to "transporting"	Words have been changed.	A: done p. 53
35.	Pg. 50	Top of page: Reference Figure 4.	Sentence added saying that Figure 4 shows the J1A and A1 plumes, as well as the location of the former ASTs.	A: done p. 55
36.	Pg. 50	Section 6.9.2: First sentence: Reference Figures 4 & 8 to orient the reader to the location of J1A.	Reference to Figures 4 and 8 added.	A: done p. 50
37.	Pg. 51/52	First sentence: Change "Water" to "Groundwater" Second paragraph, second sentence: Rework "a point 2 feet from the tip of the teeth." Third sentence: Rework "2 feet below the groundwater surface." Fourth sentence: Change "water" to "groundwater". Please continue as noted here for the rest of the document for clarification. State as either surface water or groundwater, not just water. Third paragraph, third sentence. This is the first mention of the level 7,360 mg/kg in the report. Need to explain what this is and how it was determined. Also, reference Figure 8, not just Table 10. Fourth paragraph: Reference Figure 8. Lined area in RED on figure.	"Water" has been changed to "groundwater" in this section and throughout the text where appropriate for clarification. Sentences were rewritten as requested. Text has been added to explain that 7,360 mg/kg is 80% of the site specific DRO/RRO cleanup level of 9,200 mg/kg. Section 5.2 describes that samples analyzed in the field lab with concentrations at or below 80% of the cleanup level were tentatively assumed to have reached the actual cleanup goal, after which confirmation samples were collected for fixed-lab analysis. Reference to Figure 8 was added to both third and fourth paragraphs.	A: done p. 57
38.	Pg. 52	Section 6.9.3: Reference Figures 4 and 9 in first sentence to orient the reader to the location of A1.	Text referencing Figures 4 and 9 has been added.	A: done p. 57
39.	Pg. 53	First sentence: Reference also Figure 9 contains the excavation area, conf. sample locations, results, etc. Fifth sentence: Clarify by stating "Only one sidewall sample…" What about the hot floor samples? Aren't these above the cleanup level? Explain.	Added reference to Figure 9 in the first sentence. Figure 9 is also referenced in the last sentence of the paragraph. Sidewall samples above cleanup levels (11NCMOCSS029, -031, and -045) were over-excavated, as described in the	A, but please remove samples -031 and -045 from Figure 9 since these areas have been over-excavated.

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Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
		Second paragraph, second sentence: Reference Figure 9, shows the location of the liner.	second sentence. There were no hot floor samples. Added a sentence saying that Figure 9 shows the location of the liner.	These samples look like elevated floor samples as is. Done except for fig. 9
40.	Pg. 53	Section 6.9.4: When Areas G and H are mentioned, please reference Figure 10. Last sentence: states "…groundwater infiltrated the excavation at approximately 5 to 6 feet bgs." However, on Figure 10, at the G excavation, GW is 5.15' bgs, and at the H excavation, GW is 8.62' bgs. Please explain.	Reference to Figure 10 has been moved from the last sentence in the paragraph to the fourth sentence in the paragraph. Text was added to clarify the groundwater conditions and the depths to contamination.	A: done p. 59-60
41.	Pg. 54	Section 6.9.5: Second paragraph, 4th and 5th sentences: Rework, not clear or accurate. Revise to: Water remained in the impoundment area until water samples were collected and shipped to TestAmerica. Following the receipt and initial review, the data were compared to ADEC XXXX. It was determined that the treated water could be discharged to the ground surface and so it was. There is no discussion about the accidental release of water from the J1A impoundment.	Sentence revised as suggested. Analytical results were compared to the limitations noted on the wastewater general permit 2009DB0004. The accidental release of treated wastewater from the J1A impoundment was added to the text.	A: done p. 60-61
42.	Pg. 56	Second paragraph, last sentence: Sentence OK, but need to state that the appropriate ADEC cleanup level, field action level, and explain appropriately. Third paragraph, first sentence: 18 to 24 inches should be stated as 1.5 to 2 feet bgs. Please do same for rest of report.	Added text to clarify that additional excavation occurred at the three discrete locations with field laboratory concentration above 0.8 mg/kg, which is 80 percent of the ADEC cleanup level of 1 mg/kg. References to inches have been changed to feet in this sentence and throughout the document where appropriate.	A: done p. 62-63
43.	Pg. 57	Top of page: Reference Figure 11 First paragraph, last sentence: Need to briefly explain the statistical analysis (e.g., exceeded 1/n etc.). Second paragraph: Using ug/kg for large values, please use mg/kg when possible for consistency.	Reference to Figure 11 added. Additional text and an example were added explaining the composite samples and the threshold value for discrete analysis. Units have been changed from ug/kg to mg/kg in this section	A: done p. 63-64

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Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
			and throughout the document for consistency.	
44.	Pg. 58	Section 6.10.1.1: First sentence: "The lined stockpile area (Figure 11, dashed-line box) that was sampled prior …"	Reference to Figure 11 added as suggested.	A: done p. 65
45.	Pg. 59	Section 6.10.1.2: Second sentence: Add this to back end of sentence "…to confirm they did not contain elevated PCBs."	Text added to the end of second sentence.	A: done p. 65
46.	Pg. 60	First full paragraph, last sentence. Sounds as if only one bulk bag was filled with the remaining material, this is not accurate, please clarify.	This paragraph was clarified. It now states that 16 bulk bags were filled with overburden/liner material prior to exposing the 2010 excavation extents.	A: done p. 66
47.	Pg. 61	Second full paragraph, second sentence: Change "sixty" to "60"	Changed to "60".	A: done p. 67
48.	Pg. 62	Section 6.10.2.2: These samples were collected and analyzed as those at Site 13. Please reference this and this section for how this was done.	Text was added stating that the wipe samples were collected using the procedures described in Section 6.10.1.2.	A: done p. 68
49.	Pg. 62/63	Section 6.11: First paragraph: Starting with "On July 22, 2011…" make a new paragraph. Also, cite the Site 28 Tech Memo earlier in the report as the Site 21 Tech Memo is here for consistency. Fourth sentence: "Shown" is capitalized. Please make lower case. Sixth sentence: However, only one sample from the data set was greater than 11.49 mg/kg. Interesting… Last sentence: Already stated, delete. Last paragraph, last sentence: change "excavation area was a wetland" to "excavation lies in a wetland."	New paragraph started where suggested. The Site 28 tech memo was referenced in Section 6.7 similar to how the Site 21 tech memo was referenced here for consistency, as requested. "Shown" has been made lower case. Comment acknowledged. Deleted the last sentence. Text rewritten as suggested.	A: done p. 69
50.	Figure 2	Can print quality be improved so that you can read what is highlighted in the red square such as VABM, etc?	Maps will be printed at the highest quality.	A: not sure if resolved
51.	Figure 4	What is the unit for topo? Feet AMSL? What is the vertical datum? Please clarify and apply to rest of figures as appropriate.	Units are in feet. Vertical datum is the North American Vertical Datum of 1988. These notes have been added to the figure.	A: done

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 14, 2012** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
52.	Figure 5	Each well has an Elevation, Water Depth, and Water Elevation in feet. Is this the elevation the elevation at the top of the casing, ground surface, or other? Is the water depth the depth bgs or below TOC? Is the water elevation AMSL? Please clarify in legend.	The well elevation is the TOC elevation. This has been noted on the figure. The vertical datum was added to the figure. The water depth is below TOC and water elevations reference the vertical datum.	A: not sure if resolved
53.	Figure 8	Excavation Notes: Why is excavation depth stated as +/- 12.0'? Is this feet bgs? When would it be one or the other? I don't understand this. Topo elevations are not marked, therefore, can't tell where water would be in excavation.	Topo labels were added to the figure and a note stating that "elevations are based on the North American Vertical Datum of 1988" was added.	A, but please add excavation depth to this figure as done in following figures. Not resolved in fig.
54.	Figure 9	Same as comment 57.	Excavation depth was added to the figure.	A Still says '+/-'
55.	Figure 10	Are the depths in ft bgs? Please clarify. The surface topo lines do not have any labels…useless without them. Please add. Add "encountering" to note between the words "to" and "groundwater"	Depths were clarified and additional info was added regarding the UVOST probes. Surface topo contours were labeled. The word "encountering" was added as requested.	A: not sure if resolved
56.	Figure 11	Same as comment 57. Why not just state excavation depth approximately X feet bgs? Only one topo line labeled, can't tell interval, useless with interval or labels. Please fix.	Excavation depth is stated. Topo lines are labeled and reference the North American Datum of 1988.	A: not sure if resolved
57.	Figure 12	There is no depth of excavation data on this figure. Please add.	Excavation depth is added to the figure.	A: not sure if resolved
58.				
59.				
60.				
61.				
62.				

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007

DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Teresa Lee** **PHONE: 753-2788**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
1.	Section 3.1.2	Any samples subcontracted to other labs should be discussed here as well.	**RSK-**175 (Methane) analysis-All methane samples by method RSK-175 were supposed to be analyzed by TestAmerica Denver. SDG 580-27518 had methane samples analyzed at TA-Savannah, which was not stated in the QAPP. The contractor was not notified of the laboratory change in the analysis. TA-Savannah is not a DoD ELAP accredited laboratory. **Note:** 5/22/2012. TA Savannah is a DoD ELAP approved laboratory. Section 3.1.2 still notes the samples were sent to Savannah without project chemist approval. The DoD ELAP cert for Savannah is included in Appendix D (CDQR appendix).	Will you be adding this information to section 3.1.2? It is a requirement that all samples are analyzed in an ELAP certified laboratory for the methods utilized. In addition, the USACE chemist must be contacted and give approval for any laboratory changes. I do recall Marty requesting a change for t is method to TA Denver and the request was approved. However, for the laboratory to sub to a non ELAP certified lab without USACE approval is unacceptable. Please put measures in place for future QAPPs to keep this type of error from occurring. This lab should be added to the CDQR where applicable and the deviation to the workplan noted in section 2.4 of the CDQR along with the affect on the data quality.
2.	General Throughout	The report should be a standalone document. References should not be made to documents located in the electronic supplemental folder. Include any required information in an appendix and strike those references when not required to be a part of the hard copy report.	Bristol suggests keeping the monthly status reports, waste manifests, DQCRs, field notes, POL screening results in Tables S1-S6, PCB screening results in Tables S7-S15, and ADEC checklists in the Supplemental Data folder, as has been done in the past, and is based on the number of pages associated with several of these items. The hardcopy binder	D The context of the original comment is not addressed. All references within the report to the supplemental

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
			to incorporate these pages would exceed 3". The PCB concrete wipe results have been moved to the Tables section of the report.	data folder should be stricken. The hardcopy (pdf version of the hard copy) will eventually get uploaded to FUDSMIS and become part of the forever permanent record for public view so anyone that is curious can take a gander. As such, any reference to a supplemental folder within the report should be removed. For anyone other than the project delivery team that received a disc, will wonder what the heck you are referring to in reference to a supplemental folder. The supplemental folder typically contains such things as GIS, COELT/SEDD, and laboratory analytical data reports that make the report useable by the USACE for both QA/QC checks, database compilation, mapping, and data archiving for future efforts. This portion of the EDD remains internal and goes no farther than the PDT.

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Teresa Lee** **PHONE: 753-2788**	**Action taken on comment by: Bristol**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
				It seems that during your review, contents of the report that are contractually required to be within the RA report as appendices have been placed in the supplemental folder. I cannot grant a variance to the contract, section 4.5 bullet 5 which states: “Appendices containing copies of all chemical data generated; copies of all permits; copies of waste manifests, waste profile sheets, certificates of disposal, and other pertinent documentation; copies of all field notes, logs, forms, and DQCRs and other reports; and progress photographs”. Please go through the appropriate channels if this is something you wish to pursue.
3.	General Throughout	I noticed that often times the units referenced in tables, figure, and within the report do not match those units utilized for the clean-up levels. For future publications, please have the units match the cleanup levels throughout the document so as not to cause confusion to those reading	Comment noted: All future report results will be in the same units as ADEC or site specific cleanup levels stated in the Decision Document.	A

REVIEW COMMENTS	PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007 DOCUMENT: Draft, Not Final, Removal Action Report – February 2012 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	DATE: March 26, 2012 REVIEWER: Teresa Lee PHONE: 753-2788	Action taken on comment by: Bristol

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
		who are not scientifically inclined..		
4.	5.2	It states that, "Some discrete PCB samples were also composited by Test America prior to extraction and analysis." All composite samples were supposed to be composited at the lab according to the QAPP. Please explain and note as a deviation from the work plan if applicable.	Sentence restated to say: PCB samples for compositing were collected as discrete samples and submitted to TestAmerica who composited samples at the contractors direction prior to extraction and analysis. The samples were submitted discretely in the event that the composite result allowed for the possibility of a discrete sample containing a concentration capable of exceeding the cleanup level.	A: done p. 31
5.	5..3	Include a brief summary of CDQR conclusions.	This will change after FD flagging is removed. A summary of results will be added to the CDQR.	A: not sure if changed
6.	Figures	The PDF bookmarks for figures is off starting at Figure 3 and continuing through 10.	Bristol's Tech Editor to modify bookmarks that are incorrect.	A
7.	Figure 6	Historical analytical results for all wells that have had any exceedances may be useful so that trends can be observed.	Table 6-1 in Section 6.5of the RA report contains historical results for MOC wells exceeding cleanup levels. Historical results were added to Figure 6. Note: 5/22/12-Historical results added to Table 6-1, not Figure 6.	A
8.	6.10.1.2	The results for the concrete wipe samples should be included in an analytical table in the body of the report.	Concrete w ipe tables from Supplemental Folder were moved to Appendix E (Tables) and referenced in the appropriate report sections.	A: done p. 65
9.	Table 14	All field samples should have individual sample numbers. Why are there composite groups field samples with the same name?	The names are similar but not the same. The composite groups collected on 9/20/11 should have continued with composite 49 but did not. Future composites will have sequential numbering.	A
10.	Figure 12	As presented, there is a portion of the excavation with no confirmation samples collected in the upper northeast. Why?	The area below CG 42 and east of CG 37 in the figure were determined to be below cleanup levels in 2010 and there was no need to resample.	A
11.	References	Why are there hyperlinks here?	Hyperlinks were removed.	A: done

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
12.	CDQR 1.0 Pg2	There is a reference to MS/MSDs from non project samples not being evaluated. By definition and in conformance with the DOD QSM, all MS/MSDs are run on project samples.	The laboratory failed to include some project samples noted on the CoC as MS/MSDs in the extraction batch. The inclusion of MS/MSDs from project samples was also conveyed in the project notes to TA prior to the field portion of the project and reiterated during the project.	A: not sure if resolved
13.	EDD	There are 8082A prime value duplicates when there should not be. Please revise. If you have trouble finding the SDG's I am referring to with this issue, please feel free to give me a call. I can quickly pull the data up and run the query in COELT.	TA is correcting the prime value duplicates and will resubmit.	A
14.	EDD	SDG 280-20054-2's NPDL files are named incorrectly with the dates incorporated (ex. NPDLCL 10-14-11.TXT). These need to be renamed to the appropriate file name for the final(ex. NPDLCL.TXT). 280-20054-1 Narrative file simply says "None". 580-28782-2 - All COELT files missing. In LABREP No 580-27882-1 and 280-20411-1, the extraction method is listed as METHOD. The EDD's for these SDGs will need to be revised with the actual extraction method reported in the EDD.	TA is correcting the NPDL names in the EDDs and will re-submit.	A
15.	EDD	For the following SDGs, the narrative file was named incorrectly (EDFNARR.txt instead of NPDLNARR.txt): 280-20410 280-20411 280-20446 280-20698	TA is correcting the file names and will re-submit.	A
16.	EDDs	The moisture content analysis is not documented as it should be in all of the EDDs. Please review, request the lab to revise, and resubmit those affected.	TA is correcting the moisture content method on all SDGs.	A
17.	ADEC Check sheet	The ADEC check sheets are sorely lacking in detail. Any time a box is marked yes when there is (please explain) following it, there needs to be an explanation to include	ADEC checklists will be reviewed and items covered in the CDQR will be included in the ADEC checklists. The checklists were completed prior the completion of the	A

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
		sample numbers and/or extraction batches affected where applicable. It was also noted in a few I spot checked that there were references to no qualifications when there were qualifications assigned in the CDQR and references to qualifications with no detail as to what samples were qualified or why due to lack of explanation. Please revisit the ADEC check sheets and complete all boxes with sufficient details and check for accuracy and consistency with the CDQR. You may reference the CDQR for the additional information, but reference the appropriate section so that those utilizing the checks sheets can find the appropriate information.	CDQR.	
18.	CDQR 2.5	An MS/MSD was not run with each analytical batch as required by the QAPP and the DOD QSM. It is NOT 1 per 20 as stated in the text, rather one MS/MSD per analytical batch. The proper amount of MS/MSD samples were submitted, however the laboratory split the samples into numerous analytical batches. This deviation by the laboratory should be noted and the affect on the data.	Section 2.5 will be revised to state that an MS/MSD was not analyzed with each GRO extraction/analytical batch, no MS/MSD in QC batch 580-91209. This was due to lab error. They were provided with clear instruction multiple times to include an MS/MSD with each extraction/analytical batch. Ten samples, a trip blank and extra volumes were provided for ONE MS/MSD with the SDG. The 1 MS/MSD set per 20 samples reference will be removed.	A
19.	CDQR 2.7	An MS/MSD was not run with each analytical batch for RRO (94362). Again. The QAPP criteria is NOT one per 20 samples as a whole, rather one MS/MSD per analytical batch. The lab should be aware of this DOD requirement and agreed to abide by the QAPP and the DOD QSM. If the lab splits your samples into multiple extraction batches, they should compensate for this by running a project MS/MSD with each batch per the DOD QSM. Please revise this section to include this deviation from the work plan and discuss the effects on the data, if any.	Section 2.7 will be revised to state that an MS/MSD was NOT analyzed with each DRO/RRO extraction/analytical batch, no MS/MSD in QC batch 580-96342. This was due to lab error. They were provided with clear instruction multiple times to include an MS/MSD with each extraction/analytical batch. Thirteen samples and 2 extra soil jars were provided for ONE MS/MSD with the SDG (28786). The 1 MS/MSD per set of 20 reference will be removed.	A
20.	CDQR 2.7	When listing the extraction batches where an MS/MSD was not run, 280-86671 is identified. However, when I pull up the data, it shows that this batch did have an MS/MSD run	Text revised to state: The extraction batch 280-86671 was analyzed with MS/MSD samples not associated with this	A

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
		with it. Please review and revise.	project.	
21.	CDQR 2.9	The table for qualified preparation batch groups for method blank contamination lists lab batch 9319. However, the associated sample results in this lab batch are greater than 10 times the blank contamination and as such should not be listed here, nor should they be qualified. Please revise and remove any associated qualifications.	The table only notes if method blank contamination was detected. Table 2-14 (Qualifiers) does not list any samples associated with batches 93139A and –B. Paragraph modified to state: DRO and RRO were detected in the batch method blanks as shown below. Associated detected results that were <10 times the blank concentrations were qualified B to indicate the potential for a false positive. Preparation batches 580-93139A and –B did not have any sample results less than 10 times the concentration in the method blank.	A
22.	CDQR	AK101 analysis is not discussed. A review of this method needs to be added.	It is discussed in Section 2.5	A
23.	CDQR 2.6	There were surrogate recovery failures in association with SW8270 SIM that are not addressed in this section. Please address, state the affect on the data and qualify throughout if necessary.	8270 SIM is covered in Section 2.8 (PAH analyses). 8270 SIM surrogate failures are also addressed in Section 2.8.	A
24.	CDQR 2.7.2	All affected analytes are not listed with surrogate failures to include 11NC31SS016 at 158%, 11NC31SS021 at 152%, 11NC31SS027 at 128% and 11NC31SS047 at 134%. Please add these analytes to the list and flag accordingly if necessary throughout. Also, it states that for samples all ready qualified for field duplicate quality control deviations, that the QN qualifier would supersede the QH or QL that would have been assigned for the surrogate failure. I disagree. I would like to know the possible directional bias associated with the samples. Please add these in conjunction with the QN when applicable.	Samples with surrogates exceeding the upper control limit were flagged QH to indicate high bias. The noted sample results were added to table in Section 2.7.2. The reference in Section 2.7.2 to field duplicate imprecision and flagging all PCB results was removed along with the QN flagging of non-FD samples in the text and tables.	A
25.	CDQR	For sample 11NCMOCSS047 which was associated with	Text in Section 2.9 for 11NCMOCSS047 and flag changed	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: March 26, 2012** **REVIEWER: Teresa Lee** **PHONE: 753-2788**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
	2.9	recoveries less than 10 percent, these should be qualified ML, not MH as indicated. Please fix and all associated qualified data within the report/tables.	to ML to indicate low bias. Table 11 of the report and Table 2-14 of CDQR had the correct ML flag applied.	
26.	CDQR 2.7.3	In the middle paragraph on page 45, there is a statement that MS/MSD outliers were not assigned qualification due to field duplicate exceedances. It states that the field duplicate exceedances were due to variability in concentrations. This may be true but that would be due the samples not being homogenous. In addition, considering the spikes for MS/MSD are both from the same jar and should be thoroughly homogenized, this argument is irrelevant. Please qualify all MS/MSD outliers and update all tables/figures and anywhere throughout the report where the data is presented.	Because the QN flag was removed from non field duplicate samples, MS/MSD recovery failures will be added to the table results with the direction of bias indicated. MS/MSD results that failed only to meet RPD will be flagged MN, low spike recoveries ML, high recoveries M H.	A
27.	CDQR 3.0 5th bullet	Only the duplicate and parent sample should be qualified for field duplicate RPD failures. It is indicated here that every PCB result detected for PCB-1260 at both sites 13 and 31 are qualified. Please remove these additional qualifiers that are not associated with the field duplicate and its parent sample and revise throughout to include any references in applicable figures and tables and throughout the report.	Field duplicate results failing to meet RPD will remain flagged QN, non-duplicate samples will have QN removed and text in CDQR will be modified to state only duplicate sample results are affected.	A
28.	Tables	For all analytical tables, define ND (#) where the # is either LOQ or LOD. I noted some tables where this was not defined.	Table notes will include proper notation that ND (##) is at the LOD.	A
29.	Table 6	DO row has numbers followed by # symbols. Please remedy.	The # symbol was used to define a further explanation in the Table Notes. A different symbol will be inserted to lessen possible confusion.	A
30.		Our senior chemist, Mike Utley looked at the CCV's per my request and no significant issues were found, however, in so doing, he noted the following: "I did find one significant issue - while reviewing the hardcopies, I noted that the sample chroms indicate that the	We asked TA to look into this and the following is their response: , "I am pretty sure that what they are seeing is that we unidentified (aka "marked as non-detect") the false detections in Chrom. If we have a detection, but do not see the Aroclor pattern(s), then we use the "mark as ND" function in Chrom > Peak Review so that we aren't	A The lab's response is acceptable. There is a concern in the event that if the lab "turned off" an

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
		"operator has disabled compound identification" for most of the aroclors except 1260 and occasionally 1254. This doesn't appear to the result from dilutions or other screening techniques. It appears to be ubiquitous throughout the dataset. I recommend that we have the contractor contact the laboratory for an explanation of this issue." Please contact the laboratory for an explanation as suggested.	reporting false positives. Also, if we do have an Aroclor in the sample, Chrom will think we have detections for other Aroclors that overlap (e.g., 1260 will show detections for 1254, 1262, and 1268), so we set the other Aroclors to ND because they are not really there. All of the samples really are ND, or contain only 1254 and/or 1260.	Aroclor that should not have been turned off, and reported what should be a positive hit as a ND. However the lab incorporates 2 layers of review before the result is released to the client, and as such should be sufficient. The contractor should be aware of this possibility and spot check any questionable or unexpected results to be sure the "turning off" was accurately done. This should be documented in the CDQAR and should be incorporated in future DQA's.
31.		----- End of Comments ----		

APPENDIX B

Data Verification Report and
Laboratory Certifications

TABLE OF CONTENTS

SECTION **PAGE**

TABLES

ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
Bristol	Bristol Environmental Remediation Services, LLC
BTEX	benzene, toluene, ethylbenzene, and xylenes
CoC	chain-of-custody
DL	detection limit
DoD	Department of Defense
DQO	data quality objective
DRO	diesel-range organics
EPA	U.S. Environmental Protection Agency
GRO	gasoline-range organics
HTRW	Hazardous, Toxic, and Radioactive Waste
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
MBs	method blanks
MOC	Main Operations Complex
MS	matrix spike
MSD	matrix spike duplicate
NE Cape	Northeast Cape, St. Lawrence Island, Alaska
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
QAPP	Quality Assurance Project Plan
QC	quality control
Report	Data Verification Report
RL	reporting limit
RPD	relative percent difference
RRO	residual-range organics
SIM	selected ion mode
SVOCs	semivolatile organic compounds
SW	U.S. EPA Solid Waste Test Method

ACRONYMS AND ABBREVIATIONS (continued)

TestAmerica	TestAmerica Laboratories, Inc.
TCLP	toxicity characteristic leaching procedure
TCX	tetrachloro-m-xylene
TOC	total organic carbon
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound

1.0 INTRODUCTION

This Data Verification Report (Report) has been completed on the submitted data packages in accordance with an agreement between Bristol Environmental Remediation Services, LLC (Bristol), and the U.S. Army Corps of Engineers (USACE), Alaska District. As per this agreement, all laboratory results were generated as part of work on the Remedial Actions at Northeast Cape (NE Cape), St. Lawrence Island, Alaska. The USACE assigned this project to Bristol under Contract No. W911KB-06-D-0007.

Data verification for this report was performed on the data collected as part of the Remedial Actions at NE Cape in 2011 at Sites 8, 9, 13, 21, 31, the Main Operations Complex (MOC), and the Tar Removal Area. Data verification is a process for evaluating the completeness, correctness, consistency, compliance with method procedures and quality control (QC) requirements, and identification of anomalous data. The reported project sample values, as well as any method laboratory control samples extracted or prepared with the project samples were reviewed. Specifically, the following items were reviewed in this data verification:

- Sample receipt conditions:
  - Sample preservation,
  - Cooler temperatures upon receipt,
  - Chain-of-custody (CoC) condition/correspondence to submitted sample set, and
  - Presence/absence of custody seals.
- Extraction and analytical procedures:
  - Holding times,
  - Method blanks (MBs),
  - Laboratory control samples (LCSs)/laboratory control sample duplicates (LCSDs),
  - Matrix spike (MS)/matrix spike duplicate (MSD),
  - Duplicate samples, and
  - Surrogate recoveries.
- Sampling procedures:
  - Field blanks,
  - Trip blanks,
  - Equipment blanks, and

  - Field duplicate samples.
- Correspondence to method criteria and project data quality objectives (DQOs)

Unless otherwise discussed in this document, the above parameters were within control limits specified in the NE Cape HTRW Remedial Actions Quality Assurance Project Plan (QAPP) dated July, 2011. If control limits were not specified in the QAPP, laboratory control limits were used for review.

No information on internal standards, calibrations, instrument tunes, chromatograms, quantitation reports, spectra, summaries identifying any analytical irregularities and the subsequent corrective action taken by the laboratories, and results from any other analytical procedures other than those listed above were reviewed and are not included in this Report. Laboratory narratives were examined and any documented calibration or other QC outliers were included as appropriate in this Report.

Data verification was performed in accordance with:

- *NE Cape HTRW Remedial Actions Northeast Cape, St. Lawrence Island, Alaska Quality Assurance Project Plan (QAPP)* (July, 2011)
- *Department of Defense (DoD) Quality Systems Manual*, Version 4.1 (2009)
- Alaska Department of Environmental Conservation (ADEC) Technical Memorandum: *Environmental Laboratory and Quality Assurance Requirements* (updated March 2009)

Precision and accuracy were assessed by comparing surrogate, MS/MSD and LCS/LCSD recoveries and relative percent differences (RPDs) to the QAPP-specified control limits. The frequency of QC samples was compared to the frequency specified in the QAPP. The MS/MSDs performed on non-project samples are not applicable and were not evaluated. The confirmation laboratory was instructed before submittal of samples and again on the chain of custody that an MS/MSD was to be included in every extraction batch from project samples. There were several sample batches extracted without inclusion of an MS/MSD from project samples, which is not in conformance with U.S. Department of Defense Quality Systems Manual for Environmental Laboratories (QSM, Version 4.1, April 22, 2009) requirements.

The reviewed data sets include data from samples collected for the NE Cape Remedial Actions from July through September 2011 which were analyzed by TestAmerica Laboratories, Inc. (TestAmerica), Tacoma, Washington; and TestAmerica, Denver, Colorado. TestAmerica-Denver was specified as a backup for overflow samples in the QAPP. The following methods were utilized for the analysis of the samples:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency (EPA) Solid Waste Test Method (SW-846) 5030B/8260B
- Volatile organic compounds (VOCs) by SW-846 methods 5030B/8260B
- Gasoline range organics (GRO) by ADEC method AK101
- Diesel range organics (DRO) and residual range organics (RRO) by ADEC method AK102/103
- DRO and RRO by ADEC method AK102/103 with silica gel clean-up
- Methane by RSK 175
- Semivolatile organic compounds (SVOCs) by SW-846 method 3550B/8270C.
- Polynuclear aromatic hydrocarbons (PAHs) by SW-846 method 3510C (or 3520C)//8270C (waters) or 3550B (or 3550C)/8270C (soils) selected ion mode (SIM)
- Polychlorinated biphenyls (PCBs) by SW-846 method 3510C (or 3520C)/8082 (waters) or 3550B/8082 (soils)
- Total organic carbon (TOC)-Quad by SW-846 9060
- Metals by SW-846 methods 3005A/6020 (waters) or 3050B/6020 (soils)
- Mercury by SW-846 method 7470A (waters)

The sites sampled, laboratory work order numbers, and laboratory used for analysis are presented in Table 1-0.

Table 1-0 Laboratory Work Order Numbers

Site	Sample Matrix	Work Order Number	TestAmerica Laboratory Location
Site 8	Soil	580-27899-1	Tacoma
	Water	580-27899-1	Tacoma
	Water	580-27633-2	Tacoma
Site 9	Water	580-28786-2	Tacoma
Site 13	Soil	280-20054	Denver
		280-20410	Denver
		280-20698	Denver
Site 21	Soil	580-27633-1	Tacoma
		580-28199-1	Tacoma
Site 31	Soil	280-20446	Denver
		580-28787	Tacoma
MOC	Soil	280-20411-1	Denver
		580-27882-1	Tacoma
		580-28199-1	Tacoma
		580-28350-1	Tacoma
		580-28786-1	Tacoma
	Water	280-20500-1	Denver
		580-27518-1	Tacoma
		580-28349-1	Tacoma
Tar Removal Area	Soil	580-27899-1	Tacoma

Notes:
MOC = Main Operations Complex
TestAmerica = TestAmerica Laboratories, Inc.

Analytical results tables are presented in Appendix G. The tables include sample IDs, which reference the year (11), the project (NC) for NE Cape, the site (-09 for site 9), the matrix (SS for soil sample) and the sample location or LocID. The LocID indicates the specific site at NE Cape, as well as a specific location within the sites. For samples composited for PCB analysis, the composite sample IDs were assigned at the laboratory and were unique per Laboratory Work Order. However, there are instances when the same IDs were used for a single sampling event (e.g. 11NC13SS Composite 30). Therefore, when composite sample IDs are referenced, a laboratory ID will also be included for clarification.

Data qualifiers assigned during the data review are included on the results tables in Appendix A. The following data qualifiers may be used to identify data points when data verification determines that results should be qualified because of a potential bias in the result, or a deviation from method or QAPP QC procedures:

- J – Analyte result is considered an estimated value because the level is below the laboratory limit of quantitation (LOQ) but above the detection limit (DL) (formerly the method detection limit).
- ND (LOD) – Analyte result is less than the DL. The non-detected result has the limit of detection (LOD) in parentheses.
- R – Analyte result is rejected – result is not usable. Note that "R" replaces the chemical result (no result shall be reported with an "R" flag).
- B – Analyte result is considered a high estimated value due to contamination present in the method or trip blank. Results less than 10 times the reported method blank concentration will be B flagged to indicate bias.
- MH, ML, MN – Analyte result is considered an estimated value biased (high, low, uncertain) due to matrix effects.
- QH, QL, QN – Analyte result is considered an estimated value biased (high, low, uncertain) due to a quality control failure.

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2.0 DATA VERIFICATION

Data verification was performed for samples collected from each site as follows:

- Site 8: Four soil samples and 30 water samples including one soil field duplicate, three water field duplicates, plus one trip blank
- Site 9: Five surface water samples including one field duplicate plus a trip blank
- Site 13: 87 Composite soil samples and 276 discrete samples including 24 field duplicates
- Site 21: 18 Soil samples including two field duplicates
- Site 31: 70 Composite soil samples and 178 discrete samples including 17 field duplicates
- Tar Removal Area: 24 samples including three field duplicates.
- MOC: 14 water samples, 69 soil samples and two tar samples including two water field duplicates and 12 soil field duplicates.

Field sample numbers, corresponding laboratory numbers, and analyses are presented in Tables 2-0.1 through 2-0.7. Notes defining acronyms used on the tables follow Table 2-0.7.

Table 2-0.1 Site 8

Field Sample Identification	Laboratory Sample Number	Location ID	Methane (RSK 175)	TOC (9060)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PAHs (8270C SIM)	Remarks
Site 8 Surface Water:								
11NC08WA001	580-27899-27	LDU D9	X					
11NC08WA002	580-27899-28	LDU C8	X					
11NC08WA003	580-27899-29	LDU C7	X					
11NC08WA004	580-27899-30	LDU C5	X					
11NC08WA005	580-27899-31	LDU A3	X					
11NC08WA006	580-27899-32	LDU B3	X					
11NC08WA007	580-27899-33	LDU C2	X					
11NC08WA008	580-27899-34	LDU D1	X					

Table 2-0.1 Site 8 (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	Methane (RSK 175)	TOC (9060)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PAHs (8270C SIM)	Remarks
Site 8 Surface Water:								
11NC08WA009	580-27899-35	LDU B3	X					FD of 11NC08WA008
11NC08WA010	580-27899-36	MDU A2	X					
11NC08WA011	580-27899-37	MDU B3	X					
11NC08WA012	580-27899-38	MDU A3	X					
11NC08WA013	580-27899-39	MDU A4	X					FD of 11NC08WA012
11NC08WA014	580-27899-40	MDU C5	X					
11NC08WA015	580-27899-41	MDU B6	X					
11NC08WA016	580-27899-42	MDU B7	X					
11NC08WA017	580-27899-43	MDU D1	X					
11NC08WA018	580-27899-44	MDU C5	X					
11NC08WA019	580-27899-45	UDU A1	X					FD of 11NC08WA018
11NC08WA020	580-27899-46	UDU D1	X					
11NC08WA021	580-27899-47	UDU C2	X					
11NC08WA022	580-27899-48	UDU A3	X					*continued*
11NC08WA023	580-27899-49	UDU C3	X					
11NC08WA024	580-27899-50	UDU D5	X					
11NC08WA025	580-27899-51	UDU D8	X					
11NC08WA026	580-27899-52	UDU B9	X					
11NC08WA027	580-27899-53	UDU B9	X					FD of 11NC08WA026
080811#1-Methane Trip Blank	580-27899-58		X					

Table 2-0.1 Site 8 (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	Methane (RSK 175)	TOC (9060)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PAHs (8270C SIM)	Remarks
Site 8 Surface Water:								
11NC08WA01	580-27633-11	8-01			X		X	MS/MSD
11NC08WA02	580-27633-12	8-02			X		X	
11NC08WA03	580-27633-13	8-02			X		X	FD of 11NC08WA02
Site 8 Soil Composite:								
11NC08SS001	580-27899-54	UDU-1		X	X	X	X	MS/MSD
11NC08SS002	580-27899-55	MDU-1		X	X	X	X	
11NC08SS003	580-27899-56	LDU-1		X	X	X	X	
11NC08SS004	580-27899-57	LDU-1		X	X	X	X	FD of 11NC08SS004

Table 2-0.2 Site 9

Field Sample Identification	Laboratory Sample Number	Location ID	VOCs (SW8260B)	Remarks
Site 9 Surface Water:				
11NC09WA006	580-28786-14	009-01	X	MS/MSD
11NC09WA007	580-28786-15	009-02	X	
11NC09WA008	580-28786-16	009-03	X	
11NC09WA009	580-28786-17	009-04	X	
11NC09WA010	580-28786-18	009-04	X	FD of 11NC09WA009
Trip Blank 1	580-28786-19		X	

Table 2-0.3 Site 13 Soils

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS001	280-20054-1	013-01	X	MS/MSD
11NC13SS003	280-20054-3	013-03	X	MS/MSD
11NC13SS004	280-20054-4	013-04	X	MS/MSD
11NC13SS006	280-20054-6	013-06	X	
11NC13SS007	280-20054-7	013-07	X	
11NC13SS009	280-20054-9	013-09	X	
11NC13SS010	280-20054-10	013-10	X	
11NC13SS011	280-20054-11	013-11	X	
11NC13SS012	280-20054-12	013-12	X	
11NC13SS013	280-20054-13	013-13	X	
11NC13SS014	280-20054-14	013-14	X	
11NC13SS015	280-20054-15	013-15	X	
11NC13SS016	280-20054-16	013-16	X	
11NC13SS022	280-20054-22	013-22	X	
11NC13SS024	280-20054-24	013-24	X	
11NC13SS025	280-20054-25	013-25	X	
11NC13SS026	280-20054-26	013-26	X	
11NC13SS027	280-20054-27	013-27	X	
11NC13SS030	280-20054-30	013-30	X	
11NC13SS031	280-20054-31	013-31	X	
11NC13SS036	280-20054-36	013-36	X	MS/MSD
11NC13SS037	280-20054-37	013-37	X	
11NC13SS039	280-20054-39	013-39	X	MS/MSD
11NC13SS042	280-20054-42	013-42	X	
11NC13SS043	280-20054-43	013-43	X	
11NC13SS046	280-20054-46	013-46	X	MS/MSD
11NC13SS047	280-20054-47	013-47	X	
11NC13SS048	280-20054-48	013-48	X	
11NC13SS049	280-20054-49	013-49	X	
11NC13SS050	280-20054-50	013-50	X	
11NC13SS051	280-20054-51	013-51	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS052	280-20054-52	013-52	X	
11NC13SS053	280-20054-53	013-53	X	
11NC13SS054	280-20054-54	013-54	X	
11NC13SS055	280-20054-55	013-55	X	
11NC13SS056	280-20054-56	013-56	X	
11NC13SS057	280-20054-57	013-57	X	
11NC13SS058	280-20054-58	013-58	X	
11NC13SS059	280-20054-59	013-59	X	
11NC13SS060	280-20054-60	013-60	X	
11NC13SS061	280-20054-61	013-61	X	
11NC13SS062	280-20054-62	013-62	X	
11NC13SS070	280-20054-70	013-70	X	
11NC13SS079	280-20054-79	013-79	X	MS/MSD
11NC13SS080	280-20054-80	013-80	X	
11NC13SS081	280-20054-81	013-81	X	
11NC13SS082	280-20054-82	013-82	X	
11NC13SS083	280-20054-83	013-83	X	
11NC13SS084	280-20054-84	013-84	X	
11NC13SS085	280-20054-85	013-85	X	
11NC13SS086	280-20054-86	013-86	X	
11NC13SS087	280-20054-87	013-87	X	
11NC13SS088	280-20054-88	013-88	X	
11NC13SS089	280-20054-89	013-89	X	
11NC13SS096	280-20054-96	013-96	X	
11NC13SS097	280-20054-97	013-97	X	
11NC13SS105	280-20054-105	013-105	X	
11NC13SS108	280-20054-108	013-108	X	
11NC13SS111	280-20054-111	013-111	X	
11NC13SS114	280-20054-114	013-114	X	
11NC13SS123	280-20054-123	013-123	X	
11NC13SS124	280-20054-124	013-124	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS125	280-20054-125	013-125	X	
11NC13SS126	280-20054-126	013-126	X	
11NC13SS127	280-20054-127	013-127	X	
11NC13SS128	280-20054-128	013-128	X	
11NC13SS129	280-20054-129	013-129	X	
11NC13SS130	280-20054-130	013-130	X	
11NC13SS131	280-20054-131	013-131	X	
11NC13SS138	280-20054-138	013-138	X	11NC13SS009 FD
11NC13SS139	280-20054-139	013-139	X	11NC13SS010 FD
11NC13SS140	280-20054-140	013-140	X	11NC13SS011 FD
11NC13SS141	280-20054-141	013-141	X	
11NC13SS142	280-20054-142	013-142	X	
11NC13SS143	280-20054-143	013-143	X	
11NC13SS144	280-20054-144	013-144	X	
11NC13SS145	280-20054-145	013-145	X	11NC13SS030 FD, MS/MSD
11NC13SS Composite 1	280-20054-146		X	
11NC13SS Composite 2	280-20054-147		X	
11NC13SS Composite 3	280-20054-148		X	
11NC13SS Composite 4	280-20054-149		X	
11NC13SS Composite 5	280-20054-150		X	
11NC13SS Composite 6	280-20054-151		X	
11NC13SS Composite 7	280-20054-152		X	
11NC13SS Composite 8	280-20054-153		X	
11NC13SS Composite 9	280-20054-154		X	
11NC13SS Composite 10	280-20054-155		X	MS/MSD
11NC13SS Composite 11	280-20054-156		X	
11NC13SS Composite 12	280-20054-157		X	
11NC13SS Composite 13	280-20054-158		X	
11NC13SS Composite 14	280-20054-159		X	
11NC13SS Composite 15	280-20054-160		X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS Composite 16	280-20054-161		X	
11NC13SS Composite 17	280-20054-162		X	
11NC13SS Composite 18	280-20054-163		X	
11NC13SS Composite 19	280-20054-164		X	
11NC13SS Composite 20	280-20054-165		X	
11NC13SS Composite 21	280-20054-166		X	MS/MSD
11NC13SS Composite 22	280-20054-167		X	
11NC13SS Composite 23	280-20054-168		X	
11NC13SS Composite 24	280-20054-169		X	
11NC13SS Composite 25	280-20054-170		X	
11NC13SS Composite 26	280-20054-171		X	
11NC13SS Composite 27	280-20054-172		X	
11NC13SS Composite 28	280-20054-173		X	
11NC13SS Composite 29	280-20054-174		X	
11NC13SS Composite 30	280-20054-175		X	
11NC13SS Composite 31	280-20054-176		X	
11NC13SS Composite 32	280-20054-177		X	
11NC13SS Composite 33	280-20054-178		X	
11NC13SS Composite 34	280-20054-179		X	MS/MSD
11NC13SS Composite 35	280-20054-180		X	11NC13SS Composite 33 FD
11NC13SS Composite 36	280-20054-181		X	11NC13SS Composite 32 FD
11NC13SS146	280-20410-1	013-146	X	
11NC13SS149	280-20410-4	013-149	X	
11NC13SS150	280-20410-5	013-150	X	
11NC13SS151	280-20410-6	013-151	X	
11NC13SS152	280-20410-7	013-152	X	
11NC13SS Composite 1	280-20410-32		X	
11NC13SS Composite 2	280-20410-33		X	
11NC13SS Composite 3	280-20410-34		X	
11NC13SS Composite 4	280-20410-35		X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS Composite 5	280-20410-36		X	
11NC13SS Composite 6	280-20410-37		X	
11NC13SS Composite 7	280-20410-38		X	
11NC13SS Composite 8	280-20410-39		X	11NC13SS Composite 3 (20410-34) FD
11NC13SS Composite 9	280-20410-40		X	
11NC13SS177	280-20698-1	013-177	X	
11NC13SS178	280-20698-2	013-178	X	
11NC13SS181	280-20698-5	013-181	X	
11NC13SS182	280-20698-6	013-182	X	
11NC13SS183	280-20698-7	013-183	X	
11NC13SS184	280-20698-8	013-184	X	
11NC13SS191	280-20698-15	013-191	X	
11NC13SS195	280-20698-19	013-195	X	
11NC13SS210	280-20698-34	013-210	X	
11NC13SS211	280-20698-35	013-211	X	
11NC13SS214	280-20698-38	013-214	X	
11NC13SS216	280-20698-40	013-216	X	
11NC13SS223	280-20698-47	013-223	X	
11NC13SS225	280-20698-49	013-225	X	
11NC13SS226	280-20698-50	013-226	X	
11NC13SS227	280-20698-51	013-227	X	
11NC13SS230	280-20698-54	013-230	X	
11NC13SS231	280-20698-55	013-231	X	
11NC13SS236	280-20698-60	013-236	X	
11NC13SS237	280-20698-61	013-237	X	
11NC13SS238	280-20698-62	013-238	X	
11NC13SS241	280-20698-65	013-241	X	MS/MSD
11NC13SS242	280-20698-66	013-242	X	MS/MSD
11NC13SS243	280-20698-67	013-243	X	
11NC13SS244	280-20698-68	013-244	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS245	280-20698-69	013-245	X	
11NC13SS246	280-20698-70	013-246	X	
11NC13SS247	280-20698-71	013-247	X	
11NC13SS248	280-20698-72	013-248	X	
11NC13SS249	280-20698-73	013-249	X	
11NC13SS250	280-20698-74	013-250	X	
11NC13SS251	280-20698-75	013-251	X	MS/MSD
11NC13SS252	280-20698-76	013-252	X	
11NC13SS255	280-20698-79	013-255	X	
11NC13SS256	280-20698-80	013-256	X	
11NC13SS257	280-20698-81	013-257	X	
11NC13SS258	280-20698-82	013-258	X	
11NC13SS259	280-20698-83	013-259	X	MS/MSD
11NC13SS260	280-20698-84	013-260	X	MS/MSD
11NC13SS261	280-20698-85	013-261	X	
11NC13SS262	280-20698-86	013-262	X	
11NC13SS263	280-20698-87	013-263	X	
11NC13SS264	280-20698-88	013-264	X	
11NC13SS265	280-20698-89	013-265	X	
11NC13SS266	280-20698-90	013-266	X	
11NC13SS267	280-20698-91	013-267	X	
11NC13SS268	280-20698-92	013-291	X	11NC13SS291 FD
11NC13SS269	280-20698-93	013-269	X	
11NC13SS270	280-20698-94	013-270	X	
11NC13SS271	280-20698-95	013-271	X	
11NC13SS272	280-20698-96	013-272	X	
11NC13SS273	280-20698-97	013-273	X	MS/MSD
11NC13SS274	280-20698-98	013-274	X	MS/MSD
11NC13SS275	280-20698-99	013-275	X	MS/MSD
11NC13SS276	280-20698-100	013-276	X	
11NC13SS278	280-20698-102	013-278	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS279	280-20698-103	013-279	X	
11NC13SS280	280-20698-104	013-280	X	
11NC13SS281	280-20698-105	013-281	X	
11NC13SS282	280-20698-106	013-282	X	
11NC13SS283	280-20698-107	013-283	X	
11NC13SS284	280-20698-108	013-284	X	
11NC13SS285	280-20698-109	013-285	X	
11NC13SS286	280-20698-110	013-286	X	
11NC13SS287	280-20698-111	013-287	X	
11NC13SS288	280-20698-112	013-288	X	
11NC13SS289	280-20698-113	013-289	X	
11NC13SS290	280-20698-114	013-290	X	
11NC13SS291	280-20698-115	013-291	X	
11NC13SS295	280-20698-119	013-295	X	
11NC13SS296	280-20698-120	013-296	X	MS/MSD
11NC13SS297	280-20698-121	013-297	X	
11NC13SS298	280-20698-122	013-298	X	
11NC13SS299	280-20698-123	013-299	X	
11NC13SS300	280-20698-124	013-300	X	
11NC13SS301	280-20698-125	013-301	X	
11NC13SS302	280-20698-126	013-302	X	
11NC13SS303	280-20698-127	013-303	X	
11NC13SS304	280-20698-128	013-304	X	
11NC13SS305	280-20698-129	013-305	X	
11NC13SS306	280-20698-130	013-306	X	
11NC13SS307	280-20698-131	013-307	X	
11NC13SS308	280-20698-132	013-308	X	
11NC13SS309	280-20698-133	013-309	X	
11NC13SS310	280-20698-134	013-310	X	
11NC13SS311	280-20698-135	013-311	X	
11NC13SS312	280-20698-136	013-312	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS313	280-20698-137	013-313	X	
11NC13SS314	280-20698-138	013-314	X	
11NC13SS315	280-20698-139	013-315	X	
11NC13SS316	280-20698-140	013-316	X	
11NC13SS317	280-20698-141	013-317	X	
11NC13SS318	280-20698-142	013-318	X	
11NC13SS321	280-20698-145	013-321	X	
11NC13SS322	280-20698-146	013-322	X	
11NC13SS323	280-20698-147	013-323	X	
11NC13SS324	280-20698-148	013-324	X	
11NC13SS325	280-20698-149	013-325	X	
11NC13SS326	280-20698-150	013-326	X	
11NC13SS327	280-20698-151	013-327	X	
11NC13SS330	280-20698-154	013-330	X	
11NC13SS331	280-20698-155	013-331	X	
11NC13SS332	280-20698-156	013-332	X	
11NC13SS333	280-20698-157	013-333	X	
11NC13SS334	280-20698-158	013-334	X	
11NC13SS335	280-20698-159	013-335	X	
11NC13SS336	280-20698-160	013-336	X	
11NC13SS337	280-20698-161	013-337	X	
11NC13SS338	280-20698-162	013-338	X	
11NC13SS339	280-20698-163	013-339	X	
11NC13SS340	280-20698-164	013-340	X	
11NC13SS341	280-20698-165	013-341	X	
11NC13SS342	280-20698-166	013-342	X	
11NC13SS343	280-20698-167	013-343	X	MS/MSD
11NC13SS344	280-20698-168	013-344	X	
11NC13SS345	280-20698-169	013-345	X	
11NC13SS346	280-20698-170	013-346	X	
11NC13SS347	280-20698-171	013-347	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS348	280-20698-172	013-348	X	
11NC13SS349	280-20698-173	013-349	X	
11NC13SS350	280-20698-174	013-350	X	
11NC13SS351	280-20698-175	013-351	X	
11NC13SS352	280-20698-176	013-352	X	
11NC13SS353	280-20698-177	013-353	X	
11NC13SS354	280-20698-178	013-354	X	
11NC13SS355	280-20698-179	013-355	X	
11NC13SS356	280-20698-180	013-356	X	
11NC13SS357	280-20698-181	013-357	X	
11NC13SS358	280-20698-182	013-358	X	
11NC13SS359	280-20698-183	013-359	X	MS/MSD
11NC13SS360	280-20698-184	013-360	X	
11NC13SS362	280-20698-186	013-362	X	
11NC13SS363	280-20698-187	013-363	X	
11NC13SS368	280-20698-192	013-368	X	
11NC13SS373	280-20698-197	013-373	X	
11NC13SS379	280-20698-203	013-379	X	
11NC13SS380	280-20698-204	013-380	X	
11NC13SS381	280-20698-205	013-381	X	
11NC13SS382	280-20698-206	013-382	X	
11NC13SS383	280-20698-207	013-383	X	
11NC13SS384	280-20698-208	013-384	X	
11NC13SS385	280-20698-209	013-385	X	
11NC13SS386	280-20698-210	013-386	X	
11NC13SS387	280-20698-211	013-387	X	
11NC13SS388	280-20698-212	013-388	X	
11NC13SS389	280-20698-213	013-389	X	
11NC13SS390	280-20698-214	013-390	X	
11NC13SS391	280-20698-215	013-391	X	
11NC13SS392	280-20698-216	013-392	X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS393	280-20698-217	013-393	X	
11NC13SS394	280-20698-218	013-394	X	
11NC13SS395	280-20698-219	013-395	X	MS/MSD
11NC13SS396	280-20698-220	013-396	X	
11NC13SS397	280-20698-221	013-397	X	
11NC13SS398	280-20698-222	013-398	X	
11NC13SS399	280-20698-223	013-399	X	
11NC13SS400	280-20698-224	013-400	X	
11NC13SS401	280-20698-225	013-401	X	
11NC13SS402	280-20698-226	013-402	X	
11NC13SS403	280-20698-227	013-403	X	
11NC13SS404	280-20698-228	013-404	X	
11NC13SS405	280-20698-229	013-405	X	
11NC13SS406	280-20698-230	013-406	X	
11NC13SS407	280-20698-231	013-407	X	
11NC13SS408	280-20698-232	013-408	X	
11NC13SS419	280-20698-243	013-195	X	11NC13SS195 FD
11NC13SS420	280-20698-244	013-216	X	11NC13SS216 FD
11NC13SS421	280-20698-245	013-226	X	11NC13SS226 FD
11NC13SS422	280-20698-246	013-237	X	11NC13SS237 FD
11NC13SS423	280-20698-247	013-280	X	11NC13SS280 FD
11NC13SS424	280-20698-248	013-281	X	11NC13SS281 FD
11NC13SS425	280-20698-249	013-283	X	11NC13SS283 FD
11NC13SS426	280-20698-250	013-289	X	11NC13SS289 FD
11NC13SS427	280-20698-251	013-284	X	11NC13SS284 FD
11NC13SS428	280-20698-252	013-285	X	11NC13SS285 FD, MS/MSD
11NC13SS429	280-20698-253	013-286	X	11NC13SS286 FD
11NC13SS430	280-20698-254	013-287	X	11NC13SS287 FD
11NC13SS431	280-20698-255	013-288	X	11NC13SS288 FD
11NC13SS432	280-20698-256	013-282	X	11NC13SS282 FD

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS433	280-20698-257	013-301	X	11NC13SS301 FD
11NC13SS434	280-20698-258	013-302	X	11NC13SS302 FD
11NC13SS435	280-20698-259	013-435	X	
11NC13SS436	280-20698-260	013-436	X	
11NC13SS437	280-20698-261	013-437	X	
11NC13SS438	280-20698-262	013-438	X	
11NC13SS439	280-20698-263	013-439	X	
11NC13SS440	280-20698-264	013-440	X	
11NC13SS441	280-20698-265	013-441	X	
11NC13SS442	280-20698-266	013-442	X	
11NC13SS443	280-20698-267	013-443	X	
11NC13SS444	280-20698-268	013-444	X	
11NC13SS445	280-20698-269	013-445	X	MS/MSD
11NC13SS446	280-20698-270	013-446	X	MS/MSD
11NC13SS447	280-20698-271	013-447	X	
11NC13SS Composite 1	280-20698-272		X	
11NC13SS Composite 2	280-20698-273		X	
11NC13SS Composite 3	280-20698-274		X	
11NC13SS Composite 4	280-20698-275		X	
11NC13SS Composite 5	280-20698-276		X	
11NC13SS Composite 6	280-20698-277		X	
11NC13SS Composite 7	280-20698-278		X	
11NC13SS Composite 8	280-20698-279		X	
11NC13SS Composite 9	280-20698-280		X	
11NC13SS Composite 10	280-20698-281		X	
11NC13SS Composite 11	280-20698-282		X	
11NC13SS Composite 12	280-20698-283		X	
11NC13SS Composite 13	280-20698-284		X	
11NC13SS Composite 14	280-20698-285		X	
11NC13SS Composite 15	280-20698-286		X	
11NC13SS Composite 16	280-20698-287		X	

Table 2-0.3 Site 13 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC13SS Composite 17	280-20698-288		X	
11NC13SS Composite 18	280-20698-289		X	
11NC13SS Composite 19	280-20698-290		X	
11NC13SS Composite 20	280-20698-291		X	
11NC13SS Composite 21	280-20698-292		X	
11NC13SS Composite 22	280-20698-293		X	
11NC13SS Composite 23	280-20698-294		X	
11NC13SS Composite 24	280-20698-295		X	
11NC13SS Composite 25	280-20698-296		X	
11NC13SS Composite 26	280-20698-297		X	
11NC13SS Composite 27	280-20698-298		X	
11NC13SS Composite 28	280-20698-299		X	
11NC13SS Composite 29	280-20698-300		X	
11NC13SS Composite 30	280-20698-301		X	
11NC13SS Composite 31	280-20698-302		X	
11NC13SS Composite 32	280-20698-303		X	
11NC13SS Composite 33	280-20698-304		X	
11NC13SS Composite 34	280-20698-305		X	
11NC13SS Composite 35	280-20698-306		X	
11NC13SS Composite 36	280-20698-307		X	
11NC13SS Composite 37	280-20698-308		X	
11NC13SS Composite 38	280-20698-309		X	MS/MSD
11NC13SS Composite 39	280-20698-310		X	
11NC13SS Composite 40	280-20698-311		X	
11NC13SS Composite 41	280-20698-312		X	
11NC13SS Composite 42	280-20698-313		X	

Table 2-0.4 Site 21

Field Sample Identification	Laboratory Sample Number	Location ID	Arsenic (6020)	Remarks
Site 21 Soil:				
11NC21SS01	580-27633-1	21-01	X	
11NC21SS02	580-27633-2	21-02	X	
11NC21SS03	580-27633-3	21-03	X	
11NC21SS04	580-27633-4	21-04	X	
11NC21SS05	580-27633-5	21-05	X	
11NC21SS06	580-27633-6	21-06	X	
11NC21SS07	580-27633-7	21-07	X	MS/MSD
11NC21SS08	580-27633-8	21-08	X	
11NC21SS09	580-27633-9	21-09	X	
11NC21SS10	580-27633-10	21-03	X	FD of 11NC21SS03
11NC21SS001	580-28199-5	21-001	X	
11NC21SS002	580-28199-6	21-002	X	MS/MSD
11NC21SS003	580-28199-7	21-003	X	
11NC21SS004	580-28199-8	21-004	X	
11NC21SS005	580-28199-9	21-005	X	
11NC21SS006	580-28199-10	21-006	X	
11NC21SS007	580-28199-11	21-004	X	FD of 11NC21SS004
11NC21SS008	580-28199-12	21-008	X	

Table 2-0.5 Site 31 Soils

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS001	280-20446-1	031-01	X	
11NC31SS002	280-20446-2	031-02	X	
11NC31SS003	280-20446-3	031-03	X	
11NC31SS004	280-20446-4	031-04	X	
11NC31SS005	280-20446-5	031-05	X	MS/MSD
11NC31SS007	280-20446-7	031-07	X	
11NC31SS008	280-20446-8	031-08	X	
11NC31SS010	280-20446-10	031-10	X	
11NC31SS011	280-20446-11	031-11	X	
11NC31SS012	280-20446-12	031-12	X	
11NC31SS014	280-20446-14	031-14	X	
11NC31SS015	280-20446-15	031-15	X	
11NC31SS016	280-20446-16	031-16	X	
11NC31SS017	280-20446-17	031-17	X	
11NC31SS020	280-20446-20	031-20	X	
11NC31SS021	280-20446-21	031-21	X	
11NC31SS022	280-20446-22	031-22	X	
11NC31SS023	280-20446-23	031-23	X	
11NC31SS024	280-20446-24	031-24	X	
11NC31SS025	280-20446-25	031-25	X	
11NC31SS026	280-20446-26	031-26	X	
11NC31SS027	280-20446-27	031-27	X	
11NC31SS028	280-20446-28	031-28	X	
11NC31SS029	280-20446-29	031-29	X	
11NC31SS030	280-20446-30	031-30	X	
11NC31SS031	280-20446-31	031-31	X	
11NC31SS032	280-20446-32	031-32	X	
11NC31SS033	280-20446-33	031-33	X	
11NC31SS034	280-20446-34	031-34	X	
11NC31SS035	280-20446-35	031-35	X	
11NC31SS036	280-20446-36	031-36	X	

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS039	280-20446-39	031-39	X	
11NC31SS040	280-20446-40	031-40	X	
11NC31SS044	280-20446-44	031-44	X	MS/MSD
11NC31SS047	280-20446-47	031-47	X	
11NC31SS048	280-20446-48	031-48	X	
11NC31SS049	280-20446-49	031-49	X	
11NC31SS050	280-20446-50	031-50	X	
11NC31SS051	280-20446-51	031-51	X	
11NC31SS052	280-20446-52	031-52	X	
11NC31SS053	280-20446-53	031-53	X	
11NC31SS054	280-20446-54	031-54	X	
11NC31SS063	280-20446-63	031-63	X	MS/MSD
11NC31SS067	280-20446-67	031-67	X	
11NC31SS068	280-20446-68	031-68	X	MS/MSD
11NC31SS071	280-20446-71	031-71	X	
11NC31SS072	280-20446-72	031-72	X	
11NC31SS073	280-20446-73	031-73	X	
11NC31SS074	280-20446-74	031-74	X	
11NC31SS075	280-20446-75	031-75	X	
11NC31SS076	280-20446-76	031-76	X	
11NC31SS077	280-20446-77	031-77	X	
11NC31SS078	280-20446-78	031-78	X	
11NC31SS079	280-20446-79	031-79	X	
11NC31SS080	280-20446-80	031-80	X	
11NC31SS081	280-20446-81	031-81	X	
11NC31SS082	280-20446-82	031-82	X	
11NC31SS083	280-20446-83	031-83	X	
11NC31SS084	280-20446-84	031-84	X	MS/MSD
11NC31SS085	280-20446-85	031-85	X	
11NC31SS086	280-20446-86	031-86	X	
11NC31SS087	280-20446-87	031-87	X	

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS088	280-20446-88	031-88	X	
11NC31SS089	280-20446-89	031-89	X	
11NC31SS096	280-20446-96	031-96	X	
11NC31SS097	280-20446-97	031-97	X	
11NC31SS098	280-20446-98	031-98	X	
11NC31SS099	280-20446-99	031-99	X	
11NC31SS100	280-20446-100	031-100	X	
11NC31SS101	280-20446-101	031-101	X	
11NC31SS102	280-20446-102	031-102	X	
11NC31SS104	280-20446-104	031-104	X	
11NC31SS106	280-20446-106	031-106	X	
11NC31SS107	280-20446-107	031-107	X	
11NC31SS108	280-20446-108	031-108	X	
11NC31SS109	280-20446-109	031-109	X	
11NC31SS110	280-20446-110	031-110	X	
11NC31SS113	280-20446-113	031-113	X	
11NC31SS114	280-20446-114	031-114	X	
11NC31SS115	280-20446-115	031-115	X	
11NC31SS116	280-20446-116	031-116	X	
11NC31SS117	280-20446-117	031-117	X	
11NC31SS118	280-20446-118	031-118	X	
11NC31SS119	280-20446-119	031-119	X	
11NC31SS124	280-20446-124	031-124	X	
11NC31SS125	280-20446-125	031-125	X	
11NC31SS126	280-20446-126	031-126	X	
11NC31SS127	280-20446-127	031-127	X	
11NC31SS128	280-20446-128	031-128	X	
11NC31SS129	280-20446-129	031-129	X	
11NC31SS130	280-20446-130	031-130	X	
11NC31SS132	280-20446-132	031-132	X	
11NC31SS133	280-20446-133	031-133	X	

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS134	280-20446-134	031-134	X	
11NC31SS135	280-20446-135	031-135	X	MS/MSD
11NC31SS139	280-20446-139	031-139	X	
11NC31SS140	280-20446-140	031-140	X	
11NC31SS141	280-20446-141	031-141	X	
11NC31SS142	280-20446-142	031-142	X	
11NC31SS143	280-20446-143	031-143	X	
11NC31SS144	280-20446-144	031-144	X	
11NC31SS145	280-20446-145	031-145	X	
11NC31SS146	280-20446-146	031-146	X	
11NC31SS147	280-20446-147	031-147	X	
11NC31SS148	280-20446-148	031-148	X	
11NC31SS150	280-20446-150	031-150	X	MS/MSD
11NC31SS151	280-20446-151	031-151	X	
11NC31SS152	280-20446-152	031-152	X	
11NC31SS153	280-20446-153	031-153	X	
11NC31SS154	280-20446-154	031-154	X	
11NC31SS155	280-20446-155	031-155	X	
11NC31SS158	280-20446-158	031-158	X	
11NC31SS159	280-20446-159	031-159	X	
11NC31SS160	280-20446-160	031-160	X	
11NC31SS165	280-20446-165	031-165	X	
11NC31SS166	280-20446-166	031-166	X	MS/MSD
11NC31SS169	280-20446-169	031-169	X	
11NC31SS170	280-20446-170	031-170	X	
11NC31SS173	280-20446-173	031-173	X	
11NC31SS174	280-20446-174	031-174	X	
11NC31SS181	280-20446-181	031-181	X	
11NC31SS182	280-20446-182	031-002	X	11NC31SS002 FD
11NC31SS183	280-20446-183	031-4	X	11NC31SS004 FD
11NC31SS184	280-20446-184	031-8	X	11NC31SS008 FD

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS185	280-20446-185	031-21	X	11NC31SS021 FD
11NC31SS186	280-20446-186	031-34	X	11NC31SS034 FD
11NC31SS187	280-20446-187	031-36	X	11NC31SS036 FD
11NC31SS188	280-20446-188	031-39	X	
11NC31SS189	280-20446-189	031-40	X	
11NC31SS Composite 1	280-20446-201		X	
11NC31SS Composite 2	280-20446-202		X	
11NC31SS Composite 3	280-20446-203		X	
11NC31SS Composite 4	280-20446-204		X	
11NC31SS Composite 5	280-20446-205		X	
11NC31SS Composite 6	280-20446-206		X	
11NC31SS Composite 7	280-20446-207		X	
11NC31SS Composite 8	280-20446-208		X	
11NC31SS Composite 9	280-20446-209		X	
11NC31SS Composite 10	280-20446-210		X	
11NC31SS Composite 11	280-20446-211		X	
11NC31SS Composite 12	280-20446-212		X	
11NC31SS Composite 13	280-20446-213		X	
11NC31SS Composite 14	280-20446-214		X	MS/MSD
11NC31SS Composite 15	280-20446-215		X	MS/MSD
11NC31SS Composite 16	280-20446-216		X	MS/MSD
11NC31SS Composite 17	280-20446-217		X	
11NC31SS Composite 18	280-20446-218		X	
11NC31SS Composite 19	280-20446-219		X	
11NC31SS Composite 20	280-20446-220		X	
11NC31SS Composite 21	280-20446-221		X	
11NC31SS Composite 22	280-20446-222		X	
11NC31SS Composite 23	280-20446-223		X	
11NC31SS Composite 24	280-20446-224		X	
11NC31SS Composite 25	280-20446-225		X	
11NC31SS Composite 26	280-20446-226		X	

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS Composite 27	280-20446-227		X	
11NC31SS Composite 28	280-20446-228		X	
11NC31SS Composite 29	280-20446-229		X	
11NC31SS Composite 30	280-20446-230		X	
11NC31SS Composite 31	280-20446-231		X	
11NC31SS Composite 32	280-20446-232		X	
11NC31SS Composite 33	280-20446-233		X	
11NC31SS Composite 34	280-20446-234		X	
11NC31SS Composite 35	280-20446-235		X	
11NC31SS Composite 36	280-20446-236		X	
11NC31SS Composite 37	280-20446-237		X	
11NC31SS Composite 38	280-20446-238		X	
11NC31SS Composite 39	280-20446-239		X	
11NC31SS Composite 40	280-20446-240		X	
11NC31SS Composite 41	280-20446-241		X	
11NC31SS Composite 42	280-20446-242		X	
11NC31SS Composite 43	280-20446-243		X	
11NC31SS Composite 44	280-20446-244		X	
11NC31SS Composite 45	280-20446-245		X	
11NC31SS Composite 46	280-20446-246		X	
11NC31SS Composite 47	280-20446-247		X	
11NC31SS Composite 48	280-20446-248		X	
11NC31SS201	580-28787-1	031-20	X	
11NC31SS202	580-28787-2	031-202	X	
11NC31SS203	580-28787-3	031-203	X	
11NC31SS204	580-28787-4	031-204	X	
11NC31SS207	580-28787-7	031-207	X	
11NC31SS208	580-28787-8	031-208	X	
11NC31SS209	580-28787-9	031-209	X	
11NC31SS210	580-28787-10	031-210	X	
11NC31SS211	580-28787-11	031-21	X	

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS214	580-28787-14	031-214	X	
11NC31SS215	580-28787-15	031-215	X	
11NC31SS216	580-28787-16	031-216	X	
11NC31SS217	580-28787-17	031-217	X	
11NC31SS218	580-28787-18	031-218	X	
11NC31SS220	580-28787-20	031-220	X	
11NC31SS222	580-28787-22	031-222	X	
11NC31SS223	580-28787-23	031-223	X	
11NC31SS225	580-28787-25	031-225	X	MS/MSD
11NC31SS226	580-28787-26	031-226	X	MS/MSD
11NC31SS233	580-28787-33	031-233	X	
11NC31SS236	580-28787-36	031-236	X	
11NC31SS237	580-28787-37	031-237	X	
11NC31SS238	580-28787-38	031-238	X	
11NC31SS239	580-28787-39	031-239	X	
11NC31SS240	580-28787-40	031-240	X	
11NC31SS253	580-28787-53	031-253	X	
11NC31SS275	580-28787-75	031-275	X	MS/MSD
11NC31SS276	580-28787-76	031-276	X	MS/MSD
11NC31SS277	580-28787-77	031-277	X	
11NC31SS278	580-28787-78	031-278	X	
11NC31SS279	580-28787-79	031-279	X	
11NC31SS288	580-28787-88	031-214	X	
11NC31SS289	580-28787-89	031-215	X	
11NC31SS290	580-28787-90	031-216	X	
11NC31SS291	580-28787-91	031-236	X	11NC31SS236 FD
11NC31SS292	580-28787-92	031-237	X	
11NC31SS295	580-28787-95	031-295	X	
11NC31SS296	580-28787-96	031-296	X	
11NC31SS297	580-28787-97	031-297	X	
11NC31SS298	580-28787-98	031-298	X	

Table 2-0.5 Site 31 Soils (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	PCB (SW8082)	Remarks
11NC31SS299	580-28787-99	031-299	X	
11NC31SS300	580-28787-100	031-300	X	
11NC31SS301	580-28787-101	031-30	X	
11NC31SS302	580-28787-102	031-301	X	
11NC31SS303	580-28787-103	031-303	X	
11NC31SS304	580-28787-104	031-304	X	
11NC31SS305	580-28787-105	031-305	X	
11NC31SS306	580-28787-106	031-306	X	
11NC31SS307	580-28787-107	031-307	X	
Comp Group 1	580-28787-124		X	
Comp Group 2	580-28787-128		X	
Comp Group 3	580-28787-114		X	
Comp Group 4	580-28787-115		X	
Comp Group 5	580-28787-109		X	
Comp Group 6	580-28787-123		X	
Comp Group 7	580-28787-127		X	
Comp Group 8	580-28787-122		X	
Comp Group 9	580-28787-110		X	
Comp Group 10	580-28787-121		X	
Comp Group 11	580-28787-111		X	
Comp Group 12	580-28787-116		X	
Comp Group 13	580-28787-126		X	
Comp Group 14	580-28787-108		X	
Comp Group 15	580-28787-113		X	
Comp Group 16	580-28787-117		X	
Comp Group 17	580-28787-120		X	
Comp Group 18	580-28787-125		X	
Comp Group 19	580-28787-112		X	
Comp Group 20	580-28787-118		X	
Comp Group 21	580-28787-119		X	
Comp Group 22	580-28787-129		X	

Table 2-0.6 Tar Removal Area

Field Sample Identification	Laboratory Sample Number	Location ID	PAHs (8270C SIM)	SVOCs (SW82670C)	Remarks
MOC Tar Results:					
11NCTAR001	580-27899-1	TAR-1		X	MS/MSD
11NCTAR002	580-27899-2	TAR-1		X	
Soil for Tar Removal Area:					
11NCTARSS001	580-27899-3	TAR-2	X		MS/MSD
11NCTARSS002	580-27899-4	TAR-3	X		
11NCTARSS003	580-27899-5	TAR-4	X		
11NCTARSS004	580-27899-6	TAR-5	X		
11NCTARSS005	580-27899-7	TAR-6	X		
11NCTARSS006	580-27899-8	TAR-7	X		
11NCTARSS007	580-27899-9	TAR-8	X		
11NCTARSS008	580-27899-10	TAR-9	X		
11NCTARSS009	580-27899-11	TAR-10	X		
11NCTARSS010	580-27899-12	TAR-11	X		
11NCTARSS011	580-27899-13	TAR-12	X		
11NCTARSS012	580-27899-14	TAR-15	X		
11NCTARSS013	580-27899-15	TAR-14	X		
11NCTARSS014	580-27899-16	TAR-15	X		MS/MSD
11NCTARSS015	580-27899-17	TAR-16	X		
11NCTARSS016	580-27899-18	TAR-17	X		
11NCTARSS017	580-27899-19	TAR-18	X		
11NCTARSS018	580-27899-20	TAR-19	X		
11NCTARSS019	580-27899-21	TAR-20	X		
11NCTARSS020	580-27899-22	TAR-21	X		
11NCTARSS021	580-27899-23	TAR-22	X		
11NCTARSS022	580-27899-24	TAR-12	X		FD of 11NCTARSS011
11NCTARSS023	580-27899-25	TAR-17	X		FD of 11NCTARSS016
11NCTARSS024	580-27899-26	TAR-9	X		FD of 11NCTARSS008

Table 2-0.7 Site MOC

Field Sample Identification	Laboratory Sample Number	Location ID	BTEX (SW8260B)	Methane (RSK 175)	GRO (AK101)	DRO/RRO (AK102/103)	PAHs (8270C SIM)	PCB (SW8082)	Total Metals (SW6020/7470A)	Dissolved Metals (SW6020/7470A))	Remarks
MOC Ground Water:											
11NCMOCWA01	580-27518-1	MW-10-1	X	X	X	X	X	X	X	X	
11NCMOCWA02	580-27518-2	26MW1	X	X	X	X	X	X	X	X	MS/MSD
11NCMOCWA03	580-27518-3	22MW2	X	X	X	X	X	X	X	X	
11NCMOCWA04	580-27518-4	20MW1	X	X	X	X	X	X	X	X	
11NCMOCWA05	580-27518-5	17MW1	X	X	X	X	X	X	X	X	
11NCMOCWA06	580-27518-6	MW88-5	X	X	X	X	X	X	X	X	
11NCMOCWA07	580-27518-7	MW88-5	X	X	X	X	X	X	X	X	FD of 11NCMOCWA06
11NCMOCWA08	580-27518-8	MW88-4	X	X	X	X	X	X	X	X	
11NCMOCWA09	580-27518-9	MW-88-1	X	X	X	X	X	X	X	X	
11NCMOCWA10	580-27518-10	MW88-10	X	X	X	X	X	X	X	X	
Trip Blank	580-27518-11		X		X						
MOC Impoundment Water:											
11NCMOCWA011	580-28349-1	11NCMOC026	X				X				MS/MSD
11NCMOCWA012	580-28349-2	11NCMOC026	X				X				FD of 11NCMOCWA011
11NCMOCWA013	280-20500-1	Pad98Sump	X				X				MS/MSD
11NCMOCWA014	280-20500-2	Pad98Sump	X				X				
MOC Soil:											
11NCMOCSS001	580-27882-1	MOCJ1A001				X					
11NCMOCSS002	580-27882-2	MOCJ1A002				X					
11NCMOCSS003	580-27882-3	MOCJ1A003				X					RRO MS/MSD
11NCMOCSS004	580-27882-4	MOCJ1A004				X					
11NCMOCSS005	580-27882-5	MOCJ1A005				X					
11NCMOCSS006	580-27882-6	MOCJ1A006				X					
11NCMOCSS007	580-27882-7	MOCJ1A007				X					
11NCMOCSS008	580-27882-8	MOCJ1A008				X					DRO MS/MSD

Table 2-0.7 Site MOC (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	BTEX (SW8260B)	Methane (RSK 175)	GRO (AK101)	DRO/RRO (AK102/103)	PAHs (8270C SIM)	PCB (SW8082)	Total Metals (SW6020/7470A)	Dissolved Metals (SW6020/7470A))	Remarks
MOC Soil:											
11NCMOCSS009	580-27882-9	MOCJ1A009				X					RRO MS/MSD
11NCMOCSS010	580-27882-10	MOCJ1A010				X					DRO MS/MSD
11NCMOCSS011	580-27882-11	MOCJ1A011				X					
11NCMOCSS012	580-27882-12	MOCJ1A012				X					
11NCMOCSS013	580-27882-13	MOCJ1A013				X					FD of 11NCMOCSS020
11NCMOCSS014	580-27882-14	MOCJ1A014				X					FD of 11NCMOCSS021
11NCMOCSS015	580-27882-15	MOCJ1A015				X					
11NCMOCSS016	580-27882-16	MOCJ1A016				X					
11NCMOCSS017	580-27882-17	MOCJ1A017				X					
11NCMOCSS018	580-27882-18	MOCJ1A018				X					
11NCMOCSS019	580-27882-19	MOCJ1A019				X					
11NCMOCSS020	580-27882-20	MOCJ1A013				X					
11NCMOCSS021	580-27882-21	MOCJ1A014				X					
11NCMOCSS022	580-28199-1	MOCJ1A022				X					MS/MSD
11NCMOCSS023	580-28199-2	MOCJ1A023				X					
11NCMOCSS024	580-28199-3	MOCJ1A024				X					
11NCMOCSS025	580-28199-4	MOCJ1A023				X					FD of 11NCMOCSS023
11NCMOCSS026	580-28350-1	MOCJ1A001				X					
11NCMOCSS027	580-28350-2	MOCJ1A002				X					
11NCMOCSS028	580-28350-3	MOCJ1A003				X					
11NCMOCSS029	580-28350-4	MOCJ1A004				X					
11NCMOCSS030	580-28350-5	MOCJ1A005				X					
11NCMOCSS031	580-28350-6	MOCJ1A006				X					MS/MSD

Table 2-0.7 Site MOC (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	BTEX (SW8260B)	Methane (RSK 175)	GRO (AK101)	DRO/RRO (AK102/103)	PAHs (8270C SIM)	PCB (SW8082)	Total Metals (SW6020/7470A)	Dissolved Metals (SW6020/7470A))	Remarks
MOC Soil:											
11NCMOCSS032	580-28350-7	MOCJ1A007				X					
11NCMOCSS035	580-28350-8	MOCJ1A011				X					
11NCMOCSS036	580-28350-9	MOCJ1A011				X					
11NCMOCSS037	580-28350-10	MOCJ1A012				X					
11NCMOCSS040	580-28350-13	MOCJ1A015				X					
11NCMOCSS041	580-28350-14	MOCJ1A016				X					
11NCMOCSS042	580-28350-15	MOCJ1A017				X					
11NCMOCSS043	580-28350-16	MOCJ1A018				X					
11NCMOCSS044	580-28350-17	MOCJ1A019				X					
11NCMOCSS045	580-28350-18	MOCJ1A020				X					
11NCMOCSS046	580-28350-19	MOCJ1A021				X					
11NCMOCSS047	580-28350-20	MOCJ1A022				X					MS/MSD
11NCMOCSS048	580-28350-21	MOCJ1A023				X					
11NCMOCSS049	580-28350-22	MOCJ1A024				X					
11NCMOCSS050	580-28350-23	MOCJ1A008				X					
11NCMOCSS051	580-28350-24	MOCJ1A011				X					FD of 11NCMOCSS036
11NCMOCSS052	580-28350-25	MOCJ1A009				X					
11NCMOCSS053	280-20411-1	MOCJ1A053				X					
11NCMOCSS054	280-20411-2	MOCJ1A054				X					MS/MSD
11NCMOCSS055	280-20411-3	MOCJ1A055				X					FD of 11NCMOCSS053
11NCMOCSS056	280-20411-4	MOCJ1A056				X					FD of 11NCMOCSS054
11NCMOCSS057	280-20411-5	MOCJ1A057				X					
11NCMOCSS058	280-20411-6	MOCJ1A058				X					
11NCMOCSS059	280-20411-7	MOCJ1A059				X					
11NCMOCSS060	280-20411-8	MOCJ1A060				X					

Table 2-0.7 Site MOC (continued)

Field Sample Identification	Laboratory Sample Number	Location ID	BTEX (SW8260B)	Methane (RSK 175)	GRO (AK101)	DRO/RRO (AK102/103)	PAHs (8270C SIM)	PCB (SW8082)	Total Metals (SW6020/7470A)	Dissolved Metals (SW6020/7470A))	Remarks
MOC Soil:											
11NCMOCSS061	580-28786-1	MOCJ1A061				X					
11NCMOCSS062	580-28786-2	MOCJ1A062				X					
11NCMOCSS063	580-28786-3	MOCJ1A063				X					
11NCMOCSS064	580-28786-4	MOCJ1A064				X					
11NCMOCSS065	580-28786-5	MOCJ1A065				X					
11NCMOCSS066	580-28786-6	MOCJ1A066				X					
11NCMOCSS067	580-28786-7	MOCJ1A067				X					
11NCMOCSS068	580-28786-8	MOCJ1A068				X					MS/MSD
11NCMOCSS069	580-28786-9	MOCJ1A069				X					
11NCMOCSS070	580-28786-10	MOCJ1A070				X					
11NCMOCSS071	580-28786-11	MOCJ1A071				X					
11NCMOCSS072	580-28786-12	MOCJ1A067				X					FD of 11NCMOCSS067
11NCMOCSS073	580-28786-13	MOCJ1A065				X					FD of 11NCMOCSS065

Notes:

AK	=	State of Alaska Method	MSD	=	matrix spike duplicate
BTEX	=	benzene, toluene, ethylbenzene, xylene	PAHs	=	polynuclear aromatic hydrocarbons
DRO	=	diesel range organics	PCBs	=	polychlorinated biphenyls
FD	=	field duplicate	RRO	=	residual range organics
GRO	=	gasoline range organics	SIM	=	selective ion monitoring
ID	=	identifier	SVOCs	=	semivolatile organic compounds
MOC	=	Main Operations Complex	TOC	=	total organic carbon
MS	=	matrix spike	VOCs	=	volatile organic compounds

2.1 SAMPLE RECEIPT CONDITIONS

The laboratory performing the analyses also received the samples. Some samples were transferred to TestAmerica-Denver and TestAmerica-Savannah (RSK-175 methane) via internal chain-of-custody procedures. With the exceptions listed below, samples were received within 0-6 degrees Celsius, and in good condition.

Site 8 (Lab Work Order 580-27633-2): One of the three coolers received on July 27, 2011, was at a cooler receipt temperature of 6.3 degrees Celsius (°C), and the temperature blank reading was 6.6°C. Due to the short period of temperature exceedance and the fact that all analyses were for semivolatile analytes, the three associated DRO/RRO and PAH surface water samples were not qualified.

Site 13 (Lab Work Order 280-20410): The CoC indicated three containers were submitted from 11NC13SS155 for a MS/MSD associated with Composite 1, however only one container was received. Three containers were received for sample 11NC13SS165, which was not included in Composite 1, and the CoC indicated one container was submitted. Because this sample was not included in the Composite requested for MS/MSD analyses, the requested MS/MSD sample was not performed due to inadequate sample volume. The client was notified and no further action was taken.

Site 13 (Lab Work Order 280-20054): Following sample receipt**,** the laboratory was directed to modify a composite noted on the CoC; sample 11NC12SS031 was to be included in 11NC13SS Composite 21 instead of 11NC13SSComposite 31 as directed on the CoC.

Site 13 (Lab Work Order 280-20698): The CoC indicated additional containers were submitted from 11NC13SS261 for MS/MSD, however only one was received. Subsequently, the client directed the laboratory to perform MS/MSD analyses on samples 11NC13SS259 and 11NC13SS260.

The sample "NCS13SS Composite 30" was requested by the client following sample receipt at the laboratory and this specific sample composite was not listed on the CoC associated with the samples collected 9/21/2011. The laboratory narrative indicated the composite consists of samples 11NC13SS363, 11NC13SS192, and 11NC13SS197 (Laboratory IDs: 20698-187, -192, and -197).

Site 21 (Lab Work Order 580-27633-1): One of the three coolers received on July 27, 2011, was at a cooler receipt temperature of 6.3°C and the temperature blank reading was

6.6°C. Since the analyses were for DRO/RRO, PAHs and arsenic in soil, the associated soil sample results were not qualified.

Site 31 (Lab Work Order 280-20446): The lab received instructions following sample receipt to modify the discrete samples combined in 11NC31SS Composite 5. Field sample 11NC31SS003 and 11NC31SS005 were included in Composite 5 rather than into the originally designated 11NC31SS Composite 3.

Tar Removal Area (Lab Work Order 580-27899): Tar samples (11NCTAR001 and 11NCTAR002) were originally submitted as toxicity characteristic leaching procedure (TCLP) SVOC samples; however, during the TCLP extraction the matrix became non-filterable for extraction and after consultation with the client, the analysis was switched to total SVOCs.

MOC Site

Lab Work Order 580-27518: One of the VOC vials for sample 11NCMOCWA02 was mislabeled as 11NCMOCWA01, with the collection date and time of sample 11NCMOCWA02. The laboratory determined that this VOC vial belonged to sample 11NCMOCWA02 based on the collection time and the overall number of containers.

The sampling time on the sample label did not match the time listed on the CoC for sample 11NCMOCWA10 (580-27518-10). The laboratory used the time listed on the CoC. In addition, the COC listed 16 containers for sample 11NCMOCWA08 (580-27518-8), however, 17 containers were received.

Lab Work Order 580-28349 (2 BTEX and PAH Water samples): The sample dates and times on the sample containers did not match the CoC. The laboratory logged the samples in according to the CoC.

Lab Work Order 580-28350: For DRO/RRO soil sample 11NCMOCSS046 (580-28350-19), no collection time was listed on sample container. This sample was logged and labeled according to the collection time reported on the COC.

Lab Work Order 580-28786 (soil DRO/RRO): The cooler received on September 22, 2011 was at a cooler receipt temperature of 8.9°C and the temperature blank reading was 5.7°C. Since the temperature blank reading was within the 6°C criterion, results for the 13 associated DRO/RRO soil samples were not qualified.

2.2 BTEX Analyses

TestAmerica analyzed samples for BTEX by SW-846 method 8260B. The sample QC batches are summarized in Table 2-2.1.

Table 2-2.1 BTEX QC Batches

Site	QC Batch	QC Batch Date	Matrix
MOC	280-87732	09/24/2011	Water
MOC	580-91253	07/26/2011	Water
MOC	580-94936	09/09/2011	Water

Notes:
BTEX = benzene, toluene, ethylbenzene, and xylenes
MOC = Main Operations Complex
QC = quality control

Required QC for an analytical batch of up to 20 samples includes an MB, LCS/LCSD, and MS/MSD pair. An MB, LCS/LCSD, and MS/MSD pair were analyzed with each batch with the exception that no LCSD was analyzed with batch 280-87732.

The following items were reviewed and met QAPP criteria: holding times, MB, surrogate recoveries, LCS/LCSD recoveries and RPDs, and MS/MSD RPDs.

The laboratory reported surrogate recoveries for fluorobenzene, trifluorotoluene, and ethylbenzene-d10 rather than the QAPP specified surrogates 1,2-dichloroethane-d4 and Dibromofluoromethane for water samples reported in SDG 580-27518-1. This discrepancy has not affected data quality and qualifiers were not assigned.

MS/MSD recoveries were outside QAPP Worksheet #12-14 control limits as follows:

Site	Spiked Sample	Analyte	%R	Control Limits
MOC	11NCMOCWA013	Benzene	65/--	80-120
		Ethylbenzene	60/--	75-125
		m&p-Xylenes	60/--	75-130
		o-Xylene	59/78	80-120
		Toluene	65/--	75-120
		Xylenes, total	60/--	75-130

-- = In control
%R = percent recovery

All results associated with an MS or MSD recovery less than the lower control limit were ML qualified to indicate the potential for bias due to matrix. All results were non-detect.

Associated samples were those collected from the same site and from the same matrix.

2.3 VOC Analyses

TestAmerica analyzed samples for VOCs by SW-846 method 8260B. The sample QC batch is summarized in Table 2-3.1.

Table 2-3.1 VOC QC Batches

Site	QC Batch	QC Batch Date	Matrix
Site 9	580-96554	9/30/11	Water

Notes:
QC = quality control

Required QC for an analytical batch of up to 20 samples includes an MB, LCS/LCSD, and MS/MSD pair. An MB, LCS and MS/MSD pair were performed with each QC batch. An LCSD was not analyzed.

The following items were reviewed and met QAPP criteria: holding times, MBs, surrogate recoveries, LCS recoveries, and MS/MSD RPDs.

The laboratory reported surrogate recoveries for fluorobenzene, trifluorotoluene, and ethylbenzene-d10 rather than the QAPP specified surrogates 1,2-dichloroethane-d4 and

Dibromofluoromethane for water samples reported in SDG 580-28786-2. This discrepancy has not affected data quality and qualifiers were not assigned.

Two of the surrogates reported were different than those listed in the QAPP. The two QAPP surrogates analyzed (4-bromofluorobenzene and toluene-d8) were within QAPP limits and the three extra surrogates were within the laboratory QC limits.

MS/MSD recoveries were outside control limits as follows:

Site/Spiked Sample	Analyte	%R	Control Limits
Site 9/ 11NC09WA006	1,1,2,2-Tetrachloroethane	78/78	80-130

%R = percent recovery

All results associated with MS/MSD recoveries less than the lower control limit were ML qualified to indicate the potential for bias due to matrix. , Associated samples were those collected from the same site and from the same matrix.

2.4 METHANE ANALYSES

TestAmerica analyzed samples for methane by RSK 175. The sample QC batches are summarized in Table 2-4.1.

Table 2-4.1 Methane QC Batches

Site	QC Batch	QC Batch Date	Matrix
Site 8	280-81710	08/16/2011	Water
Site 8	280-81840	08/17/2011	Water
MOC	680-210181	07/26/2011	Water
MOC	680-210182	07/26/2011	Water
MOC	680-210414	07/28/2011	Water

Notes:
MOC = Main Operations Complex
QC = quality control

A MB and LCS/LCSD were performed with each batch. Additionally, per the QAPP frequency, project MS/MSD pairs were analyzed on a 1 per 20 frequency. Also, two laboratory duplicates were analyzed for batch 280-81710 and one laboratory duplicate was analyzed for batch 280-81840. The laboratory duplicates were performed due to insufficient sample volume for MS/MSD analysis.

The following items were reviewed and met QAPP criteria: holding times, MB, and LCSD recoveries and RPDs, MS/MSD recoveries and RPDs, and laboratory duplicate RPDs.

LCS/LCSD recoveries were outside QAPP control limits as follows:

Site	QC Batch	Analyte	%R	Control Limits
MOC Water	680-210181	Methane	121/--	80-120

Notes:
-- = In control
%R = percent recovery

Associated detected results were QH qualified to indicate an estimated value with a potential high bias.

2.5 GRO ANALYSES

TestAmerica analyzed samples for GRO by ADEC method AK101. The sample QC batches are summarized in Table 2-5.1.

Table 2-5.1 GRO QC Batches

Site	QC Batch	QC Batch Date	Matrix
MOC	580-91108	07/25/2011	Water
MOC	580-91209	07/26/2011	Water
MOC	580-91108	07/24/2011	Water
MOC	580-91209	07/26/2011	Water

Notes:
GRO = gasoline-range organics
MOC = Main Operations Complex
QC = quality control

Required QC for an analytical batch of up to 20 samples includes an MB, LCS/LCSD pair, and MS/MSD pair. An MB, and LCS/LCSD pair were performed with each batch. Additionally, per the QAPP frequency, project MS/MSD pairs were analyzed with each extraction/analytical batch except for batch 580-91209 due to laboratory error.

The following items were reviewed and met QAPP criteria: holding times, surrogate recoveries, LCS/LCSD recoveries and RPDs, and MS/MSD recoveries and RPDs.

GRO was detected in the batch method blanks as shown below. Associated detected results were <10 times the blank concentrations and were qualified B to indicate the potential for a false positives or high bias.

Site	Laboratory Work Order	Batch	Analytes	Units	Concentration
MOC Water	580-27518-1	580-91108	GRO	ug/L	0.0169 J

2.6 SVOC ANALYSES

TestAmerica analyzed samples by method SW-846 8270C. The extraction batches are summarized in Table 2-6.1.

Table 2-6.1 SVOC QC Batches

Site	QC Batch	QC Batch Dates	Matrix
Tar Samples	580-93174	08/18/2011	Tar

Notes:
SVOC = semivolatile organic compounds
QC = quality control

Required QC for an analytical batch of up to 20 samples includes an MB, LCS/LCSD, and MS/MSD pair. An MB, LCS/LCSD and MS/MSD pair were performed with each QC batch.

The following items were reviewed and met QAPP criteria: MBs, surrogate recoveries, LCS/LCSD recoveries and RPDs, and MS/MSD recoveries.

The holding time of 14 days from collection to sample prep was exceeded for the tar samples listed below. These samples were originally submitted as TCLP SVOC samples; however, during the TCLP extraction the matrix became non-filterable for extraction and after consultation with the client, the analysis was switched to total SVOCs. This scenario caused a delay in the total SVOC extraction. SVOC results were not detected and QL qualified and are considered to be estimated with a low bias.

Site	Sample No.	Analyte	Days Over Hold Time
Tar Samples	11NCTAR001	SVOCs	4
	11NCTAR002	SVOCs	3

The MS/MSD RPD for 2-methylphenol was above the limit of 25% (30%). 2-Methylphenol was not detected in the samples and results did not require qualification.

2.7 PCB Analyses

TestAmerica analyzed samples by method SW-846 8082. The extraction batches are summarized in Table 2-7.1.

Table 2-7.1 PCB QC Batches

QC Batch	QC Batch Date	QC Batch	QC Batch Date
Site 13 Soils			
280-85400	9/9/2011	280-88008	9/27/2011
280-85404	9/9/2011	280-88102	9/27/2011
280-85409	9/9/2011	280-88109	9/27/2011
280-85411	9/10/2011	280-88148	9/28/2011
280-85535	9/12/2011	280-88364	9/29/2011
280-85541	9/12/2011	280-88520	9/29/2011
280-86158	9/15/2011	280-88527	9/29/2011
280-86293	9/15/2011	280-88530	9/29/2011
280-86355	9/15/2011	280-89262	10/04/2011
280-86671	9/18/2011	280-89277	10/4/2011
280-87966	9/27/2011	280-89514	10/5/2011
280-88001	9/27/2011	280-89522	10/5/2011

Table 2-7.1 PCB QC Batches (continued)

QC Batch	QC Batch Date	QC Batch	QC Batch Date
Site 31 Soils			
280-87321	9/22/2011	280-88269	9/28/2011
280-87329	9/22/2011	280-88275	9/28/2011
280-87335	9/22/2011	280-88940	10/3/2011
280-87356	9/22/2011	580-96409	9/29/2011
280-87383	9/22/2011	580-96415	9/29/2011
280-87408	9/22/2011	580-96420	9/29/2011
280-88165	9/28/2011	580-96447	9/29/2011
280-88217	9/28/2011		
MOC Waters			
580-91024	07/22/2011		

Notes:
MOC = Main Operations Complex
PCB = polychlorinated biphenyl
QC = quality control

Required QC for an analytical batch of up to 20 samples includes an MB, LCS, and MS/MSD pair. A MB, LCS/LCSD, and MS/MSD pair was analyzed with each batch with the exception that an MS/MSD pair was not associated with the following QC extraction batches: 280-89262, 280-89277, and 280-88940. The extraction batch 280-86671 was analyzed with MS/MSD samples not associated with this project due to laboratory oversight.

The following items were reviewed and met QAPP criteria: MBs and LCS/LCSD recoveries and RPDs.

2.7.1 Holding Times

The soil hold time criteria of 14 days to extraction and 40 days from extraction to analysis was met with the exception of sample 11NC31SS082 (280-20446-82). PCB results for this sample were reported from a re-extraction performed 16 days after sample collection. The sample was re-extracted due to surrogate recoveries of less than 20% for the initial analysis. Surrogate recoveries were acceptable for the re-extracted sample and PCB results were reported from the re-extracted sample with a QL qualifier due to the missed holding time.

2.7.2 Surrogate Recoveries

Many samples were diluted due to the presence of either target or non-target analytes. Surrogate recoveries were evaluated for samples analyzed at a dilution of 4x or less. For dilutions greater than 4x, the surrogates were considered to be diluted out and recoveries were not evaluated. Surrogate recoveries were outside the QAPP control limits as follows:

Site	Field Sample ID	Affected Analyte	Surrogate	%R	Criteria
13	11NC13SS181	All Results	DCB	33	60-125
13	11NC13SS226	All Results	DCB	34	60-125
13	11NC13SS182	All Results	DCB	45	60-125
13	11NC13SS248	All Results	DCB	46	60-125
13	11NC13SS Composite 9 (280-20410-40)	All Results	DCB	59	60-125
13	11NC13SS150	All Results	DCB	57	60-125
13	11NC13SS013	Detected PCBs	DCB	126	60-125
13	11NC13SS014	Detected PCBs	DCB	199	60-125
13	11NC13SS015	Detected PCBs	DCB	218	60-125
13	11NC13SS042	Detected PCBs	DCB	199	60-125
31	11NC31SS016	Detected PCBs	DCB	158	60-125
31	11NC31SS021	Detected PCBs	DCB	152	60-125
31	11NC31SS023	Detected PCBs	DCB	128	60-125
31	11NC31SS027	Detected PCBs	DCB	128	60-125
31	11NC31SS034	Detected PCBs	DCB	126	60-125
31	11NC31SS036	Detected PCBs	DCB	131	60-125
31	11NC31SS047	Detected PCBs	DCB	134	60-125
MOC	11NCMOCWA06	All Results	DCB	29	40-135

DCB = decachlorobiphenyl
%R = percent recovery

All PCB results with low surrogate recoveries (detections and non-detections) were QL qualified to indicate a potential low bias. Detected PCB results with high (>125%) surrogate Decachlorobiphenyl (DCB) recoveries were QH qualified to indicate the potential for high bias. Non-detected results are not affected by high recoveries.

The QAPP specifies the addition of two surrogates for PCB determination. However, the lab followed the method which requires only one surrogate, DCB, with an optional second surrogate, tetrachloro-m-xylene (TCX). All samples were analyzed with a single surrogate with the exception of the samples analyzed at TestAmerica-Tacoma under WO 580-28787 which included both surrogates. The surrogate DCB is more closely associated with PCBs and no action was required due to the lack of TCX recovery information.

2.7.3 MS/MSD Recoveries and RPDs

Samples used for MS/MSD analyses are listed below. Numerical values for recoveries and RPDs outside QAPP Table 12-4 control limits are presented. A dash indicates results were within control limits.

Spiked Client ID	Lab ID	PCB-1016 %R MS / MSD (RPD) Limits: 40-140 (<20%)	PCB-1260 %R MS/ MSD (RPD) Limits: 60-130 (<20%)
11NC13SS241	20698-65	--	-16% / 40% (39%)
11NC13SS242	20698-66	--	-- / 11%
11NC13SS251	20698-75	--	--
11NC13SS260	20698-83	na, diluted out	na, >4x spike
11NC13SS261	20698-84	na, diluted out	na, >4x spike
11NC13SS273	20698-97	229% / 286% (22%)	na, >4x spike
11NC13SS274	20698-98	--	--
11NC13SS275	20698-99	--	--
11NC13SS296	20698-120	--	--
11NC13SS343	20698-167	na, diluted out	na, >4x spike
11NC13SS359	20698-183	--	169% / 25% (38%)
11NC13SS395	20698-219	--	--
11NC13SS428	20698-252	146% / 143%	-- / 138%
11NC13SS445	20698-269	--	-- / 54%
11NC13SS446	20698-270	-- / 147%	--
11NC13SS Comp 38	20698-309	--	na, >4x spike
11NC13SS001	20054-1	167% / -- (69%)	na, >4x spike
11NC13SS003	20054-3	--	na, >4x spike
11NC13SS004	20054-4	--	--
11NC13SS036	20054-36	na, Diluted out	na, >4x spike
11NC13SS039	20054-39	--	54% / 50%
11NC13SS046	20054-46	--	--
11NC13SS079	20054-79	-- / 143%	-- / 150%
11NC13SS145	20054-145	141% -- (27%)	na, >4x spike

Spiked Client ID	Lab ID	PCB-1016 %R MS / MSD (RPD) Limits: 40-140 (<20%)	PCB-1260 %R MS/ MSD (RPD) Limits: 60-130 (<20%)
11NC13SS Comp 10	20054-155	--	--
11NC13SS Comp 21	20054-166	-- / 141%	na, >4x spike
11NC13SS Comp 34	20054-179	--	--
11NC31SS225	580-28787-25	--	--
11NC31SS226	580-28787-26	--	na, >4x spike
11NC31SS275	580-28787-75	142% / 157%	na, >4x spike
11NC31SS276	580-28787-76	--	565% / 26% (126%)
11NC31SS005	20446-5	435% / 433%	117% / 667% (79%)
11NC31SS044	20446-44	--	--
11NC31SS063	20446-63	--	138% / -- (24%)
11NC31SS068	20446-68	na, Diluted out	na, >4x spike
11NC31SS084	20446-84	--	--
11NC31SS135	20446-135	na, Diluted out	na, >4x spike
11NC31SS150	20446-150	--	143% / 150%
11NC31SS166	20446-166	na, diluted out	na, >4x spike
11NC31SS Comp 14	20446-214	144% / --	171% / -- (26%)
11NC31SS Comp 15	20446-215	--	na, >4x spike
11NC31SS Comp 16	20446-216	190% / 210%	360% / 248% (21%)
11NCMOCWA02	580-27518-2	--	--

na – not applicable
%R = percent recovery

All PCB-1016 recovery outliers were outside the upper control limit. PCB-1016 was not detected in the samples, and results were not affected by the high recoveries.

In all instances where PCB-1260 failed criteria (either high or low %Rs or high RPDs), the source sample contained concentrations ranging from 1x to 3x the spiking concentration. Examination of the field duplicate results (Section 2-13) shows the outlier recoveries are more a function of the variability of concentrations in the samples rather than laboratory procedure or extraction efficiency. Qualifiers due to MS/MSD outliers were either ML for matrix interference with low bias when recoveries were below acceptance limits, MH when a high bias was inferred, or MN when results or RPDs were outside of acceptance limits with no bias direction indicated. .

When the source sample concentration exceeds the spike concentration by greater than 4x or the sample was analyzed at a dilution >4x , recoveries were not applicable (na) and recovery and RPD information were not evaluated.

2.7.4 Laboratory Replicates

The following MS/MSD pair results were evaluated as laboratory replicates due to the high concentrations of PCB-1260 present in the samples (the spiking concentration added was not significant). Because TestAmerica-Denver analyzed the MS/MSD samples at the same dilutions as the parent samples, concentration results obtained from the MS and MSD were within the PCB calibration range. TestAmerica-Tacoma MS/MSD results were outside the calibration range and were not evaluated. In two instances, variability occurred around the screening criteria of 1 mg/kg (bold results). However, the generally good agreement observed between the MS and MSDs indicates that laboratory procedures were acceptable.

Spiked Client ID	Lab ID	PCB-1260 Parent Sample	PCB-1260 MS	PCB-1260 MSD
11NC13SS145	20054-145	0.440mg/kg	0.546mg/kg	0.508mg/kg
11NC13SS001	20054-1	0.450mg/kg	0.399mg/kg	0.450mg/kg
11NC13SS003	20054-3	0.340mg/kg	0.433mg/kg	0.443mg/kg
11NC13SS Comp 21	20054-166	0.570mg/kg	0.634mg/kg	0.673mg/kg
11NC13SS036	20054-36	31.000mg/kg	29.800mg/kg	-
11NC13SS261	20698-84	33.000mg/kg	24.600mg/kg	32.200mg/kg
11NC13SS273	20698-97	0.900mg/kg	0.729mg/kg	0.975mg/kg
11NC13SS343	20698-167	**1.500mg/kg**	**0.346mg/kg**	**0.259mg/kg**
11NC13SS Comp 38	20698-309	0.560mg/kg	0.190mg/kg	0.178mg/kg
11NC13SS260	20698-83	0.260mg/kg	0.201mg/kg	0.182mg/kg
11NC31SS166	20446-166	2.600mg/kg	2.350mg/kg	2.230mg/kg
11NC31SS Comp 16	20446-216	0.240mg/kg	0.499mg/kg	0.404mg/kg
11NC31SS068	20446-68	3.200mg/kg	1.740mg/kg	1.510mg/kg
11NC31SS135	20446-135	**1.600mg/kg**	**1.470mg/kg**	**0.997mg/kg**

- Not analyzed

2.7.5 Continuing Calibration Verifications

The laboratory narrative indicated a failing continuing calibration verification (CCV) with a low bias for the DCB surrogate in analytical batch 280-87866. Because all associated results met criteria, qualification was not necessary.

2.7.6 Shared PCB Peaks

The laboratory narrative indicated that the following samples contained more than one PCB with shared peaks. During analysis and reporting, the laboratory switched off the “Aroclor ID” software due to false positive detections of peaks that did not match Aroclor patterns. In those instances, analyst experience was used to identify Aroclor patterns or eliminate false positive results. Detected PCB results for these samples were qualified as estimated with an unknown bias (MN):

Site	Field ID	Lab ID	Site	Field ID	Lab ID
13	11NC13SS140	280-20054-140	13	11NC13SS080	280-20054-80
13	11NC13SS Composite 2	280-20054-147	13	11NC13SS085	280-20054-85
13	11NC13SS Composite 3	280-20054-148	13	11NC13SS086	280-20054-86
13	11NC13SS Composite 6	280-20054-151	13	11NC13SS089	280-20054-89
13	11NC13SS051	280-20054-51	13	11NC13SS124	280-20054-124
13	11NC13SS052	280-20054-52	13	11NC13SS126	280-20054-126
13	11NC13SS053	280-20054-53	13	11NC13SS127	280-20054-127
13	11NC13SS056	280-20054-56	13	11NC13SS128	280-20054-128
13	11NC13SS057	280-20054-57	13	11NC13SS129	280-20054-129

2.7.7 Percent Moisture

The volume for sample 11NC13SS036 (280-20054-36) was used up during the PCB sample extraction, with no volume remaining for a % moisture determination. The lab was directed to use 10% moisture for results reporting. Because the sample was heavily contaminated with PCBs, exceeded the screening criteria for PCB-1260, and was analyzed at a 100x dilution, any effect to the usability is negligible. No data qualifiers were applied.

In three of the percent moisture soil batches (280-86415, 280-88062, and 280-88164) the laboratory duplicate exceeded the 20% criteria (ex. 19% and 14% for an RPD of 31%; 9% and 7% for an RPD of 27%). In all cases, the soil moisture sample results ranged around 10%

(from approximately 1% to 22% moisture observed from both sites). This type of variability is inherent in a soil matrix, and any effect to the results is minimal, no data qualification was performed as a result of the percent moisture duplicate results.

2.7.8 Confirmation Column RPD

The laboratory narrative indicated the RPD between the detected PCB concentrations on the primary versus the confirmation columns exceeded 40% for the following samples:

Site	Field ID	Lab ID	Reported PCB
13	11NC13SS057	280-20054-57	PCB-1254
13	11NC13SS126	280-20054-126	PCB-1254
13	11NC13SS181	280-20698-5	PCB-1260
13	11NC13SS182	280-20698-6	PCB-1260
13	11NC13SS184	280-20698-8	PCB-1260
13	11NC13SS306	280-20698-130	PCB-1260

The laboratory reported the lower of the two results due to noted obvious matrix interference, which prevented proper quantification of Aroclor 1254. The PCB-1254 results were previously qualified MN due to shared peaks. Samples 280-20698-6, -8, and -130 had non-Aroclor peaks in the second column, which had higher concentrations. The initial column, with lower concentrations, was reported due to higher accuracy. All three samples in work order 280-20698 had reported concentrations well below cleanup levels. All results have flags due to either high RPD or other QC issues, such as matrix interference or low surrogate recoveries.

2.8 PAH Analyses

TestAmerica analyzed samples by SW-846 method 8270C SIM for PAHs. The extraction batches are summarized in Table 2-8-1.

Table 2-8.1 PAH QC Batches

Site	QC Batch	QC Batch Dates	Matrix
Site 8	580-91592	07/29/2011	Water
Site 8	580-93114	08/18/2011	Soil
Tar Removal Area	280-81466	08/15/2011	Soil
Tar Removal Area	280-81469	08/15/2011	Soil
MOC Water	280-87205	09/21/2011	Water
MOC Water	580-90999	07/22/2011	Water
MOC Water	580-94181	08/31/2011	Water

Notes:
MOC = Main Operations Complex
PAH = polynuclear aromatic hydrocarbons
QC = quality control

Required QC for an analytical batch of up to 20 samples includes an MB, LCS/LCSD, and MS/MSD pair. An MB, LCS/LCSD, and MS/MSD pair were extracted and analyzed with each QC batch.

The following items were reviewed and met QAPP criteria: holding times, LCS/LCSD recoveries and RPDs and MS/MSD recoveries and RPDs.

PAH compounds were detected in the method blanks as shown below. Associated detected results were <10 times the blank concentrations and were qualified B to indicate the potential for a false positive or high bias.

Site	Laboratory Work Order	Preparation Batch	Analytes	Units	Concentration
Site 8	580-27899-1	580-93114	Pyrene	ug/Kg	2.58

For work orders 580-27518, 580-27633-2, and 580-28349-1 the laboratory reported only the terphenyl-d14 surrogate, while the QAPP also requires 2-fluorobiphenyl and nitrobenzene-d5 for the aqueous samples. The QAPP surrogates 2-fluorobiphenyl and nitrobenzene-d5 were not reported. The raw data was reviewed and adequate instrument response was found for 2-fluorobiphenyl and nitrobenzene-d5 and results were not qualified.

Many samples were diluted due to the presence of either target or non-target analytes. Surrogate recoveries were evaluated for samples analyzed at a dilution of 4x or less. For dilutions greater than 4x, the surrogates were considered to be diluted out and recoveries were not evaluated. Surrogate recoveries for samples analyzed at a dilution of 4x or less were outside QAPP control limits as follows:

Site	Sample No.	Affected Analyte	Surrogate	%R	Control Limits
Tar Area	11NCTARSS002	PAHs	nitrobenzene-d5	146	35-100
Tar Area	11NCTARSS005	PAHs	nitrobenzene-d5	110	35-100
Tar Area	11NCTARSS006	PAHs	nitrobenzene-d5	122	35-100
Tar Area	11NCTARSS022 (1x)	PAHs	nitrobenzene-d5	104	35-100
Tar Area	11NCTARSS023	PAHs	nitrobenzene-d5	133	35-100
MOC Water	11NCMOCWA011	PAHs	terphenyl-d14	42	50-135
MOC Water	11NCMOCWA012	PAHs	terphenyl-d14	40	50-135

%R = percent recovery

Detected results associated with an exceedance of the upper control limit were qualified QH to indicate a potential for high bias and all results associated with an exceedance of a lower control limit were QL qualified to indicate the potential for low bias.

No qualifiers were assigned to MS/MSD recoveries outside control limits if the sample concentration was >4x the spike concentration, or analyzed at a dilution >4x. The MS/MSD spiked samples this rule applies to were:

Site	Spiked Sample	Analyte	Reason
Tar Areas	11NCTARSS001	PAHs	dilution/high sample conc
Tar Areas	11NCTARSS014	PAHs	dilution/high sample conc

The laboratory indicated that sample 11NCTARSS017 (580-27899-19) could not be concentrated to the final method required volume of 1 mL, it was instead taken to a final volume of 10 mL. Since the sample required dilution to bring the concentrations within the instrument calibration range, this discrepancy has not affected data quality.

2.9 DRO/RRO ANALYSES

TestAmerica analyzed samples for DRO/RRO following ADEC methods AK102/103. The QC batches are summarized in Table 2-9.1.

Table 2-9.1 DRO/RRO QC Batches

Site	Analysis	QC Batch	QC Batch Date	Matrix
Site 8	DRO/RRO	580-92043	08/04/2011	Water
Site 8	DRO/RRO	580-93139	08/18/2011	Soil
Site 8	DRO/RRO with silica gel cleanup	580-93139	08/18/2011	Soil
MOC	DRO/RRO	280-86816	09/19/2011	Soil
MOC	DRO/RRO	280-80762	08/10/2011	Soil
MOC	DRO/RRO	280-80769	08/10/2011	Soil
MOC	DRO/RRO	580-94384	09/02/2011	Soil
MOC	DRO/RRO	580-94408	09/02/2011	Soil
MOC	DRO/RRO	580-96331	09/28/2011	Soil
MOC	DRO/RRO	580-96342	09/28/2011	Soil
MOC	DRO/RRO	580-91153	07/25/2011	Water

Notes:
DRO = diesel-range organics
MOC = Main Operations Complex
QC = quality control
RRO = residual range organics

Required QC for a batch of up to 20 samples includes an MB, LCS /LCSD, and MS/MSD pair. An MB and LCS/LCSD were analyzed with each QC batch. Additionally, per the QAPP frequency, project MS/MSD pairs were extracted and analyzed with each QC batch except where noted. QC batch 580-96342 from SDG 580-28786 was extracted without inclusion of an MS/MSD from project samples. Thirteen project samples were submitted with an MS/MSD specified on the chain of custody; however, the samples were extracted in two separate QC batches with the project MS/MSD included in only one batch.

The following items were reviewed and met QAPP criteria: LCS/LCSD recoveries and RPDs, and MS/MSD RPDs.

The QAPP holding time of 7 days from collection to sample prep was exceeded for eleven water samples. Results were not qualified since the extractions were performed in the method holding time of 14 days.

DRO and RRO were detected in the batch method blanks as shown below. Associated detected results that were <10 times the blank concentrations were qualified B to indicate the potential for a false positive. Preparation batches 580-93139A and –B did not have any sample results less than 10 times the concentration in the method blank.

Site	Laboratory Work Order	Preparation Batch	Analytes	Units	Concentration
Site 8	580-27899-1	580-93139A	RRO	mg/kg	18
Site 8	580-27899-1	580-93139B	RRO with silica gel cleanup	mg/kg	2.01
MOC	580-28199-1& 580-28350-1	580-94384	DRO	mg/kg	2.12
MOC	580-28350-1	580-94408	DRO	mg/kg	8.67

Many samples were diluted due to the presence of either target or non-target analytes. Surrogate recoveries were evaluated for samples analyzed at a dilution of 4x or less. For dilutions greater than 4x, the surrogates were considered to be diluted out and recoveries were not evaluated. Surrogate recoveries for samples analyzed at a dilution of 4x or less were outside QAPP control limits as follows:

Site	Sample No.	Affected Analyte	Surrogate	%R	Control Limits
Site 8	11NC08SS002	RRO	n-triacontane-d62	192	50-150
MOC	11NCMOCSS045	RRO	n-triacontane-d62	162	50-150

%R = percent recovery

Detected RRO results for the affected samples were QH qualified to indicate the potential for a high bias.

For batches 280-86816 and 280-80762 the laboratory reported the surrogate n-octacosane, rather than n-triacontane-d62 for RRO analyses. Laboratory control limits were used to evaluate the n-octacosane recoveries.

No qualifiers were assigned to MS/MSD recoveries outside control limits if the sample concentration was >4x the spike concentration, or analyzed at a dilution >4x. The MS/MSD spiked samples this rule applies to were:

Site	Spiked Sample	Analyte	Reason
MOC	11NCMOCSS054	DRO	high sample conc
MOC	11NCMOCSS054	RRO	dilution
MOC	11NCMOCSS008	DRO	high sample conc
MOC	11NCMOCSS009	RRO	dilution
MOC	11NCMOCSS010	DRO	high sample conc
MOC	11NCMOCSS031	DRO	high sample conc
MOC	11NCMOCSS068	DRO	high sample conc

MS/MSD recoveries were outside QAPP Table 5-1 control limits as follows:

Site	Spiked Sample	Analyte	%R	Control Limits
Site 8	11NC08SS001	RRO with silica gel cleanup	146/129	53-116
MOC soil	11NCMOCSS047	DRO	7/7	72-128
MOC soil	11NCMOCSS047	RRO	1/-0.3	53-116

%R = percent recovery

Detected results associated with an exceedance of the upper control limit were MH qualified to indicate the potential for high bias and all results associated with an exceedance of a lower control limit were ML qualified to indicate the potential for bias due to matrix. Associated samples were those collected in the same day and from the same site and matrix. For sample 11NCMOCSS047 which was associated with recoveries less than 10 percent, DRO/RRO were detected above the LOQ and ML qualified. In addition for sample 11NCMOCSS047, more than one MS/MSD was reported in the batch and qualification was limited to the spiked sample.

2.10 TOC ANALYSES

TestAmerica analyzed samples for TOC-Quad by SW-846 method 9060. The QC batches are summarized in Table 2-10.1.

Table 2-10.1 TOC QC Batches

Site	QC Batch	QC Batch Date	Matrix
Site 8	580-93022	08/17/2011	Soil

An MB, LCS, MS/MSD, and laboratory duplicate were analyzed with each batch. The following items were reviewed and met QAPP criteria: holding time, MB, and LCS %Rs, MS/MSD %R and RPD, and laboratory duplicate RPDs.

2.11 TOTAL AND DISSOLVED METALS ANALYSES

TestAmerica analyzed water and soil samples by SW-846 method 6020; the waters were analyzed for both total and dissolved (field filtered) metals. The QC batches are summarized in Table 2-11.1.

Table 2-11.1 Total and Dissolved Metals QC Batches

Site	QC Batch	QC Batch Date	Matrix
Site 21	580-91441	07/28/2011	Soil
Site 21	580-95009	9/9/11	Soil
MOC	580-91011	07/22/2011	Water
MOC	580-91018	07/22/2011	Water

Note:
MOC = Main Operations Complex
QC = quality control

Required QC for a batch of up to 20 samples includes an MB, LCS/LCSD, and MS/MSD pair. An MB, MS/MSD, LCS/LCSD, and a laboratory duplicate were analyzed per batch.

The following items were reviewed and met QAPP: holding time, MB, LCS/LCSD %Rs and RPDs, MS/MSD %Rs and RPD.

For the MOC site, laboratory work order 580-27518-1, analytical batch 580-91011, the laboratory duplicate for total chromium had an RPD of 23% which is outside the control limits of <20%. The project sample was used as the laboratory duplicate. This sample and the associated detected project sample in the batch were QN qualified to indicate the matrix may be non-homogenous.

2.12 MERCURY ANALYSES

TestAmerica analyzed total and dissolved mercury in water samples by SW-846 method 7470A. The QC batches are summarized in Table 2-12.1.

Table 2-12.1 Mercury QC Batches

Site	QC Batch	QC Batch Date	Matrix
MOC	580-91725	08/01/2011	Water

Note:
MOC = Main Operations Complex
QC = quality control

Required QC for a batch of up to 20 samples includes an MB, LCS/LCSD, and MS/MSD pair. An MB, MS/MSD, and LCS/LCSD were analyzed per batch. In addition, a laboratory duplicate was reported.

The following items were reviewed and met QAPP criteria: hold time, MB, LCS/LCSD recoveries and RPDs, MS/MSD recoveries and RPDs, and laboratory duplicate RPDs.

2.13 FIELD QA/QC

Field QC samples included field duplicate pairs, MS/MSD pairs, and trip blanks. The same methods used to analyze the investigative samples were used to analyze the field QC samples.

2.13.1 Field Sample Duplicates

Comparison of field sample duplicate results to the associated parent sample results provides precision information for the overall sample collection and analytical process, including possible variability related to sample collection, handling, shipping, storage, preparation, and analysis. The RPD between the primary (parent) sample and field duplicate sample also accounts for the variation of target analyte concentrations within a matrix. This variability is assessed by evaluating the calculated RPDs between the field duplicates and the associated parent samples. If target analytes were detected in one sample greater than the LOQ and not detected in the duplicate, both detected and non-detected results should be flagged to indicate imprecision. Data which is J flagged was detected between the LOQ and the DL. The RPD assessment criteria in the QAPP of ≤30% for water matrices and ≤50% for soils was used to evaluate the field duplicates.

Field Duplicate Frequencies

Field sample duplicate pairs are required by the QAPP at a rate of 10 percent. Field duplicates were collected at each site for the following frequencies per method:

- Site 8:
  - Three aqueous field duplicate pairs were collected for methane analysis at a frequency of 12%.
  - One aqueous field duplicate pair was associated with the surface water samples collected for DRO/RRO and PAHs at a frequency of 50%.
  - One soil field duplicate pair was collected for TOC, DRO/RRO, DRO/RRO with silica gel cleanup, and PAHs, at a frequency of 33%.
- Site 9: One aqueous field duplicate pair was collected for VOCs at a frequency of 25%.
- Site 13: Twenty-Four soil field duplicate pairs per a total of 363 samples were collected for PCBs by 8082 at a frequency of 7%. The low frequency is attributed to analysis of discrete samples following composite results exceeding cleanup levels, necessitating discrete sample analysis.
- Site 21: Two soil field duplicate pairs were collected for analysis of arsenic at a frequency of 12%.
- Site 31: Seventeen soil field duplicate pairs per a total of 248 samples were collected for PCBs by 8082 at a frequency of 7%. The low frequency is attributed to analysis of discrete samples following composite results exceeding cleanup levels, necessitating discrete sample analysis.
- Tar Removal Area:
  - A field duplicate was not associated with the two tar samples collected for SVOCs. The results were used for disposal purposes only.
  - Three soil field duplicate pairs were collected for analysis of PAHs at a frequency of 14%.
- MOC Site:
  - One aqueous field duplicate pair from the MOC wells was collected for analysis of all methods at a frequency of 11%.

- One impoundment water field duplicate pair was collected for analysis of BTEX and PAHs for a frequency of 33%.
- Eight soil field duplicate pairs were collected for the analysis of DRO/RRO at a frequency of 12 percent.

The QAPP duplicate frequency criteria of 10% was not met for all sites and matrixes. An assessment of precision was made using the available information.

Field Duplicate RPDs

Tables 2-13.1 lists the RPDs calculated between the field duplicate and parent sample results for target analytes that were detected above the LOQ in both the parent and field duplicate sample.

Table 2-13.1 Field Sample Duplicate Pair Results

Parent Sample ID/ Laboratory Sample ID	Field Duplicate Sample ID/ Laboratory Sample ID	Compound	Units	Parent Field Sample Result	Field Duplicate Result	RPD (%)
Site 8:						
11NC08SS003 580-27899-56	11NC08SS004 580-27899-57	1-Methylnaphthalene	ug/Kg	300	130	**79**
		2-Methylnaphthalene	ug/Kg	210	92	**78**
		Acenaphthene	ug/Kg	20	4.2 U	nc
		Acenaphthylene	ug/Kg	8.9 J	4.2 U	nc
		Anthracene	ug/Kg	4.7 U	6 J	nc
		Chrysene	ug/Kg	4.7 U	9.7	nc
		Fluoranthene	ug/Kg	4.7 U	9	nc
		Fluorene	ug/Kg	53	47	12
		Naphthalene	ug/Kg	240	42	**140**
		Phenanthrene	ug/Kg	42	39	7
		Pyrene	ug/Kg	4.3 B	11 B	nc
		DRO	mg/Kg	550	1600	**98**
		RRO	mg/Kg	1300 MH	1200 MH	**93**
		Total Organic Carbon	mg/Kg	140000	97000	38
11NC08WA006 580-27899-32	11NC08WA0009 580-27899-35	Methane	ug/L	14	21	**40**
11NC08WA014 580-27899-40	11NC08WA0018 580-27899-44	Methane	ug/L	8.0	8.8	10
11NC08WA026 580-27899-52	11NC08WA0027 580-27899-53	Methane	ug/L	20	30	**40**
11NC08WA02 580-27899-12	11NC08WA03 580-27899-13	DRO	mg/L	0.19	0.28	**38**
		RRO	mg/L	0.28	0.44	**44**
11NC08WA02	11NC08WA03	DRO	mg/L	0.19	0.28	**38**
580-27633-12	580-27633-13	RRO	mg/L	0.28	0.44	**44**
Site 9:						
11NC09WA009 580-28786-17	11NC09WA010 580-28786-18	VOCs	ug/L	All ND	All ND	**-**

Table 2-13.1 Field Sample Duplicate Pair Results

Parent Sample ID/ Laboratory Sample ID	Field Duplicate Sample ID/ Laboratory Sample ID	Compound	Units	Parent Field Sample Result	Field Duplicate Result	RPD (%)
Site 13:						
11NC13SS009 280-20054-9	11NC13SS138 280-20054-138	PCB-1260	mg/kg	0.340	0.340	0
11NC13SS010 280-20054-10	11NC13SS139 280-20054-139	PCB-1260	mg/kg	1.600	0.790	**68**
11NC13SS011 280-20054-11	11NC13SS140 280-20054-140	PCB-1254	mg/kg	ND (0.041)	0.420	nc
		PCB-1260	mg/kg	0.890	1.100	21
		Total PCBs	mg/kg	0.890	1.52	**52**
11NC13SS030 280-20054-30	11NC13SS145 280-20054-145	PCB-1260	mg/kg	0.530	0.440	19
11NC13SS195 280-20698-19	11NC13SS419 280-20698-243	PCB-1260	mg/kg	0.730	0.280	**89**
11NC13SS216 280-20698-40	11NC13SS420 280-20698-244	PCB-1260	mg/kg	0.660	0.500	28
11NC13SS226 280-20698-50	11NC13SS421 280-20698-245	PCB-1260	mg/kg	0.170	0.095	**57**
11NC13SS237 280-20698-61	11NC13SS422 280-20698-246	PCB-1260	mg/kg	0.930	1.100	17
11NC13SS281 280-20698-105	11NC13SS424 280-20698-248	PCB-1260	mg/kg	0.028 J	1.600	**nc**
11NC13SS282 280-20698-106	11NC13SS432 280-20698-256	PCB-1260	mg/kg	0.270	0.038	**151**
11NC13SS283 280-20698-107	11NC13SS425 280-20698-249	PCB-1260	mg/kg	0.092	0.036	**88**
11NC13SS284 280-20698-108	11NC13SS427 280-20698-251	PCB-1260	mg/kg	0.067	0.049	31
11NC13SS285 280-20698-109	11NC13SS428 280-20698-252	PCB-1260	mg/kg	0.170	0.016 J	nc
11NC13SS286 280-20698-110	11NC13SS429 280-20698-253	PCB-1260	mg/kg	0.430	1.200	**95**
11NC13SS287 280-20698-111	11NC13SS430 280-20698-254	PCB-1260	mg/kg	230	4.6	**192**
11NC13SS288 280-20698-112	11NC13SS431 280-20698-255	PCB-1260	mg/kg	1.400	4.700	**108**
11NC13SS289 280-20698-113	11NC13SS426 28020698-250	PCB-1260	mg/kg	0.6	3.0	**133**
11NC13SS301 280-20698-125	11NC13SS433 280-20698-257	PCB-1260	mg/kg	2.10	0.68	**102**

Table 2-13.1 Field Sample Duplicate Pair Results

Parent Sample ID/ Laboratory Sample ID	Field Duplicate Sample ID/ Laboratory Sample ID	Compound	Units	Parent Field Sample Result	Field Duplicate Result	RPD (%)
11NC13SS302 280-20698-126	11NC13SS434 280-20698-258	PCB-1260	mg/kg	3.3	4.1	22
11NC13SS280 280-20698-104	11NC13SS423 280-20698-247	PCBs	mg/kg	All ND	All ND	**-**
Site 21:						
11NC21SS03 580-27633-3	11NC21SS10 580-27633-10	Arsenic	mg/Kg	3.5	2.9	19
11NC21SS004 580-28199-8	11NC21SS007 580-28199-11	Arsenic	mg/Kg	100	140	33
Site 31:						
11NC31SS002 280-20446-2	11NC31SS182 280-20446-182	PCB-1260	mg/kg	3.50	0.38	**161**
11NC31SS004 280-20446-4	11NC31SS183 280-20446-183	PCB-1260	mg/kg	0.074	1.400	**180**
11NC31SS008 280-20446-8	11NC31SS184 280-20446-184	PCB-1260	mg/kg	0.042	0.120	**96**
11NC31SS021 280-20446-21	11NC31SS185 280-20446-185	PCB-1260	mg/kg	1.10	0.49	**77**
11NC31SS034 280-20446-34	11NC31SS186 280-20446-186	PCB-1260	mg/kg	0.51	0.64	23
11NC31SS036 280-20446-36	11NC31SS187 280-20446-187	PCB-1260	mg/kg	0.61	1.40	**79**
11NC31SS039 280-20446-39	11NC31SS188 280-20446-188	PCB-1260	mg/kg	0.56	0.37	40
11NC31SS040 280-20446-40	11NC31SS189 280-20446-189	PCB-1260	mg/kg	0.25	0.72	**97**
11NC31SSComposite 13 280-20446-213	11NC31SSComposite 46 280-0446-246	PCB-1260	mg/kg	0.57	0.56	2
11NC31SSComposite 21 280-20446-221	11NC31SSComposite 47 280-20446-247 11NC31SS236 580-28787-36	11NC31SS291 PCB-1260 580-28787-91	mg/kg	0.11	0.078	34
11NC31SSComposite 23 280-20446-223	11NC31SSComposite 48 280-20446-248 11NC31SS236 580-28787-36	11NC31SS291 PCB-1260 580-28787-91	mg/kg	0.24	0.14	**53**
11NC31SS236 580-28787-36	11NC31SS291 580-28787-91	PCB-1260	mg/kg	1.6	1.0	46
11NC31SS214 580-28787-14	11NC31SS288 580-28787-88	PCB-1260	mg/kg	0.11	0.21	**63**
11NC31SS215	11NC31SS289	PCB-1260	mg/kg	1.0	1.1	10

Table 2-13.1 Field Sample Duplicate Pair Results

Parent Sample ID/ Laboratory Sample ID	Field Duplicate Sample ID/ Laboratory Sample ID	Compound	Units	Parent Field Sample Result	Field Duplicate Result	RPD (%)
580-28787-15	580-28787-89					
11NC31SS216 580-28787-16	11NC31SS290 580-28787-90	PCB-1260	mg/kg	1.1	1.4	24
11NC31SS237 580-28787-37	11NC31SS292 580-28787-92	PCB-1260	mg/kg	3.2	0.24	**172**
COMP Group 1 580-28787-108	COMP Group 22 580-28787-129	PCB-1260	mg/kg	0.33	0.081	**121**
Tar Area:						
11NCTARSS008 580-27899-10	11NCTARSS024 580-27899-26	1-Methylnaphthalene	ug/Kg	4.7 J	14 U	nc
		2-Methylnaphthalene	ug/Kg	7.8 J	14 U	nc
		Acenaphthene	ug/Kg	22 J	14 U	nc
		Acenaphthylene	ug/Kg	1.6 J	2.7 J	nc
		Anthracene	ug/Kg	110	4.7 J	nc
		Benzo[a]Anthracene	ug/Kg	220	18 J	nc
		Benzo[a]Pyrene	ug/Kg	66	15 J	nc
		Benzo[b]Fluoranthene	ug/Kg	120	14 U	nc
		Benzo[g,h,i]perylene	ug/Kg	17 J	10 J	nc
		Benzo[k]Fluoranthene	ug/Kg	46	14 U	nc
		Chrysene	ug/Kg	280	48	**141**
		Dibenzo[a,h]Anthracene	ug/Kg	11 J	14 U	nc
		Fluoranthene	ug/Kg	450	25 J	nc
		Fluorene	ug/Kg	42	2.9 J	nc
		Indeno[1,2,3-cd]Pyrene	ug/Kg	22 J	14 U	nc
		Naphthalene	ug/Kg	6.3 J	14 U	nc
		Phenanthrene	ug/Kg	350	11 J	nc
		Pyrene	ug/Kg	330	33	**164**
11NCTARSS011 580-27899-13	11NCTARSS022 580-27899-24	1-Methylnaphthalene	ug/Kg	30 U	2 J QH	nc
		2-Methylnaphthalene	ug/Kg	30 U	2.1 J QH	nc
		Acenaphthene	ug/Kg	30 U	15 QH	nc
		Acenaphthylene	ug/Kg	2.9 J	4.1 J QH	9
		Anthracene	ug/Kg	30 U	98 QH	nc
		Benzo[a]Anthracene	ug/Kg	12 J	250 QH	45
		Benzo[a]Pyrene	ug/Kg	11 J	110 QH	41
		Benzo[b]Fluoranthene	ug/Kg	30 U	200 QH	nc
		Benzo[g,h,i]perylene	ug/Kg	30 U	36 QH	nc
		Benzo[k]Fluoranthene	ug/Kg	30 U	63 QH	nc
		Chrysene	ug/Kg	54 J	270 QH	33
		Dibenzo[a,h]Anthracene	ug/Kg	30 U	19 QH	nc
		Fluoranthene	ug/Kg	16 J	450 QH	47
		Fluorene	ug/Kg	30 U	28 QH	nc
		Indeno[1,2,3-cd]Pyrene	ug/Kg	30 U	42 QH	nc
		Naphthalene	ug/Kg	30 U	1.3 J QH	nc

Table 2-13.1 Field Sample Duplicate Pair Results

Parent Sample ID/ Laboratory Sample ID	Field Duplicate Sample ID/ Laboratory Sample ID	Compound	Units	Parent Field Sample Result	Field Duplicate Result	RPD (%)
		Phenanthrene	ug/Kg	30 U	240 QH	nc
		Pyrene	ug/Kg	26 J	360 QH	nc
11NCTARSS016 580-27899-18	11NCTARSS023 580-27899-25	1-Methylnaphthalene	ug/Kg	15 U	0.56 J QH	nc
		2-Methylnaphthalene	ug/Kg	1.8 J	0.93 J QH	nc
		Acenaphthene	ug/Kg	3.9 J	2.2 J QH	nc
		Acenaphthylene	ug/Kg	63	26 QH	**83**
		Anthracene	ug/Kg	30	17 QH	**55**
		Benzo[a]Anthracene	ug/Kg	90	50 QH	**57**
		Benzo[a]Pyrene	ug/Kg	150	61 QH	**84**
		Benzo[b]Fluoranthene	ug/Kg	140	64 QH	**75**
		Benzo[g,h,i]perylene	ug/Kg	59	23 QH	**88**
		Benzo[k]Fluoranthene	ug/Kg	49	21 QH	**80**
		Chrysene	ug/Kg	120	60 QH	**67**
		Dibenzo[a,h]Anthracene	ug/Kg	20 J	8.1 QH	nc
		Fluoranthene	ug/Kg	98	67 QH	38
		Fluorene	ug/Kg	9.2 J	7.3 QH	23
		Indeno[1,2,3-cd]Pyrene	ug/Kg	63	25 QH	**86**
		Naphthalene	ug/Kg	15 U	1 J QH	nc
		Phenanthrene	ug/Kg	26 J	25 QH	4
		Pyrene	ug/Kg	150	83 QH	**58**
MOC:						
11NCMOCSS020 580-27882-20	11NCMOCSS013 580-27882-13	DRO	mg/Kg	4600	5800	23
11NCMOCSS021 580-27882-21	11NCMOCSS014 580-27882-14	DRO	mg/Kg	11000	14000	24
11NCMOCSS023 580-28199-2	11NCMOCSS025 580-28199-4	DRO	mg/Kg	460	310	39
		RRO	mg/Kg	20 J	13 J	nc
11NCMOCSS036 580-28350-9	11NCMOCSS051 580-28350-24	DRO	mg/Kg	2200	3500	46
		RRO	mg/Kg	43 J	55 U	nc
11NCMOCSS053 280-20411-1	11NCMOCSS055 280-20411-3	DRO	mg/Kg	58	51	13
		RRO	mg/Kg	150	130	14
11NCMOCSS054 280-20411-2	11NCMOCSS056 280-20411-4	DRO	mg/Kg	1600	5800	**114**
		RRO	mg/Kg	79 J	260	nc
11NCMOCSS065 580-28786-5	11NCMOCSS073 580-28786-13	DRO	mg/Kg	6900	5100	30
		RRO	mg/Kg	340	750	**75**
11NCMOCSS067 580-28786-7	11NCMOCSS072 580-28786-12	DRO	mg/Kg	330	330	0
		RRO	mg/Kg	54 J	64 J	17
11NCMOCWA06 580-27518-6	11NCMOCWA07 580-27518-7	Benzene	ug/L	20	16	22
		Toluene	ug/L	2.1	1.9	10
		Ethylbenzene	ug/L	3.3	3.2	3
		m-Xylene & p-Xylene	ug/L	6.0	6.1	2
		o-Xylene	ug/L	4.1	3.9	5
		Xylenes (Total)	ug/L	10.1	10	1
		Acenaphthene	ug/L	0.12	0.16	29
		Anthracene	ug/L	0.071 U	0.064 J	nc

Table 2-13.1 Field Sample Duplicate Pair Results

Parent Sample ID/ Laboratory Sample ID	Field Duplicate Sample ID/ Laboratory Sample ID	Compound	Units	Parent Field Sample Result	Field Duplicate Result	RPD (%)
		Fluorene	ug/L	0.071 U	0.048 J	nc
		Naphthalene	ug/L	0.78	0.84	7
		GRO	mg/L	0.24	0.23	4
		DRO	mg/L	7.2	7.5	4
		RRO	mg/L	1.8	2.0	11
		Methane	ug/L	630	620	2
		Arsenic-dissolved	mg/L	0.0052	0.0049 J	nc
		Barium-dissolved	mg/L	0.055	0.054	2
		Chromium-dissolved	mg/L	0.0029 J	0.0026 J	nc
		Lead-dissolved	mg/L	0.00049 J	0.00046 J	nc
		Nickel-dissolved	mg/L	0.013 J	0.012 J	nc
		Vanadium-dissolved	mg/L	0.0079 J	0.0087 J	nc
		Arsenic- total	mg/L	0.0057	0.0058	2
		Barium- total	mg/L	0.062	0.064	3
		Chromium- total	mg/L	0.0041	0.004	2
		Lead- total	mg/L	0.0019 J	0.0019 J	nc
		Nickel- total	mg/L	0.014 J	0.014 J	nc
		Vanadium- total	mg/L	0.0051 J	0.0069 J	nc
11NCMOCWA011 580-28349-1	11NCMOCWA012 580-28349-2	1-Methylnaphthalene	ug/L	0.065 J	0.078 J	nc
		2-Methylnaphthalene	ug/L	0.075 U	0.039 J	nc
		Naphthalene	ug/L	0.097 J	0.095 J	nc

Notes:

BOLD	=	Exceeds acceptance criteria	nc	=	not calculated, one or more concentration below the LOQ
B	=	also detected in the blank at a concentration<10x the sample concentration	PCBs	=	polychlorinated biphenyls
DRO	=	diesel range organics	QH	=	estimated with a high bias
FD	=	field duplicate	QL	=	estimated with a low bias
GRO	=	gasoline range organics	RPD	=	relative percent difference
ID	=	identifier	RRO	=	residual range organics
J	=	The analyte was positively identified; the quantitation is an estimation	TOC	=	total organic carbon
LOD	=	limit of detection	U	=	not detected at the LOD
LOQ	=	limit or quantitation			
M	=	a matrix effect was present	ug/kg	=	micrograms per kilogram
mg/kg	=	milligrams per kilogram	ug/L	=	micrograms per liter
mg/L	=	milligrams per liter	###	=	FD pair results bracket screening criteria
MH	=	Estimated biased high due to matrix			
MOC	=	Main Operations Complex			

For the Site 8 soil samples, results for acenaphthene, chrysene and fluoranthene were not detected in one sample but detected in the duplicate pair. In addition the RPDs were exceeded for 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, DRO/RRO and TOC. Three Site 8 water samples were collected in the decision unit area for methane. Two of the three sets failed RPD criteria in water, both with 40% RPD. A duplicate set of surface water samples were collected near the confluence of the Suqi River for PAHs, DRO and RRO. The PAHs were non-detect so no calculation was performed. The DRO and RRO duplicate results failed RPD at 38 and 44% respectively. No other field duplicates were collected from this site for these analytes. Since the action/cleanup levels are well above the uncertainty, results were not qualified.

For Sites 13 and 31, variability was observed for PCBs in the field duplicate pairs. The laboratory MS/MSD RPD results showed good reproducibility, indicating either the sampling procedure or sample heterogeneity was the reason for the variability in the field duplicate results. Results at the screening criteria of 1 mg/kg were specifically evaluated. Seven of the 20 duplicate pairs from Site 13 and four of the seven duplicate pairs collected from Site 31 showed one result above and one result below the screening criteria as follows (and in blue on Table 2-13):

<u>PCB 1260 FD Pair Results Bracketing Screening Criteria</u>

Site 13							Site 31			
0.028 J	0.43	0.6	0.68	0.79	0.89	0.93	0.61	0.49	0.074	0.38
1.6	1.2	3	2.1	1.6	1.1	1.1	1.4	1.1	1.4	3.5

In general, the above results indicate that detected concentrations of 0.4 mg/kg or greater have the potential to exceed the screening criteria if the area was re-sampled, or conversely, field results at 3.5 mg/kg or less may be reported to be less than the screening criteria upon re-sampling.

For Site 13, eleven of the 20 duplicate pairs exceeded the RPD criteria of 50%. For Site 31, five of the seven duplicate pairs exceeded the RPD criteria of 50%. Since more than half of the field duplicates exceeded the RPD criteria and variability was observed at the screening criteria all detected PCB-1260 results (not otherwise qualified with a bias) were qualified as estimated. Since the PCB-1260 result is used to calculate total PCBs, the total PCB result was also qualified. A QN qualifier was used to show variability with an unknown bias.

For the tar area soil sample, three field duplicates were provided for PAH analysis. For field duplicate pair 11NCTARSS008/ 11NCTARSS024 four PAHs had either RPD exceedances or detections in one sample, but not the duplicate pair. For field duplicate pair 11NCTARSS011/ 11NCTARSS022, 10 compounds were detected in the field duplicate, but not the parent sample. For field duplicate pair 11NCTARSS016/ 11NCTARSS023, ten compounds had RPD exceedances. Since the action/cleanup level is well above the uncertainty, results were not qualified.

For the MOC soil samples, eight field duplicates for DRO/RRO were provided. One DRO and one RRO duplicate pair exceed the RPD criteria of 50%. DRO and RRO precision for the other duplicate pairs were acceptable and results in the sample and duplicate pairs which showed imprecision only were QN qualified to indicate the results are estimated with an unknown bias.

2.13.2 Matrix Spikes and Matrix Spike Duplicates

The MS/MSD samples are spiked in the laboratory with known concentrations of target analytes. The MS/MSD sample results provide information on possible matrix effects encountered during sample extraction, digestion, and analysis. Analytical results from MS/MSD samples are used to evaluate the sample matrix, method efficiency and applicability, accuracy, and precision. Accuracy was assessed by calculating the percent recovery of the target analytes added to the primary sample; precision was assessed by calculating the RPD for the MS/MSD sample pairs.

The MS/MSD sample pairs are required by the QAPP at a rate of one MS/MSD pair per 20 samples per matrix. The MS/MSD sample pairs were collected at the following frequencies:

- Site 8:
  - One aqueous (groundwater) MS/MSD was analyzed for methane at a frequency of 4%. Laboratory duplicates were performed for methane for batch 280-81840 due to insufficient sample volume for MS/MSD analysis.
  - One surface water MS/MSD was analyzed for DRO/RRO and PAHs at a frequency of 33%.
  - One soil MS/MSD was analyzed for TOC, DRO/RRO, DRO/RRO with silica gel cleanup and PAHs at a frequency of 33%.

- Site 9: One aqueous MS/MSD for VOCs at a frequency of 25%.
- Site 13: 27 soil matrix MS/MSD sets were analyzed for PCBs at a frequency of 6%.
- Site 21: Two soil MS/MSDs were analyzed for arsenic at a frequency of 12%.
- Site 31: 15 soil matrix MS/MSD sets were analyzed for PCBs at a frequency of 4%.
- Tar Removal Area:
- One tar MS/MSD was analyzed for SVOCs for a frequency of 50%.
- Two soil matrix MS/MSDs were analyzed for PAHs at a frequency of 9%.
- MOC:
  - One aqueous (groundwater) MS/MSD was analyzed for all methods except methane at a frequency of 11%.
  - One aqueous (surface water) MS/MSD was analyzed for BTEX and PAHs at a frequency of 33%.
  - Seven soil MS/MSDs were analyzed for DRO/RRO at a frequency of 12%.

The MS and MSD recoveries and RPDs are discussed in Sections 2.2 through 2.12.

2.13.3 Trip Blanks

Aqueous and soil trip blanks are included in shipments containing samples which are submitted to the laboratory for VOC, BTEX, and GRO analyses. Trip blanks are collected to assess the potential for VOC, BTEX, or GRO cross-contamination introduced by sample bottles, from sample handling during field operations, shipping, or storage at the laboratory.

Trip blanks were included with shipments containing samples for VOC, BTEX, and GRO analysis and were free of target analytes with the exceptions noted below.

Methylene chloride was detected at a concentration greater than the detection limit but less than the LOQ (0.32 ug/L) in the aqueous trip blank shipped with water samples on 9/21/11 from Site 9 Surface Water (laboratory work order 580-28786-2). Associated results were not detected and qualification was not required.

GRO was detected in the aqueous trip blank at a concentration greater than the detection limit, but less than the LOQ (0.017 ug/L) with water samples shipped on 7/19/11 from MOC Groundwater (laboratory work order 580-27518-1). Associated detected results <10 times the blank concentration were < LOQ and were B qualified.

2.14 SAMPLE QUALIFIERS

Sample qualifiers are presented in Table 2-14.

Table 2-14 Sample Qualifiers

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
Site 8:					
11NC08SS001 11NC08SS002 11NC08SS003 11NC08SS004	580-27899-54 580-27899-55 580-27899-56 580-27899-57	Pyrene	Detected at similar concentration in method blank	B	High
11NC08SS001 11NC08SS002 11NC08SS003 11NC08SS004	580-27899-54 580-27899-55 580-27899-56 580-27899-57	RRO with silica gel cleanup	High MS/MSD recovery	MH	High
11NC08SS002	580-27899-55	RRO	High surrogate recovery	QH	High
Site 9:					
11NC09WA006 11NC09WA007 11NC09WA008 11NC09WA009 11NC09WA010	580-28786-14 580-28786-15 580-28786-16 580-28786-17 580-28786-18	1,1,1,2-Tetrachloroethane	Low MS/MSD recovery	ML	Low

Table 2-14 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
Site 13:					
11NC13SS140 11NC13SS Composite 2 11NC13SS Composite 3 11NC13SS Composite 6 11NC13SS051 11NC13SS052 11NC13SS053 11NC13SS056 11NC13SS057 11NC13SS080 11NC13SS085 11NC13SS086 11NC13SS089 11NC13SS124 11NC13SS126 11NC13SS127 11NC13SS128 11NC13SS129	280-20054-140 280-20054-147 280-20054-148 280-20054-151 280-20054-51 280-20054-52 280-20054-53 280-20054-56 280-20054-57 280-20054-80 280-20054-85 280-20054-86 280-20054-89 280-20054-124 280-20054-126 280-20054-127 280-20054-128 280-20054-129	All Detected PCBs	Multiple PCBs, Shared peaks	MN	Unknown
11NC13SS014 11NC13SS015 11NC13SS042	280-20054-14 280-20054-15 280-20054-42	Detected PCBs	High Surrogate %Rs	QH	High
11NC13SS181 11NC13SS226 11NC13SS182 11NC13SS248 11NC13SS Composite 9 11NC13SS150	280-20698-5 280-20698-50 280-20698-6 280-20698-72 280-20410-40 280-20410-5	All PCBs	Low surrogate %Rs	QL	Low
All samples not previously qualified	All samples not previously qualified	Detected PCB-1260 And total PCBs with detected PCB-1260	High Field Varibabilty	QN	Unknown
11NC13SS079	280-20054	PCB-1260	High MS and/or MSD recovery	MH	High
11NC13SS359	280-20698	PCB-1260	High and Low MS and/or MSD recovery	MN	Unknown

Table 2-14 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
Site 13:					
11NC31SS241 11NC31SS445 11NC31SS039	280-20698	PCB-1260	Low MS and/or MSD recovery	ML	Low
Site 31:					
11NC31SS082	280-20446-82	All PCBs	Extracted outside holding time	QL	Low
All samples not previously qualified	All samples not previously qualified	Detected PCB-1260 And total PCBs with detected PCB-1260	High Field Variability	QN	Unknown
11NC31SS005 11NC31SS063 11NC31SS150	280-20446 280-20446 280-20446	PCB-1260	High MS and/or MSD recovery	MH	High
11NC31SS276	580-28787	PCB-1260	High and Low MS and/or MSD recovery	MN	Unknown
MOC Water:					
11NCMOCWA013 11NCMOCWA014	280-20500-1 280-20500-2	BTEX	Low MS and/or MSD recovery	ML	Low
11NCMOCWA01 11NCMOCWA03 11NCMOCWA04 11NCMOCWA05	580-27518-1 580-27518-3 580-27518-4 580-27518-5	GRO	Detected at similar concentration in method blank	B	High
1NCMOCWA06	580-27518-6	PCBs	Low surrogate recovery	QL	Low
11NCMOCWA011 11NCMOCWA012	580-28349-1 580-28349-2	PAHs	Low surrogate recovery	QL	Low
11NCMOCWA01	580-27518-1	Methane	High LCS recovery	QH	High

Table 2-14 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
MOC Water:					
11NCMOCWA01 11NCMOCWA02 11NCMOCWA03 11NCMOCWA04 11NCMOCWA05 11NCMOCWA06 11NCMOCWA07 11NCMOCWA08 11NCMOCWA09 11NCMOCWA10	580-27518-1 580-27518-2 580-27518-3 580-27518-4 580-27518-5 580-27518-6 580-27518-7 580-27518-8 580-27518-9 580-27518-10	Total Chromium	Laboratory duplicate imprecision	QN	Unknown
MOC Soils:					
11NCMOCSS022 11NCMOCSS024 11NCMOCSS041 11NCMOCSS046	580-28199-1 580-28199-3 580-28350-14 580-28350-19	DRO	Detected at similar concentration in method blank	B	High
11NCMOCSS045	580-28350-18	RRO	High surrogate recovery	QH	High
11NCMOCSS047	580-28350-20	DRO/RRO	Low MS/MSD recovery	ML	Low
11NCMOCSS054 11NCMOCSS056	280-20411-2 280-20411-4	DRO	Field duplicate imprecision	QN	Unknown
11NCMOCSS065 11NCMOCSS073	580-28786-5 580-28786-13	RRO	Field duplicate imprecision	QN	Unknown
Tar Samples:					
11NCTAR001 11NCTAR002	580-27899-1 580-27899-2	SVOCs	Hold time exceedance	QL	Low
11NCTARSS002 11NCTARSS005 11NCTARSS006 11NCTARSS022 (1x) 11NCTARSS023	580-27899-4 580-27899-7 580-27899-8 580-27899-24 580-27899-25	All detected PAHs	High surrogate recovery	QH	High

%R = percent recovery

3.0 SUMMARY

This Report evaluates the analytical data generated during the NE Cape Remedial Actions conducted from July through September 2011. This assessment evaluated whether program objectives and data quality goals were met. The assessment reviewed sample receipt conditions, extraction and analytical procedures, sampling procedures, and correspondence to method criteria and project DQOs. The following conclusions were drawn based on this assessment of the analytical data:

- Sample receipt conditions were acceptable based on temperatures upon receipt and CoC correspondence to submitted sample set.
- Holding times were met with the following exceptions:
  - One soil PCB sample, and
  - Two SVOC tar samples.

Results reported outside hold time requirements were qualified as estimated with a low bias (QL).

- Extraction and analytical procedures were acceptable based on MBs, LCS/LCSDs, MS/MSDs, and surrogates except as noted below.
  - GRO, DRO and pyrene were detected in method blanks. Associated results with sample concentrations <10x the blank concentration were B qualified.
  - All PCB results in six soil samples and one water sample and all PAH results in two water samples were qualified as estimated with a low bias (QL) due to low surrogate recoveries.
  - Detected RRO results in two soil samples, detected PCB results in three soil samples, and detected PAH results in five tar samples were qualified as estimated with a high bias (QH) due to high surrogate recoveries.
  - Five soil results for 1,1,1,2-tetrachloroethane and two water results for BTEX were qualified as estimated with a low bias due to a matrix effect (ML) due to low MS or MSD recoveries.
  - Four detected soil results for RRO with silica gel cleanup were qualified as estimated with a high bias due to a matrix effect (MH) due to high MS or MSD recoveries.
  - Multiple PCBs with shared peaks were detected in 18 samples. Individual PCB concentrations were MN qualified to indicate a potential matrix effect with an unknown bias.

   - One water methane result was qualified as estimated with a high bias (QH) due to an associated high LCS recovery
   - Ten total chromium results in water were qualified as estimated with an unknown bias (QN) due to a high RPD observed with laboratory duplicates.

- Imprecision was observed in field duplicates samples for DRO/RRO, several PAHs and TOC. If the action/cleanup level was well above the uncertainty, results were not qualified. Two DRO and two RRO results were within the uncertainty of the action/cleanup level and were qualified as QN.
- Imprecision was observed in field duplicate samples for PCB 1260. Results were reviewed on a site by site basis. The majority of duplicate sample result RPDs were outside control limits (≥50%) for both Sites 13 and 31, and all detected PCB-1260 field duplicates were qualified (QN) due to heterogeneity at both sites.
- A comparison of soil duplicate PCB results to screening criteria showed that detections ranging from 0.4 mg/kg to 3.5 mg/kg had the potential to provide a misleading conclusion since in several duplicate pairs for both Sites 13 and 31 reported result pairs showed one above the screening criteria of 1 mg/kg while the duplicate result was below.

Based on this review, the analytical data generated during the NE Cape Remedial Action at Sites 8, 9, 13, 21, 31, the MOC, and the Tar Removal Area are complete, correct, consistent, and compliant with method procedures and QC requirements, and are usable as qualified.

LABORATORY ACCREDITATION BUREAU

Certificate of Accreditation

ISO/IEC 17025:2005 **Certificate Number L2236**

TestAmerica Laboratories, Inc

5755 8th Street East
Tacoma, WA 98424

has met the requirements set forth in L-A-B's policies and procedures, all requirements of ISO/IEC 17025:2005 "General Requirements for the competence of Testing and Calibration Laboratories" and the U.S. Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP).*

The accredited lab has demonstrated technical competence to a defined "Scope of Accreditation" and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Accreditation Granted through: January 19, 2013

R. Douglas Leonard, Jr., Managing Director
Laboratory Accreditation Bureau
Presented the 19th of January 2010

*See the laboratory's Scope of Accreditation for details of the DoD ELAP requirements
Laboratory Accreditation Bureau is found to be in compliance with ISO/IEC 17011:2004 and recognized by ILAC (International Laboratory Accreditation Cooperation) and NACLA (National Cooperation for Laboratory Accreditation).

Certificate # L2236

Scope of Accreditation
For
TestAmerica Laboratories, Inc.

5755 8th Street East
Tacoma, WA 98424
Dave Wunderlich
1-253-922-2310

In recognition of a successful assessment to ISO/IEC 17025:2005 and the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the DoD Quality Systems Manual for Environmental Laboratories (DoD QSM v4.1) based on the National Environmental Laboratory Accreditation Conference Chapter 5 Quality Systems Standard (NELAC Voted Revision June 5, 2003), accreditation is granted to TestAmerica Laboratories, Inc. to perform the following tests:

Accreditation granted through: January 19, 2013

Testing - Environmental

Non-Potable Water

Technology	Method	Analyte
ICP-AES	6010B/200.7	Silver
ICP-AES	6010B/200.7	Aluminum
ICP-AES	6010B/200.7	Arsenic
ICP-AES	6010B/200.7	Boron
ICP-AES	6010B/200.7	Barium
ICP-AES	6010B/200.7	Beryllium
ICP-AES	6010B/200.7	Calcium
ICP-AES	6010B/200.7	Cadmium
ICP-AES	6010B/200.7	Cobalt
ICP-AES	6010B/200.7	Chromium
ICP-AES	6010B/200.7	Copper
ICP-AES	6010B/200.7	Iron
ICP-AES	6010B/200.7	Potassium
ICP-AES	6010B/200.7	Magnesium
ICP-AES	6010B/200.7	Manganese
ICP-AES	6010B/200.7	Molybdenum
ICP-AES	6010B/200.7	Sodium
ICP-AES	6010B/200.7	Nickel
ICP-AES	6010B/200.7	Lead
ICP-AES	6010B/200.7	Antimony
ICP-AES	6010B/200.7	Selenium

Non-Potable Water

Technology	Method	Analyte
ICP-AES	6010B/200.7	Silicon
ICP-AES	6010B/200.7	Tin
ICP-AES	6010B/200.7	Titanium
ICP-AES	6010B/200.7	Strontium
ICP-AES	6010B/200.7	Thallium
ICP-AES	6010B/200.7	Vanadium
ICP-AES	6010B/200.7	Zinc
ICP-MS	6020/200.8	Silver
ICP-MS	6020/200.8	Arsenic
ICP-MS	6020/200.8	Barium
ICP-MS	6020/200.8	Beryllium
ICP-MS	6020/200.8	Cadmium
ICP-MS	6020/200.8	Cobalt
ICP-MS	6020/200.8	Chromium
ICP-MS	6020/200.8	Copper
ICP-MS	6020/200.8	Manganese
ICP-MS	6020/200.8	Molybdenum
ICP-MS	6020/200.8	Nickel
ICP-MS	6020/200.8	Lead
ICP-MS	6020/200.8	Antimony
ICP-MS	6020/200.8	Selenium
ICP-MS	6020/200.8	Thallium
ICP-MS	6020/200.8	Uranium
ICP-MS	6020/200.8	Vanadium
ICP-MS	6020/200.8	Zinc
CVAAS	7470A/245.1	Mercury
ICP-AES	7195/6010B	Hexavalent Chromium
GC/MS	8260B/624	1,1,1,2-Tetrachloroethane
GC/MS	8260B/624	1,1,1-Trichloroethane
GC/MS	8260B/624	1,1,2,2-Tetrachloroethane
GC/MS	8260B/624	1,1,2-Trichloroethane
GC/MS	8260B/624	1,1-Dichloroethane
GC/MS	8260B/624	1,1-Dichloroethene
GC/MS	8260B/624	1,1-Dichloropropene
GC/MS	8260B/624	1,2,3-Trichlorobenzene
GC/MS	8260B/624	1,2,3-Trichloropropane
GC/MS	8260B/624	1,2,4-Trichlorobenzene
GC/MS	8260B/624	1,2,4-Trimethylbenzene
GC/MS	8260B/624	1,2-Dibromo-3-Chloropropane
GC/MS	8260B/624	1,2-Dichlorobenzene

Certificate # L2236

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	8260B/624	1,2-Dichloroethane
GC/MS	8260B/624	1,2-Dichloropropane
GC/MS	8260B/624	1,3,5-Trimethylbenzene
GC/MS	8260B/624	1,3-Dichlorobenzene
GC/MS	8260B/624	1,3-Dichloropropane
GC/MS	8260B/624	1,4-Dichlorobenzene
GC/MS	8260B/624	2,2-Dichloropropane
GC/MS	8260B/624	2-Chlorotoluene
GC/MS	8260B/624	2-Hexanone
GC/MS	8260B/624	4-Chlorotoluene
GC/MS	8260B/624	4-Isopropyltoluene
GC/MS	8260B/624	Acetone
GC/MS	8260B/624	Benzene
GC/MS	8260B/624	Bromobenzene
GC/MS	8260B/624	Bromodichloromethane
GC/MS	8260B/624	Bromoform
GC/MS	8260B/624	Bromomethane
GC/MS	8260B/624	Carbon disulfide
GC/MS	8260B/624	Carbon tetrachloride
GC/MS	8260B/624	Chlorobenzene
GC/MS	8260B/624	Chlorobromomethane
GC/MS	8260B/624	Chlorodibromomethane
GC/MS	8260B/624	Chloroethane
GC/MS	8260B/624	Chloroform
GC/MS	8260B/624	Chloromethane
GC/MS	8260B/624	cis-1,2-Dichloroethene
GC/MS	8260B/624	cis-1,3-Dichloropropene
GC/MS	8260B/624	Dibromomethane
GC/MS	8260B/624	Dichlorodifluoromethane
GC/MS	8260B/624	Ethylbenzene
GC/MS	8260B/624	Ethylene Dibromide
GC/MS	8260B/624	Hexachlorobutadiene
GC/MS	8260B/624	Isopropylbenzene
GC/MS	8260B/624	Methyl Ethyl Ketone
GC/MS	8260B/624	Methyl Isobutyl Ketone
GC/MS	8260B/624	Methyl tert-butyl ether
GC/MS	8260B/624	Methylene Chloride
GC/MS	8260B/624	m-Xylene & p-Xylene
GC/MS	8260B/624	Naphthalene
GC/MS	8260B/624	n-Butylbenzene

Non-Potable Water

Technology	Method	Analyte
GC/MS	8260B/624	N-Propylbenzene
GC/MS	8260B/624	o-Xylene
GC/MS	8260B/624	sec-Butylbenzene
GC/MS	8260B/624	Styrene
GC/MS	8260B/624	tert-Butylbenzene
GC/MS	8260B/624	Tetrachloroethene
GC/MS	8260B/624	Toluene
GC/MS	8260B/624	trans-1,2-Dichloroethene
GC/MS	8260B/624	trans-1,3-Dichloropropene
GC/MS	8260B/624	Trichloroethene
GC/MS	8260B/624	Trichlorofluoromethane
GC/MS	8260B/624	Vinyl chloride
GC/MS	8270C/625	1,2,4-Trichlorobenzene
GC/MS	8270C/625	1,2-Dichlorobenzene
GC/MS	8270C/625	1,3-Dichlorobenzene
GC/MS	8270C/625	1,4-Dichlorobenzene
GC/MS	8270C/625	bis(2-chloroisoprolyl)ether
GC/MS	8270C/625	2,4,5-Trichlorophenol
GC/MS	8270C/625	2,4,6-Trichlorophenol
GC/MS	8270C/625	2,4-Dichlorophenol
GC/MS	8270C/625	2,4-Dimethylphenol
GC/MS	8270C/625	2,4-Dinitrophenol
GC/MS	8270C/625	2,4-Dinitrotoluene
GC/MS	8270C/625	2,6-Dinitrotoluene
GC/MS	8270C/625	2-Chloronaphthalene
GC/MS	8270C/625	2-Chlorophenol
GC/MS	8270C/625	2-Methylnaphthalene
GC/MS	8270C/625	2-Methylphenol
GC/MS	8270C/625	2-Nitroaniline
GC/MS	8270C/625	2-Nitrophenol
GC/MS	8270C/625	3 & 4 Methylphenol
GC/MS	8270C/625	3,3'-Dichlorobenzidine
GC/MS	8270C/625	3-Nitroaniline
GC/MS	8270C/625	4,6-Dinitro-2-methylphenol
GC/MS	8270C/625	4-Bromophenyl phenyl ether
GC/MS	8270C/625	4-Chloro-3-methylphenol
GC/MS	8270C/625	4-Chloroaniline
GC/MS	8270C/625	4-Chlorophenyl phenyl ether
GC/MS	8270C/625	4-Nitroaniline
GC/MS	8270C/625	Acenaphthene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	8270C/625	Acenaphthylene
GC/MS	8270C/625	Anthracene
GC/MS	8270C/625	1,2-Diphenylhydrazine as Azobenzene
GC/MS	8270C/625	Benzo[a]anthracene
GC/MS	8270C/625	Benzo[a]pyrene
GC/MS	8270C/625	Benzo[b]fluoranthene
GC/MS	8270C/625	Benzo[g,h,i]perylene
GC/MS	8270C/625	Benzo[k]fluoranthene
GC/MS	8270C/625	Benzoic acid
GC/MS	8270C/625	Benzyl alcohol
GC/MS	8270C/625	Bis(2-chloroethoxy)methane
GC/MS	8270C/625	Bis(2-chloroethyl)ether
GC/MS	8270C/625	Bis(2-ethylhexyl) phthalate
GC/MS	8270C/625	Butyl benzyl phthalate
GC/MS	8270C/625	Carbazole
GC/MS	8270C/625	Chrysene
GC/MS	8270C/625	Dibenz(a,h)anthracene
GC/MS	8270C/625	Dibenzofuran
GC/MS	8270C/625	Diethyl phthalate
GC/MS	8270C/625	Dimethyl phthalate
GC/MS	8270C/625	Di-n-butyl phthalate
GC/MS	8270C/625	Di-n-octyl phthalate
GC/MS	8270C/625	Fluoranthene
GC/MS	8270C/625	Fluorene
GC/MS	8270C/625	Hexachlorobenzene
GC/MS	8270C/625	Hexachlorobutadiene
GC/MS	8270C/625	Hexachloroethane
GC/MS	8270C/625	Indeno[1,2,3-cd]pyrene
GC/MS	8270C/625	Isophorone
GC/MS	8270C/625	Naphthalene
GC/MS	8270C/625	Nitrobenzene
GC/MS	8270C/625	N-Nitrosodimethylamine
GC/MS	8270C/625	N-Nitrosodi-n-propylamine
GC/MS	8270C/625	N-Nitrosodiphenylamine
GC/MS	8270C/625	Pentachlorophenol
GC/MS	8270C/625	Phenanthrene
GC/MS	8270C/625	Phenol
GC/MS	8270C/625	Pyrene
GC/MS SIM	8270C SIM	2-Methylnaphthalene
GC/MS SIM	8270C SIM	Acenaphthene

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Non-Potable Water

Technology	Method	Analyte
GC/MS SIM	8270C SIM	Acenaphthylene
GC/MS SIM	8270C SIM	Anthracene
GC/MS SIM	8270C SIM	Benzo[a]anthracene
GC/MS SIM	8270C SIM	Benzo[a]pyrene
GC/MS SIM	8270C SIM	Benzo[b]fluoranthene
GC/MS SIM	8270C SIM	Benzo[g,h,i]perylene
GC/MS SIM	8270C SIM	Benzo[k]fluoranthene
GC/MS SIM	8270C SIM	Chrysene
GC/MS SIM	8270C SIM	Dibenz(a,h)anthracene
GC/MS SIM	8270C SIM	Fluoranthene
GC/MS SIM	8270C SIM	Fluorene
GC/MS SIM	8270C SIM	Indeno[1,2,3-cd]pyrene
GC/MS SIM	8270C SIM	Naphthalene
GC/MS SIM	8270C SIM	Phenanthrene
GC/MS SIM	8270C SIM	Pyrene
GC-ECD	8011	1,2-Dibromoethane
GC-ECD	8011	1,2-Dibromo-3-Chloropropane
GC-ECD	8081A/608	4,4'-DDD
GC-ECD	8081A/608	4,4'-DDE
GC-ECD	8081A/608	4,4'-DDT
GC-ECD	8081A/608	Aldrin
GC-ECD	8081A/608	alpha-BHC
GC-ECD	8081A/608	alpha-Chlordane
GC-ECD	8081A/608	beta-BHC
GC-ECD	8081A/608	delta-BHC
GC-ECD	8081A/608	Dieldrin
GC-ECD	8081A/608	Endosulfan I
GC-ECD	8081A/608	Endosulfan II
GC-ECD	8081A/608	Endosulfan sulfate
GC-ECD	8081A/608	Endrin
GC-ECD	8081A/608	Endrin aldehyde
GC-ECD	8081A/608	Endrin ketone
GC-ECD	8081A/608	gamma-BHC (Lindane)
GC-ECD	8081A/608	gamma-Chlordane
GC-ECD	8081A/608	Heptachlor
GC-ECD	8081A/608	Heptachlor epoxide
GC-ECD	8081A/608	Methoxychlor
GC-ECD	8081A/608	Technical Chlordane
GC-ECD	8081A/608	Toxaphene
GC-ECD	8082/608	PCB-1016

Non-Potable Water

Technology	Method	Analyte
GC-ECD	8082/608	PCB-1221
GC-ECD	8082/608	PCB-1232
GC-ECD	8082/608	PCB-1242
GC-ECD	8082/608	PCB-1248
GC-ECD	8082/608	PCB-1254
GC-ECD	8082/608	PCB-1260
GC-IT/MS	8151A mod.	2,4,5-T
GC-IT/MS	8151A mod.	2,4-D
GC-IT/MS	8151A mod.	2,4-DB
GC-IT/MS	8151A mod.	4-Nitrophenol
GC-IT/MS	8151A mod.	Dalapon
GC-IT/MS	8151A mod.	Dicamba
GC-IT/MS	8151A mod.	Dichlorprop
GC-IT/MS	8151A mod.	Dinoseb
GC-IT/MS	8151A mod.	MCPA
GC-IT/MS	8151A mod.	Mecoprop
GC-IT/MS	8151A mod.	Pentachlorophenol
GC-IT/MS	8151A mod.	Silvex (2,4,5-TP)
GC-FID	EPA 8015B/AK101/ NWTPH-Gx/NWVPH	Gasoline and Volatile Petroleum Hydrocarbons
GC-FID	EPA 8015B/AK102/ NWTPH-Dx/NWEPH	Diesel and Extractable Petroleum Hydrocarbons
GC-FID	EPA 8015B/AK102/ NWTPH-Dx/NWEPH	Motor Oil and Extractable Petroleum Hydrocarbons
Gravimetric	1664A	Oil & Grease
Colorimetric/RFA	9012A	Total Cyanides
Ion Chromatography	300.0/9056A	Bromide
Ion Chromatography	300.0/9056A	Chloride
Ion Chromatography	300.0/9056A	Fluoride
Ion Chromatography	300.0/9056A	Sulfate
Ion Chromatography	300.0/9056A	Nitrate
Ion Chromatography	300.0/9056A	Nitrite
TOC Analyzer (IR)	415.1/9060	TOC
Probe	9040/9045/150.1	pH
Conductivity meter	9050/120.1/SM2510B	Specific Conductance
Pensky-Martens closed-cup tester/ Setaflash	1010/1020	Ignitability/Flashpoint
Preparation	**Method**	**Type**
Separatory Funnel Liquid-Liquid Extraction	3510C	Semivolatile and Nonvolatile Organics

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Non-Potable Water

Preparation	Method	Type
Continuous Liquid-Liquid Extraction	3520	Semivolatile and Nonvolatile Organics
Solvent Dilution	3580	Semivolatile and Nonvolatile Organics
Waste Dilution	3585	Volatile Organic Compounds
Purge and Trap	5030	Volatile Organic Compounds
Purge and Trap	5035	Volatile Organic Compounds
Acid Digestion (Aqueous)	3005/3010	Inorganics
Acid Digestion (Sediments, Sludges, and Soils)	3050	Inorganics
TCLP Extraction	1311	Toxicity Characteristic Leaching Procedure
Florisil Cleanup	3620B	Cleanup of pesticide residues and other chlorinated hydrocarbons
Silica Gel Cleanup	3630C	Column Cleanup
Gel Permeation Cleanup	3640A	Separation of Synthetic Macromolecules
Sulfur Cleanup	3660B	Sulfur Cleanup Reagent
Sulfuric Acid Cleanup	3665A	Cleanup for Quantitation of PCBs

Solid and Chemical Materials

Technology	Method	Analyte
ICP-AES	6010B	Silver
ICP-AES	6010B	Aluminum
ICP-AES	6010B	Arsenic
ICP-AES	6010B	Boron
ICP-AES	6010B	Barium
ICP-AES	6010B	Beryllium
ICP-AES	6010B	Calcium
ICP-AES	6010B	Cadmium
ICP-AES	6010B	Cobalt
ICP-AES	6010B	Chromium
ICP-AES	6010B	Copper
ICP-AES	6010B	Iron
ICP-AES	6010B	Potassium
ICP-AES	6010B	Magnesium
ICP-AES	6010B	Manganese
ICP-AES	6010B	Molybdenum
ICP-AES	6010B	Sodium
ICP-AES	6010B	Nickel
ICP-AES	6010B	Lead
ICP-AES	6010B	Antimony
ICP-AES	6010B	Selenium

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP-AES	6010B	Silicon
ICP-AES	6010B	Tin
ICP-AES	6010B	Titanium
ICP-AES	6010B	Strontium
ICP-AES	6010B	Thallium
ICP-AES	6010B	Vanadium
ICP-AES	6010B	Zinc
ICP-MS	6020	Silver
ICP-MS	6020	Arsenic
ICP-MS	6020	Barium
ICP-MS	6020	Beryllium
ICP-MS	6020	Cadmium
ICP-MS	6020	Cobalt
ICP-MS	6020	Chromium
ICP-MS	6020	Copper
ICP-MS	6020	Iron
ICP-MS	6020	Manganese
ICP-MS	6020	Molybdenum
ICP-MS	6020	Nickel
ICP-MS	6020	Lead
ICP-MS	6020	Antimony
ICP-MS	6020	Selenium
ICP-MS	6020	Thallium
ICP-MS	6020	Uranium
ICP-MS	6020	Vanadium
ICP-MS	6020	Zinc
CVAAS	7471A	Mercury
ICP-AES	7195/6010B	Hexavalent Chromium
GC/MS	8260B	1,1,1,2-Tetrachloroethane
GC/MS	8260B	1,1,1-Trichloroethane
GC/MS	8260B	1,1,2,2-Tetrachloroethane
GC/MS	8260B	1,1,2-Trichloroethane
GC/MS	8260B	1,1-Dichloroethane
GC/MS	8260B	1,1-Dichloroethene
GC/MS	8260B	1,1-Dichloropropene
GC/MS	8260B	1,2,3-Trichlorobenzene
GC/MS	8260B	1,2,3-Trichloropropane
GC/MS	8260B	1,2,4-Trichlorobenzene
GC/MS	8260B	1,2,4-Trimethylbenzene

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Solid and Chemical Materials

Technology	Method	Analyte
GC/MS	8260B	1,2-Dibromo-3-Chloropropane
GC/MS	8260B	1,2-Dichlorobenzene
GC/MS	8260B	1,2-Dichloroethane
GC/MS	8260B	1,2-Dichloropropane
GC/MS	8260B	1,3,5-Trimethylbenzene
GC/MS	8260B	1,3-Dichlorobenzene
GC/MS	8260B	1,3-Dichloropropane
GC/MS	8260B	1,4-Dichlorobenzene
GC/MS	8260B	2,2-Dichloropropane
GC/MS	8260B	2-Chlorotoluene
GC/MS	8260B	2-Hexanone
GC/MS	8260B	4-Chlorotoluene
GC/MS	8260B	4-Isopropyltoluene
GC/MS	8260B	Acetone
GC/MS	8260B	Benzene
GC/MS	8260B	Bromobenzene
GC/MS	8260B	Bromoform
GC/MS	8260B	Bromomethane
GC/MS	8260B	Carbon disulfide
GC/MS	8260B	Carbon tetrachloride
GC/MS	8260B	Chlorobenzene
GC/MS	8260B	Chlorodibromomethane
GC/MS	8260B	Chloroethane
GC/MS	8260B	Chloroform
GC/MS	8260B	Chloromethane
GC/MS	8260B	cis-1,2-Dichloroethene
GC/MS	8260B	cis-1,3-Dichloropropene
GC/MS	8260B	Dibromomethane
GC/MS	8260B	Dichlorodifluoromethane
GC/MS	8260B	Ethylbenzene
GC/MS	8260B	Ethylene Dibromide
GC/MS	8260B	Hexachlorobutadiene
GC/MS	8260B	Isopropylbenzene
GC/MS	8260B	Methyl Ethyl Ketone
GC/MS	8260B	Methyl Isobutyl Ketone
GC/MS	8260B	Methyl tert-butyl ether
GC/MS	8260B	Methylene Chloride
GC/MS	8260B	m-Xylene & p-Xylene
GC/MS	8260B	Naphthalene
GC/MS	8260B	n-Butylbenzene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	8260B	N-Propylbenzene
GC/MS	8260B	o-Xylene
GC/MS	8260B	sec-Butylbenzene
GC/MS	8260B	Styrene
GC/MS	8260B	tert-Butylbenzene
GC/MS	8260B	Tetrachloroethene
GC/MS	8260B	Toluene
GC/MS	8260B	trans-1,2-Dichloroethene
GC/MS	8260B	trans-1,3-Dichloropropene
GC/MS	8260B	Trichloroethene
GC/MS	8260B	Trichlorofluoromethane
GC/MS	8260B	Vinyl chloride
GC/MS	8270C	1,2,4-Trichlorobenzene
GC/MS	8270C	1,2-Dichlorobenzene
GC/MS	8270C	1,3-Dichlorobenzene
GC/MS	8270C	1,4-Dichlorobenzene
GC/MS	8270C	bis(2-chloroisoprolyl)ether
GC/MS	8270C	2,4,5-Trichlorophenol
GC/MS	8270C	2,4,6-Trichlorophenol
GC/MS	8270C	2,4-Dichlorophenol
GC/MS	8270C	2,4-Dimethylphenol
GC/MS	8270C	2,4-Dinitrophenol
GC/MS	8270C	2,4-Dinitrotoluene
GC/MS	8270C	2,6-Dinitrotoluene
GC/MS	8270C	2-Chloronaphthalene
GC/MS	8270C	2-Chlorophenol
GC/MS	8270C	2-Methylnaphthalene
GC/MS	8270C	2-Methylphenol
GC/MS	8270C	2-Nitroaniline
GC/MS	8270C	2-Nitrophenol
GC/MS	8270C	3 & 4 Methylphenol
GC/MS	8270C	3,3'-Dichlorobenzidine
GC/MS	8270C	3-Nitroaniline
GC/MS	8270C	4,6-Dinitro-2-methylphenol
GC/MS	8270C	4-Bromophenyl phenyl ether
GC/MS	8270C	4-Chloro-3-methylphenol
GC/MS	8270C	4-Chloroaniline
GC/MS	8270C	4-Chlorophenyl phenyl ether
GC/MS	8270C	4-Nitroaniline
GC/MS	8270C	Acenaphthene

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Solid and Chemical Materials

Technology	Method	Analyte
GC/MS	8270C	Acenaphthylene
GC/MS	8270C	Anthracene
GC/MS	8270C	1,2-Diphenylhydrazine as Azobenzene
GC/MS	8270C	Benzo[a]anthracene
GC/MS	8270C	Benzo[a]pyrene
GC/MS	8270C	Benzo[b]fluoranthene
GC/MS	8270C	Benzo[g,h,i]perylene
GC/MS	8270C	Benzo[k]fluoranthene
GC/MS	8270C	Benzoic acid
GC/MS	8270C	Benzyl alcohol
GC/MS	8270C	Bis(2-chloroethoxy)methane
GC/MS	8270C	Bis(2-chloroethyl)ether
GC/MS	8270C	Bis(2-ethylhexyl) phthalate
GC/MS	8270C	Butyl benzyl phthalate
GC/MS	8270C	Carbazole
GC/MS	8270C	Chrysene
GC/MS	8270C	Dibenz(a,h)anthracene
GC/MS	8270C	Dibenzofuran
GC/MS	8270C	Diethyl phthalate
GC/MS	8270C	Dimethyl phthalate
GC/MS	8270C	Di-n-butyl phthalate
GC/MS	8270C	Di-n-octyl phthalate
GC/MS	8270C	Fluoranthene
GC/MS	8270C	Fluorene
GC/MS	8270C	Hexachlorobenzene
GC/MS	8270C	Hexachlorobutadiene
GC/MS	8270C	Hexachloroethane
GC/MS	8270C	Indeno[1,2,3-cd]pyrene
GC/MS	8270C	Isophorone
GC/MS	8270C	Naphthalene
GC/MS	8270C	Nitrobenzene
GC/MS	8270C	N-Nitrosodimethylamine
GC/MS	8270C	N-Nitrosodi-n-propylamine
GC/MS	8270C	N-Nitrosodiphenylamine
GC/MS	8270C	Pentachlorophenol
GC/MS	8270C	Phenanthrene
GC/MS	8270C	Phenol
GC/MS	8270C	Pyrene
GC/MS SIM	8270C SIM	2-Methylnaphthalene
GC/MS SIM	8270C SIM	Acenaphthene

Solid and Chemical Materials

Technology	Method	Analyte
GC/MS SIM	8270C SIM	Acenaphthylene
GC/MS SIM	8270C SIM	Anthracene
GC/MS SIM	8270C SIM	Benzo[a]anthracene
GC/MS SIM	8270C SIM	Benzo[a]pyrene
GC/MS SIM	8270C SIM	Benzo[b]fluoranthene
GC/MS SIM	8270C SIM	Benzo[g,h,i]perylene
GC/MS SIM	8270C SIM	Benzo[k]fluoranthene
GC/MS SIM	8270C SIM	Chrysene
GC/MS SIM	8270C SIM	Dibenz(a,h)anthracene
GC/MS SIM	8270C SIM	Fluoranthene
GC/MS SIM	8270C SIM	Fluorene
GC/MS SIM	8270C SIM	Indeno[1,2,3-cd]pyrene
GC/MS SIM	8270C SIM	Naphthalene
GC/MS SIM	8270C SIM	Phenanthrene
GC/MS SIM	8270C SIM	Pyrene
GC-ECD	8081A	4,4'-DDD
GC-ECD	8081A	4,4'-DDE
GC-ECD	8081A	4,4'-DDT
GC-ECD	8081A	Aldrin
GC-ECD	8081A	alpha-BHC
GC-ECD	8081A	alpha-Chlordane
GC-ECD	8081A	beta-BHC
GC-ECD	8081A	delta-BHC
GC-ECD	8081A	Dieldrin
GC-ECD	8081A	Endosulfan I
GC-ECD	8081A	Endosulfan II
GC-ECD	8081A	Endosulfan sulfate
GC-ECD	8081A	Endrin
GC-ECD	8081A	Endrin aldehyde
GC-ECD	8081A	Endrin ketone
GC-ECD	8081A	gamma-BHC (Lindane)
GC-ECD	8081A	gamma-Chlordane
GC-ECD	8081A	Heptachlor
GC-ECD	8081A	Heptachlor epoxide
GC-ECD	8081A	Methoxychlor
GC-ECD	8081A	Technical Chlordane
GC-ECD	8081A	Toxaphene
GC-ECD	8082	PCB-1016
GC-ECD	8082	PCB-1221
GC-ECD	8082	PCB-1232

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC-ECD	8082	PCB-1242
GC-ECD	8082	PCB-1248
GC-ECD	8082	PCB-1254
GC-ECD	8082	PCB-1260
GC-IT/MS	8151A mod.	2,4,5-T
GC-IT/MS	8151A mod.	2,4-D
GC-IT/MS	8151A mod.	2,4-DB
GC-IT/MS	8151A mod.	4-Nitrophenol
GC-IT/MS	8151A mod.	Dalapon
GC-IT/MS	8151A mod.	Dicamba
GC-IT/MS	8151A mod.	Dichlorprop
GC-IT/MS	8151A mod.	Dinoseb
GC-IT/MS	8151A mod.	MCPA
GC-IT/MS	8151A mod.	Mecoprop MCPP
GC-IT/MS	8151A mod.	Pentachlorophenol
GC-IT/MS	8151A mod.	Silvex (2,4,5-TP)
GC-FID	8015B/AK101/ NWTPH-Gx/NWVPH	Gasoline and Volatile Petroleum Hydrocarbons
GC-FID	8015B/AK102/ NWTPH-Dx/NWEPH	Diesel and Extractable Petroleum Hydrocarbons
GC-FID	8015B/AK102/ NWTPH-Dx/NWEPH	Motor Oil and Extractable Petroleum Hydrocarbons
Colorimetric/RFA	9012A	Total Cyanides
Ion Chromatography	300.0/9056A	Fluoride
Ion Chromatography	300.0/9056A	Chloride
Ion Chromatography	300.0/9056A	Fluoride
Ion Chromatography	300.0/9056A	Sulfate
Ion Chromatography	300.0/9056A	Nitrate
Ion Chromatography	300.0/9056A	Nitrite
TOC Analyzer (IR)	9060	TOC
Probe	9040/9045	pH/Corrosivity
Conductivity meter	9050	Specific Conductance
Pensky-Martens closed-cup tester/ Setaflash	1010/1020	Ignitability/Flashpoint
Preparation	**Method**	**Type**
Separatory Funnel Liquid-Liquid Extraction	3510C	Semivolatile and Nonvolatile Organics
Continuous Liquid-Liquid Extraction	3520	Semivolatile and Nonvolatile Organics
Ultrasonic Extraction	3550C	Semivolatile and Nonvolatile Organics
Solvent Dilution	3580	Semivolatile and Nonvolatile Organics

LABORATORY ACCREDITATION BUREAU

Certificate # L2236

Solid and Chemical Materials

Preparation	Method	Type
Waste Dilution	3585	Volatile Organic Compounds
Purge and Trap	5030	Volatile Organic Compounds
Purge and Trap	5035	Volatile Organic Compounds
Acid Digestion (Aqueous)	3005/3010	Inorganics
Acid Digestion (Sediments, Sludges, and Soils)	3050	Inorganics
TCLP Extraction	1311	Toxicity Characteristic Leaching Procedure
Florisil Cleanup	3620B	Cleanup of pesticide residues and other chlorinated hydrocarbons
Silica Gel Cleanup	3630C	Column Cleanup
Gel Permeation Cleanup	3640A	Separation of Synthetic Macromolecules
Sulfur Cleanup	3660B	Sulfur Cleanup Reagent
Sulfuric Acid Cleanup	3665A	Cleanup for Quantitation of PCBs

Notes:

1) This laboratory offers commercial testing service.

Approved By: ______________________ Date: January 19, 2010

R. Douglas Leonard
Chief Technical Officer

Issued: 01/19/10

THE STATE OF ALASKA

Department of Environmental Conservation

Laboratory Certification Program

Certificate of Approval for Contaminated Sites Analysis

TestAmerica-Tacoma

5755 8th Street East
Tacoma, WA 98424

UST-022

has complied with the provisions set forth in 18 AAC 78 and is hereby recognized by The Department of Environmental Conservation as **Approved** for the analytical parameter listed on the accompanying Scope of Accreditation. This certificate is effective **3/4/11**, and expires **3/4/12**.

THE SEAL OF THE STATE OF ALASKA

Patryce D. McKinney
State of Alaska Certification Authority

Lance W. Morris
Laboratory Chemistry Certification Officer

THE STATE OF ALASKA
Department of Environmental Conservation
Laboratory Approval Program

Scope of Approval **Expiration: 03/04/2012**

TestAmerica-Seattle, WA **UST-022**
5755 8th Street East
Tacoma, WA 98424

is approved by the State of Alaska Department of Environmental Conservation, pursuant to 18 AAC 78, to perform analysis for the parameters listed below using the analytical methods indicated. Approval for all parameters is final. Approval is for the latest version of a method unless specified otherwise in a note. EPA refers to the U.S. Environmental Protection Agency. AK refers to Alaska Methods 101, 102 and 103 for the determination of gasoline, diesel and residual range organics in soil and water. ASTM refers to the American Society for Testing and Materials.

Contaminated Sites

Method/Test Name	Reference	Analyte	Matrix	Status
6010B	EPA	Total Arsenic	Soil	Approved
6010B	EPA	Total Barium	Soil	Approved
6010B	EPA	Total Cadmium	Soil	Approved
6010B	EPA	Total Chromium	Soil	Approved
6010B	EPA	Total Lead	Soil	Approved
6010B	EPA	Total Nickel	Soil	Approved
6010B	EPA	Total Vanadium	Soil	Approved
6010B	EPA	Total Arsenic	Water	Approved
6010B	EPA	Total Barium	Water	Approved
6010B	EPA	Total Cadmium	Water	Approved
6010B	EPA	Total Chromium	Water	Approved
6010B	EPA	Total Lead	Water	Approved
6010B	EPA	Total Nickel	Water	Approved
6010B	EPA	Total Vanadium	Water	Approved
6020	EPA	Total Arsenic	Soil	Approved
6020	EPA	Total Barium	Soil	Approved
6020	EPA	Total Cadmium	Soil	Approved
6020	EPA	Total Chromium	Soil	Approved
6020	EPA	Total Lead	Soil	Approved

Contaminated Sites

Method/Test Name	Reference	Analyte	Matrix	Status
6020	EPA	Total Nickel	Soil	Approved
6020	EPA	Total Vanadium	Soil	Approved
6020	EPA	Total Arsenic	Water	Approved
6020	EPA	Total Barium	Water	Approved
6020	EPA	Total Cadmium	Water	Approved
6020	EPA	Total Chromium	Water	Approved
6020	EPA	Total Lead	Water	Approved
6020	EPA	Total Nickel	Water	Approved
6020	EPA	Total Vanadium	Water	Approved
8021B	EPA	BTEX	Water	Approved
8082	EPA	Polychlorinated Biphenyls-PCB	Soil	Approved
8082	EPA	Polychlorinated Biphenyls-PCB	Water	Approved
8260B	EPA	BTEX	Soil	Approved
8260B	EPA	Total Volatile Chlorinated Solvents	Soil	Approved
8260B	EPA	BTEX	Water	Approved
8260B	EPA	Total Volatile Chlorinated Solvents	Water	Approved
8270C	EPA	PAH	Soil	Approved
8270C	EPA	PAH	Water	Approved
AK101	AK	Gasoline Range Organics	Soil	Approved
AK101	AK	Gasoline Range Organics	Water	Approved
AK101/8021B	EPA	BTEX-methanol preserved	Soil	Approved
AK102	AK	Diesel Range Organics	Soil	Approved
AK102	AK	Diesel Range Organics	Water	Approved
AK102-SV	AK	Diesel Range Organics-small volume	Water	Approved
AK103	AK	Residual Range Organics	Soil	Approved

THE STATE OF ALASKA

Department of Environmental Conservation
Laboratory Certification Program

Certificate of Approval for Contaminated Sites Analysis

TestAmerica-Denver, CO

4955 Yarrow Street
Arvada, CO 80002

UST-030

has complied with the provisions set forth in 18 AAC 78 and is hereby recognized by The Department of Environmental Conservation as **Approved** for the analytical parameter listed on the accompanying Scope of Accreditation. This certificate is effective **4/5/11**, and expires **4/5/12**.

Patryce D. McKinney
State of Alaska Certification Authority

THE SEAL OF THE STATE OF ALASKA

Lance W. Morris
Laboratory Chemistry Certification Officer

THE STATE OF ALASKA
Department of Environmental Conservation
Laboratory Approval Program

Scope of Approval **Expiration: 04/05/2012**

TestAmerica-Denver, CO **UST-030**
4955 Yarrow Street
Arvada, CO 80002

is approved by the State of Alaska Department of Environmental Conservation, pursuant to 18 AAC 78, to perform analysis for the parameters listed below using the analytical methods indicated. Approval for all parameters is final. Approval is for the latest version of a method unless specified otherwise in a note. EPA refers to the U.S. Environmental Protection Agency. AK refers to Alaska Methods 101, 102 and 103 for the determination of gasoline, diesel and residual range organics in soil and water. ASTM refers to the American Society for Testing and Materials.

Contaminated Sites

Method/Test Name	Reference	Analyte	Matrix	Status
6010B	EPA	Total Arsenic	Soil	Approved
6010B	EPA	Total Barium	Soil	Approved
6010B	EPA	Total Cadmium	Soil	Approved
6010B	EPA	Total Chromium	Soil	Approved
6010B	EPA	Total Lead	Soil	Approved
6010B	EPA	Total Nickel	Soil	Approved
6010B	EPA	Total Vanadium	Soil	Approved
6010B	EPA	Total Arsenic	Water	Approved
6010B	EPA	Total Barium	Water	Approved
6010B	EPA	Total Cadmium	Water	Approved
6010B	EPA	Total Chromium	Water	Approved
6010B	EPA	Total Lead	Water	Approved
6010B	EPA	Total Nickel	Water	Approved
6010B	EPA	Total Vanadium	Water	Approved
6020	EPA	Total Arsenic	Soil	Approved
6020	EPA	Total Barium	Soil	Approved
6020	EPA	Total Cadmium	Soil	Approved
6020	EPA	Total Chromium	Soil	Approved
6020	EPA	Total Lead	Soil	Approved

Contaminated Sites

Method/Test Name	Reference	Analyte	Matrix	Status
6020	EPA	Total Nickel	Soil	Approved
6020	EPA	Total Vanadium	Soil	Approved
6020	EPA	Total Arsenic	Water	Approved
6020	EPA	Total Barium	Water	Approved
6020	EPA	Total Cadmium	Water	Approved
6020	EPA	Total Chromium	Water	Approved
6020	EPA	Total Lead	Water	Approved
6020	EPA	Total Nickel	Water	Approved
6020	EPA	Total Vanadium	Water	Approved
8021B	EPA	BTEX	Water	Approved
8021B	EPA	Total Volatile Chlorinated Solvents	Water	Approved
8082	EPA	Polychlorinated Biphenyls-PCB	Soil	Approved
8082	EPA	Polychlorinated Biphenyls-PCB	Water	Approved
8260B	EPA	BTEX	Soil	Approved
8260B	EPA	Total Volatile Chlorinated Solvents	Soil	Approved
8260B	EPA	BTEX	Water	Approved
8260B	EPA	Total Volatile Chlorinated Solvents	Water	Approved
8270C	EPA	PAH	Soil	Approved
8270C	EPA	PAH	Water	Approved
8270D	EPA	PAH	Soil	Approved
8270D	EPA	PAH	Water	Approved
8310	EPA	PAH	Soil	Approved
8310	EPA	PAH	Water	Approved
AK101	AK	Gasoline Range Organics	Soil	Approved
AK101	AK	Gasoline Range Organics	Water	Approved
AK101/8021B	EPA	BTEX-methanol preserved	Soil	Approved
AK102	AK	Diesel Range Organics	Soil	Approved
AK102	AK	Diesel Range Organics	Water	Approved
AK103	AK	Residual Range Organics	Soil	Approved

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited DoD ELAP Laboratory

A2LA has accredited

TESTAMERICA DENVER

Arvada, CO

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the DoD Quality Systems Manual for Environmental Laboratories (QSM v4.1); accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 30th day of November 2009.

President & CEO
For the Accreditation Council
Certificate Number 2907.01
Valid to October 31, 2011

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TESTAMERICA DENVER
4955 Yarrow Street
Arvada, CO 80002
Karen Kuoppala Phone: 303-736-1203
www.testamericainc.com

ENVIRONMENTAL

Valid To: October 31, 2011 Certificate Number: 2907.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the DoD Quality Systems Manual for Environmental Laboratories (DoD QSM v4.1)) accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, ICP/MS, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Misc.- Electronic Probes (pH, O_2), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Spectrophotometry (Automated), IR Spectrometry, Titrimetry, Total Organic Carbon, Total Organic Halide

Parameter/Analyte	Solid Hazardous Waste
Metals	
Aluminum	EPA 6010B/6010C
Antimony	EPA 6010B/6010C/6020/6020A
Arsenic	EPA 6010B/6010C/6020/6020A
Barium	EPA 6010B/6010C/6020/6020A
Beryllium	EPA 6010B/6010C/6020/6020A
Boron	EPA 6010B/6010C
Cadmium	EPA 6010B/6010C/6020/6020A
Calcium	EPA 6010B/6010C
Chromium	EPA 6010B/6010C/6020/6020A
Cobalt	EPA 6010B/6010C/6020/6020A
Copper	EPA 6010B/6010C/6020/6020A
Iron	EPA 6010B/6010C
Lead	EPA 6010B/6010C/6020/6020A
Lithium	EPA 6010B/6010C
Magnesium	EPA 6010B/6010C
Manganese	EPA 6010B/6010C/6020/6020A
Mercury	EPA 7470A/7471A/7471B

Parameter/Analyte	Solid Hazardous Waste
Molybdenum	EPA 6010B/6010C/6020/6020A
Nickel	EPA 6010B/6010C/6020/6020A
Potassium	EPA 6010B/6010C
Selenium	EPA 6010B/6010C/6020/6020A
Silica	EPA 6010B/6010C
Silicon	EPA 6010B/6010C
Silver	EPA 6010B/6010C/6020/6020A
Sodium	EPA 6010B/6010C
Strontium	EPA 6010B/6010C
Thallium	EPA 6010B/6010C/6020/6020A
Tin	EPA 6010B/6010C
Titanium	EPA 6010B/6010C
Vanadium	EPA 6010B/6010C/6020/6020A
Zinc	EPA 6010B/6010C/6020/6020A
Nutrients	
Nitrate (as N)	EPA 9056/9056A
Nitrate-nitrite (as N)	EPA 9056/9056A
Nitrite (as N)	EPA 9056/9056A
Orthophosphate (as P)	EPA 9056/9056A
Total phosphorus	EPA 6010B/6010C
Demands	
Total organic carbon	EPA 9060
Total organic halides	EPA 9020B/9023
Wet Chemistry	
Bromide	EPA 9056/9056A
Total organic carbon	EPA 9060
Chloride	EPA 9056/9056A
Conductivity	EPA 9050
Cyanide	EPA 9010B/9012
Extractable organic halides (EOX)	EPA 9023
Fluoride	EPA 9056/9056A
pH	EPA 9040B/9045C
Oil and Grease	EPA 1664A/9071B
Percent moisture	ASTM D2216
Perchlorate	EPA 6860
Phenols	EPA 9066
Sulfate	EPA 9038/9056/9056A
Sulfide, Total	EPA 9034
Sulfide	EPA 9030
Purgeable Organics (volatiles)	
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Acrolein	EPA 8260B
Acrylonitrile	EPA 8260B
Allyl Chloride	EPA 8260B
Benzene	EPA 8260B/8021B
Benzy chloride	EPA 8260B
Bromobenzene	EPA 8260B/8021B(water only)

Parameter/Analyte	Solid Hazardous Waste
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B/8021B(water only)
Bromoform	EPA 8260B/8021B(water only)
Bromomethane	EPA 8260B
2-Butanone	EPA 8260B
n-Butyl alcohol	EPA 8260B/8015B/8015C
n-Buytlbenzene	EPA 8260B
Sec-Butylbenzene	EPA 8260B
Tert-Butylbenzene	EPA 8260B
Carbon disulfide	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chlorobenzene	EPA 8260B / 8021B
2-Chloro-1,3-butadiene	EPA 8260B
Chloroethane	EPA 8260B
2-Chloroethyl vinyl ether	EPA 8260B/8021B(water only)
Chloroform	EPA 8260B/8021B(water only)
1-Chlorohexane	EPA 8260B
Chloromethane	EPA 8260B/8021B(water only)
Chloroprene	EPA 8260B
3-Chloroprene	EPA 8260B
4-Chlorotoluene	EPA 8260B
2-Chlorotoluene	EPA 8260B
Cyclohexane	EPA 8260B
Cyclohexanone	EPA 8260B
Dibromochloromethane	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B/8011/8021B(water only)
Dibromochloromethane	EPA 8260B/8021B(water only)
Dichlorodifluoromethane	EPA 8260B
Dibromomethane	EPA 8260B/8021B(water only)
1,2 Dibromomethane (EDB)	EPA 8260B/8011/8021B(water only)
1,4-Dichloro-2-butane	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B/8021B
1,3-Dichlorobenzene	EPA 8260B/8021B
1,4-Dichlorobenzene	EPA 8260B/8021B
cis-1,4-Dichloro-2-butene	EPA 8260B/8021B(water only)
trans-1,4-Dichloro-2-butene	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B/8021B(water only)
1,2-Dichloroethane	EPA 8260B/8021B(water only)
1,1-Dichloroethene	EPA 8260B/8021B(water only)
1,2-Dichloroethene	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B/8021B(water only)
trans-1,2-Dichloroethene	EPA 8260B/8021B(water only)
Dichlorofluoromethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B/8021B(water only)
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B/8021B(water only)
1,1-Dichloropropene	EPA 8260B/8021B(water only)
1,3-Dichloropropene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B/8021B(water only)
trans-1,3-Dichloropropene	EPA 8260B/8021B(water only)
1,2-Dichlorotetrafluoroethane	EPA 8260B

Parameter/Analyte	Solid Hazardous Waste
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260B
Diethyl ether	EPA 8260B
Di-isopropylether	EPA 8260B
1,4-Dioxane	EPA 8260B
p-Dioxane	EPA 8260B
Ethanol	EPA 8260B/8015B/8015C
Ethyl acetate	EPA 8260B
Ethyl benzene	EPA 8260B/8021B
Ethyl methacrylate	EPA 8260B
Ethylene oxide	EPA 8260B
Gas Range Organics (GRO)	EPA 8015B/8015C
Hexane	EPA 8260B
2-Hexanone	EPA 8260B
Hexachlorobutadiene	EPA 8260B
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260B/8015B/8015C
Isopropanol	EPA 8260B
Isopropyl alcohol	EPA 8260B
Isopropylbenzene	EPA 8260B
1,4-Isopropyltoluene	EPA 8260B
Iodomethane	EPA 8260B
Methacrylonitrile	EPA 8260B
Methanol	EPA 8015B/8015C
Methyl acetate	EPA 8260B
Methyl cyclohexane	EPA 8260B
Methylene chloride	EPA 8260B
Methyl ethyle ketone (MEK)	EPA 8260B
Methyl isobutyl ketone	EPA 8260B
Methyl methacrylate	EPA 8260B
Methyl tert-butyl ether (MtBE)	EPA 8260B/8021B
4-Methyl-2-pentanone	EPA 8260B
Naphthalene	EPA 8260B/8021B(water only)
2-Nitropropane	EPA 8260B
2-Pentanone	EPA 8260B
2-Propanol	EPA 8260B
Propionitrile	EPA 8260B
n-Propylbenzene	EPA 8260B
Styrene	EPA 8260B
Tert-amyl-methylether	EPA 8260B
Tert-butyl ethyl ether	EPA 8260B
1,1,1,2-Tetrachloroethane	EPA 8260B/8021B(water only)
1,1,2,2-Tetrachloroethane	EPA 8260B/8021B(water only)
Tetrachloroethene	EPA 8260B/8021B(water only)
Tetrahydrofuran	EPA 8260B
Tetrahydrothiophene	EPA 8260B
Toluene	EPA 8260B / 8021B
Total Petroleum Hydrocarbons (TPH)	EPA 1664A
1,2,3-Trichlorobenzene	EPA 8260B/8021B(water only)
1,1,1-Trichloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
Trichloroethene	EPA 8260B/8021B(water only)
Trichlorofluoromethane	EPA 8260B/8021B(water only)
1,2,3-Trichlorobenzene	EPA 8260B

Parameter/Analyte	Solid Hazardous Waste
1,2,4-Trichlorobenzene	EPA 8260B/8021B(water only)
1,2,3-Trichloropropane	EPA 8260B/8021B(water only)
1,1,2-Trichloro-1,2,2-trifluoroethane	EPA 8260B
1,1,1-Trifluoro-2,2-dichloroethane	EPA 8260B
1,2,3-Trimethylbenzene	EPA 8260B
1,2,4-Trimethylbenzene	EPA 8260B/8021B(water only)
1,3,5-Trimethylbenzene	EPA 8260B
Trihalomethanes	EPA 8260B
Vinyl acetate	EPA 8260B
Vinyl chloride	EPA 8260B/8021B(water only)
Xylenes, total	EPA 8260B/8021B
1,2-Xylene	EPA 8260B/8021B
1,3-Xylene	EPA 8260B/8021B
1,4-Xylene	EPA 8260B/8021B
Extractable Organics (semivolatiles)	
Acenaphthene	EPA 8270C/8270D/8310/9270SIM
Acenaphthylene	EPA 8270C/8270D/8310/8270SIM
Acetophenone	EPA 8270C/8270D
2-Acetylaminofluorene	EPA 8270C/8270D
Alachlor	EPA 8270C/8270D
4-Aminobiphenyl	EPA 8270C/8270D
Aniline	EPA 8270C/8270D
Anthracene	EPA 8270C/8270D/8310/8270SIM
Aramite	EPA 8270C/8270D
Atrazine	EPA 8270C/8270D
Azobenzene	EPA 8270C/8270D
Benzal chloride	EPA 8270C/8270D
Benzaldehyde	EPA 8270C/8270D
Benzidine	EPA 8270C/8270D
Benzoic acid	EPA 8270C/8270D
Benzo (a) anthracene	EPA 8270C/8270D/8310/8270SIM
Benzo (b) fluoranthene	EPA 8270C/8270D/8310/8270SIM
Benzo (k) fluoranthene	EPA 8270C/8270D/8310/8270SIM
Benzo (ghi) perylene	EPA 8270C/8270D/8310/8270SIM
Benzo (a) pyrene	EPA 8270C/8270D/8310/8270SIM
Benzyl alcohol	EPA 8270C/8270D
Biphenyl	EPA 8270C/8270D
Bis (2-chloroethoxy) methane	EPA 8270C/8270D
Bis (2-chloroethyl) ether	EPA 8270C/8270D
Bis (2-chloroisopropyl) ether (2,2'Oxybis(1-chloropropane)	EPA 8270C/8270D
Bis (2-ethylhexyl) phthalate	EPA 8270C/8270D
4-Bromophenyl phenyl ether	EPA 8270C/8270D
Butyl benzyl phthalate	EPA 8270C/8270D
2-sec-Butyl-4,6-dinitrophenol	EPA 8270C/8270D
Caprolactam	EPA 8270C/8270D
Carbazole	EPA 8270C/8270D
Carbofuran phenol	EPA 8270C/8270D
4-Chloroanilene	EPA 8270C/8270D
Chlorobenzilate	EPA 8270C/8270D
4-Chloro-3-methylphenol	EPA 8270C/8270D

Parameter/Analyte	Solid Hazardous Waste
1-Chloronaphthalene	EPA 8270C/8270D
2-Chloronaphthalene	EPA 8270C/8270D
2-Chlorophenol	EPA 8270C/8270D
4-Chlorophenyl phenyl ether	EPA 8270C/8270D
Chrysene	EPA 8270C/8270D/8310/8270SIM
Cresols	EPA 8270C/8270D
Diallate	EPA 8270C/8270D
Dibenzo (a,h) acridine	EPA 8270C/8270D
Dibenzo (a,j) acridine	EPA 8270C/8270D
Dibenzo (a,h) anthracene	EPA 8270C/8270D/8310/8270SIM
Dibenzofuran	EPA 8270C/8270D
Dibenzo (a,e) pyrene	EPA 8270C/8270D
2,3-Dichloroaniline	EPA 8270C/8270D
1,2-Dichlorobenzene	EPA 8270C/8270D
1,3-Dichlorobenzene	EPA 8270C/8270D
1,4-Dichlorobenzene	EPA 8270C/8270D
3,3'-Dichlorobenzidine	EPA 8270C/8270D
2,4-Dichlorophenol	EPA 8270C/8270D
2,6-Dichlorophenol	EPA 8270C/8270D
Diethyl phthalate	EPA 8270C/8270D
Dimethoate	EPA 8270C/8270D
3,3-Dimethylbenzidine	EPA 8270C/8270D
p-Dimethylaminoazobenzene	EPA 8270C/8270D
7,12-Dimethylbenz(a)anthracene	EPA 8270C/8270D
Dimethylformamide	EPA 8270C/8270D
Alpha-,alpha-Dimethylphenethylamine	EPA 8270C/8270D
2,4-Dimethylphenol	EPA 8270C/8270D
Dimethyl phthalate	EPA 8270C/8270D
Di-n-butyl phthalate	EPA 8270C/8270D
Di-n-octyl phthalate	EPA 8270C/8270D
1,3-Dinitrobenzene	EPA 8270C/8270D
1,4-Dinitrobenzene	EPA 8270C/8270D
2,4-Dinitrophenol	EPA 8270C/8270D
2,4-Dinitrotoluene	EPA 8270C/8270D
2,6-Dinitrotoluene	EPA 8270C/8270D
Dinoseb	EPA 8270C/8270D
Diphenylamine	EPA 8270C/8270D
1,2-Diphenylhydrazine	EPA 8270C/8270D
Disulfoton	EPA 8270C/8270D
DRO	EPA 8015B/8015C
Ethyl methanesulfonate	EPA 8270C/8270D
Famphur	EPA 8270C/8270D
Fluoroanthene	EPA 8270C/8270D/8310/8270SIM
Fluorene	EPA 8270C/8270D/8310/8270SIM
Hexachlorobenzene	EPA 8270C/8270D
Hexachlorobutadiene	EPA 8270C/8270D
Hexachlorocyclopentadiene	EPA 8270C/8270D
Hexachloroethane	EPA 8270C/8270D
Hexachlorophene	EPA 8270C/8270D
Hexachloropropene	EPA 8270C/8270D
Indeno (1,2,3-cd) pyrene	EPA 8270C/8270D/8310/8270SIM
Isodrin	EPA 8270C/8270D

Parameter/Analyte	Solid Hazardous Waste
Isophorone	EPA 8270C/8270D
Isosafrole	EPA 8270C/8270D
Methapyrilene	EPA 8270C/8270D
3-Methylcholanthrene	EPA 8270C/8270D
2-Methyl-4,6-Dinitrophenol	EPA 8270C/8270D
4,4-Methylenebis(2-chloroaniline)	EPA 8270C/8270D
Methyl methane sulfonate	EPA 8270C/8270D
2-Methylcholanthrene	EPA 8270C/8270D
1-Methylnaphthalene	EPA 8270C/8270D/8270SIM
2-Methylnaphthalene	EPA 8270C/8270D/8270SIM
2-Methylphenol	EPA 8270C/8270D
3-Methylphenol	EPA 8270C/8270D
4-Methylphenol	EPA 8270C/8270D
Naphthalene	EPA 8270C/8270D/8310/8270SIM
1,4-Naphthoquinone	EPA 8270C/8270D
1-Naphthylamine	EPA 8270C/8270D
2-Naphthylamine	EPA 8270C/8270D
2-Nitroaniline	EPA 8270C/8270D
3-Nitroaniline	EPA 8270C/8270D
4-Nitroaniline	EPA 8270C/8270D
Nitrobenzene	EPA 8270C/8270D
2-Nitrophenol	EPA 8270C/8270D
4-Nitrophenol	EPA 8270C/8270D
Nitroquinoline-1-oxide	EPA 8270C/8270D
N-Nitrosodiethylamine	EPA 8270C/8270D/8070A
N-Nitrosodimethylamine	EPA 8270C/8270D/8070A
N-Nitrosodi-n-butylamine	EPA 8270C/8270D
N-Nitrosodi-n-propylamine	EPA 8270C/8270D
N-Nitrosodiphenylamine	EPA 8270C/8270D/8070A
N-Nitrosomethylethylamine	EPA 8270C/8270D
N-Nitrosomorpholine	EPA 8270C/8270D
N-Nitrosopiperidine	EPA 8270C/8270D
N-Nitrosopyrrolidine	EPA 8270C/8270D
5-Nitro-o-toluidine	EPA 8270C/8270D
2,2-oxybis(1-chloropropane)	EPA 8270C/8270D
Parathion, methyl	EPA 8270C/8270D
Parathion, ethyl	EPA 8270C/8270D
Pentachlorobenzene	EPA 8270C/8270D
Pentachloroethane	EPA 8270C/8270D
Pentachloronitobenzene	EPA 8270C/8270D
Pentachlorophenol	EPA 8270C/8270D
Phenacetin	EPA 8270C/8270D
Phenanthrene	EPA 8270C/8270D/8310/8270SIM
Phenol	EPA 8270C/8270D
1,4-Phenylenediamine	EPA 8270C/8270D
Phorate	EPA 8270C/8270D
Phthalic anhydride	EPA 8270C/8270D
2-Picoline	EPA 8270C/8270D
Pronamide	EPA 8270C/8270D
Pyrene	EPA 8270C/8270D/8310/8270SIM
Pyridine	EPA 8270C/8270D
Quinoline	EPA 8270C/8270D

Parameter/Analyte	Solid Hazardous Waste
Safrole	EPA 8270C/8270D
Sulfotepp	EPA 8270C/8270D
1,2,4,5-Tetrachlorobenzene	EPA 8270C/8270D
2,3,4,6-Tetrachlorophenol	EPA 8270C/8270D
Thionazin	EPA 8270C/8270D
Thiophenol	EPA 8270C/8270D
Toluene diamine	EPA 8270C/8270D
o-Toluidine	EPA 8270C/8270D
1,2,4-Trichlorobenzene	EPA 8270C/8270D
2,4,5-Trichlorophenol	EPA 8270C/8270D
2,4,6-Trichlorophenol	EPA 8270C/8270D
Triethyl amine	EPA 8270C/8270D
Triethyl phosphate	EPA 8270C/8270D
o,o,o-Triethyl phosphorothioate	EPA 8270C/8270D
1,3,5-Trinitrobenzene	EPA 8270C/8270D
Tris(2,3-Dibromopropyl) phosphate	EPA 8270C/8270D
Pesticides/Herbicides/PCBs	
Aldicarb	EPA 8321A
Aldrin	EPA 8081A/8081B
Anilazine	EPA 8141A/8141B
Atrazine	EPA 8141A/8141B
Azinophos ethyl	EPA 8141A/8141B
Azinophos methyl	EPA 8141A/8141B
alpha-BHC	EPA 8081A/8081B
Beta-BHC	EPA 8081A/8081B
delta-BHC	EPA 8081A/8081B
Gamma-BHC	EPA 8081A/8081B
Bolstar	EPA 8141A/8141B
Carbaryl	EPA 8321A
Carbofuran	EPA 8321A
Carbophenothion	EPA 8141A/8141B
Alpha-Chlordane	EPA 8081A/8081B
Gamma-Chlordane	EPA 8081A/8081B
Chlordane (technical)	EPA 8081A/8081B
Chlorobenzilate	EPA 8081A/8081B
Chloropyrifos	EPA 8081A/8081B/8141A/8141B
Coumaphos	EPA 8141A/8141B
2,4-D	EPA 8151A/8321A
Dalapon	EPA 8151A/8321A
2,4-DB	EPA 8151A/8321A
2,4’-DDD	EPA 8081A/8081B
4,4’-DDD	EPA 8081A/8081B
2,4’-DDE	EPA 8081A/8081B
4,4’-DDE	EPA 8081A/8081B
2,4’,-DDT	EPA 8081A/8081B
4,4’,-DDT	EPA 8081A/8081B
Demeton-O	EPA 8141A/8141B
Demeton-S	EPA 8141A/8141B
Demeton, total	EPA 8141A/8141B
Diallate	EPA 8081A/8081B
Diazinon	EPA 8141A/8141B

Parameter/Analyte	Solid Hazardous Waste
Dicamba	EPA 8151A/8321A
Dichlorovos	EPA 8141A/8141B
Dichloroprop	EPA 8151A/8321A
Dicofol	EPA 8081A/8081B
Dieldrin	EPA 8081A/8081B
Dimethoate	EPA 8141A/8141B
Dinoseb	EPA 8151A/8321A
Disulfoton	EPA 8141A/8141B
Diuron	EPA 8321A
Endosulfan I	EPA 8081A/8081B
Endosulfan II	EPA 8081A/8081B
Endonsulfan sulfate	EPA 8081A/8081B
Endrin	EPA 8081A/8081B
Endrin aldehyde	EPA 8081A/8081B
Endrin ketone	EPA 8081A/8081B
EPN	EPA 8141A/8141B
Ethoprop	EPA 8141A/8141B
Ethyl parathion	EPA 8141A/8141B
Famphur	EPA 8141A/8141B
Fensulfothion	EPA 8141A/8141B
Fenthion	EPA 8141A/8141B
Heptachlor	EPA 8081A/8081B
Heptachlor epoxide	EPA 8081A/8081B
Hexachlorobenzene	EPA 8081A/8081B
Isodrin	EPA 8081A/8081B
Kepone	EPA 8081A/8081B
Malathion	EPA 8141A/8141B
MCPA	EPA 8151A/8321A
MCPP	EPA 8151A/8321A
Merphos	EPA 8141A/8141B
Methiocarb	EPA 8321A
Methoxychlor	EPA 8081A/8081B
Methyl Cabophenothion	EPA 8141A/8141B
Methyl parathion	EPA 8141A/8141B
Mevinphos	EPA 8141A/8141B
Mirex	EPA 8081A/8081B
Naled	EPA 8141A/8141B
Oxamyl	EPA 8321A
PCB-1016 (Arochlor)	EPA 8082/8082A
PCB-1221	EPA 8082/8082A
PCB-1232	EPA 8082/8082A
PCB-1242	EPA 8082/8082A
PCB-1248	EPA 8082/8082A
PCB-1254	EPA 8082/8082A
PCB-1260	EPA 8082/8082A
PCB-1262	EPA 8082/8082A
PCB-1268	EPA 8082/8082A
Phorate	EPA 8141A/8141B
Phosmet	EPA 8141A/8141B
Propazine	EPA 8141A/8141B
Propham	EPA 8321A
Propoxur	EPA 8321A

Parameter/Analyte	Solid Hazardous Waste
Ronnel	EPA 8141A/8141B
Simazine	EPA 8081A/8081B/8141A/8141B
Stirophos	EPA 8141A/8141B
Strychnine	EPA 8321A
Sulfotepp	EPA 8141A/8141B
2,4,5-T	EPA 8151A/8321A
Thionazin	EPA 8141A/8141B
Tokuthion	EPA 8141A/8141B
2,4,5-TP	EPA 8151A/8321A
Toxaphene	EPA 8081A/8081B
Trichloronate	EPA 8141A/8141B
o,o,o-triethylphos phorothioate	EPA 8141A/8141B
tris(2,3-Dibromopropyl)phosphate	EPA 8081A/8081B
Hazardous Waste Characteristics	
Conductivity	EPA 9050A
Corrosivity	EPA 9040B/9045C
Explosives	
1,3,5-Trinitrobenzene	EPA 8330A/8330B/8321A/8321B
1,3-Dinitrobenzene	EPA 8330A/8330B/8321A/8321B
2,4,6-Trinitrotoluene	EPA 8330A/8330B/8321A/8321B
2,4-Dinitrotoluene	EPA 8330A/8330B/8321A/8321B
2,6-Dinitroltoluene	EPA 8330A/8330B/8321A/8321B
2-Amino-4,6-dinitrotoluene	EPA 8330A/8330B/8321A/8321B
2-Nitrotoluene	EPA 8330A/8330B/8321A/8321B
3-Nitrotoluene	EPA 8330A/8330B/8321A/8321B
4-Amino-2,6-dinitrotoluene	EPA 8330A/8330B/8321A/8321B
4-Nitrotoluene	EPA 8330A/8330B/8321A/8321B
Nitrobenzene	EPA 8330A/8330B/8321A/8321B
Nitroglycerin	EPA 8330A/8330B/8321A/8321B
Octahydro-1,3,5,7-tetrabitro-1,3,5,7-tetrazocine (HMX)	EPA 8330A/8330B/8321A/8321B
Pentaerythritoltetranitrate (PETN)	EPA 8330A/8330B/8321A/8321B
RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330A/8330B/8321A/8321B
Tetryl (methyl2,4,6-trinitrophenylnitramine	EPA 8330A/8330B/8321A/8321B
Ignitibility	EPA 1010
Paint Filter Liquids Test	EPA 9095A
Synthetic Precipitation Leaching Procedure (SPLP)	EPA 1312
ToxicityCharacteristic Leaching Procedure	EPA 1311
Synthetic Precipitation Leaching Procedure	EPA 1312
Organic Prep Methods	
Separatory Funnel Liquid-Liquid Extraction	EPA 3510C
Continuous Liquid-Liquid Extraction	EPA 3520C
Soxhlet Extraction	EPA 3540C
Microwave Extraction	EPA 3546
Ultrasonic Extraction	EPA 3550B
Ultrasonic Extraction	EPA 3550C
Waste Dilution	EPA 3580A
Solid Phase Extraction Volatiles Purge and trap Volatiles purge and trap for soils	EPA 3535A EPA 5030B EPA 5035

Parameter/Analyte	Solid Hazardous Waste
Organic Cleanup Procedures	
Florisil Cleanup	EPA 3620B
Florisil Cleanup	EPA 3620C
Sulfur Cleanup	EPA 3660B
Sulfuric Acid/Permanganate Cleanup	EPA 3665A
Metals Digestion	
Acid Digestion Total Recoverable or Dissolved Metals	EPA 3005A
Acid Digestion for Total Metals	EPA 3010A
Acid Digestion for Total Metals	EPA 3020A
Acid Digestion of Sediments, Sludges and Soils	EPA 3050B

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SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TEST AMERICA SAVANNAH
5102 LaRoche Avenue
Savannah, GA 31404
Andrea Teal Phone: 912 354 7858

ENVIRONMENTAL

Valid To: February 28, 2013 Certificate Number: 0399.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the current DoD Quality Systems Manual for Environmental Laboratories) accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below and for the test methods applicable to Kentucky Statute KRS 224.60-130(2)(a):

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, Ion Chromatography, ICP/MS, Methylene Blue Active Substances, Misc.- Electronic Probes (pH, F^-, O_2), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, Total Organic Carbon, Total Organic Halide, Turbidity

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Metals				
Aluminum	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP)

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Antimony	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Arsenic	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Barium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Beryllium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Boron	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A
Cadmium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Calcium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP)
Chromium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Chromium 3+	SM 3500 Cr B_01 SM3500 Cr D	EPA 7196A SM 3500 Cr B_01 SM 3500 Cr D	EPA 7196A SM 3500 Cr B_01 SM 3500 Cr D	EPA 3060A/7196A
Chromium 6+	SM 3500 Cr B_01 SM3500 Cr D	EPA 7196A SM 3500 Cr B_01 SM 3500 Cr D	EPA 7196A SM 3500 Cr B_01 SM 3500 Cr D	EPA 3060A/7196A

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Cobalt	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Copper	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Iron	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP)

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Iron, Ferric	SM 3500 Fe B_97 SM3500 Fe D	SM 3500 Fe B_97 SM3500 Fe D	SM 3500 Fe B_97 SM3500 Fe D	- - - - - - - - - -
Iron, Ferrous	SM 3500 Fe B_97 SM3500 Fe D	SM 3500 Fe B_97 SM3500 Fe D	SM 3500 Fe B_97 SM3500 Fe D	- - - - - - - - - -
Lead	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Magnesium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP)

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Manganese	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Mercury	EPA 200.8 EPA 245.1	EPA 200.8 EPA 245.1 SM 3112B	EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A EPA 7470A ISM01.2 (Hg) SM 3112B	EPA 3050B/6020 EPA 3050B/6020A EPA 7471A EPA 7471B ISM01.2 (Hg)
Molybdenum	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Nickel	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Potassium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP)
Selenium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Silica	EPA 200.7	EPA 200.7	EPA 6010B EPA 6010C	- - - - - - - - - -
Silicon	EPA 200.7	EPA 200.7	EPA 6010B EPA 6010C	- - - - - - - - - -
Silver	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Sodium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP)
Sodium Adsorption Ratio	- - - - - - - - - -	USDA 20B	USDA 20B	- - - - - - - - - -

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Strontium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A
Thallium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Tin	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Titanium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A
Vanadium	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)
Zinc	EPA 200.7 EPA 200.8	EPA 200.7 EPA 200.8	EPA 3005A/6010B EPA 3010A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B EPA 3005A/6010C EPA 3010A/6010C SM 3030C/EPA 6010C EPA 3005A/6020 EPA 3010A/6020 SM 3030C/EPA 6020 EPA 3005A/6020A EPA 3010A/6020A SM 3030C/EPA 6020A ISM01.2 (ICP) ISM01.2 (ICPMS)	EPA 3050B/6010B EPA 3050B/6010C EPA 3050B/6020 EPA 3050B/6020A ISM01.2 (ICP) ISM01.2 (ICPMS)

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Nutrients				
Ammonia (as N)	EPA 350.1 SM4500NH3_G	EPA 350.1 SM4500NH3_G	EPA 350.1 SM4500NH3_G	- - - - - - - - - -
Kjeldahl nitrogen	EPA 351.2	EPA 351.2	EPA 351.2	- - - - - - - - - -
Nitrate (as N)	EPA 300.0 EPA 353.2	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Nitrate-nitrite (as N)	EPA 300.0 EPA 353.2	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Nitrite (as N)	EPA 300.0 EPA 353.2	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Nitrate (as NO3)	EPA 300.0 EPA 353.2	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Nitrate-nitrite (as NO3-NO2)	EPA 300.0 EPA 353.2	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Nitrite (as NO2)	EPA 300.0 EPA 353.2	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 353.2 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Organic Nitrogen (as N)	- - - - - - - - - -	TKN minus Ammonia	TKN minus Ammonia	- - - - - - - - - -
Orthophosphate (as P)	EPA 365.1 SM4500P F	EPA 365.1 SM4500P F	EPA 365.1 SM4500P F	- - - - - - - - - -
Total Nitrogen (as N)	- - - - - - - - - -	TKN plus Nitrate-Nitrite (as N)	TKN plus Nitrate-Nitrite (as N)	- - - - - - - - - -
Total phosphorus	EPA 365.4	EPA 365.4	EPA 365.4	- - - - - - - - - -
Demands				
Adsorbable organic halides (AOX)	- - - - - - - - - -	EPA 1650	EPA 1650	- - - - - - - - - -
Biochemical oxygen demand	EPA 405.1 SM 5210 B	EPA 405.1 SM 5210 B	EPA 405.1 SM 5210 B	- - - - - - - - - -
Carbonacious BOD	SM 5210 B	SM 5210 B	SM 5210 B	- - - - - - - - - -
Chemical oxygen demand	EPA 410.4 SM 5220 D	EPA 410.4 SM 5220 D	EPA 410.4 SM 5220 D	- - - - - - - - - -

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Dissolved carbon	EPA 415.1 SM 5310B	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	- - - - - - - - - -
Dissolved inorganic carbon	EPA 415.1 SM 5310B	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	- - - - - - - - - -
Dissolved organic carbon	EPA 415.1 SM 5310B	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	- - - - - - - - - -
Extractable organic halides	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -	EPA 9023
Total carbon	EPA 415.1 SM 5310B	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	- - - - - - - - - -
Total inorganic carbon	EPA 415.1 SM 5310B	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	- - - - - - - - - -
Total organic carbon	EPA 415.1 SM 5310B	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 415.1 SM 5310B EPA 9060 EPA 9060A	EPA 9060 EPA 9060A Lloyd Kahn
Total organic halides	EPA 9020B	EPA 450.1 EPA 9020B	EPA 9020B EPA 450.1	- - - - - - - - - -
Wet Chemistry				
Acidity	EPA 305.1 SM 2310B	EPA 305.1 SM 2310B	EPA 305.1 SM 2310B	- - - - - - - - - -
Alkalinity	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	- - - - - - - - - -
Anion/Cation Balance	- - - - - - - - - -	SM 1030 F	SM 1030 F	- - - - - - - - - -
Bicarbonate alkalinity	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	- - - - - - - - - -
Bromide	EPA 300.1B	EPA 300.0 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A	EPA 300.0 EPA 9056 EPA 9056A
Bromate	EPA 300.1B	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Carbon dioxide, free	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	- - - - - - - - - -
Carbonate alkalinity	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B SM 4500 CO2 D	EPA 310.1 SM 2320B SM 4500 CO2 D	- - - - - - - - - -
Chlorate	EPA 300.1B	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Chloride	EPA 300.0 EPA 325.2 SM 4500 Cl- E	EPA 300.0 EPA 325.2 SM4500 Cl- E EPA 9056 EPA 9056A EPA 9251	EPA 9056 EPA 9056A EPA 9251 EPA 300.0 EPA 325.2 SM4500 Cl-E	EPA 300.0 EPA 9056 EPA 9056A EPA 9251
Chloride, residual	EPA 330.3 SM 4500 Cl-B	EPA 330.3 SM4500 Cl-B	EPA 330.3 SM4500 Cl-B	- - - - - - - - - -
Chlorite	EPA 300.1B	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Color	EPA 110.2 SM 2120B	EPA 110.2 SM 2120B	EPA 110.2 SM 2120B	- - - - - - - - - -
Corrosivity-calc.carb. stability	SM 2330B	SM 2330B	SM 2330B	- - - - - - - - - -
Cyanide	EPA 335.4 SM 4500-CN-E	EPA 335.4 SM 4500 CN-E ISM01.2 (CN) EPA 9012A EPA 9012B	EPA 9012A EPA 9012B ISM01.2 (CN) EPA 335.4 SM 4500 CN-E	EPA 9012A EPA 9012B ISM01.2 (CN)
Cyanide amenable to chlorination	EPA 335.1	EPA 335.1 EPA 9013/9012A EPA 9013/9012B	EPA 9013/9012A EPA 9013/9012B EPA 335.1	EPA 9013/9012A EPA 9013/9012B
Cyanide, weak acid dissociable	- - - - - - - - - -	SM 4500-CN-I	SM 4500-CN-I	- - - - - - - - - -
Fluoride	EPA 300.0 SM 4500-F-C	EPA 300.0 EPA 9056 EPA 9056A SM 4500-F-C	EPA 300.0 EPA 9056 EPA 9056A SM 4500-F-C	EPA 300.0 EPA 9056 EPA 9056A
Hardness (as calcium carbonate)	EPA 130.2 SM 2340B SM 2340C	EPA 130.2 SM 2340B SM 2340C	EPA 130.2 SM 2340B SM 2340C	- - - - - - - - - -
Hardness, Calcium (as calcium carbonate)	SM 2340B	SM 2340B	SM 2340B	- - - - - - - - - -
Hardness, Magnesium (as calcium carbonate)	SM 2340B	SM 2340B	SM 2340B	- - - - - - - - - -

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Hydroxide alkalinity	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	- - - - - - - - - -
Odor	EPA 140.1 SM 2150 B	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Oxygen, dissolved	EPA 360.2 SM 4500 O C	EPA 360.2 SM 4500 O C	EPA 360.2 SM 4500 O C	- - - - - - - - - -
Perchlorate	EPA 314.0	EPA 314.0	EPA 314.0	EPA 314.0
pH	EPA 150.1 SM 4500 H+ B	EPA 150.1 SM 4500 H+ B EPA 9040B EPA 9040C	EPA 9040B EPA 9040C EPA 150.1 SM 4500 H+ B	EPA 9045C EPA 9045D
Phenolphthalein alkalinity	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	EPA 310.1 SM 2320B	- - - - - - - - - -
MBAS (Surfactants)	EPA 425.1 SM 5540C	EPA 425.1 SM 5540C	EPA 425.1 SM 5540C	
Oil and Grease (HEM)	- - - - - - - - - -	EPA 1664A	EPA 1664A	EPA 9071B
Phenols	EPA 420.1	EPA 420.1 EPA 9065 EPA 9065A	EPA 9065 EPA 9065A EPA 420.1	EPA 9065 EPA 9065A
Filterable residue	EPA 160.1 SM 2540C	EPA 160.1 SM 2540C	EPA 160.1 SM 2540C	- - - - - - - - - -
Nonfilterable residue	EPA 160.2 SM 2540D	EPA 160.2 SM 2540D	EPA 160.2 SM 2540D	- - - - - - - - - -
Settleable Residue	EPA 160.5 SM 2540F	EPA 160.5 SM 2540F	EPA 160.5 SM 2540F	- - - - - - - - - -
Total residue	EPA 160.3 SM 2540B	EPA 160.3 SM 2540B	EPA 160.3 SM 2540B	SM2540G
Volatile dissolved residue	- - - - - - - - - -	SM 2540E	SM 2540E	- - - - - - - - - -
Total volatile suspended residue	- - - - - - - - - -	SM 2540E	SM 2540E	- - - - - - - - - -
Volatile residue	EPA 160.4 SM 2540E	EPA 160.4 SM 2540E	EPA 160.4 SM 2540E	SM2540G
Ash Content	- - - - - - - - - -	SM 2540E	SM 2540E	SM2540G
Fixed residue	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -	SM2540G
Percent Moisture	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -	SM2540G
Resistivity	EPA 120.1 SM 2510B	EPA 120.1 SM 2510B	EPA 120.1 SM 2510B	- - - - - - - - - -
Salinity	SM 2520B	SM 2520B	SM 2520B	- - - - - - - - - -
Specific conductance	EPA 120.1 SM 2510B	EPA 120.1 SM 2510B	EPA 9050A EPA 120.1 SM 2510B	EPA 9050A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Sulfide	EPA 376.1 SM4500-S2-F	EPA 376.1 EPA 9030B/9034 SM4500 S2 F	EPA 9030B/9034 EPA 376.1 SM4500 S2 F	EPA 9030B/9034
Sulfate	EPA 300.0 EPA 375.4	EPA 300.0 EPA 375.4 EPA 9038 EPA 9056 EPA 9056A	EPA 300.0 EPA 375.4 EPA 9056 EPA 9056A EPA 9038	EPA 300.0 EPA 9056 EPA 9056A EPA 9038
Sulfite	EPA 377.1 SM4500 SO3 B	EPA 377.1 SM4500 SO3 B	EPA 377.1 SM4500-SO3-B	- - - - - - - - - -
Tannin & Lignin	- - - - - - - - - -	SM 5550 B	SM 5550 B	- - - - - - - - - -
Thiocyanate	SM 4500 CN M	SM 4500 CN M	SM 4500 CN M	- - - - - - - - - -
Total Petroleum Hydrocarbons (TPH or SGT-HEM)	- - - - - - - - - -	EPA 1664A	EPA 1664A	EPA 9071B
Turbidity	EPA 180.1 SM 2130B	EPA 180.1 SM 2130B	EPA 180.1 SM 2130B	- - - - - - - - - -
Unionized ammonia	- - - - - - - - - -	FL-DEP SOP	FL-DEP SOP	- - - - - - - - - -
UV-254	SM5910B	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Purgeable Organics (Volatiles)				
Acetone	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Acetonitrile	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Acrolein	- - - - - - - - - -	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Acrylonitrile	- - - - - - - - - -	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Amyl acetate, mixed isomers	- - - - - - - - - -	EPA 1666	EPA 1666	- - - - - - - - - -
Benzene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
BTEX, Total		EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Bromobenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Bromochloromethane	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Bromodichloromethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Bromoform	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Bromomethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
n-Butanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
sec-Butanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
2-Butanone	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
2-Butoxyethanol (Butyl cellosolve)	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
n-Butyl acetate	- - - - - - - - - -	EPA 1666	EPA 1666 EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
sec-Butyl acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
tert-Butyl alcohol (2-methyl-2-propanol)	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
n-Butylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Sec-Butylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Tert-Butylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Carbon disulfide	- - - - - - - - - -	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Carbon tetrachloride	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Cellosolve acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Chlorobenzene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Chloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
2-Chloroethyl vinyl ether	- - - - - - - - - -	EPA 624	EPA 5030B/8260B	- - - - - - - - - -
Chloroform	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1-Chlorohexane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
4-Isopropyltoluene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Chloromethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
3-Chloro-1-propene	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Chloroprene	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Cyclohexane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
2-Chlorotoluene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
4-Chlorotoluene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Dibromoacetic Acid (DBAA)	EPA 552.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Dibromochloromethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2-Dibromo-3-chloropropane (DBCP)	EPA 504.1 EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B EPA 8011	EPA 5030/8260B EPA 5035A/8260B
Dibromomethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2-Dibromoethane (EDB)	EPA 504.1 EPA 524.2	EPA 624	EPA 5030B/8260B EPA 8011	EPA 5030/8260B EPA 5035A/8260B
Dichloroacetic Acid (DCAA)	EPA 552.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,2-Dichlorobenzene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,3-Dichlorobenzene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,4-Dichlorobenzene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Trans-1,4-dichloro-2-butene	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Dichlorodifluoromethan e	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,1-Dichloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2-Dichloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,1-Dichloroethene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
cis-1,2-Dichloroethene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
trans-1,2-Dichloroethene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2-Dichloroethene, Total	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2-Dichloropropane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
1,3-Dichloropropane	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
2,2-Dichloropropane	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,1-Dichloropropene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
cis-1,3-Dichloropropene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
trans-1,3-Dichloropropene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,3-Dichloropropene, Total	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Diethyl ether	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Diisopropyl ether	EPA 524.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,4-Dioxane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Ethanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI EPA 5030B/8260B	EPA 8015B-DAI EPA 8015C-DAI EPA 5030/8260B EPA 5035A/8260B
Ethyl acetate	- - - - - - - - - -	EPA 1666	EPA 1666 EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Ethyl benzene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Ethyl methacrylate	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Ethylene glycol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Tetraethylene glycol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Triethylene glycol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Furan	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Haloacetic Acids, Total (HAA5)	EPA 552.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
n-Heptane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
n-Heptanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
2-Hexanone	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Hexachlorobutadiene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Hexane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Isoamyl acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Isobutanol	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B EPA 8015B-DAI EPA 8015C-DAI	EPA 5030/8260B EPA 5035A/8260B EPA 8015B-DAI EPA 8015C-DAI
Isobutyl acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Isopropyl acetate	- - - - - - - - - -	EPA 1666	EPA 1666 EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Isopropanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Isopropyl ether	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Isopropylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Iodomethane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Methacrylonitrile	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Methanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Methyl acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B EPA 8015B-DAI EPA 8015C-DAI	EPA 5030/8260B EPA 5035A/8260B EPA 8015B-DAI EPA 8015C-DAI
Methylene chloride	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Methyl isobutyl ketone	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Methyl methacrylate	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Methyl cyclohexane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Monobromoacetic Acid (MBAA)	EPA 552.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Monochloroacetic Acid (MCAA)	EPA 552.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Methyl tert-butyl ether (MTBE)	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Naphthalene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
2,2'-Oxybisethanol (Diethylene glycol)	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Pentachloroethane	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Phenol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
n-Propanol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Propionitrile	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
2-Propoxy ethanol (Propyl cellosolve)	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
n-Propyl acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
n-Propylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Propylene glycol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Di-propylene glycol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Di-propylene glycol methyl ether	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI	EPA 8015B-DAI
Styrene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Tert-amyl alcohol	- - - - - - - - - -	- - - - - - - - - -	EPA 8015B-DAI EPA 8015C-DAI	EPA 8015B-DAI EPA 8015C-DAI
Tert-amyl methyl ether (TAME)	EPA 524.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Tert-butyl alcohol (TBA)	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Tert-butyl ethyl ether (ETBE)	EPA 524.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,1,1,2-Tetrachloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,1,2,2-Tetrachloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Tetrachloroethene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Tetrahydrofuran	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Toluene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Trichloroacetic acid	EPA 552.2	- - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,1,1-Trichloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,1,2-Trichloroethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Trichloroethene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Trichlorofluoromethane	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2,3-Trichlorobenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2,4-Trichlorobenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2,3-Trichloropropane	EPA 524.2 EPA 504.1	- - - - - - - - - -	EPA 5030B/8260B EPA 8011	EPA 5030/8260B EPA 5035A/8260B
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2,4-Trimethylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,3,5-Trimethylbenzene	EPA 524.2	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Trihalomethanes, Total	EPA 524.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Vinyl acetate	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Vinyl chloride	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Xylenes, total	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,2-Xylene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
1,3 & 1,4-Xylene	EPA 524.2	EPA 624	EPA 5030B/8260B	EPA 5030/8260B EPA 5035A/8260B
Gasoline Range Organics	- - - - - - - - - -	- - - - - - - - - -	EPA 5030B/8015B EPA 5030B/8015C	EPA 5030/8015B EPA 5035A/8015B EPA 5030/8015C EPA 5035A/8015C

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Extractable Organics (Semivolatiles)				
Acenaphthene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Acenaphthylene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Acetochlor	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Acetophenone	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Acetylaminofluorene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Alachlor	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
4-Aminobiphenyl	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Aniline	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Anthracene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Aramite, Total	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Atrazine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzaldehyde	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Benzidine	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzoic acid	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzo (a) anthracene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzo (b) fluoranthene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzo (k) fluoranthene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzo (ghi) perylene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzo (a) pyrene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Benzyl alcohol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,1-Biphenyl	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Bis (2-chloroethoxy) methane	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Bis (2-chloroethyl) ether	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Bis (2-chloroisopropyl) ether	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Bis (2-ethylhexyl) phthalate	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Bromacil	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
4-Bromophenylphenyl ether	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Butachlor	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Butylate	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Butyl benzyl phthalate	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-sec-Butyl-4,6-dinitrophenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Caprolactam	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Carbazole	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Chloroaniline	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Chloro-3-methylphenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Chloronaphthalene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Chlorobiphenyl	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
2-Chlorophenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Chlorophenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Chlorophenyl phenyl ether	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Chrysene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Cresols (total methyl phenols)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Diallate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Dibenzofuran	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Dibenz(a,h) anthracene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,2-Dichlorobenzene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,3-Dichlorobenzene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,4-Dichlorobenzene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
3,3-Dichlorobenzidine	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,4-Dichlorophenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,6-Dichlorophenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Diethyl phthalate	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Di(2-ethylhexyl)adipate	EPA 525.2	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Dimethoate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
p-Dimethylaminoazobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
7,12-Dimethylbenz (a) anthracene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3,3'-Dimethylbenzidine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Alpha-, alpha-Dimethylphenethlylamine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,3-Dimethylphenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
2,4-Dimethylphenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,5-Dimethylphenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,4 & 2,5-Dimethylphenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,6-Dimethylphenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3,4-Dimethylphenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Dimethyl phthalate	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Di-n-butyl phthalate	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Di-n-octyl phthalate	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Diphenyl ether	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,3-Dinitrobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,4-Dinitrophenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
2,4-Dinitrotoluene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,6-Dinitrotoluene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,4-Dioxane	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,2-Diphenylhydrazine	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Diphenamide	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
EPTC	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Ethoprop (Mocap)	EPA 525.2	- - - - - - - - - -		- - - - - - - - - -
Ethyl methane sulfonate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Etridiazole	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Fenarimol	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Fluoroanthene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Fluorene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Fluridone	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
2,2',3,3',4,4',6-Heptachlorobiphenyl	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Hexachlorobenzene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Hexachlrobutadiene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Hexachlorocyclopentadiene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Hexachloroethane	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Hexachlorophene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Hexachloropropene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Hexazinone	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Indeno (1,2,3-cd) pyrene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Isophorone	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Isosafrole	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Methapyrilene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Methylbenzoate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3-Methylcholanthrene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Methyl-4,6-Dinitrophenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Methyl methane sulfonate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1-Methylnaphthalene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Methylnaphthalene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Methyl paraoxon	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
2-Methylphenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3 & 4-Methylphenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Metolachlor	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Metribuzin	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Mevinphos	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
MGK 264, total (isomer a+b)	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Molinate	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Napropamide	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Naphthalene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,4-Naphthoquinone	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1-Naphthylamine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Naphthylamine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
2-Nitroaniline	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3-Nitroaniline	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Nitroaniline	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Nitrobenzene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Nitrophenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Nitrophenol	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitroso-di-n-butylamine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosodiethylamine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosodimethylamine	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosomethylethylamine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosomorpholine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
N-Nitrosodi-n-propylamine	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosodiphenylamine	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosopiperidine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
N-Nitrosopyrrolidine	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
4-Nitroquinoline-1-oxide	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
trans-Nonachlor	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Norflurazon	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Pebulate	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Pentachlorobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,2',3,4,6-Pentachlorobiphenyl	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Pentachlronitrobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Pentachlorophenol	- - - - - - - - - -	EPA 625 EPA 1653	EPA 3520C/8270C EPA 3520C/8270D EPA 1653	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Permethrin, total	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Phenacetin	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Phenanthrene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Phenol	----------	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Phenyl ether	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
p-Phenylene diamine	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Phorate	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Picoline	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
alpha-Pinene	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Pronamide	EPA 525.2	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Propazine	EPA 525.2	----------	----------	----------
Pyrene	EPA 525.2	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Pyridine	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Safrole, Total	----------	----------	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Terbacil	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,2,4,5-Tetrachlorobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,2’,4,4’-Tetrachlorobiphenyl	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Tetrachlorocatechol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
Tetrachloroguaicol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
2,3,4,6-Tetrachlorophenol	- - - - - - - - - -	EPA 1653	EPA 1653 EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2-Toluidine (o-Toluidine)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Triademefon	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
2,4,5-Trichlorobiphenyl	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,2,3-Trichlorobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,2,4-Trichlorobenzene	- - - - - - - - - -	EPA 625	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
1,3,5-Trichlorobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3,4,5-Trichlorocatechol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
3,4,6-Trichlorocatechol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
3,4,5-Trichloroguaicol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
3,4,6-Trichloroguaicol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
4,5,6-Trichloroguaicol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
2,4,5-Trichlorophenol	- - - - - - - - - -	EPA 1653	EPA 3520C/8270C EPA 3520C/8270D EPA 1653	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,3,6-Trichlorophenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
2,4,6-Trichlorophenol	- - - - - - - - - -	EPA 625 EPA 1653	EPA 3520C/8270C EPA 3520C/8270D EPA 1653	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3,4,5-Trichlorophenol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
Trichlorosyringol	- - - - - - - - - -	EPA 1653	EPA 1653	- - - - - - - - - -
Tricyclazole	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
o,o',o"-Triethylphosphorothioate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Trifluralin	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1,3,5-Trinitrobenzene	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Vernolate	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
2,3-Xylenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
3,4-Xylenol	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8270C EPA 3520C/8270D	EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
#2 Diesel Fuel (Product Identification)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8015B EPA 3520C/8015C	EPA 3550B/8015B EPA 3546/8015B EPA 3550C/8015C EPA 3546/8015C
Diesel Range Organics	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8015B EPA 3520C/8015C	EPA 3550B/8015B EPA 3546/8015B EPA 3550C/8015C EPA 3546/8015C
Kerosene (Product Identification)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8015B EPA 3520C/8015C	EPA 3550B/8015B EPA 3546/8015B EPA 3550C/8015C EPA 3546/8015C
Mineral Spirits (Product Identification)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8015B EPA 3520C/8015C	EPA 3550B/8015B EPA 3546/8015B EPA 3550C/8015C EPA 3546/8015C
Motor Oil (Product Identification)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8015B EPA 3520C/8015C	EPA 3550B/8015B EPA 3546/8015B EPA 3550C/8015C EPA 3546/8015C

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Oil Range Organics	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8015B EPA 3520C/8015C	EPA 3550B/8015B EPA 3546/8015B EPA 3550C/8015C EPA 3546/8015C
Petroleum Range Organics	- - - - - - - - - -	- - - - - - - - - -	FL-PRO	FL-PRO
Pesticides-Herbicides-PCBs				
Acifluorfen	EPA 515.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Aldicarb (MS)	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Aldicarb sulfone	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Aldicarb sulfoxide	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Aldrin	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Atrazine	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Azinphos methyl	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
alpha-BHC	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Bentazon	EPA 515.1	- - - - - - - - - -	- - - - - - - - - -	--------------------
beta-BHC	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
delta-BHC	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
gamma-BHC	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Bolstar	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Carbaryl	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
Carbofuran (MS)	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Chloramben	EPA 515.1			
Chlordane (technical)	EPA 508	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Chlordane (alpha)	EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Chlordane (gamma)	EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Chlorobenzilate	EPA 525.2		EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Decachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Dichlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Heptachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Hexachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Monochlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Nonachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Octachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Pentachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Tetrachlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Trichlorobiphenyl	- - - - - - - - - -	EPA 680	EPA 680	EPA 680
Chloroneb	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Chlorpropham	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Chlorpyrifos	EPA 525.2	EPA 614	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Chlorthalonil	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Coumaphos	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Cycloate	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
2,4-D	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
2,6-Dichlorophenol	- - - - - - - - - -	EPA 615	EPA 8151A	EPA 8151A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
DCPA (Dacthal)	EPA 515.1 EPA 525.2	- - - - - - - - - -	EPA 8151A	EPA 8151A
Dalapon	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
2,4-DB	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
2,4'-DDD	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
2,4' DDE	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
2,4'-DDT	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
4,4'-DDD	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
4,4' DDE	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
4,4'-DDT	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Demeton-O	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Demeton-S	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Diazinon	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Dicamba	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Dichlorvos	EPA 525.2	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
3,5-Dichlorobenzoic acid	EPA 515.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
2,3-Dichlorobiphenyl (PCB 5)	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Dichloroprop	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
Dieldrin	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Dimethoate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Dinoseb	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
Diquat	EPA 549.2	- - - - - - - - - -	- - - - - - - - -	- - - - - - - - - -
Disulfoton	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B EPA 3520C /8270C EPA 3520C /8270D	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Endosulfan I (alpha)	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Endosulfan II (beta)	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Endosulfan sulfate	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Endothall	EPA 548.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Endrin	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Endrin aldehyde	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Endrin ketone	- - - - - - - - - -	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
EPN	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Ethoprop (Mocap)	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Famphur	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B EPA 3520C /8270C EPA 3520C /8270D	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Fensulfothion	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Fenthion	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Glysophate	EPA 547	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Heptachlor	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Heptachlor epoxide	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B.	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
2,2',4,4',5,6'-Hexachlorobiphenyl (PCB 154)	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
3-Hydroxycarbofuran	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Isodrin	- - - - - - - - - -		EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Malathion	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
MCPA	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
MCPP	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
Merphos	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Methiocarb	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Methomyl	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Methoxychlor	EPA 508 EPA 525.2	EPA 608	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Mevinphos	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Mirex	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8081A EPA 3520C/8081B	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B
Monocrotophos	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Naled	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
4-Nitrophenol	EPA 515.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -

Parameter/Analyte	**Potable Water**	**Nonpotable Water**	**Solid Hazardous Waste**	
			Aqueous	**Solid**
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (PCB 201)	EPA 525.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Oxamyl (MS)	EPA 531.1	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Paraquat	EPA 549.2	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Parathion ethyl	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B EPA 3520C /8270C EPA 3520C /8270D	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
Parathion methyl	- - - - - - - - - -	EPA 614	EPA 3520C/8141A EPA 3520C/8141B EPA 3520C /8270C EPA 3520C /8270D	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
PCB-1016	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1221	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1232	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1242	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1248	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1254	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
PCB-1260	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1262	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCB-1268	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
PCBs, Total	EPA 508	EPA 608	EPA 3520C/8082 EPA 3520C/8082A	EPA 3550B/8082 EPA 3546/8082 EPA 3550C/8082A EPA 3546/8082A
Pentachlorophenol	EPA 515.1	- - - - - - - - - - -	EPA 8151A	EPA 8151A
Picloram	EPA 515.1	- - - - - - - - - - -	EPA 8151A	EPA 8151A
Phorate	- - - - - - - - - - -	- - - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Propachlor	EPA 525.2	- - - - - - - - - - -	- - - - - - - - - - -	- - - - - - - - - - -
Propoxur (Baygon)	EPA 531.1	- - - - - - - - - - -	- - - - - - - - - - -	- - - - - - - - - - -
Ronnel	- - - - - - - - - -	- - - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Simazine	EPA 525.2	- - - - - - - - - - -	- - - - - - - - - - -	- - - - - - - - - - -
Stirophos	EPA 525.2	- - - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Sulfotepp	- - - - - - - - - - -	- - - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B EPA 3520C /8270C EPA 3520C /8270D	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,4,5-T	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Thionazin	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B EPA 3520C /8270C EPA 3520C /8270D	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B EPA 3550B/8270C EPA 3546/8270C EPA 3550C/8270D EPA 3546/8270D
2,4,6-Trichlorophenol	- - - - - - - - - -	EPA 615	EPA 8151A	EPA 8151A
Tokuthion	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
2,4,5-TP (Silvex)	EPA 515.1	EPA 615	EPA 8151A	EPA 8151A
Toxaphene	EPA 508	EPA 608	EPA 3520C/8081A EPA 3520C/8081B EPA 3520C/8276	EPA 3550B/8081A EPA 3546/8081A EPA 3550C/8081B EPA 3546/8081B EPA 3546/8276
Trichloronate	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8141A EPA 3520C/8141B	EPA 3550B/8141A EPA 3546/8141A EPA 3550C/8141B EPA 3546/8141B
Hp-Sed	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Hx-Sed	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Parlar 26	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Parlar 40	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Parlar 41	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Parlar 44	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Parlar 50	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Parlar 62	- - - - - - - - - -	- - - - - - - - - -	EPA 3520C/8276	EPA 3546/8276
Hazardous Waste Characteristics				
BTU	- - - - - - - - - -	ASTM D240	ASTM D240	ASTM D240
Free Liquid	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -	EPA 9095A EPA 9095B
Ignitability	- - - - - - - - - -	EPA 1010 EPA 1010A	EPA 1010 EPA 1010A	EPA 1030
Specific Gravity	- - - - - - - - - -	SM2710 F	SM2710 F	SM2710 F
SPLC	- - - - - - - - - -	- - - - - - - - - -	EPA 1312	EPA 1312
TCLP	- - - - - - - - - -	- - - - - - - - - -	EPA 1311	EPA 1311
Air Testing				

Parameter/Analyte	Potable Water	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Purgeable Organics				
Methane (FID)	- - - - - - - - - -	RSK-175	RSK-175	- - - - - - - - - -
Methane (TCD)	- - - - - - - - - -	RSK-175	RSK-175	- - - - - - - - - -
Ethane (FID)	- - - - - - - - - -	RSK-175	RSK-175	- - - - - - - - - -
Ethene (FID)	- - - - - - - - - -	RSK-175	RSK-175	- - - - - - - - - -
Kentucky UST Program				
TCLP Metals				
Arsenic	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B
Barium	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B
Cadmium	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B
Chromium	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B
Lead	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B
Mercury	- - - - - - - - - -	- - - - - - - - - -	EPA 7470A	EPA 7470A
Selenium	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B
Silver	- - - - - - - - - -	- - - - - - - - - -	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B	EPA 3005A/6010B EPA 3010A/6010B SM 3030C/EPA 6010B

The American Association for Laboratory Accreditation

World Class Accreditation

Accredited DoD ELAP Laboratory

A2LA has accredited

TEST AMERICA SAVANNAH

Savannah, GA

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in the current DoD Quality Systems Manual for Environmental Laboratories); accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009*).

Presented this 5th day of April 2011.

President & CEO
For the Accreditation Council
Certificate Number 0399.01
Valid to February 28, 2013

For the tests or types of tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.

APPENDIX C

Permits

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

SEAN PARNELL, GOVERNOR

555 Cordova Street
Anchorage, AK 99501
PHONE: (907) 269-3053
FAX: (907) 269-7649
www.dec.state.ak.us

File: 475.38.013

November 28, 2011

Carey Cossaboom
USACE Alaska District (PM-C)
P.O. Box 6898
JBER, AK 99506-6898

Re: ADEC Approval of Final July 2011 Northeast Cape HTRW Remedial Actions Work Plan

Dear Mr. Cossaboom:

Thank you for providing the Alaska Department of Environmental Conservation's Contaminated Sites program (ADEC) with a copy of the final Northeast Cape Remedial Actions Work Plan dated July, 2011 which was received by ADEC on August 25, 2011. ADEC has completed its review of the final work plan and has determined that all of ADEC's comments and revision requests have been adequately addressed. ADEC tentatively approved the work plan for implementation in the field via email on July 22, 2011; pending all ADEC revision requests were adequately addressed. This letter serves as formal record of ADEC's approval of the subject work plan.

In the process of finalizing the subject 2011 work plan, the contract for the 2011 remedial work at Northeast Cape has changed such that resources will be overwintered on site in future years, and the current contractor will execute a remedial contract for two more field seasons through 2013. The Corps of Engineers recently confirmed (via miscellaneous correspondence) that documents (draft and final versions) such as work plans, reports, tech memos, addendums, etc. will continue to be provided to ADEC for review, comment, and approval throughout the duration of the current contract.

Please contact me at 907.269.3053 or curtis.dunkin@alaska.gov if you have any questions regarding this letter.

Sincerely,

Curtis Dunkin
Environmental Program Specialist

cc: Molly Welker – BERS, Inc. (via email)

G:\SPAR\SPAR-CS\38 Case Files (Contaminated Sites)\475 West Coast (Other)\475.38.013 Northeast Cape St Lawrence Island FUDS DERP\475 38 013 final 2011 NEC RA WP adec approval letter 11-25-11.docx

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF MINING, LAND & WATER
Water Resources Section

550 WEST 7TH AVENUE, SUITE 1020
ANCHORAGE, ALASKA 99501-3562
PHONE: (907) 269-8600
FAX: (907) 269-8904

July 13, 2011

Bristol Environmental Remediation Services
Attn: Molly Welker
111 W. 16th Avenue, Third Floor
Anchorage, AK 99501

Subject: Temporary Water Use Authorization, TWUP A2011-81

Dear Ms. Welker:

The Water Resources Section completed the review of the Application for Temporary Use of Water from Bristol Environmental Remediation Services. Enclosed is the Temporary Water Use Authorization TWUP A2011-81, **with an expiration date of December 31, 2011,** for uses associated with the ongoing environmental remedial cleanup activities at the former Northeast Cape site.

Please note all of the conditions on the permit, especially conditions one (1), five (5) and thirteen (13) through nineteen (19).

If changes to this project are proposed during its operation, please contact this office immediately to determine if further review is necessary. If you have any questions or concerns, I may be contacted at (907) 269-8588. Thank you for your cooperation with the Water Resources Section.

Sincerely,

Merry Johnson

Merry Johnson
Natural Resource Specialist III

Enclosures: Temporary Water Use Authorization – TWUP A2011-81

Cc. Susan Luetters, Bristol Environmental & Engineering Services Corporation
(via email: sluetters@bristol-companies.com)

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

ALASKA DEPARTMENT OF NATURAL RESOURCES

Division of Mining, Land, and Water

Water Resources Section

550 West 7th Avenue, Suite 1020, Anchorage, AK 99501-3562

TEMPORARY WATER USE AUTHORIZATION
TWUP A2011-81

Pursuant to AS 46.15, as amended and the rules and regulations promulgated thereunder, permission is hereby granted to Bristol Environmental Remediation Services, 111 W. 16th Avenue, Third Floor, Anchorage, Alaska 99501, and its contractors, **to withdraw up to 3,000 gallons of water per day (subject to a maximum of 180,000 gallons of water)** from July15 through December 31, 2011 from the below-described source of water. The water will be used for camp water supply and dust suppression associated with the ongoing environmental remedial cleanup activities at the former Northeast Cape site, on Saint Lawrence Island, Alaska.

SOURCES OF WATER:

Suqitughneg River within NW¼ Section 15, Township 25 South, Range 54 West, Kateel River Meridian.

STRUCTURES TO BE CONSTRUCTED AND USED:

Screened water intake structure, four-inch pump with 35-gpm output, hose and/or pipe, tanker truck and other water removal and distribution equipment.

Changes in the natural state of water are to be made as stated herein and for the purposes indicated.

During the effective period of this authorization, the permittee shall comply with the following conditions:

CONDITIONS:

1. **This authorization does not authorize the permittee to enter upon any lands until proper rights-of-way, easements, or permission documents from the appropriate landowner have been obtained.**
2. Comply with all applicable laws, and any rules and/or regulations issued thereunder.
3. Except for claims or losses arising from negligence of the State, defend and indemnify the State against and hold it harmless from any and all claims, demands, suits, loss, liability and expense for injury to or death of persons and damages to or loss of property arising out of or connected with the exercise of the privileges covered by this authorization.
4. Notify the Water Resources Section upon change of address.

5. **The permittee shall obtain and comply with other permits/approvals (state, federal, or local) that may be required prior to beginning water withdrawal pursuant to this authorization.**

6. Follow acceptable engineering standards in exercising the privilege granted herein.

7. Failure to respond to a request for additional information during the term of the authorization may result in the termination of this authorization.

8. The permittee shall allow an authorized representative of the Water Resources Section to inspect, at reasonable times, any facilities, equipment, practices, or operators regulated or required under this authorization.

9. The permittee is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved project, and shall ensure that workers are familiar with the requirements of this authorization. For any activity that significantly deviates from the approved project during its siting, construction, or operation, the permittee is required to contact the Water Resources Section and obtain approval before beginning the activity.

10. The Water Resources Section may modify this authorization to include different limitations, expand monitoring requirements, evaluate impacts, or require restoration at the site.

11. Pursuant to 11 AAC 93.220 (f), this authorization may be suspended by the Department of Natural Resources to protect the water rights of other persons or the public interest.

12. Any false statements or representations, in any application, record, report, plan, or other document filed or required to be maintained under this authorization, may result in the termination of this authorization.

13. **Any water intake structure in fish bearing waters, including a screened enclosure, well-point, sump, or infiltration gallery, must be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury, unless specifically exempted by the Alaska Department of Fish and Game, Habitat Division.**

14. **To avoid entrainment, impingement, or injury to fish, a properly sized and screened structure must surround the water intake. The screen mesh shall not exceed 1/4 inches and the water velocity at the screen surface shall not exceed 0.5 feet per second.**

15. **The intake screen will be inspected for damage (torn screen, crushed screen, screen separated from intake ends, etc.) before and after each use. Any damage observed must be repaired prior to use of the structure. The structure must always conform to the original design specifications while in use.**

16. **Permittee must employ pumping operations in such a way as to prevent any petroleum products or other hazardous substances from contaminating surface or ground water. Pumps will not be fueled or serviced within 100 feet of a pond, lake, stream, or river unless the pumps are situated within a catch basin designed to contain any spills.**

17. **Water trucks will not be fueled or serviced within 100 feet of a pond, lake, stream or river. In case of accidental spills, absorbent pads shall be readily available at the water collection point. All spills must be reported to the Alaska Department of Environmental Conservation and the Alaska Department of Natural Resources.**

18. **Permittee shall control any runoff so that it does not introduce any pollutants, including sediment, into any surface water body, including the Suqitughneg River and adjacent wetlands.**

19. **The streambed and stream banks of the Suqitughneg River shall not be excavated, altered, or disturbed in any manner to facilitate the water withdrawal.**

This Temporary Water Use Authorization is issued pursuant to 11 AAC 93.220. No water right or priority is established by a temporary water use authorization issued pursuant to 11 AAC 93.220. Water so used is subject to appropriation by others (11 AAC 93.210(b)).

Pursuant to 11 AAC 93.210 (b), authorized temporary water use is subject to amendment, modification, or revocation by the Department of Natural Resources if the Department of Natural Resources determines that amendment, modification, or revocation is necessary to supply water to lawful appropriators of record or to protect the public interest.

This authorization shall expire on December 31, 2011.

Date issued: July 13, 2011

Approved: Kristina Plitt

Title: Natural Resource Manager

STATE OF ALASKA

SARAH PALIN, GOVERNOR

1300 COLLEGE RD.
FAIRBANKS, AK 99701
PHONE: (907) 459-7289
FAX: (907) 459-7303

DEPARTMENT OF FISH AND GAME

DIVISION OF HABITAT

FISH HABITAT PERMIT
FH09-III-OI03

ISSUED: April 22, 2009
EXPIRES: December 31, 2014

Ms. Molly Welker
Bristol Environmental and Engineering Services Corporation
111 W. 16th Ave., Third Floor
Anchorage, AK 99501-5109

Dear Ms. Welker:

RE: Bridge Repair, Northeast Cape White Alice Site Removal Action (St. Lawrence Island); T25S, R54W, Suqitughneq River; SID AK0203-17AA

Pursuant to AS 16.05.841, the Alaska Department of Fish and Game (ADF&G), Division of Habitat, has reviewed your proposal to place riprap or conduct maintenance activities in the Suqitughneq River (on St. Lawrence Island) to protect the bridge abutments. ADF&G received your request via email on April 17, 2009. Your original request was received on March 19, 2002 with a more detailed description received via email on April 3, 2002. The original activity was permitted under Fish Habitat Permit FG02-III-0072 which expired December 31,2005.

Your original proposed project entailed placing approximately 15 cubic yards of riprap at the base of the abutments of the bridge crossing the Suqitughneq River each work season (two work seasons are anticipated). An excavator, operating from the deck of the bridge, will place the riprap. The current proposed work will included any necessary repairs but will not exceed the original footprint and scope of work.

The Suqitughneq River supports anadromous Dolly Varden (and possibly whitefish) and resident fish (e.g., Alaska blackfish) in the area of your proposed activity. Based upon our review of your plans, your proposed project should not obstruct the efficient passage and movement of fish.

In accordance with AS 16.05.841, project approval is hereby given subject to the following stipulations:

(1) Banks shall not be altered or disturbed in any way. If stream banks are inadvertently disturbed, they shall be immediately stabilized to prevent erosion.

(2) "End-dumping" riprap is prohibited. Riprap shall be strategically placed to prevent excess rock in the streambed.

The permittee is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved plan. For any activity that significantly deviates from the approved plan, the permittee shall notify the ADF&G and obtain written approval in the form of a permit amendment before beginning the activity. Any action taken by the permittee, or an agent of the permittee, that increases the project's overall scope or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this permit will be deemed a significant deviation from the approved plan. The final determination as to the significance of any deviation and the need for a permit amendment is the responsibility of the ADF&G. Therefore, it is recommended that the ADF&G be consulted immediately when a deviation from the approved plan is being considered.

This letter constitutes a permit issued under the authority of AS 16.05.841. This permit must be retained on site during construction. Please be advised that this approval does not relieve you of the responsibility of securing other permits, state, federal or local.

This permit provides reasonable notice from the commissioner that failure to meet its terms and conditions constitutes violation of AS 16.05.861; no separate notice under AS 16.05.861 is required before citation for violation of AS 16.05.841 can occur.

In addition to the penalties provided by law, this permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The department reserves the right to require mitigation measures to correct disruption to fish and game created by the project and which were a direct result of the failure to comply with this permit or any applicable law.

The recipient of this permit (permittee) shall indemnify, save harmless, and defend the department, its agents and its employees from any and all claims, actions or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or the permittee's performance under this permit. However, this provision has no effect, if, and only if, the, sole proximate cause of the injury is the department's negligence.

Sincerely,

Denby S. Lloyd, Commissioner

BY: Robert F. "Mac" McLean, Regional Supervisor
Habitat Division
Alaska Department of Fish and Game

cc: Chris Milles, ADNR, Fairbanks
Ann Rappoport, USFWS, Anchorage
Jeanne Hanson, NMFS, Anchorage

RFM:mac

STATE OF ALASKA

SARAH PALIN, GOVERNOR

1300 COLLEGE RD.
FAIRBANKS, AK 99701
PHONE: (907) 459-7289
FAX: (907) 459-7303

DEPARTMENT OF FISH AND GAME

DIVISION OF HABITAT

FISH HABITAT PERMIT
FH09-III-OI02

ISSUED: April 22, 2009
EXPIRES: December 31, 2014

Ms. Molly Welker
Bristol Environmental and Engineering Services Corporation
111 W. 16th Ave., Third Floor
Anchorage, AK 99501-5109

Dear Ms. Welker:

RE: Equipment Stream Crossing, Northeast Cape White Alice Site Removal Action (St. Lawrence Island), T25S, R54W, Quangeghsaq River; SID AK 0203-17AA

Pursuant to AS 16.05.841, the Alaska Department of Fish and Game (ADF&G), Division of Habitat, has reviewed your proposal to make multiple crossings at multiple sites (four) across the Quangeghsaq River with amphibious all-terrain vehicles. Timbers or poles may need to be placed in and adjacent to the stream to create better crossing sites that prevent ATVs from getting stuck and reduce damage to vegetation. Access is needed to cut down and remove hundreds of poles from abandoned utility lines. ADF&G originally received a description of the proposed project on March 19, 2002 and a more detailed description via email on April 3, 2002. That activity was permitted under Fish Habitat Permit FG02-III-0073 which expired December 31, 2005. Additional access may be needed to conduct maintenance activities.

The Quangeghsaq River supports anadromous Dolly Varden (and possibly whitefish) and resident fish (e.g., Alaska blackfish) in the area of your proposed activity. Based upon our review of your plans, your proposed project may obstruct the efficient passage and movement of fish.

In accordance with AS 16.05.841, project approval IS hereby gIven subject to the following stipulations:

(1) Equipment crossings shall be made from bank to bank in a direction substantially perpendicular to the direction of stream flow.

Equipment crossings shall be made only at locations with gradually sloping banks. There shall be no crossings at locations with sheer or cut banks.

Banks shall not be altered or disturbed in any way to facilitate crossings. If stream banks are inadvertently disturbed, they shall be immediately stabilized to prevent erosion.

(2) If timber/poles are placed in and adjacent to the stream to create a crossing site, they must be placed in such a way that free passage of fish is assured. In addition, all material shall be completely removed from the streambed and banks at the end of each work season. If needed, the streambed shall be recontoured to assure that "trenches" are not left that will trap fish at low-water levels.

(3) Vehicle crossings shall be limited to only what is necessary to accomplish work.

(4) No damming or diversions are permitted.

The permittee is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved plan. For any activity that significantly deviates from the approved plan, the permittee shall notify the ADF&G and obtain written approval in the form of a permit amendment before beginning the activity. Any action taken by the permittee, or an agent of the permittee, that increases the project's overall scope or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this permit will be deemed a significant deviation from the approved plan. The final determination as to the significance of any deviation and the need for a permit amendment is the responsibility of the ADF&G. Therefore, it is recommended that the ADF&G be consulted immediately when a deviation from the approved plan is being considered.

This letter constitutes a permit issued under the authority of AS 16.05.841. This permit must be retained on site during construction. Please be advised that this approval does not relieve you of the responsibility of securing other permits, state, federal or local.

This permit provides reasonable notice from the commissioner that failure to meet its terms and conditions constitutes violation of AS 16.05.861; no separate notice under AS 16.05.861 is required before citation for violation of AS 16.05.841 can occur.

In addition to the penalties provided by law, this permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The department reserves the right to require mitigation measures to correct disruption to fish and game created by the project and which were a direct result of the failure to comply with this permit or any applicable law.

The recipient of this permit (permittee) shall indemnify, save harmless, and defend the department, its agents and its employees from any and all claims, actions or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or the permittee's performance under this permit. However, this provision has no effect, if, and only if, the sole proximate cause of the injury is the department's negligence.

Sincerely,

Denby S. Lloyd, Commissioner

BY: Robert F. "Mac" McLean, Regional Supervisor
Habitat Division

cc: Chris Milles, ADNR, Fairbanks
Ann Rappoport, USFWS, Anchorage
Jeanne Hanson, NMFS, Anchorage

RFM:mac

Welker, Molly

Subject: FW: NE Cape

From: Leinberger, Dianna L (DNR) [mailto:dianna.leinberger@alaska.gov]
Sent: Thursday, April 21, 2011 1:31 PM
To: Luetters, Susan
Subject: RE: NE Cape

Susan,

The letter is still valid. I'll note in the file that clean up is still ongoing.

-Dianna

Dianna Leinberger
Department of Natural Resources
Division of Mining, Land & Water
Northern Region Lands Section - Permits & Easements
907-451-3014

From: Luetters, Susan [mailto:sluetters@bristol-companies.com]
Sent: Thursday, April 21, 2011 12:41 PM
To: Leinberger, Dianna L (DNR)
Subject: FW: NE Cape

Trying this one more time.

Susan Luetters
Senior Environmental Scientist
Phone : (907) 563-0013

From: Luetters, Susan
Sent: Thursday, April 21, 2011 12:33 PM
To: 'dainna.leinberger@alaska.gov'
Cc: Welker, Molly; Floyd, Christopher B POA
Subject: FW: NE Cape

Hi Dianna,

It is that time of year again . . . As per below we are ramping up for the 2011 season out at NE Cape conditions surrounding the request are the same as 2009 and 2010. Are we good to go?

Susan Luetters
Senior Environmental Scientist
Phone : (907) 563-0013

From: Luetters, Susan
Sent: Tuesday, February 23, 2010 1:19 PM
To: 'dianna.leinberger@alaska.gov'
Subject: FW: NE Cape

From: Luetters, Susan
Sent: Tuesday, February 23, 2010 10:11 AM

To:
Cc: Welker, Molly; Floyd, Christopher B POA
Subject: NE Cape

Hi Dianna,

As per the attached, Bristol Environmental Remediation Services will be going back to Northeast Cape at the request of the USACE to continue the environmental remediation of the Formerly Used Defense Site. Included in this transmission is your 2009 "Letter of Entry for State tidelands within Kitnagak Bay, Saint Lawrence Island" For the purpose of accessing NE Cape for a Formerly Used Defense Site Cleanup and a Native American Lands Environmental Mitigation Program Project.

The conditions that surrounded the issuance of this Letter of Entry will not be changing for the 2010 season; therefore, do we need to re-request this authorization for the 2010 season or will the 2009 letter extend to cover this season since there is no expiration date on the authorization?

Thank you for your attention to this matter and we look forward to your response.

Sincerely,

Susan Luetters
Senior Environmental Scientist
Bristol Environmental & Engineering Services Corporation
111 W. 16th Avenue, Third Floor
Anchorage, AK 99501-5109
Phone : (907) 563-0013
Direct : (907) 743-9316
FAX : (907) 563-6713
sluetters@bristol-companies.com
http://www.bristol-companies.com/

STATE OF ALASKA

SARAH PALIN, GOVERNOR

1300 COLLEGE RD.
FAIRBANKS, AK 99701
PHONE: (907) 459-7289
FAX: (907) 459-7303

DEPARTMENT OF FISH AND GAME

DIVISION OF HABITAT

FISH HABITAT PERMIT
FH09-III-0103
Amendment #1

ISSUED: April 22, 2009
AMENDMENT #1 ISSUED: June 5, 2009
EXPIRES: December 31, 2014

Ms. Molly Welker
Bristol Environmental and Engineering Services Corporation
111 W. 16th Ave., Third Floor
Anchorage, AK 99501-5109

Dear Ms. Welker:

RE: Bridge Repair, Northeast Cape White Alice Site Removal Action (St. Lawrence Island); T25S, R54W, Suqitughneq River; SID AK0203-17AA

Pursuant to AS 16.05.841, the Alaska Department of Fish and Game (ADF&G), Division of Habitat, has reviewed Ms. Susan Luetters' email request, dated June 4, 2009, to amend Fish Habitat Permit FH09-III-0103 to authorize withdrawal of up to 3,000 gallons per day of water from the Suqitughneg River (180,000 gallons per season). Water will be withdrawn with a 4-inch diameter pump at a rate of 35 gpm. Proposed season of use is July 15, 2009 to September 15, 2009.

In accordance with AS 16.05.841, Fish Habitat Permit FH09-III-0103 is hereby amended subject to the following stipulation:

(1) In fish bearing waters, pump intakes or stream diversions shall be designed to prevent intake, impingement, or entrapment of fish. Each water intake structure shall be centered in a screened enclosure. The effective screen opening may not exceed ¼ inch. To reduce fish impingement on the screened surfaces, water velocity at the screen/water interface may not exceed 0.5 feet per second when the pump is operating.

NOTE: Due the small water withdrawal rate, the simplest manner to achieve compliance with this stipulation is to perforate the lower third of a 5-gallon plastic bucket with a large number of ¼-inch holes, place some large rock in the bucket to keep it submerged, and then place the intake hose (presumably with a small rock chuck) in the bucket.

All other terms and conditions of FH09-III-0103 remain in effect.

Sincerely,

Denby S. Lloyd, Commissioner

BY: Robert F. "Mac" McLean, Regional Supervisor
Habitat Division
Alaska Department of Fish and Game

cc: Chris Milles, ADNR, Fairbanks
Ann Rappoport, USFWS, Anchorage
Jeanne Hanson, NMFS, Anchorage

RFM:mac

DEPARTMENT OF THE ARMY
RIGHT-OF-ENTRY FOR
ENVIRONMENTAL ASSESSMENT AND RESPONSE

SAINT LAWRENCE ISLAND, ALASKA (Project, Installation or Activity)

NO. DACA85- 8-08-0134 (Property Identification Number)

The undersigned, hereinafter called the "**Owner**", in consideration of the mutual benefits of the work described below, hereby grants to the **UNITED STATES OF AMERICA**, hereinafter called the "Government", a right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter in, on, over and across the land described herein, for a period not to exceed five (5) years, **beginning June 1, 2008**, and terminating upon the earlier completion of remediation or the filling of a notice of termination in the local land records by the representative of the United States in charge of the Saint Lawrence Island remediation project, for use by the United States, its representatives, agents, contractors, and assigns, as a work area for environmental investigation and response; including the right to store, move, and remove equipment and supplies; erect and remove temporary structures on the land; investigate and collect samples; excavate and remove ordnance and explosive waste, pollutants, hazardous substances, contaminated soils, containerized waste, and replace with uncontaminated soil; excavate and remove all storage tanks (above, at and below ground level), contents and appurtenant piping; demolish and dispose of former military structures and debris; construct, operate, maintain, alter, repair and remove groundwater monitoring wells, groundwater purification and injection systems, appurtenances thereto and other devices for the monitoring and treatment of contamination in soil, air and water; and perform any other such work which may be necessary and incident to the Government's use for the environmental investigation and response on said lands; subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowner(s), their heirs, executors, administrators, successors and assigns, all such right, title, interest and privilege as may be used and enjoyed without interfering with or abridging the rights and right-of-entry hereby acquired.

2. The Owner also grants the right to enter and exit over and across any other lands of the Owner as necessary to use the described lands for the purposes listed above.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. Upon expiration or termination of this right-of-entry, the Government shall assure restoration of the ground contour and replace any pavement or other cover which was removed or damaged for this work, establish a groundcover of grass on areas not otherwise covered and reconnect any operating utility lines which were required to be disconnected or otherwise disrupted.

5. If any action of the Government's employees or agents in the exercise of this right-of-entry results in damage to the real property, the Government will, in its sole discretion, either repair such damage or make an appropriate settlement with the Owner. In no event shall such repair or settlement exceed the fair market value of the fee title to the real property at the time immediately preceding such damage. The Government's liability under this clause is subject to the availability of appropriations for such payment, and nothing contained in this agreement may be considered as implying that Congress will at a later date appropriate funds sufficient to meet any deficiencies. The provisions of this clause are without prejudice to any rights the Owner may have to make a claim under applicable laws for any damages other than those provided for herein.

6. The land affected by this right-of-entry is located in the State of Alaska, and is described as follows:

All surface and subsurface rights on Saint Lawrence Island, Alaska, within Township 20 South, Range 67 West, Kateel River Meridian and; Township 25 South, Range 54 West, Kateel River Meridian

WITNESS MY HAND AND SEAL this 17 day of June 2008.

Aaron Sologrigen

SAVOONGA AK 99769 JUN 17 2008 USPS

KUKULGET, INCORPORATED
Perry Pungowiyi, President

Perry Pungowiyi
Authorized Signature

P.O. Box 160
Address

(907) 984-6184
Telephone Number

UNITED STATES OF AMERICA

Veronica A. Hiriams
Veronica A. Hiriams
Chief, Real Estate Division
US Army Engineer District, AK
P.O. Box 898
Anchorage, Alaska 99506-0898

SAINT LAWRENCE ISLAND, ALASKA
(Project, Installation or Activity)

NO. DACA85-8-08-0134
(Property Identification Number)

SIVUQAQ, INCORPORATED
~~Bruce Boolowon, President~~ Merle Apassingok, Acting Chairman

[signature]
Authorized Signature

P.O. Box 101 Gambell, AK. 99742
Address

(907) 985-5826
Telephone Number

MATERIAL SUPPLY AND
QUARRY OPERATING AGREEMENT

Kukulget Inc., whose address is P.O. Box 160 Savoonga, Alaska 99769, and Sivuqaq Inc., whose address is P.O. Box 101 Gambell, Alaska 99742, Alaska Native Corporations created pursuant to the Alaska Native Claims Settlement Act, herein referred to as "Owners," and Bristol Environmental Remediation Services LLC, whose address is 111 W. 16th Avenue, Third Floor, Anchorage, Alaska 99501, herein referred to as "Contractor" agree to the extraction of material and the operation of the quarry and such other rights as are designated in this contract, subject to the following provisions:

1. DESCRIPTION - LOCATION, MATERIAL, AND PRICE:

1.1. Quarry Description. The material source area covered by this agreement is the borrow site south of the Main Operations Complex at Northeast Cape, St. Lawrence Island, Alaska shown on the attached figure.

1.2. Royalty. The royalty price for all types of material removed from the Quarry during the Term of this Agreement is:

Material Type	Unit Price
All Material	$10.00 (per cubic yard)

Quantities to be determined by truck count.

2. EXCLUSIVE RIGHTS AND DUTIES:

Owner hereby grants to Contractor and Contractor accepts from Owner, the exclusive right to manage and operate the Quarry for the Term of this Agreement (defined in ¶3). Management and operation of the Quarry shall include, without limitation, the following:

A. The exclusive right to manage the extraction and removal of Materials from the Quarry;

B. The exclusive right, to secure access to the Quarry to avoid an attractive nuisance and deter unauthorized extraction of Materials therefrom, up to and including, fencing the perimeter and/or access to the Quarry;

C. The duty to perform all reclamation identified in the Letter of Intent (section 5).

3. TERM:

The term of this Agreement ("term") shall commence on July 1, 2011 and expire on December 31, 2011.

4. PAYMENTS AND DEPOSITS:

Within 30 days after the cessation of work for winter, or completion or termination, Contractor in any year in which the Contractor extracts or transports material from the Quarry, Contractor shall pay payments as described in Paragraph 1.2.

5. LETTER OF INTENT/ANNUAL RECLAMATION STATEMENT:

By July 1, 2011 and prior to commencing any operations in any Quarry subject to this Agreement, the Contractor shall file a "Letter of Intent" (Letter) with the State of Alaska Department of Natural Resources, Division of Land (Division of Land) as required by State law. The contractor shall also file an "Annual Reclamation Statement" (Statement) with the Division of Land as required by State law. The Statement shall be filed before December 31 of any calendar year during which Quarry operations were carried out under this Agreement. The Contractor shall provide copies of the Letter and the Statement(s) to the Owners.

6. RECLAMATION PLAN:

Contractor shall comply with the requirements of the Letter (section 5) regarding reclamation. The Contractor shall document reclamation activities per the Statement (section 5).

7. CONFLICT WITH CONTRACT.

In the event that any provision of this Material Supply Contract and Quarry Operating Agreement shall conflict with Contractor's Contract W911KB-06-D-0007 with the Corp of Engineers for the Northeast Cape HTRW Remedial Actions, St. Lawrence Island, Alaska, contract W911KB-06-D-0007 shall control and this Agreement shall be considered amended to bring it into conformity with W911KB-06-D-0007.

8. INSPECTION OF QUARRY:

Prior to commencing any operations at the Quarry, authorized representatives of Contractor and Owners may inspect the Quarry to determine whether and to what extent prior mining operations have resulted in visual environmental contamination that requires remediation. Contractor shall have no obligation to perform remediation of contamination discovered at this inspection; provided, however, that from the date of such inspection Contractor shall be liable for all hazardous materials deposited at the Quarry as a result of Contractor's operations during the term hereof, or any extension . Failure by the parties to do so shall not affect the enforceability of this Agreement, provided Contractor prepares and transmits its environmental findings to Owners, at its address set forth in ¶17, below in writing, before beginning Operations.

9. BOOKS AND RECORDS OF ACCOUNT:

Contractor shall maintain accurate and complete records, log books and books of account documenting: (a) the volume of gravel extracted from the Quarry seasonally and submitted to Owners; (b) the amounts due and payable by Contractor and; the amounts actually paid by Contractor to Owners pursuant to this Agreement.

Materials from the Quarry shall be measured by truckloads. Each truck load will contain between 18.75 and 25 cubic yards depending on the truck type (e.g., 30 or 40 ton rock truck). Truck count and truck type shall be performed and recorded by the operator loading haul units at the quarry site. The operator will provide the truck count to the Contractor's Site Superintendent or his designee on a daily basis. The Site Superintendent will provide a summary of the truck count to Owner within five business days of receiving a request from the Owner.

10. OPERATING REQUIREMENTS:

10.1. Standards of Operations. Contractor shall excavate and remove Material from the Quarry in compliance with all laws, regulations, ordinances, orders and its contract with the Corps W911KB-06-D-0007. Contractor shall conduct and maintain its Operations in a commercially reasonable, workman like and clean manner, and shall take all necessary precautions to prevent or suppress fires and to prevent erosion, contamination or destruction of the land and adjacent wetlands and waters. The Contractor agrees to carry out its quarry operations only in areas previously disturbed by others at the Quarry site.

10.2. Supervision. Contractor shall maintain adequate supervision at all times when Operations are in progress to ensure compliance with the provisions of this contract and all applicable federal, state, and local laws and regulations.

10.3. Agents. The provisions of this Contract apply with equal force upon any agent, employee, or contractor designated by Contractor to perform any of the Operations under this contract. Contractor is liable for the noncompliance caused by any such agent, employee, or contractor.

10.4. Grave Sites or Archaeological Sites. No grave or archaeological site shall be in any way disturbed, removed, or damaged. Upon encountering any grave or archaeological site, Contractor shall immediately cease work in the area of the site and shall immediately notify Owners.

11. COMPLIANCE WITH APPLICABLE LAWS:

Contractor shall comply with all local, State and federal laws, statutes, ordinances, rules, regulations, decrees, injunctions, orders and codes applicable to the operation or management of the Quarry, including without limitation, mining reclamation, mining safety and health (i.e., "MSHA") and occupational safety and health (i.e., "OSHA"). These laws and regulations are, by this reference, made a part of this Contract.

12. REQUIRED PERMITS:

Contractor shall obtain and maintain, at its expense and throughout the Term, all licenses, permits, approvals, consents and certificates from local, state and federal authorities which may be necessary or appropriate for its management and operation of the Quarry.

13. ASSIGNMENT:

This contract may be assigned or transferred pursuant to 30 days advance notice to Owners.

14. PERMITS:

Any permits necessary for Operations under this Contract must be obtained by Contractor before commencing those Operations.

15. WARRANTIES:

This sale is made without any warranties, express or implied, as to quantity, quality, merchantability, profitability, or fitness for a particular use of the Material to be extracted from the Quarry under contract. Contractor specifically waives any claims that may arise resulting from the use of the Material.

16. NOTICES:

All notices and other documents required or authorized under this Contract must be in writing and are deemed delivered upon receipt provided that the same are sent certified mail, postage paid, to the party to which the same is mailed the following address or such other address as such party may by written notice provide:

To the Owner:

Kukulget Inc.
P. O. Box 160
Savoonga, AK 99769

Sivuqaq Inc.
P.O. Box 101
Gambell, AK 99742

with a copy to Fortier & Mikko, P.C. 101 W. Benson Blvd., Suite 304, Anchorage, AK 99503.

To the Contractor:

Bristol Environmental Remediation Services, LLC
Attn: Molly Welker
111 W. 16th. Avenue, Third Floor
Anchorage, Alaska 99501

17. INTEGRATION AND MODIFICATION:

This Contract, including all laws and documents that by reference are incorporated in it or made a part of it, contains the entire agreement between the parties. This Contract may not be modified or amended except by a document signed by both parties to this contract. Any amendment or modification which is not in writing, signed by both parties, is null and void and of no legal effect.

18. SEVERABILITY OF CLAUSES OF CONTRACT:

If any provision of this Contract is adjudged to be invalid, that judgment does not affect the validity of any other provision of this Contract, nor does it constitute any cause or action in favor of either party as against the other.

19. CONSTRUCTION:

Words in the singular number include the plural, and words in the plural number include the singular.

20. HEADINGS:

The headings of the numbered paragraphs in this Contract shall not be considered in construing any provisions of this Contract.

21. "EXTRACTED," "EXTRACTION":

In this Contract, use of the terms "Extracted" and "Extraction" encompasses the severance or removal, as well as extraction, by Contractor of any Material covered by this Contract.

22. WAIVERS:

No agent, representative, or employee of Owners has authority to waive any provision of this Contract unless expressly authorized to do so in writing by the Presidents of Kukulget Inc. and Sivuqaq Inc.

23. GOVERNING LAW:

This Contract shall be governed by and construed in accordance with Alaska law. Venue and jurisdiction shall lie exclusively in the Superior Court for the State of Alaska, Third Judicial District, at Anchorage, Alaska.

24. EFFECTIVE DATE:

This Contract shall be effective the 1st day of July 2011.

25. BY SIGNING THIS CONTRACT, Owner, and Contractor, agrees to be bound by its provisions as set out above.

CONTRACTOR:

Bristol Environmental Remediation Services, LLC

By: [signature]

Its: Project Manager

OWNER:

Kukulget Inc.

Morris Toolie JR.

By: [signature]

Its: President

Sivuqaq Inc.

By: [signature]

Its: President

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF AGRICULTURE

Sean Parnell, GOVERNOR

☐ **CENTRAL OFFICE**
1800 GLENN HIGHWAY, SUITE 12
PALMER, ALASKA 99645-6736
PHONE: (907) 745-7200
FAX: (907) 745-7112

☐ **NORTHERN REGION OFFICE**
1648 S. CUSHMAN ST., # 201
FAIRBANKS, ALASKA 99701-6206
PHONE: (907) 328-1950
FAX: (907) 328-1951

☐ **PLANT MATERIALS CENTER**
5310 S. BODENBURG SPUR
PALMER, ALASKA 99645-9706
PHONE: (907) 745-4469
FAX: (907) 746-1568

August 16, 2010

Carey Cossaboom
Project Manager
U.S. Army Corps of Engineers

Carey,

After visiting the NE Cape cleanup site I believe a maintenance fertilization program may be real valuable in order to meet the 70% cover requirement for the sites. The process is starting but the plants could use some help. An application of fertilizer (20-20-10) at 500 pounds per acre would help the process along. I believe this will give the plants the boost they need.

Species composition of the seeded areas does correspond with the applied seed mix of 70% Tufted hairgrass and 30% Red fescue, although not at that density. The seeded perennial grasses are performing relatively well and there is no indication of extreme stress. The brown color and yellowing of the grasses at some sites is probably due to fertilizer deficiency and would benefit from an additional application. Some sites are heavily compacted and may require breakup in order for grasses to become established. This is especially true where the three tanks were removed.

Sporadic vegetation cover at one site is likely the result of using hand-held broadcast seeders to apply the seed mix. It looks like a lot of the area was simply missed. If available, a broadcast seeder mounted on the back of an ATV vehicle will provide more uniform coverage of the seed mixture. One good way to prevent misses while seeding and fertilizing areas with employees not familiar with broadcast applications is to set the spreader at half the rate. Apply the product in one direction, and then repeat the application perpendicular to the first application. Skips and void are often prevented using the two step application method. I recommend reseeding this site with 70% Tufted hairgrass and 30% Red fescue at a rate of 1 pound per 1,000 square feet. Follow with 20-20-10 fertilizer at a rate of 500 pounds per acre. The fertilizer should be applied concurrent with or prior to seeding to avoid unnecessary disturbance. Seeding will need to be completed prior to August 1.

The appearance of native species other than those planted, resulted from natural reinvasion from the surrounding community. These species will continue to colonize the site over time providing additional ground cover. Non-seeded grass species that have been identified include: Deschampsia caespitosa (Hairgrass), Festuca rubra (Red fescue), Arctagrostis latifolia (Polargrass), Trisetum Spicatum (Spike trisetum), Hierochloe odorata (Sweetgrass), Poa Alpina (Alpine bluegrass), and Calamagrostis nutkaensis (Nootka reedgrass). These species appear to be performing well and will add a natural appearance to the project.

If I can be of further assistance please do not hesitate to give me a call.

Sincerely,

Phil Czapla
Alaska Plant Materials Center
907-745-8747
phil.czapla@alaska.gov


This site will require a mechanical implement, such as ripper to fracture the soil.


I recommend reseeding this site with 70% Tufted hairgrass and 30% Red fescue. Fertilize with 20-20-10 at 500 pounds per acre. Yellowing of the grasses is probably due to fertilizer deficiency.

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAM

SEAN PARNELL, GOVERNOR
555 Cordova
Anchorage, Alaska 99501-2617
PHONE: (907) 269-6285
FAX: (907) 334-2415
http://www.dec.state.ak.us

Thank you for using the DEC Water Online Application System. In order to sign your electronic Notice of Intent (eNOI) application, you the NOI Certifier must sign and submit this Signature NOI. The ADEC needs to verify your signature in order to update the status of your eNOI to a signed status.

Please sign on the appropriate line in the Certification Information Section (Section VII) of this Signature NOI and mail, fax, or email to:

Attn: Storm Water Program
Division of Water
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501
Fax Number: (907) 269-3487
Phone Number: (907) 269-8117
Email Address: DEC.Water.OPAHelp@alaska.gov

If you have any questions regarding this signature page or other questions concerning the eNOI System, please call ADEC at: (907) 269-8117.

Thank you for using the ADEC eNOI system.

For Agency Use
Permit # AKR10DL58

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an APDES Construction General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section I of this form requests authorization to discharge pursuant to the APDES Construction General Permit (CGP). Submission of this NOI also constitutes notice that the party identified in Section I of this form meets the eligibility requirements of the CGP for the project identified in Section II of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Operator Information

Organization: Bristol Environmental Remediation Services, LLC

Contact Person: Charles Croley

Mailing Address:
Street (PO Box): 111 W. 16th Avenue, Third Floor
City: Anchorage State: AK Zip: 99501
Phone: 907-563-0013 Fax(optional):
Email:

II. Billing Contact Information

Organization: Bristol Environmental Remediation Services, LLC

Contact Person: Molly Welker

Mailing Address:
[ ] Check if same as Operator Information.
Street (PO Box): 111 W. 16th Avenue, Third Floor
City: Anchorage State: AK Zip: 99501
Phone: 907-563-0013 Fax(optional):
Email:

III. Project/Site Information

Project/Site Name: Northeast Cape HTRW Remedial Actions

Project Street/Location: Main Operations Complex, Site 13, Site 31 NE Cape

City: Savoonga, Northeast Cape, St. Lawrence Is. State: AK Zip: 99769

Borough or similar government subdivision: Nome

Latitude: 63.312 Longitude: -168.957

Determined By: ☐ GPS ☐ USGS topographic map ☑ Other: Google Maps

If you used a USGS topographic map, what was the scale?

Estimated Project Start Date: 6/26/2011 Estimated Project Completion Date: 9/15/2011

Estimated Area to be Disturbed (to the nearest quarter acre): 0.85

For Agency Use
Permit # AKR10DL58

IV. SWPPP (Storm Water Pollution Prevention Plan)			
Has the SWPPP been prepared in advance of filing this NOI? ☑ Yes ☐ No			
Location of SWPPP for Viewing: ☐ Address in Section I ☑ Address in Section III ☐ Other			
If other:	SWPPP Street:		
	City:	State: AK	Zip:
	SWPPP Contact Information (if different than that in Section I):		
	Name: Charles Croley		
	Phone: 907-563-0013	Fax(optional):	
	Email:		

V. Discharge Information	
Identify the name(s) of waterbodies to which you discharge: NA	
Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)?	☑ Yes ☐ No

VI. Endangered Species Protection	
Under which criterion of Part 1.3.3.6 of the permit have you satisfied your ESA eligibility obligations?	
☑ A ☐ B ☐ C ☐ D ☐ E ☐ F	
If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:	

VII. Certification Information

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

Printed Name: Steve Johnson	Title: CEO
Signature: [signature]	Date: 5/6/11 Email: sjohnson@bristol-companies.com
NOI Preparer (Complete if NOI was prepared by someone other than the certifier)	
Prepared By: Derek Tannahill	
Organization: Bristol Engineering Services Corp.	
Phone: 907-563-0013	Email:

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

1300 COLLEGE RD.
FAIRBANKS, AK 99701
PHONE: (907) 459-7289
FAX: (907) 459-7303

DEPARTMENT OF FISH AND GAME

DIVISION OF HABITAT

FISH HABITAT PERMIT
FH11-III-0190

ISSUED: June 29, 2011
EXPIRES: December 31, 2011

Bristol Environmental Remediation Services
Attn.: Molly Welker
111 West 16th Avenue, 3rd Floor
Anchorage, AK 99501

Dear Ms. Welker:

RE: Water Withdrawal; Northeast Cape Remedial Actions; Section 15, T25S, R54W, KRM; St. Lawrence B-0 Quad; Suqitughneg River (AWC #333-99-10250).

Pursuant to AS 16.05.871, the Alaska Department of Fish and Game (ADF&G), Division of Habitat, has reviewed your proposal to withdraw up to 35 gpm (3,000 gpd) over a two month period using a 4 inch diameter pump from the Suqitughneg River. Water will be used in support of ongoing environmental remedial cleanup activities at the former Northeast Cape site.

Anadromous Fish Act

The Suqitughneg River has been specified as being important for the migration, spawning, or rearing of anadromous fishes in accordance with AS 16.05.871(a). Anadromous Dolly Varden are documented in the river at the subject location.

In accordance with AS 16.05.871(d), project approval is hereby given subject to your proposed scope of work and the following stipulation:

1. Pump intakes shall be designed to prevent intake, impingement, or entrapment of fish. Each intake structure shall be enclosed in a screened enclosure. The effective screen opening may not exceed ¼ inch. To reduce fish impingement on the screened surface,

water velocity at the screen/water interface may not exceed 0.5 feet per second when the pump is operating.

You are responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved plan. For any activity that significantly deviates from the approved plan, you shall notify the Division of Habitat and obtain written approval in the form of a permit amendment before beginning the activity. Any action that increases the project's overall scope or that negates, alters, or minimizes the intent or effectiveness of any stipulation contained in this permit will be deemed a significant deviation from the approved plan. The final determination as to the significance of any deviation and the need for a permit amendment is the responsibility of the Division of Habitat. Therefore, it is recommended that the Division of Habitat be consulted immediately when a deviation from the approved plan is being considered.

For the purpose of inspecting or monitoring compliance with any condition of this permit, you shall give an authorized representative of the state free and unrestricted access, at safe and reasonable times, to the permit site. You shall furnish whatever assistance and information as the authorized representative reasonably requires for monitoring and inspection purposes.

This letter constitutes a permit issued under the authority of AS 16.05.871 and must be retained on site during the permitted activity. Please be advised that this approval does not relieve you of the responsibility of securing other permits, state, federal or local.

In addition to the penalties provided by law, this permit may be terminated or revoked for failure to comply with its provisions or failure to comply with applicable statutes and regulations. The ADF&G reserves the right to require mitigation measures to correct disruption to fish and game created by the project and which were a direct result of the failure to comply with this permit or any applicable law.

You shall indemnify, save harmless, and defend the ADF&G, its agents and its employees from any and all claims, actions or liabilities for injuries or damages sustained by any person or property arising directly or indirectly from permitted activities or your performance under this permit. However, this provision has no effect if, and only if, the sole proximate cause of the injury is the ADF&G's negligence.

Please be advised that this determination applies only to activities regulated by the Division of Habitat; other departments and agencies also may have jurisdiction under their respective authorities. This determination does not relieve you of the responsibility for securing other permits, state, federal, or local. You are still required to comply with all other applicable laws.

This permit decision may be appealed in accordance with the provisions of AS 44.62.330--44.62.630.

Any questions or concerns about this permit may be directed to me at (907) 459-7281 or emailed to mac.mclean@alaska.gov.

Sincerely,

Cora Campbell, Commissioner

BY: Robert F. "Mac" McLean, Regional Supervisor
Division of Habitat

ecc: Chris Milles, ANDR, Fairbanks
Merry Johnson, ADNR, Anchorage
Jewel Bennett, USFWS, Fairbanks
NOAA Fisheries, Anchorage
Brendan Scanlon, ADF&G, Fairbanks
Jim Menard, ADF&G, Nome
Al Ott, ADF&G, Fairbanks

RFM/mac

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF MINING, LAND & WATER
Water Resources Section

550 WEST 7TH AVENUE, SUITE 1020
ANCHORAGE, ALASKA 99501-3562
PHONE: (907) 269-8600
FAX: (907) 269-8904

July 13, 2011

Bristol Environmental Remediation Services
Attn: Molly Welker
111 W. 16th Avenue, Third Floor
Anchorage, AK 99501

Subject: Temporary Water Use Authorization, TWUP A2011-81

Dear Ms. Welker:

The Water Resources Section completed the review of the Application for Temporary Use of Water from Bristol Environmental Remediation Services. Enclosed is the Temporary Water Use Authorization TWUP A2011-81, **with an expiration date of December 31, 2011,** for uses associated with the ongoing environmental remedial cleanup activities at the former Northeast Cape site.

Please note all of the conditions on the permit, especially conditions one (1), five (5) and thirteen (13) through nineteen (19).

If changes to this project are proposed during its operation, please contact this office immediately to determine if further review is necessary. If you have any questions or concerns, I may be contacted at (907) 269-8588. Thank you for your cooperation with the Water Resources Section.

Sincerely,

Merry Johnson

Merry Johnson
Natural Resource Specialist III

Enclosures: Temporary Water Use Authorization – TWUP A2011-81

Cc. Susan Luetters, Bristol Environmental & Engineering Services Corporation
(via email: sluetters@bristol-companies.com)

ALASKA DEPARTMENT OF NATURAL RESOURCES
Division of Mining, Land, and Water
Water Resources Section
550 West 7th Avenue, Suite 1020, Anchorage, AK 99501-3562

TEMPORARY WATER USE AUTHORIZATION
TWUP A2011-81

Pursuant to AS 46.15, as amended and the rules and regulations promulgated thereunder, permission is hereby granted to Bristol Environmental Remediation Services, 111 W. 16th Avenue, Third Floor, Anchorage, Alaska 99501, and its contractors, **to withdraw up to 3,000 gallons of water per day (subject to a maximum of 180,000 gallons of water)** from July15 through December 31, 2011 from the below-described source of water. The water will be used for camp water supply and dust suppression associated with the ongoing environmental remedial cleanup activities at the former Northeast Cape site, on Saint Lawrence Island, Alaska.

SOURCES OF WATER:

Suqitughneg River within NW¼ Section 15, Township 25 South, Range 54 West, Kateel River Meridian.

STRUCTURES TO BE CONSTRUCTED AND USED:

Screened water intake structure, four-inch pump with 35-gpm output, hose and/or pipe, tanker truck and other water removal and distribution equipment.

Changes in the natural state of water are to be made as stated herein and for the purposes indicated.

During the effective period of this authorization, the permittee shall comply with the following conditions:

CONDITIONS:

1. **This authorization does not authorize the permittee to enter upon any lands until proper rights-of-way, easements, or permission documents from the appropriate landowner have been obtained.**
2. Comply with all applicable laws, and any rules and/or regulations issued thereunder.
3. Except for claims or losses arising from negligence of the State, defend and indemnify the State against and hold it harmless from any and all claims, demands, suits, loss, liability and expense for injury to or death of persons and damages to or loss of property arising out of or connected with the exercise of the privileges covered by this authorization.
4. Notify the Water Resources Section upon change of address.

5. **The permittee shall obtain and comply with other permits/approvals (state, federal, or local) that may be required prior to beginning water withdrawal pursuant to this authorization.**

6. Follow acceptable engineering standards in exercising the privilege granted herein.

7. Failure to respond to a request for additional information during the term of the authorization may result in the termination of this authorization.

8. The permittee shall allow an authorized representative of the Water Resources Section to inspect, at reasonable times, any facilities, equipment, practices, or operators regulated or required under this authorization.

9. The permittee is responsible for the actions of contractors, agents, or other persons who perform work to accomplish the approved project, and shall ensure that workers are familiar with the requirements of this authorization. For any activity that significantly deviates from the approved project during its siting, construction, or operation, the permittee is required to contact the Water Resources Section and obtain approval before beginning the activity.

10. The Water Resources Section may modify this authorization to include different limitations, expand monitoring requirements, evaluate impacts, or require restoration at the site.

11. Pursuant to 11 AAC 93.220 (f), this authorization may be suspended by the Department of Natural Resources to protect the water rights of other persons or the public interest.

12. Any false statements or representations, in any application, record, report, plan, or other document filed or required to be maintained under this authorization, may result in the termination of this authorization.

13. **Any water intake structure in fish bearing waters, including a screened enclosure, well-point, sump, or infiltration gallery, must be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury, unless specifically exempted by the Alaska Department of Fish and Game, Habitat Division.**

14. **To avoid entrainment, impingement, or injury to fish, a properly sized and screened structure must surround the water intake. The screen mesh shall not exceed 1/4 inches and the water velocity at the screen surface shall not exceed 0.5 feet per second.**

15. **The intake screen will be inspected for damage (torn screen, crushed screen, screen separated from intake ends, etc.) before and after each use. Any damage observed must be repaired prior to use of the structure. The structure must always conform to the original design specifications while in use.**

16. **Permittee must employ pumping operations in such a way as to prevent any petroleum products or other hazardous substances from contaminating surface or ground water. Pumps will not be fueled or serviced within 100 feet of a pond, lake, stream, or river unless the pumps are situated within a catch basin designed to contain any spills.**

17. **Water trucks will not be fueled or serviced within 100 feet of a pond, lake, stream or river. In case of accidental spills, absorbent pads shall be readily available at the water collection point. All spills must be reported to the Alaska Department of Environmental Conservation and the Alaska Department of Natural Resources.**

18. **Permittee shall control any runoff so that it does not introduce any pollutants, including sediment, into any surface water body, including the Suqitughneg River and adjacent wetlands.**

19. **The streambed and stream banks of the Suqitughneg River shall not be excavated, altered, or disturbed in any manner to facilitate the water withdrawal.**

This Temporary Water Use Authorization is issued pursuant to 11 AAC 93.220. No water right or priority is established by a temporary water use authorization issued pursuant to 11 AAC 93.220. Water so used is subject to appropriation by others (11 AAC 93.210(b)).

Pursuant to 11 AAC 93.210 (b), authorized temporary water use is subject to amendment, modification, or revocation by the Department of Natural Resources if the Department of Natural Resources determines that amendment, modification, or revocation is necessary to supply water to lawful appropriators of record or to protect the public interest.

This authorization shall expire on December 31, 2011.

Date issued: July 13, 2011

Approved: Kristina Plott

Title: Natural Resource Manager

APPENDIX D

Monthly Status Reports

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109
907-563-0013 Phone
907-563-6713 Fax

2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007 Task Order 0007
Monthly Status Report
December 2011

Submitted on 01/10/12

Summary of Work Performed

Subcontractors

- Worked with Northland Services and Waste Management on the transfer and tracking of 752 bulk bags and 3 containers of scrap metal and concrete. Eighty of the 752 bulk bags have been left to overwinter in Nome and 451 bulkbags are stored at NE Cape for the winter. A total of 1203 bulk bags were filled in 2011.
- Received and paid invoices to subcontractors for the overwinter rental costs of the camp, vehicles, equipment, and ambulance stored at NE Cape.
- Requested and received price quotes from all subcontractors for the 2012 Scope of Work (SOW).
- Compiled cost of the fuel surcharge increase to 26% from Northland Services and 13% from Waste Management for the transportation of bulk bags.

USACE and ADEC Correspondence

- Bristol received on 12/5/11 the SOW for additional work at NE Cape in 2012 under W911KB-12-R-0020.
- On 12/6/11 R. Broyles sent Bristol clarification of the bid schedule for the 2012 SOW.
- R. Broyles sent Bristol the signed LDRs for the arsenic soil on 12/7/11.
- C. Cossaboom sent Bristol the comments on the Draft Site 28 Technical Memorandum on 12/7/11.
- Welker submitted the November Monthly Status Report and Exposure Hour Forms on 12/12/11.
- Bristol sent A. Shewman a revised Site 28 figure on 12/13/11 after a phone conversation with A. Shewman and R. Broyles about the proposed Site 28 SOW for 2012.
- The Bristol chemist, M. Hannah, sent T. Lee an email on 12/13/11 about the silica gel treated results and requested that once the Chemical Data Verification Report (CDVR) is finalized to request that ADEC evaluate the biogenics.
- On 12/13/11 M. Abbott sent Bristol an email with an extension of the proposal due date for the 2012 SOW till 12/19/11.
- Bristol received an email from A. Shewman on 12/14/11 about the revised Site 28 drainage map that Bristol sent him and he restated that the objective for the 2012 SOW for Site 28 is to remove sediment in channels and ponded areas where no

vegetative mat occurs and that the USACE is considering a treatability study for 2012 for Site 28.

- R. Broyles sent Bristol on 12/14/11 a notice of the new version of the Immediate Report of Accident 265-E Form.
- S. Johnson sent M. Abbott an email on 12/15/11 asking for clarification of the 2012 SOW and Section B.
- On 12/19/11 Bristol sent M. Abbott the Price Proposal and associated cover letters and technical understanding letter for the 2012 SOW under W911KB-12-R-0020. A confirmation email was sent by M. Abbott on 12/19/11 that the proposal was received by the USACE.
- On 12/19/11 Bristol sent C. Cossaboom the Response to Comment Forms for the Site 28 Technical Memorandum.
- Bristol sent C. Cossaboom on 12/28/11 revised responses to 2 comments on the Site 28 Technical Memorandum related to revisions to the figures.

Work Underway

- In January 2012 Bristol will submit the Draft HTRW Report for the 2011 NE Cape Project and the Final Site 28 Technical Memorandum.
- Bristol will continue to work with AECOM on the CDVR that evaluates all the 2011 laboratory data. The CDVR is due to be submitted to Bristol by the end of January.

Work Planned for the Upcoming Month

- Bristol will revise the Site 28 Technical Memorandum after receiving the response to comment forms on 1/10/12 from the USACE.
- Bristol will continue to finalize the Draft 2011 Final HTRW Report.

Status of Laboratory Reports

- All final laboratory reports have been received and are being reviewed by AECOM for the CDVR.

Pay Estimates

- Bristol plans to submitted the POA Form 15 for Invoice 06 to USACE in January 2012.

Accident/Exposure Hours

- The November 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form was submitted on 12/12/11 to R. Broyles.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109
907-563-0013 Phone
907-563-6713 Fax

2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
January 2011
Submitted on 2/11/11

Summary of Work Performed

- Held a Kick-off Meeting on 1/18/11 at 1:30 p.m. at the Bristol Office
- Contacted all subcontractors on approved 2011 contract and worked on their subcontracts & work authorizations
    - Signed Transportation Agreement with Northland Services, Inc. on 1/24/11
    - Set up office visit with TestAmerica Analytical Services Corporation for 2/7/11
- Ordered 570 Bulk Bags and 2 loading frames from PacTec, Inc. on 1/25/11
- Submitted Schedule of Values and Project Schedule to COR on 1/27/11

Work Underway

- Working on the Draft Planning Documents including the following:
    - UFP-QAPP, Work Plan, CQCP, WMP, SSHP, and. SPCC
- Working on evaluating the UVOST information in AutoCAD to design an Excavation Plan for the MOC. Includes evaluating the groundwater data, soil boring data, and test pit data collected in 2010
- Identifying permits that will need to be requested from state and federal agencies

Work Planned for the Upcoming Month

- Finalize the Draft Excavation Plan for the MOC and set up a meeting to discuss it with the USACE
- Finalize the Draft Planning Documents
- Set up subcontracts/work authorizations with all Subcontractors

Status of Laboratory Reports

- N/A

Communications from USACE

- Signed Designation of COR Letter for Contract on 1/11/11

Pay Estimates

- N/A

Accident/Exposure Hours

- No Monthly Record of Work-Related Injuries/Illnesses & Exposure Form has been submitted

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109
907-563-0013 Phone
907-563-6713 Fax

2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
February 2011
Submitted on 3/11/11

Summary of Work Performed

- Worked on subcontracts & work authorizations for all subcontractors
- Sent Jerry Reichlin 2011 Quarry Agreement for Sivuqaq, Inc. and Kukulget, Inc.
- Continued to evaluate and interpret the UVOST data to design an excavation plan at the MOC
    - Held a meeting to discuss the excavation plan with the USACE on 3/10/11
- Purchased fuel to fill nine ISO tanks

Work Underway

- Working on the Draft Planning Documents including the following:
    - UFP-QAPP, Work Plan, CQCP, WMP, SSHP, and. SPCC
- Identifying and drafting permits that will need to be requested from state and federal agencies
- Working on equipment rentals and mobilization schedule

Work Planned for the Upcoming Month

- Finalize the Draft Excavation Plan based on the UVOST data for the MOC and get approval from the USACE
- Submit the Draft Planning Documents
- Finalize subcontracts/work authorizations with all Subcontractors
- Finalize Quarry Agreement

Status of Laboratory Reports

- N/A

Communications from USACE

- N/A

Pay Estimates

- N/A

Accident/Exposure Hours

- Monthly Record of Work-Related Injuries/Illnesses & Exposure Form submitted on March 3, 2011.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109
907-563-0013 Phone
907-563-6713 Fax

2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
March 2011
Submitted on 4/11/11

Summary of Work Performed

- Worked on subcontracts & work authorizations with all subcontractors.
  - Received subcontracts, work authorizations, certificate of insurance (COI) and signed SF1413 forms from Eco-land, Inc. and Test America.
  - Renewed service agreement with Waste Management.
  - Received COI from Northland Services and booking information for departures from Seattle and Anchorage. Received the signed 2011 transportation agreement between Northland Services and Bristol Environmental Remediation Services, LLC (Bristol).
  - Leased an ambulance and medical supplies from Fairweather LLC.
  - Received COI from Global Services and paid an invoice to them for their mobilization fee for the camp.
- Requested and received native files from the USACE for Site 28 Drainage Basin to allow Bristol to add proposed transects on the figure for the Work Plan on 3/2/11.
- Conducted Bristol team meetings (3/3/10 and 3/9/11) to discuss the UVOST data and to design an excavation plan at the MOC based on UVOST evaluation prior to meeting with the USACE on 3/10/11.
  - Held a meeting on 3/10/11 from 1:00 – 2:30 pm with USACE: R. Broyles, L. Geist, and A. Shewman and Bristol: S. Johnson, C. Croley, R. James, L. Kleppin, N. Peacock, and M. Welker at the Bristol Office.
  - The meeting discussed Bristol's assumptions in the UVOST evaluation and how Bristol came up with the estimates of between 26,000 and 41,000 tons of POL-contaminated soil at the MOC. Also discussed the magnitude and extent of the contamination based on the UVOST modeling and a proposed excavation plan for 2011.
    - Bristol followed up with P. Caron on UVOST correlation data and revisions to UVOST report based on N. Folcik's comments that we received on 3/10/11.
    - Discussed transects proposed in Site 28 drainage basin.
    - Minutes sent to USACE on 3/15/11 and comments received back from the USACE on 3/18/11.
- Prepared presentation for the RAB meeting in Savoonga on 3/30/11.
  - Sent presentation to C. Cossaboom on 3/24/11.
  - Attended meeting in Savoonga from 3/29/11-3/31/11.
    - Discussed landfarming option for MOC contaminated soil with USACE, ADEC and the RAB.

        - Reviewed 2010 efforts and discussed 2011 plans for NE Cape with the IRA in the morning and the RAB in the afternoon from 3 – 7:30 pm.
        - Gave Morris Toolie, President of Kulukget, Inc. the Quarry Agreement. He will share it with his board, sign it, and then send it to the Sivuqaq, Inc. in Gambell for their signature.
        - Gave local hires (Eugene Toolie, Michael Toolie, Charles Kava, and M. Kingeekuk) their Bristol temporary hiring packets.
- Worked on mobilization issues with C. Croley including:
    - Temporary hiring packets for Bristol mobilization crew.
    - Leasing equipment, purchasing supplies and new equipment (e.g., ATV-side x side vehicles).
    - Received 534 bulk bags at Port of Seattle from Pac-Tec, Inc. and an invoice for the bulk bags. Thirty-six bulk bags are on back order.
        - Ordered an additional 200 bulk bags to have on–site if Bristol is awarded an option to excavate an additional 2000 tons of POL-contaminated soil in 2011.
- Discussed permits needed for 2011 with Susan Luetters at Bristol and Christopher Floyd on 3/25/11 and 4/5/11.
- Updated project schedule.
- Sent out an advertisement to several universities and consultants for a chemistry intern to work as an assistant in the field laboratory at NE Cape.
- Field crew and project manager took an 8-hour Hazwoper Refresher course on 3/25/11.

Work Underway

- Working on the Draft Planning Documents including the following:
    - UFP-QAPP, Work Plan, CQCP, WMP, APP, SSHP, SWPPP and SPCC.
- Identifying and seeking permits that will need to be requested from state and federal agencies.
    - Completing the Coastal Project Questionnaire.
- Working on equipment rentals, purchasing equipment and supplies to prepare for scheduled mobilization on May 12, 2011.
- Set up meeting with A. Shewman on 4/13/11 to discuss MOC excavation plan.

Work Planned for the Upcoming Month

- Finalize the Draft Excavation Plan based on the UVOST data for the MOC and get approval from the USACE after meeting with A. Shewman on 4/13/11.
- Submit the Draft Planning Documents.
- Finalize subcontracts/work authorizations with all Subcontractors.
- Finalize Quarry Agreement.
- Arrange for marine insurance coverage between Nome and NE Cape.

Status of Laboratory Reports

- N/A

Communications from USACE

- Discussed concerns about remaining PCB-contaminated soil at Site 31 with C. Cossaboom on 3/1/11.
    - Text and figures will be revised for Sites 13 and 31 in the 2010 Final Report and be included in the 2011 Work Plan.
- Minutes from the UVOST meeting held on 3/10/11 were sent to USACE on 3/15/11 and USACE comments to the minutes were received on 3/18/11.
- Received email communication from C. Floyd about 2011 permits on 3/25/11.

Pay Estimates

- N/A

Accident/Exposure Hours

- Monthly Record of Work-Related Injuries/Illnesses & Exposure Form submitted on March 3, 2011 and April 6, 2011.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

111 W. 16th Avenue, Third Floor
Anchorage, Alaska 99501-5109
907-563-0013 Phone
907-563-6713 Fax

2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
April 2011

Submitted on 5/10/11

Summary of Work Performed

Subcontractors

- Received subcontracts, work authorizations, certificates of insurance (COI) and signed SF1413 forms from TestAmerica, Fairweather and Waste Management, Inc.
- Held a conference call with Eco-Land, LLC on 4/6/11 to discuss the survey requirements for the 2011 contract.
- On 4/11/11 communicated with Fairweather about the leased ambulance for the project.
- Corresponded with Bering Air about the charter needs this summer on 4/18/11.
- Paid PacTec for the 770 bulk bags and 2 loading frames that have been delivered to the Port of Seattle.
- Placed bottle order with TestAmerica and arranged for 100+ coolers with the bottles to be delivered to Northland's terminal in Seattle for barge departure on 5/2/11.
- Communicated with Waste Management and Northland Services about containers that Waste Management will supply for the project that needed to be delivered to the Port of Seattle by 5/2/11.

Permits

- Discussed permits needed for 2011 with Susan Luetters at Bristol and Christopher Floyd on 4/5/11.
- Received email correspondence from the National Marine Fisheries Service with respect to the stellar sea lion issues and got an extension on the 2009 'no effect of federally listed species' letter on 4/26/11. Forwarded this email to C. Floyd on 4/28/11.
- Applying for a temporary water use permit.
- Corresponded with Kimberly Klein of the USFWS about the threatened and endangered species on NE Cape on 4/26/11.
- Submitted NE Cape SWPPP and the signed NOI for permit #AKR10DL58 to the DEC Water Online Application System on 5/6/11.

Mobilization

- Set up medical surveillance appointments with Dr. Baskous for several of the temporary employees.
- Site Superintendent C. Croley and mobilization crew continue to organize and prepare for the May 12th mobilization from Anchorage including leasing equipment, purchasing supplies, containerizing equipment and trucking it to the Port of Anchorage by 5/12/11.

Miscellaneous Items

- Updated project schedule on 4/7/11 and on 4/25/11.
- Held three interviews during the week of April 25 for two chemistry intern positions to work in the field laboratory. Offered the job to Emily Conway (2011 UAA graduate) and Scott Hummell (UAF chemistry student) on 5/6/11.
- Called Savoonga to follow-up with Morris Toolie on the Quarry Agreement on 5/3/11.

USACE and ADEC Correspondence

- Submitted landfarming information and ADEC Tech Memo on landfarming to the USACE on 4/1/11 and to ADEC on 4/20/11.
- Email communication about the SWPPP requirement occurred on 4/6/11 and 4/7/11 with A. Shewman.
- March 2011 Monthly Status Report was sent to R. Broyles on 4/11/11.
- On 4/13/11 Bristol met with A. Shewman and R. Broyles to discuss MOC excavation plan based on UVOST data. Submitted the minutes from this meeting to USACE on 4/14/11. Bristol revised tonnage estimates, figures and text in the Work Plan based on this meeting.
- Bristol submitted an Unsolicited Landfarming Price Proposal to the USACE on 4/20/11. It was denied on 5/3/11.
- Bristol submitted a price proposal on 4/21/11 for the contract modification for the addition of arsenic background samples near Site 21. Received an email that the USACE received the price proposal but have not received the signed contract modification yet.
- On 4/25/11 Bristol requested and received information from the USACE for the UFP-QAPP Worksheet #7.
- Bristol received the contract administration information and forms from R. Broyles on 4/26/11.

Work Underway

- Draft Planning Documents and MED deliverables are in production and will be delivered to the USACE within a week:
  - UFP-QAPP, Work Plan, CQCP, WMP, APP, SSHP, SWPPP and SPCC.
- Planning and preparation for mobilization and the field effort.

Work Planned for the Upcoming Month

- Submit the Draft Planning Documents.
- Arrange for marine insurance coverage between Nome and NE Cape.
- Finalize Quarry Agreement.

Status of Laboratory Reports

- N/A

Pay Estimates

- The first pay estimate for this contract was sent to R. Broyles on 4/25/11. It was approved and the complete invoice packet was sent to R. Broyles on 4/26/11. Bristol received payment on 5/4/11.

Accident/Exposure Hours

- April Monthly Record of Work-Related Injuries/Illnesses & Exposure Form submitted on 5/4/11.

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2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
May 2011
Submitted on 6/9/11

Summary of Work Performed

Subcontractors
- Worked on finalizing subcontracts and work authorizations with Eco-Land, LLC and Fairweather.
- Project Manager and Site Superintendent worked closely with Northland Services during the final stages of the mobilization from Anchorage in May. Barge left Anchorage a few days after May 12th.

Permits
- Submitted NE Cape SWPPP and the signed NOI for permit #AKR10DL58 to the DEC Water Online Application System on 5/6/11.
- Susan Luetters communicated with C. Ballard at DCOM about the coastal consistency questionnaire. She will follow up with C. Floyd on 6/13/11.
- Submitted the temporary water use permit.
- Received correspondence from Kimberly Klein of the USFWS stating that it will not be necessary to reinitiate consultation with the USFWS pursuant to Section 7 of the Endangered Species Act for this year's activities at NE Cape on 6/1//11.

Mobilization
- Set up medical surveillance appointments with Dr. Baskous for several of the temporary employees, including the laborers from Savoonga.
- Worked on a marine cargo insurance policy for the transportation of equipment between Nome and NE Cape.

Miscellaneous Items
- Received signed 2011 Quarry Agreement from the Sivuqaq Inc. and Kukulget Inc.
- Bristol received notification on 5/3/11 that the USACE does not want to pursue the landfarming option.
- Received Contract Modification 001 for the Arsenic Background Samples at Site 21 on 5/13/11.
- Submitted draft 2011 NE Cape Work Plans to the USACE on 5/17/11.
- Submitted borrow pit information to Jerry Reichlin on 5/25/11.
- Hired two chemistry interns to work in the field laboratory. Offered the job to Emily Conway (2011 UAA graduate) and Scott Hummell (UAF chemistry student) on 5/6/11.

USACE and ADEC Correspondence

- April 2011 Monthly Status Report was sent to R. Broyles on 4/10/11.

Work Underway

- Revising the Draft Planning Documents based on comments Bristol received from C. Cossaboom and R. Scrudato on 6/8/11.
- Continue to plan and prepare for mobilization and the field effort.

Work Planned for the Upcoming Month

- Finalize the Planning Documents based on comments received from the USACE and ADEC.
- Schedule ice reconnaissance flights with Bering Air at NE Cape - Cargo Beach.

Status of Laboratory Reports

- N/A

Pay Estimates

- The first pay estimate for this contract was approved and the complete invoice packet was sent to R. Broyles on 4/26/11. Bristol received payment on 5/4/11.

Accident/Exposure Hours

- May 2011 Monthly Record of Work-Related Injuries/Illnesses & Exposure Form submitted on 6/6/11 to R. Broyles.

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2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
June 2011

Submitted on 7/6/11

Summary of Work Performed

Subcontractors

- Bristol communicated with AECOM about the Chemical Data Quality Review requirements for the 2011 NE Cape Project.
- Bering Air flew an ice reconnaissance flight over NE Cape on 6/14/11.
- C. Croley the Bristol Site Superintendent communicated on 6/17/11 with Northland Services about their landing craft schedule into NE Cape.
- Finalized the marine cargo insurance policy for the charters between Nome and NE Cape with Marsh USA Insurance/Zurich American Insurance Companies.

Permits

- Received correspondence from Kimberly Klein of the USFWS stating that it will not be necessary to reinitiate consultation with the USFWS pursuant to Section 7 of the Endangered Species Act for this year's activities at NE Cape on 6/1/11.
- Communicated with Merry Johnson of the DNR about Application for Temporary Use of Water A2011-81 on 6/1/11 and 6/2/11.
- Sent email requesting information on the Temporary Use of Water Permit to M. Johnson at DNR on 6/16/11.
- Communicated with Christopher Floyd about the Coastal Consistency Questionnaire and the Nation-wide Permit No. 38 on 6/6/11, 6/8/11, and 6/16/11.
- Received new USFWS project number 2011-0143 for the NE Cape project from K. Klein on 6/27/11.

Mobilization

- Bristol corresponded with the USACE about the mobilization schedule to NE Cape in emails sent on 6/16/11 and 6/24/11.
- Set up medical surveillance appointments with Dr. Baskous for several of the temporary employees, including the laborers from Savoonga.
- Bristol's mobilization crew arrived at NE Cape on 6/27/11.
- The Global Services camp set-up crew arrived at NE Cape on 6/30/11.
- Bristol delivered a printer for the QAR to the USACE for drivers to be installed on 6/28/11. It was returned to Bristol and has been shipped up to NE Cape.

Miscellaneous Items

- Worked on and submitted Canadian Notices and Waste Profiles.

- Worked on budget and with Bristol contract administration related to Contract Modification 01 for the Arsenic Background Samples at Site 21.
- Three Savoonga laborers arrived in Anchorage on 6/15/11 for their physicals, drug testing, and to fill out their temporary hiring packet.
- Held a Bristol Field Crew Planning Meeting on 6/16/11.

USACE and ADEC Correspondence

- Submitted the May Monthly Status Report to the USACE on 6/9/11.
- Bristol received comments from the USACE (C. Cossaboom and R. Scrudato) on the 2011 NE Cape Work Plan on 6/8/11. Bristol sent back the response to comment forms addressing these comments on 6/16/11 and 6/28/11. USACE sent back approval with 3 clarifications requested by C. Cossaboom on 7/1/11. M. Welker sent back clarifications to these three comments on 7/6/11.
- Received an email from C. Cossaboom about the Scope of Work requirement for UFP-QAPP meetings on 6/14/11. M. Welker responded with an email to C. Cossaboom on 6/15/11.
- Bristol received comments from the USACE (A. Shewman) on the 2011 NE Cape Work Plan and SWPPP on 6/15/11. Bristol sent back the response to comment forms addressing these comments on 6/16/11. USACE sent back approval of the response to comments with additions requested on Figure 3 of the SWPPP on 7/1/11.
- Bristol received comments from the USACE (T. Lee) on the 2011 NE Cape Work Plan, SWPPP, and UFP-QAPP on 6/21/11. M. Welker sent an email to R. Broyles addressing his concern about the additional comments in 2011. Bristol sent back the response to comment forms addressing these comments on 6/27/11.
- Received email from C. Cossaboom about ADEC pending comments on the 2011 NE Cape Work Plan on 6/28/11.
- M. Welker discussed contract modification issues with R. Broyles on 6/28/11 and 6/29/11. Bristol received and signed Contract Modification 02 on 6/30/11.

Work Underway

- Revising the Draft Planning Documents based on comments Bristol received from USACE.
- Continue to plan and prepare for mobilization of the rest of the field crew and subcontractors to NE Cape by 7/15/11.

Work Planned for the Upcoming Month

- Address ADEC Comments and Submit Work Plans to the USACE.
- Oversee logistics and implementation of site environmental work at NE Cape.
  - Including sampling at Site 21 and Site 28, surveying the MOC and Site 28, begin PCB- and POL-contaminated soil excavations at Sites 13, 31 and the MOC.

Status of Laboratory Reports

- N/A

Pay Estimates

- Bristol will submit the second pay estimate after the mobilization phase at NE Cape is completed.

Accident/Exposure Hours

- May 2011 Monthly Record of Work-Related Injuries/Illnesses & Exposure Form submitted on 6/6/11 to R. Broyles.
- June 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form submitted on 7/5/11 to R. Broyles.

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2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
July 2011

Submitted on 8/10/11

Summary of Work Performed

Subcontractors

- Global Services completed the camp set-up and as of 7/10/11 is responsible for the cooking, baking, and housecleaning at the NE Cape remote camp.
- The Fairweather medic and Eco-land surveyor team were mobilized out to NE Cape on 7/13/11.
- Northland Services landing craft hauled 46 bulk bags off island on 7/23/11 and 50 bulk bags off island on 7/31/11.

Permits

- Received the Temporary Water Use Authorization TWUP A2011-81 for NE Cape from Merry Johnson of the DNR on 7/13/11.

Mobilization

- Bristol's environmental team, operators, and laborers arrived at NE Cape on 7/13/11 and 7/15/11.
- USACE QAR arrived at NE Cape on 7/16/11.
- Mobilization completed as of 7/16/11.

Miscellaneous Items

- Many shipments of food, supplies, and equipment parts were flown up to NE Cape during the month of July.
- Chuck Croley left the project site at NE Cape on 7/27/11 and returned on 8/2/11.
- Comments received on the 2011 Draft NE Cape Work Plan were incorporated into the Final Work Plan.

USACE and ADEC Correspondence

- Submitted the June 2011 Monthly Status Report to the USACE on 7/6/11.
- M. Welker sent back to the USACE clarifications to three comments on the 2011 NE Cape Work Plan from C. Cossaboom on 7/6/11. Clarification responses were accepted by the USACE on 7/8/11.
- Received email on 7/14/11 from C. Cossaboom on the use of a submersible pump for the groundwater sampling of monitoring wells at the MOC.
- Received email on 7/14/11 from A. Shewman on the use of a sediment sampler for the collection of Site 28 samples.

- Bristol sent C. Cossaboom the Response to Comment forms for the ADEC comments on the 2011 Work Plan on 7/15/11. C. Cossaboom forwarded the response forms to ADEC on 7/18/11 and the ADEC accepted the responses on 7/22/11.
- A Stabilization Analysis on the borrow pit material was submitted to the USACE on 7/29/11 based on T. Lee's comments to the 2011 NE Cape Draft Work Plan and SWPPP.

Work Underway

- Finalize and submit the Final 2011 Work Plan and SWPPP.
- Bristol will continue to implement the field tasks at NE Cape including the excavation at the MOC and Sites 13 and 31. Other tasks underway include the bagging and transporting of the roofing tar, completing the technical memorandum on the collection of the arsenic Site 21 background samples, evaluating the analytical results from the groundwater collected from the 9 monitoring wells at the MOC, and evaluating analytical results from the collection of the Site 8 surface water and soil samples.

Work Planned for the Upcoming Month

- Bristol Project Manager will continue to oversee logistics and implementation of site environmental work at NE Cape with the site superintendent, CQCSM, and QAR.
    - Including sampling at Site 28 and the background samples, finalize the survey at the MOC and Site 28, and continue the PCB- and POL-contaminated soil excavations at Sites 13 and 31, and the MOC.

Status of Laboratory Reports

- TestAmerica laboratory received samples from the MOC groundwater monitoring and from the Site 21 background arsenic study.

Pay Estimates

- On 7/20/11 R. Broyles was sent the complete packet for Invoice #02 from Bristol, it was processed by the USACE on 7/25/11 and Bristol has received payment of $1,077,599.75.
- Bristol will submit the third pay estimate in early August to cover costs of excavating, processing, and transporting the POL and PCB contaminated soil.

Accident/Exposure Hours

- June 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form submitted on 7/5/11 to R. Broyles.
- July 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form submitted on 8/3/11 to R. Broyles.

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2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
August 2011
Submitted on 9/13/11

Summary of Work Performed

Subcontractors

- Northland Services landing craft hauled 184 bulk bags off island between August 6th and September 1st. 440 additional bulk bags were shipped up on Voyage W1108 out of Seattle in early August.
- Global Services continues to operate the camp; Fairweather, LLC continues to supply a full-time medic on site; and Eco-land has a team of surveyors on-site full-time.

Miscellaneous Items

- Many shipments of food, supplies, and equipment parts were flown up to NE Cape during the month of August. Including 340 bulk bags on 8/31/11.
- Chuck Croley left the project site at NE Cape on 7/27/11 and returned on 8/2/11.
- Many Bristol field personnel rotated in and out of the project site in the month of August:
  - L. Kleppin 8/8/11-8/15/11 off-site
  - N. Peacock 8/8/11-8/15/11 on-site
  - J. Clark 8/12/11-8/22/11 on-site
  - R. James 8/17/11-8/29/11 off-site
  - M. Faust 8/15/11-8/29/11 on-site
  - 6 operators and 3 laborers 8/24/11 – 8/29/11 off-site
- Carl Calugan was injured on 8/26/11 and left project site on 8/29/11.

USACE and ADEC Correspondence

- Numerous emails between the Bristol chemist and the USACE chemist occurred in August addressing lab issues, holding time exceedances for the roofing tar-TCLP results, TOC analyses, soil matrix issues from the Site 28 samples and the BTEX holding time exceedances.
- On 8/1/11 R. Broyles requested that Bristol finalize the Work Plans. Final Work Plans were delayed due to ADEC comments. Final Work Plans submitted to the USACE on 8/5/11.
- Submitted the July 2011 Monthly Status Report to the USACE on 8/10/11.
- On 8/17/11 R. Broyles requested that Bristol submit the DQCRs 001-019. DQCRs are required for the duration of the project including the mobilization phase. DQCRs 017-019 have been submitted and the others will be submitted covering the mobilization phase once C. Croley can finalize them.

- On 8/17/11 Bristol received email from USACE stating that based on Site 21 background arsenic sample results that Bristol has been approved to excavate 10 tons of arsenic contaminated soil at Site 21; 14.8 tons was removed and confirmation samples were sent to the laboratory.
- On 8/17/11 C. Cossaboom recommended that Bristol seek a variance for the permanent stabilization.
    - According to the 2011 Alaska Construction General Permit Appendix C Final Stabilization means that:
        - All soil disturbing activities at the site have been completed and either of the two following criteria shall be met:
            - A uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
            - Equivalent non vegetative permanent stabilization measures have been employed (such as the use of riprap, gabions, porous backfill (ADOT&PF Specification 703-2.10), railroad ballast, or subballast, ditch lining (ADOT&PF Specification 610-2.01 with <3% smaller than #200 sieve), geotextiles, or fill material with low erodibility as determined by an engineer familiar with the site and documented in the SWPPP.
        - The Stabilization Analysis on the borrow pit material that was submitted to the USACE meets the non vegetative permanent stabilization requirement. Therefore a variance is not required.
- On 8/19/11 C. Cossaboom requested minor changes need to be made to the Final Work Plan (e.g., project schedule revised to state that the Site 28 Tech Memo is due in October 2011 and a correction on the PCB cleanup level in Table 15-2 of the QAPP). Corrections were made. The Final WP has not yet been reviewed for the MED requirements.
- Communication about the PCB overruns and unit price was discussed with R. Broyles on 8/12/11, 8/19/11 and 8/22/11.
- C. Cossaboom requested that VOC samples be re-sampled in the surface water from Site 9 on 8/23/11. Samples were collected on 8/23/11 and were submitted to the analytical laboratory on 8/30/11. There will be no cost for the reanalysis.
- On 8/26/11 Invoice03 discrepancies discussed with R. Broyles and also discussed the Security Aviation flight scheduled for 9/2/11.
- Bristol submitted POD Form 265-R and Eng 3394 form for the NE Cape accident on 8/31/11.

Work Underway

- Bristol will continue to implement the field tasks at NE Cape including the excavation at the MOC and Sites 13 and 31. Other tasks underway include the bagging, sampling, transporting, and disposal of the bulk bags and, completing the Site 28 technical memorandum.

Work Planned for the Upcoming Month

- Bristol Project Manager will continue to oversee logistics and implementation of site environmental work and preparation for the demobilization phase at NE Cape with the site superintendent, CQCSM, and QAR.
- Starting in mid-September Northland Services plan to have ~10 landing craft loads of bags removed from NE Cape. Each load will be approximately 46-50 bags.
- Over-wintering of equipment, supplies, the camp and setting up barriers around open excavations will be undertaken.

Status of Laboratory Reports

- During the month of August Bristol shipped samples to TestAmerica: Roofing tar waste characterization samples, MOC J1A confirmation samples, Site 8 soil and surface water samples (8/8/11); Site 28 samples shipped on 8/16-8/18/11; and on 8/29/11 Site 9 VOC surface water samples, MOC water treatment samples, and confirmation samples from MOC A1 area.
- Bristol received sample results from TestAmerica on 8/5/11 for the MOC Groundwater monitoring samples, on 8/11/11 for the Site 8 surface water and soil samples, and the roofing tar waste characterization, and on 8/15/11 for the confirmation samples from the MOC J1A excavation.

Pay Estimates

- Bristol submitted the POA Form 15 for Invoice03 on 8/9/11 and the complete Invoice03 packet was submitted on 8/12/11.

Accident/Exposure Hours

- July 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form submitted on 8/3/11 to R. Broyles.

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2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007
Monthly Status Report
September 2011
Submitted on 10/13/11

Summary of Work Performed

Subcontractors

- Northland Services landing craft hauled 38 bulk bags off island on September 1st and 32 bulk bags on September 28 for a total of 70 bulk bags in the month of September. On September 30th they hauled off the hazardous waste (3 containers of metal; 2 containers of wood, 1 container of miscellaneous material, 1 container of asbestos, 2 arsenic bulk bags, 2 bulk bags of leaded ash and soil, and 14 bulk bags of PCB soil (>50 ppm)).
- Global Services continued to operate the camp and on September 2nd Kurt Winkler Global President visited the project site. All Global personnel left the project site on October 13, 2011.
- Fairweather, LLC continued to supply a full-time medic on site until September 23rd when he left the project site.
- Eco-land had a team of surveyors on-site full-time until September 26th. Correspondence between Bristol and Eco-land occurred throughout the month of September discussing the survey requirements for the Site 28 task.
- TestAmerica laboratory issues were discussed with the Bristol chemist, USACE chemist and the laboratory project manager throughout the month over the large number of samples, soil/sediment matrix issues, the turn-around-time for the analyses, and the holding time issues for the Site 28 samples.
- Waste Management provided Bristol with the non-hazardous and hazardous manifests and took possession of 232 bulk bags at the Port of Seattle from Northland Services and transported them to their landfill from September 19 - 27, 2011.
- Security Aviation Flights: 3 round-trip charter flights from Anchorage to Northeast Cape occurred on 9/2/11, 9/12/11, and 9/23/11.

Miscellaneous Items

- Many shipments of food, supplies, and equipment parts were flown up to NE Cape during the month of September, including 200 new bulk bags from PacTec.
- Many Bristol field personnel and subcontractors rotated in and also permanently left the project site in the month of September:
  - D. Winslow, operator arrived on site on 9/7/11.
  - R. Black, field office assistant returned on 9/9/11. His replacement S. Lovell left the project site on this date.
  - E. Conway, M. Toolie, J. Adkins, M. Gallegos, and D. Rhode all permanently left on 9/16/11.

- M. Hannah, T. Ibarguen, a surveyor, and medic left on 9/23/11.
- L. Kleppin, a surveyor, and E. Toolie left on 9/26/11.
-

USACE and ADEC Correspondence

- On 9/21/11 R. Broyles requested a meeting with Bristol to discuss status of project, demobilization plans, plans for next spring, an MIS task at Cargo Beach requested by ADEC, Site 21, final excavation plans with bulk bags as barriers and liners at Sites 13 and 31, backfilling of all POL sites, and number of bags that will be left on site over winter. It was reiterated that the Site 28 tech memo is due in October, and that Bristol needed to provide an explanation of the PCB conversion rate to POL soil costs. R. Broyles, C. Cossaboom and J. Craner from the USACE and S. Johnson, C. Croley, R. James and M. Welker from Bristol participated in the meeting.
- Submitted the August 2011 Monthly Status Report to the USACE on 9/13/11.
- On 9/19/11 Bristol's contract was modified; PMOD 03 was approved for an additional 2,000 tons of POL contaminated soil which increased the contract by $1,525,924 to $19,180,360.22.
- Invoice04 was approved by the USACE COR and received on 9/19/11 for $2,045,124.13.

Work Underway

- In October Bristol started the demobilization phase and had all personnel off island by 10/13/11. The camp and equipment were winterized and stored on island at the south end of the runway and at the MOC. Eleven Northland landing crafts removed all the bulk bags from the beach in October and a total of 700 non-hazardous bulk bags were transported off island in 2011.

Work Planned for the Upcoming Month

- Bristol will work to complete the Site 28 Tech Memorandum by the end of the month and evaluate all the field and analytical data collected in 2011 for the HTRW Final Report.

Status of Laboratory Reports

- During the month of August Bristol shipped samples to TestAmerica. Over 3,000 samples have been analyzed by laboratories in Tacoma, WA and Denver, Co during the 2011 field season. Laboratory Reports are being reviewed by the Bristol chemist and any errors that are detected are being corrected by the laboratories.

Pay Estimates

- On September 1, 2011 Bristol submitted the POA Form 15 for Invoice04 and it was approved and received on 9/19/11.

Accident/Exposure Hours

- The September 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form was submitted on 10/4/11 to R. Broyles.

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2011 Northeast Cape HTRW Remedial Actions
Contract: W911KB-06-D-0007 Task Order 0007
Monthly Status Report
October 2011

Submitted on 11/3/11

Summary of Work Performed

Subcontractors

- Eleven Northland Services landing craft hauled ~388 bulk bags off island from October 2nd through October 9th.
- Global Services continued to operate the camp and their demobilization crew arrived on October 3rd and all Global personnel left the project site on October 13, 2011.
- Eco-land provided Bristol with the final Site 28 survey maps required for the Site 28 Technical Memorandum and continues to work on the other survey requirements for the 2011 HTRW Final Report.
- The final laboratory reports from TestAmerica were submitted to Bristol for 20 sample delivery groups. A few outstanding issues were discussed with the Bristol chemist and the laboratory project manager throughout the month.
- Discussed the Chemical Data Verification Report (CDVR) with AECOM.
- Bering Air provided 6 charter flights between Nome and NE Cape or to Savoonga during the demobilization phase.

Miscellaneous Items

- Several freight shipments of supplies and equipment parts were organized and flown to Anchorage on NAC or Alaska Air Cargo during the demobilization phase.
- All remaining Bristol field personnel and subcontractors permanently left the project site by October 13, 2011:
  - E. Barnhill, R. James, D. Winslow, J. Willis, C. Kava, M. Kingeekuk departed on 10/3/11.
  - R. Black, G. Mack, and A. Dennis departed on 10/10/11.
  - The Bristol and Global demobilization crew departed on 10/13/11.

USACE and ADEC Correspondence

- Bristol submitted the September 2011 Exposure Hour Form to R. Broyles on 10/4/11.
- On 10/7/11 Bristol sent C. Cossaboom the NOT for NE Cape Sites 7 and 9.
- Bristol submitted the September Monthly Status Report on 10/13/11.
- Bristol received correspondence on the RAB Meeting date (11/30/11) from C. Cossaboom on 10/20/11.
- Bristol submitted the NE Cape Site 28 Technical Memorandum on 10/28/11.

Work Underway

- In November Bristol will continue to work on drafting the 2011 Final HTRW Report, evaluate laboratory results, and track the transport and disposal of over 450 non-hazardous bulk bags and 16 hazardous bulk bags.

Work Planned for the Upcoming Month

- Bristol will continue to draft the 2011 Final HTRW Report and prepare and submit a Firm Fixed Price proposal for the Scope of Work Modification by November 15, 2011.

Status of Laboratory Reports

- All laboratory reports have been received and are being reviewed by the Bristol chemist. Bristol is working on the ADEC checklists and with AECOM on the CDVR.

Pay Estimates

- Bristol submitted the POA Form 15 for Invoice 05 to USACE on 10/18/11. It was approved on 11/3/11.

Accident/Exposure Hours

- The October 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form was submitted on 11/3//11 to R. Broyles.

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Contract: W911KB-06-D-0007 Task Order 0007
Monthly Status Report
November 2011

Submitted on 12/12/11

Summary of Work Performed

Subcontractors

- Worked with Northland Services and Waste Management on the transfer of ~750 bulk bags at the Port of Seattle during the week of November 7th for delivery to the disposal facility in Oregon.
  - Bristol revised the waste profile for the roofing tar with Waste Management on 11/2/11.
  - Bristol worked with Bloch Steel, Waste Management, and Northland Services to deal with the disposal of the concrete and scrap steel in 3 containers.
  - Bristol is tracking the bulk bags on the Northland and Waste Management invoices. And tracking the certificates of disposal, signed manifests, and weight tickets received from Waste Management.
- Finalized the work authorization for the Chemical Data Verification Report (CDVR) with AECOM and requested an Eqapp from Test America so that AECOM could do an electronic review of the laboratory data.
- Received all the revised final laboratory data packages from Test America in November.
- Received final deliverables from Ecoland, LLC on the survey data collected in 2011 at NE Cape.

USACE and ADEC Correspondence

- Bristol received questions on the POA Form 15 for Invoice 05 on 11/1/11 from J. Craner. Bristol answered the questions and was approved for payment on 11/3/11. Bristol received payment on 11/9/11 for $4,955,753.91.
- Bristol received a request for proposal on Contract Mod #000704 on 11/1/11. Bristol submitted the FFP proposal on 11/17/11.
  - Bristol submitted the 2011 NE Cape Work Plan addendum letters on 11/28/11 to address the Site 9 surface water samples collected in 2011 and the PCB concrete wipe sampling procedure required in the Contract Mod 00704.
- Bristol submitted the October 2011 Exposure Hour Form to R. Broyles on 11/3/11.
- R. Broyles sent an email to Bristol about adjustment of the serial letter numbering sequence on 11/3/11.
- Bristol sent an email on 11/4/11 to R. Broyles about the fact that Option 4.6.5 for 10 tons of additional roofing tar has yet to be exercised after receiving the RFP for the

Contract Mod 000704. R. Broyles stated that they will exercise this option with the upcoming Contract Mod 000704.

- Bristol submitted the October Monthly Status Report on 11/3/11.
- Bristol received the NOI from the State of Alaska for continuing coverage under the 2011 CGP.
- The Bristol chemist received a phone call from T. Lee to discuss the sample IDs and LOC IDs for the composites on 11/9/11.
- Bristol submitted the PowerPoint presentation to C. Cossaboom for the 2011 RAB meeting on 11/22/11. Bristol received an email from C. Cossaboom about the Bristol PowerPoint presentation and was asked to include all local hires in the presentation and to keep the presentation to 45 minutes.
    - Bristol Project Manager, M. Welker, attended the RAB Meeting in Savoonga on 11/30/11.

Work Underway

- In December Bristol will submit the Response to Comment forms on the Site 28 Technical Memorandum.
- Bristol will continue to work on drafting the 2011 Final HTRW Report, evaluate laboratory results, and track the transport and disposal of ~750 non-hazardous bulk bags and 16 hazardous bulk bags.
- Bristol will submit a price proposal for additional work at NE Cape for the 2012-2013 field season on 12/15/11.

Work Planned for the Upcoming Month

- Bristol will revise the Site 28 Technical Memorandum after our response to comment forms are approved by the ADEC and USACE.
- Bristol will continue to finalize the Draft 2011 Final HTRW Report.

Status of Laboratory Reports

- All final laboratory reports have been received and are being reviewed by AECOM for the CDVR.

Pay Estimates

- Bristol submitted the POA Form 15 for Invoice 05 to USACE on 10/18/11. It was approved on 11/3/11 and paid on 11/9/11.

Accident/Exposure Hours

- The October 2011 Monthly Record of Work–Related Injuries/Illnesses & Exposure Form was submitted on 11/3/11 to R. Broyles.

APPENDIX E

Photograph Log

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
1	July 16, 2011	MOC	Bulk bag loading at eastern tank footprint in MOC	Southeast	Russell James
2	July 17, 2011	MOC	Bag loading and marking in MOC tank footprint area.	Northeast	Russell James
3	July 18, 2011	MOC	Excavating eastern tank footprint at the MOC.	Northeast	Eric Barnhill
4	July 18, 2011	MOC	Building pad 98 where bulk bags were stored over winter, with rock screener parked on it.	North	Russell James
5	July 19, 2011	MOC	The bulk bag staging area at the MOC	South	Russell James
6	July 19, 2011	MOC	Prepping the future stockpile area.	North	Russell James
7	July 20, 2011	MOC	Initial POL stockpile	West	Chuck Croley
8	July 20, 2011	MOC	Excavation at J1A plume	Northwest	Russell James
9	July 21, 2011	MOC	Excavation of contaminated material 2'-4' bgs at J1A	North	Russell James
10	July 21, 2011	MOC	Sampling bulk bags at the J1A excavation	South	Russell James
11	July 21, 2011	MOC	The J1A excavation area	Northeast	Eric Barnhill

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
12	July 24, 2011	MOC	The J1A excavation with boom	Northeast	Russell James
13	July 25, 2011	MOC	J1A excavation with silt fence and dump truck for transporting clean overburden	North	Russell James
14	July 28, 2011	MOC	J1A excavation at the MOC	Northwest	Russell James
15	August 3, 2011	MOC	Removing soil from two feet below water at J1A	Northwest	Russell James
16	August 5, 2011	MOC	Excavation of POL contaminated soil at A1	North	Russell James
17	August 6, 2011	MOC	Buried debris and underground piping exposed at the southern extent of A1 excavation	Southwest	Russell James
18	August 9, 2011	MOC	Mobile lab samples being collected at the A1 excavation	Northwest	Russell James
19	August 9, 2011	MOC	Breaking up concrete at the MOC	South	Russell James
20	August 15, 2011	MOC	An oil-containing drum uncovered in the southeast corner of the J1A excavation	Southeast	Russell James

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
21	August 19, 2911	MOC	Northwest sidewall of A1 showing newly excavated area	Northwest	Russell James
22	August 20, 2011	MOC	Groundwater flowing into deepened A1 excavation	North	Russell James
23	August 25, 2011	MOC	Lined sumps with filtered water from dewatering area at the MOC	Northwest	Russell James
24	September 3, 2011	MOC	Excavating POL hot spots at the A1 plume	Southwest	Russell James
25	September 14, 2011	MOC	Backfilling the J1A excavation	West	Russell James
26	July 19, 2011	Site 13	Baseline sampling of the future stockpile location	South	Eric Barnhill
27	July 20, 2011	Site 13	Removing clean overburden from site 13	South	Russell James
28	August 22, 2011	Site 13	Bulk bag preparation at site 13	Northwest	Russell James
29	July 24, 2011	Site 13	Discrete sampling from a grid with Eric Barnhill of BERS	North	Russell James
30	July 26, 2011	Site 13	Site 13 excavations with sampling grid	South	Russell James
31	July 26, 2011	Site 13	Setting up load frames for bulk bags	North	Russell James

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
32	July 27, 2011	Site 13	A concrete slab and wood frame in the bottom of site 13 excavation	West	Eric Barnhill
33	August 2, 2011	Site 13	Setting up a sampling grid at site 13	Southeast	Russell James
34	August 10, 2011	Site 13	Site 13 excavation	South	Russell James
35	August 22, 2011	Site 13	Collecting samples from bulk bags from site 13	Northwest	Russell James
36	September 11, 2011	Site 13	Utility corridor, pipe and wires buried in southwestern section of excavation.	Southwest	Eric Barnhill
37	September 11, 2011	Site 13	Concrete removal, material to be used as backfill at A1 excavation.	North	Eric Barnhill
38	September 24, 2011	Site 13	Liner installations at site 13.	South	Russell James
39	September 26, 2011	Site 13	Site 13 excavation during bag-armoring operations.	Southwest	Russell James
40	July 20, 2011	Site 31	Sample locations for future stockpile area	North	Eric Barnhill
41	July 21, 2011	Site 31	Exposing the site 31 excavation	Southwest	Russell James

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
42	July 23, 2011	Site 31	Excavation of site 31	North	Russell James
43	July 25, 2011	Site 31	Site 31 excavation area and sampling grid	North	Eric Barnhill
44	July 29, 2011	Site 31	Water pooling behind berm at site 31	North	Russell James
45	August 7, 2011	Site31	Sampling grid for possible stockpile location at site 31	North	Russell James
46	August 18, 2011	Site 31	Excavating and bulk bagging PCB-contaminated soil	South	Russell James
47	September 16, 2011	Site 31	Concrete wipe sample locations 16 and 17, marked with orange marking paint	East	Russell James
48	September 18, 2011	Site 31	Sidewall sampling with excavator and sampling attachment	Southeast	Russell James
49	September 25, 2011	Site 31	Placing liner in the site 31 excavation	Northeast	Russell James
50	September 26,2011	Site 31	Site 31 excavation rimmed with bulk bags	North	Russell James
51	September 31, 2011	Roofing Tar Area	Removal area and resulting stockpile	Southeast	Eric Barnhill

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
52	July 18, 2011	Roofing Tar Area	Roofing tar stockpile with Lyndsey Kleppin of BERS in the foreground	North	Russell James
53	July 18, 2011	Roofing Tar Area	Roofing tar stockpile	West	Russell James
54	August 7, 2011	Roofing tar area	Confirmation sampling at the tar removal area	August 7, 2011	Russell James
55	July 17, 2011	Site 28	Site 28 background location	North	Russell James
56	August 13, 2011	Site 28	Transect sample locations at site 28	South	Russell James
57	August 14, 2011	Site 28	Sampling at site 28 with Julie Clark of BERS	South	Russell James
58	August 18, 2011	Site 28	Soil sampling with Charles Kava and Julie Clark	Southeast	Russell James
59	July 22, 2011	Site 21	The background area for site 21	South	Eric Barnhill
60	July 22, 2011	Site 21	Site 21 background sample location	South	Eric Barnhill
61	July 22, 2011	Site 21	Example of soil at a background sample location	West	Russell James
62	July 22, 2011	Site 21	Background soil sample	N/A	Russell James

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
63	August 21, 2011	Site 21	Site 21 after excavation and confirmation sampling	South	Russell James
64	July 16, 2011	MOC Wells	Monitoring well sampling	South	Russell James
65	July 15, 2011	Fuel Containment Area	Fuel containment area	South	Russell James
66	July 18, 2011	N/A	Eco-Land, LLC surveying the NE Cape site	West	Russell James
67	July 23, 2011	Site 8	Surface water collection at site 8	South	Chuck Croley
68	July 31, 2011	Cargo Beach	Bulk bags being loaded onto flats at cargo Beach	West	Russell James
69	June 28, 2011	Cargo Beach	Landing craft preparing to land at Cargo Beach	North	Chuck Croley
70	October 7, 2011	Cargo Beach	Loading a Northland barge with bulk bags at Cargo Beach	South	Chuck Croley
71	September 28, 2011	Cargo Beach	Loading/unloading the landing craft on Cargo Beach	Northwest	Chuck Croley
72	July 30, 2011	Site 13	Metal debris was machine and hand-picked during site work	North	Chuck Croley
73	August 11, 2011	Pad 98	Screen plant operations at Pad 98	West	Russell James

PHOTOGRAPH LOG
NORTHEAST CAPE, 2011

PHOTO	DATE	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
74	August 27, 2011	MOC	Chuck Croley of Bristol gives members of Kukulget Corporation a tour of the site	South	Matt Faust
75	August 28, 2011	Site 9	Collecting surface water samples from drainage between site 9 and the Suki R.	North	Russell James
76	July 3, 2011	Cargo Beach Road	Road re-grading and repair	North	Chuck Croley
77	September 28, 2011	Cargo Beach	Nunaniq landing craft unloading flats to load bulk bags	East	Chuck Croley
78	October 10, 2011	MOC	The majority of the equipment parked for the winter	South	Chuck Croley
79	October 10, 2011	Cargo beach	Empty Northland flats are all that is left on Cargo Beach for the winter	East	Chuck Croley
80	October 12, 2011	Shop Pad	Containers and ISO tanks secured for the winter on the shop pad	Southwest	Chuck Croley
81	October 12, 2011	Camp	Demobilization of camp	North	Chuck Croley

Job Site: Main Operation Complex (MOC)

Photograph 1 Bulk bag loading at eastern tank footprint in Main Operations Complex (MOC) — Northeast Cape

July 16, 2011 — Direction: Southeast

Photograph 2 Bag loading and marking in MOC tank footprint area — Northeast Cape

July 17, 2011 — Direction: Northeast

Photograph 3 Excavating eastern tank footprint Northeast Cape
at the MOC
July 18, 2011 Direction: Northeast

Photograph 4 Building pad 98 where bulk bags were Northeast Cape
stored overwinter, with rock screener parked on it
July 18, 2011 Direction: North

Photograph 5 The bulk bag staging area at the MOC Northeast Cape
July 19, 2011 Direction: South

Photograph 6 Prepping the future Petroleum, oil, and lubricants (POL) stockpile area Northeast Cape
July 19, 2011 Direction: North

Photograph 7 Initial POL stockpile Northeast Cape
July 20, 2011 Direction: West

Photograph 8 Excavation at J1A plume Northeast Cape
July 20, 2011 Direction: Northwest

Photograph 9 Excavation of contaminated material 2-4 feet below ground surface (bgs) at J1A
Northeast Cape
July 21, 2011
Direction: North

Photograph 10 Sampling bulk bags at the J1A excavation
Northeast Cape
July 21, 2011
Direction: South

Photograph 11 The J1A excavation area Northeast Cape
July 21, 2011 Direction: Northeast

Photograph 12 The J1A excavation with boom Northeast Cape
July 24, 2011 Direction: Northeast

Photograph 13 J1A excavation with silt fence and dump truck for transporting clean overburden Northeast Cape
July 25, 2011 Direction: North

Photograph 14 J1A excavation at the MOC Northeast Cape
July 28, 2011 Direction: Northwest

Photograph 15 Removing soil from 2 feet below water at J1A Northeast Cape
August 3, 2011 Direction: Northwest

Photograph 16 Excavation of POL-contaminated soil at A1 Northeast Cape
August 5, 2011 Direction: North

Photograph 17 Buried debris and underground piping exposed at southern extent of A1 excavation
Northeast Cape
August 6, 2011
Direction: Southwest

Photograph 18 Mobile lab samples being collected at the A1 excavation
Northeast Cape
August 9, 2011
Direction: Northwest

Photograph 19   Breaking up concrete at the MOC   Northeast Cape
August 9, 2011   Direction: South

Photograph 20   An oil-containing drum uncovered   Northeast Cape
In the southeast corner of the J1A excavation
August 15, 2011   Direction: Southeast

Photograph 21 Northwest sidewall of A1 showing newly excavated area Northeast Cape
August 19, 2011 Direction: Northwest

Photograph 22 Groundwater flowing into deepened A1 excavation Northeast Cape
August 20, 2011 Direction: North

Photograph 23 Lined sumps with filtered water from dewatering area at the MOC Northeast Cape
August 25, 2011 Direction: Northwest

Photograph 24 Excavating POL hot spots at the A1 plume Northeast Cape
September 3, 2011 Direction: Southwest

Photograph 25 Backfilling the J1A excavation Northeast Cape
September 14, 2011 Direction: West

Job Site: 13 Heat and Power

Photograph 26 Baseline sampling of the future stockpile location Northeast Cape
July 19, 2011 Direction: South

Photograph 27 Removing clean overburden from Site 13 Northeast Cape
July 20, 2011 Direction: South

Photograph 28 Bulk bag preparation at Site 13 Northeast Cape
August 22, 2011 Direction: Northwest

Photograph 29 Eric Barnhill of Bristol performs discrete sampling from a grid Northeast Cape
July 24, 2011 Direction: N/A

Photograph 30 Site 13 excavations with sampling grid Northeast Cape
July 26, 2011 Direction: South

Photograph 31 Setting up load frames for bulk bags Northeast Cape
July 26, 2011 Direction: North

Photograph 32 A concrete slab and wood frame Northeast Cape
in the bottom of Site 13 excavation
July 27 2011 Direction: West

Photograph 33 Setting up a sampling grid at Site 13 Northeast Cape
August 2, 2011 Direction: Southeast

Photograph 34 Site 13 excavation Northeast Cape
August 10, 2011 Direction: South

Photograph 35 Collecting samples from bulk bags from Site 13 Northeast Cape
August 22, 2011 Direction: Northwest

Photograph 36 Utility corridor, pipe and wires buried in southwestern section of excavation at Site 13 Northeast Cape
September 11, 2011 Direction: Southwest

Photograph 37 Concrete removal, material to be used as backfill at A1 excavation Northeast Cape
September 11, 2011 Direction: North

Photograph 38 Liner installations at Site 13 Northeast Cape
September 24, 2011 Direction: South

Photograph 39 Site 13 excavation during bag-armoring operations
September 26, 2011

Northeast Cape
Direction: Southwest

Job Site: 31 White Alice Communication Station

Photograph 40 Sample locations for future stockpile area
July 20, 2011

Northeast Cape
Direction: North

Photograph 41 Exposing the Site 31 excavation Northeast Cape
July 21, 2011 Direction: Southwest

Photograph 42 Excavation of Site 31 Northeast Cape
July 23, 2011 Direction: North

Photograph 43 Site 31 excavation area and sampling grid Northeast Cape
July 25, 2011 Direction: North

Photograph 44 Water pooling behind berm at Site 31 Northeast Cape
July 29, 2011 Direction: North

Photograph 45 Sampling grid for possible stockpile location at Site 31 — Northeast Cape
August 7, 2011 — Direction: North

Photograph 46 Excavating and bulk bagging polychlorinated biphenyls- (PCB-) contaminated soil — Northeast Cape
August 18, 2011 — Direction: South

Photograph 47 Concrete wipe-sample locations 16 and 17 marked with orange marking paint — Northeast Cape
September 16, 2011 — Direction: East

Photograph 48 Sidewall sampling with excavator and sampling attachment — Northeast Cape
September 18, 2011 — Direction: Southeast

Photograph 49 Placing liner in the Site 31 excavation Northeast Cape
September 25, 2011 Direction: Northeast

Photograph 50 Site 31 excavation rimmed with bulk bags Northeast Cape
September 26, 2011 Direction: North

Job Site: Roofing Tar Area

Photograph 51 Removal area and resulting stockpile Northeast Cape
July 31, 2011 Direction: Southeast

Photograph 52 Roofing tar stockpile with Northeast Cape
Lyndsey Kleppin of Bristol in the foreground
July 18, 2011 Direction: North

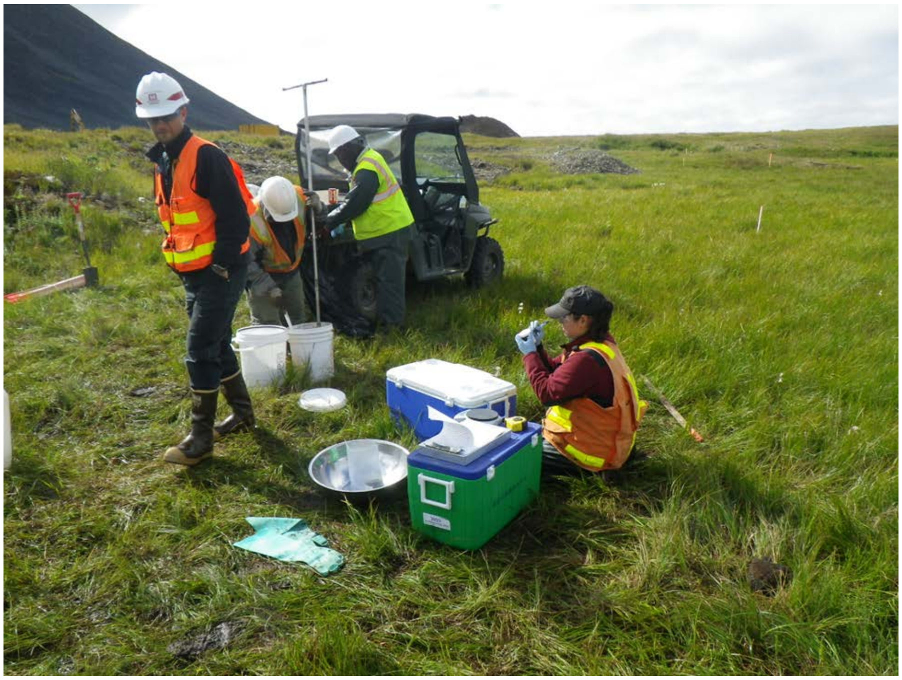
Photograph 53 Roofing tar stockpile Northeast Cape
July 18, 2011 Direction: West

Photograph 54 Confirmation sampling at the Tar Removal Area Northeast Cape
August 7, 2011 Direction: Southwest

Job Site: 28

Photograph 55 Site 28 background location Northeast Cape
July 17, 2011 Direction: North

Photograph 56 Transect sample locations Northeast Cape
at Site 28
August 13, 2011 Direction: South



Photograph 57 Sampling at Site 28 with Julie Clark of Bristol
Northeast Cape
August 14, 2011
Direction: South

Photograph 58 Soil sampling with Charles Kava and Julie Clark
Northeast Cape
August 18, 2011
Direction: Southeast

Job Site: 21

Photograph 59 The background area for Site 21 Northeast Cape
July 22, 2011 Direction: South

Photograph 60 Northeast Cape
Site 21 background sample location
July 22, 2011 Direction: South

Photograph 61 Example of soil at a background sample location | Northeast Cape
July 22, 2011 | Direction: N/A

Photograph 62 Background soil sample | Northeast Cape
July 22, 2011 | Direction: N/A

Photograph 63 Site 21 after excavation and confirmation sampling Northeast Cape
August 21, 2011 Direction: South

Job Site: Miscellaneous

Photograph 64 Monitoring well sampling Northeast Cape
July 16, 2011 Direction: South

Photograph 65 Fuel containment area Northeast Cape
July 15, 2011 Direction: South

Photograph 66 ECO-Land, LLC, surveying the NE Cape Site Northeast Cape
July 18, 2011 Direction: West

Photograph 67 Surface water sample collection at Site 8 Northeast Cape
July 23, 2011 Direction: South

Photograph 68 Bulk bags being loaded onto flats at Cargo Beach Northeast Cape
July 31, 2011 Direction: West

Photograph 69 Landing craft preparing to land at Cargo Beach. Northeast Cape
June 28, 2011 Direction: North

Photograph 70 Loading a Northland barge with bulk bags at Cargo Beach Northeast Cape
October 7, 2011 Direction: South

Photograph 71 Loading/unloading the landing craft on Cargo Beach. Northeast Cape
September 28, 2011. Direction: Northwest

Photograph 72 Metal debris was machine and hand-picked during site work Northeast Cape
July 30, 2011 Direction: North

Photograph 73 Screen plant operations at Pad 98 Northeast Cape
August 11, 2011 Direction: West

Photograph 74 Chuck Croley of Bristol gives members of Kukulget Corporation a tour of the site Northeast Cape
August 27, 2011 Direction: South

Photograph 75 Collecting surface water samples from drainage between Site 9 and the Suqitughneq River Northeast Cape
August 28, 2011 Direction: North

Photograph 76 Road regrading and repair Northeast Cape
July 3, 2011 Direction: North

Photograph 77 Nunaniq landing craft unloading flats to load bulk bags — Northeast Cape
September 28, 2011 — Direction: East

Photograph 78 The majority of the equipment parked for the winter — Northeast Cape
October 10, 2011 — Direction: South

Photograph 79 Empty Northland flats are all that is left on Cargo Beach for the winter
Northeast Cape
October 10, 2011
Direction: East

Photograph 80 Containers and ISO tanks secured for the winter on the shop pad
Northeast Cape
October 12, 2011
Direction: Southwest

Photograph 81   Demobilization of the camp   Northeast Cape
October 12, 2011   Direction: North

APPENDIX F

Waste Profiles

WM WASTE MANAGEMENT

Profile Addendum:
RECERTIFICATION OF GENERATOR'S WASTE PROFILE SHEET

F. Additional Waste Stream Information

Profile #: OR304360 Expiration/renewal Date: ________

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District
2. Address: St. Lawrence NEC Facility-Wide, NE Cape, St. Lawrence Island, Savoonga, Alaska, 99769
3. Technical Contact: CAREY COSSABOOM
4. Telephone: (907) 753-2689 Fax #: (907) 384-7441

B. BILLING INFORMATION - Optional (Mail WM Invoices To:)

1. Company Name: Bristol Environmental Remediation Services, LLC
2. Address: 111 W. 16th Avenue, Third Floor, Anchorage, Alaska, 99501
3. Contact: Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist
4. Telephone: (907) 563-013 P.O. Box: ________
5. Special Billing Requirements: ________

C. RECERTIFICATION INFORMATION

1. Waste Name: Arsenic Contaminated Soil
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
   We will submit new analytical once we get into the field and prior to shipment.
3. Have you changed the raw materials used in the waste generating process or the waste generating process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain true and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) TYLER ELLINGBOE Title: PROJECT MANAGER

Signature: Tyler G. Ellingboe Date: JUNE 27, 2011

WM Approval: ________ Date: ________

CONTAMINATED SOILS

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

ARL-OR306188

Generator Name: US ARMY CORP OF ENGINEERS Manifest Doc. No.: 004376108FLE

Profile Number: OR306188 SOIL State Manifest No: ________

1. Is this waste a non-wastewater? (See 40 CFR 268.2) Check one: Nonwastewater X Wastewater _

2. This contaminated soil does not contain listed hazardous waste and does contain a characteristic of hazardous waste and <is subject to/complies with> the soil treatment standards as provided by 40 CFR 268.49(c) or the Universal Treatment Standards.

3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent soil must be listed and attached by the generator. If D001-D043 and/or listed waste, requires treatment of any applicable characteristics and meets 268.48 standards, then the underlying constituent(s) in the waste must be listed and attatched.

REF #	4. US EPA HAZARDOUS WASTE CODE(S)	5. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE — DESCRIPTION	NONE	6. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
1	D004		X	D
2				
3				
4				

To identify F039, D001-D043, or soil underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (CWM-2004) and check here: _
If no UHCs are present in the waste upon its initial generation check here: X
To list additional USEPA waste code(s) and subcategorie(s), use the supplemental sheet provided (CWM-2005-D) and check here: _
If treater will test for all Spent Solvents and UHCs, check here:
Disposal facility monitors for all UHCs check here _
If waste will be managed in a system regulated under the CWA, or a Class 1 injection well under the SDWA check here

HOW MUST THE WASTE BE MANAGED? In column 6 above, enter the letter (A.1, B.5, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter A.1, B.5, D, or E, you are making the appropriate certification as provided below. States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.

A.1 RESTRICTED SOIL REQUIRES TREATMENT (Circle)
"I certify under penalty of law that I personally have examined this contaminated soil and it <does/does not> contain listed hazardous waste and <does/does not> exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 40 CFR 268.49(c)."

B.5 RESTRICTED SOIL TREATED TO ALTERNATE PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

D. RESTRICTED SOIL CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

E. SOIL IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR 268 Part restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature ______________ Title ______________ Date ______________

SOLVENT

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS [2]					
F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s).	Treatment Standard [1]		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s).	Treatment Standard [1]	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters

1
All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.
2
For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of constituents or less than 10 x the standards listed.

SUBCATEGORY REFERENCE

D001:
A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High TOC subcategory.
B. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a)(1) - Greater than or equal to 10% total organic carbon.

CONTAMINATED SOILS

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

ARL-OR306188

Generator Name: US ARMY CORP OF ENGINEERS   Manifest Doc. No.: 004376109FLE

Profile Number: OR306188 SOIL   State Manifest No: ______

1. Is this waste a non-wastewater? (See 40 CFR 268.2) Check one: Nonwastewater X Wastewater _

2. This contaminated soil does not contain listed hazardous waste and does contain a characteristic of hazardous waste and <is subject to/complies with> the soil treatment standards as provided by 40 CFR 268.49(c) or the Universal Treatment Standards.

3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subcategory, or check NONE if the waste code has no subcategory. Spent solvent soil must be listed and attached by the generator. If D001-D043 and/or listed waste, requires treatment of any applicable characteristics and meets 268.48 standards, then the underlying constituent(s) in the waste must be listed and attatched.

REF #	4. US EPA HAZARDOUS WASTE CODE(S)	5. SUBCATEGORY ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE, SIMPLY CHECK NONE		6. HOW MUST THE WASTE BE MANAGED? ENTER LETTER FROM BELOW
		DESCRIPTION	NONE	
1	D004		X	D
2				
3				
4				

To identify F039, D001-D043, or soil underlying hazardous constituent(s), use the "F039/Underlying Hazardous Constituent Form" provided (CWM-2004) and check here: _

If no UHCs are present in the waste upon its initial generation check here: X

To list additional USEPA waste code(s) and subcategorie(s), use the supplemental sheet provided (CWM-2005-D) and check here: _

If treater will test for all Spent Solvents and UHCs, check here: ______

Disposal facility monitors for all UHCs check here _

If waste will be managed in a system regulated under the CWA, or a Class 1 injection well under the SDWA check here ___

HOW MUST THE WASTE BE MANAGED? In column 6 above, enter the letter (A.1, B.5, or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter A.1, B.5, D, or E, you are making the appropriate certification as provided below. States authorized by EPA to manage the LDR program may have regulatory citations different from the 40 CFR citations listed below. Where these regulatory citations differ, your certification will be deemed to refer to those state citations instead of the 40 CFR citations.

A.1 RESTRICTED SOIL REQUIRES TREATMENT (Circle)
"I certify under penalty of law that I personally have examined this contaminated soil and it <does/does not> contain listed hazardous waste and <does/does not> exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 40 CFR 268.49(c)."

B.5 RESTRICTED SOIL TREATED TO ALTERNATE PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

D. RESTRICTED SOIL CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

E. SOIL IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS
This waste is a newly identified waste that is not currently subject to any 40 CFR 268 Part restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature ____________ Title ____________ Date ____________

SOLVENT

If the waste identified on the first page of this form is described by any of the following USEPA hazardous waste codes: F001, F002, F003, F004, F005, and all solvent constituents will not be monitored by the treater, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the previous page of this form. If the waste code F039 describes this waste, then the corresponding list of constituents must be attached. If D001-D043 require treatment to 268.48 standards, then the underlying hazardous constituent(s) must also be attached.

SOLVENT WASTE TREATMENT STANDARDS[2]

F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s).	Treatment Standard[1]		F001 through F005 spent solvent constituents and their associated USEPA hazardous waste code(s).	Treatment Standard[1]	
	Wastewaters	Nonwastewaters		Wastewaters	Nonwastewaters

1 All spent solvent treatment standards are measured through a total waste analysis (TCA), unless otherwise noted. Wastewater units are mg/l, nonwastewater are mg/kg.

2 For contaminated soils using the alternative soil treatment standards, the treatment standards for F001-F005 spent solvents must be a 90% reduction of constituents or less than 10 x the standards listed.

SUBCATEGORY REFERENCE

D001:

A. Ignitable characteristic wastes, except for the 40 CFR 261.21(a)(1) High TOC subcategory.
B. High TOC Ignitable characteristic liquids subcategory based on 40 CFR 261.21(a)(1) - Greater than or equal to 10% total organic carbon.

WM WASTE MANAGEMENT

Profile Addendum:
RECERTIFICATION OF GENERATOR'S WASTE PROFILE SHEET

F. Additional Waste Stream Information

Profile #: 107102OR Expiration/renewal Date: ____

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District

2. Address: St. Lawrence NEC Facility-Wide, NE Cape, St. Lawrence Island, Savoonga, Alaska, 99769

3. Technical Contact: CAREY COSSABOOM

4. Telephone: (907) 753-2689 Fax #: (907) 753-2829

B. BILLING INFORMATION - Optional (Mail WM Invoices To:)

1. Company Name: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES, LLC

2. Address: 111 WEST 16TH AVENUE, THIRD FLOOR, ANCHORAGE, ALASKA, 99501

3. Contact: TYLER ELLINGBOE Title: PROJECT MANAGER

4. Telephone: (907) 563-0013 P.O. Box: ____

5. Special Billing Requirements: ____

C. RECERTIFICATION INFORMATION

1. Waste Name: CONSTRUCTION AND DEMOLITION DEBRIS

2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No

3. Have you changed the raw materials used in the waste generating process or the waste generating process itself? ☐ Yes ☑ No

4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain true and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist

Signature: Tyler G. Ellingboe Date: July 19, 2011

WM Approval: ____ Date: ____

WASTE MANAGEMENT

Profile Amendment Request Form

TYLER ELLINGBOE (BRISTOL) hereby requests an amendment to WMI profile #: 106581OR
(Contact Name)

to include the following:

Amendment Type: ☐ One Time Only Request (Event) ☑ Permanent Addition to Profile (Base)

☐ Additional Analytical/MSDS to be added to profile (see attached)

☑ Volume Increase (specify volume) 40 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify) ____

☑ Constituent(s) to be added and/or modify current range in chemical composition:

Chemicals or constituents to be added/modify	Low	High	Units
CONCRETE	0	20	%

☐ Change current ranges on profile (specify below)

pH Range ____ to ____ Free Liquid Range ____ to ____

☐ Other (specify) ____

GENERATOR CERTIFICATION

By signing this form, the Generator hereby certifies:

The information provided in this document, the referenced Waste Management Generator's Waste Profile Sheet, and all other referenced documents contain true and accurate descriptions of the waste material. All information regarding known or suspected hazards in the possession of the Generator has been disclosed.

Generator/Customer Signature: Tyler S. Ellingboe Date: 12/2/2011

Company Name: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES, LLC

Name (Print): TYLER ELLINGBOE Title: PROJECT MANAGER

FOR WASTE MANAGEMENT USE ONLY

Submitted By: ____ (W.M. Initials) Date: ____ Time: ____

WM Approval: ____ Date: ____

Agency Approval Required: ☐ Yes ☐ No

☐ Profile Extension ☐ Analytical Extension

Original Expiration Date ____ Analytical Due Date ____

Requested Extension ____ Requested Extension ____

New Expiration Date ____ New Analytical Due Date ____

Conditions/Precautions: ____

WM WASTE MANAGEMENT

Re-Certification of Generator's Non-Hazardous Waste Profile Sheet

Profile #: 106581OR New Expiration Date: ______

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District
2. Address: Kanguksham Mountain, 52.25 Miles ESE of Savoonga, Savoonga, Alaska, 99769
3. Technical Contact: Carey Cossaboom Title: Project Manager
4. Telephone: (907) 753-2689 Fax #: (907) 753-2829
5. Email: carey.c.cossaboom@usace.army.

B. BILLING INFORMATION - Optional (Mail WM Invoices To:) ☐ Same as above

1. Company Name: Bristol Environmental Remediation Services, LLC
2. Address: 111 W. 16th Avenue, Third Floor, Anchorage, Alaska, 99501
3. Contact: Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist
4. Telephone: (907) 563-0013 P.O. Box: ______
5. Special Billing Requirements: ______
6. Email: tellingboe@bristol-companies.com

C. RECERTIFICATION INFORMATION

1. Waste Name: Scrap Metal/Wood Rubber
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
3. Have you changed the raw materials used in the waste generating process or the process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain ture and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist

Signature: Tyler S. Ellingboe Date: January 23, 2012

This is an extension of the original WM Decision. All conditions continue to apply.

Acceptable for use in the following states as sanctioned by Waste Management's waste review and approval process. Some waste streams will require the use of a new profile rather than the re-certification form.

AK, AL, AR, CO, DE, FL, GA, HI, IL, IN, KY, LA, MA, MD, ME, MI, MS, NC, NH, NY, OK, OR, SC, TX, VA & WA.

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation Approval Decision: ☐ Approved ☐ Not Approved

☐ Non-hazardous solidification ☐ Other: ______ Waste Approval Expiration Date: ______

☐ Transfer ☐ See attached conditions

Management Facility Precautions, Special Handling Procedures or Limitation on approval: ______

☐ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste Manifest must accompany load

WM Authorization Name / Title: ______ Date: ______

State Authorization (if Required): ______ Date: ______

WASTE MANAGEMENT, INC ....NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST

Columbia Ridge Landfill

18177 Cedar Springs Lane, Arlington Oregon 97812

Profile # 100514AK

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated _____ __________.

EXPIRES: 4/30/2013

GENERATOR: US ARMY CORPS OF ENGINEERS, ALASKA DISTRICT

DESCRIPTION: *TREATED WOOD*	**VOLUME:** *10*
☒SPECIAL WASTE ☐PCS ☐CLEAN-UP MATERIAL	
LOCATION: *SAVOONGA, ALASKA ST. LAWRENCE NEC FACILITY -WIDE, NE CAPE*	**COUNTY:***
CONTACT: *TYLER ELLINGBOE*	**PHONE:** *907-563-0013*
	FAX : *907-563-6713*

BILLING: *Landfill account BRISTOL ENVIRONMENTAL REMEDIATION*	**PO#:** *32110002*	**JOB#:** *N/A*

TYPE OF DISPOSAL/ SPECIAL HANDLING/LOAD TYPE: *BULK, CO-MINGLE, NO FREE LIQUIDS*

****

ALL LOADS MUST BE SCHEDULED 24 HOURS IN ADVANCE.
CONTACT GREG AT 541-454-3220 OR JULIE AT 541-454-3310

APPROVED: KC *KRISTIN CASTNER* DATE: *03/02/12 10:32:33 AM*

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

WM

WASTE MANAGEMENT

WASTE MANAGEMENT

Re-Certification of Generator's Non-Hazardous Waste Profile Sheet

Profile #: 100514AK New Expiration Date:

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District
2. Address: St. Lawrence NEC Facility-Wide, NE Cape, St. Lawrence Island, Savoonga, Alaska, 99769
3. Technical Contact: Carey Cossaboom Title: Project Manager
4. Telephone: (907) 753-2689 Fax #: (907) 384-7441
5. Email: carey.c.cossaboom@usace.army.

B. BILLING INFORMATION - Optional (Mail WM Invoices To:) ☐ Same as above

1. Company Name: Bristol Environmental Remediation Services, LLC
2. Address: 111 W. 16th Avenue, Third Floor, Anchorage, Alaska, 99501
3. Contact: Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist
4. Telephone: (907) 563-0013 P.O. Box:
5. Special Billing Requirements:
6. Email: tellingboe@bristol-companies.com

C. RECERTIFICATION INFORMATION

1. Waste Name: Treated Wood-Weathered
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
3. Have you changed the raw materials used in the waste generating process or the process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain ture and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist

Signature: Tyler G. Ellingboe Date: March 1, 2012

This is an extension of the original WM Decision. All conditions continue to apply.

Acceptable for use in the following states as sanctioned by Waste Management's waste review and approval process. Some waste streams will require the use of a new profile rather than the re-certification form.

AK, AL, AR, CO, DE, FL, GA, HI, IL, IN, KY, LA, MA, MD, ME, MI, MS, NC, NH, NY, OK, OR, SC, TX, VA & WA.

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: ____ ☐ Transfer ☐ See attached conditions

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date:

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

☐ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste Manifest must accompany load

WM Authorization Name / Title: ____ Date: ____

State Authorization (if Required): ____ Date: ____

WASTE MANAGEMENT

Re-Certification of Generator's Non-Hazardous Waste Profile Sheet

Profile #: 100514AK New Expiration Date: ____________

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District
2. Address: St. Lawrence NEC Facility-Wide, NE Cape, St. Lawrence Island, Savoonga, Alaska, 99769
3. Technical Contact: Carey Cossaboom Title: Project Manager
4. Telephone: (907) 753-2689 Fax #: (907) 384-7441
5. Email: carey.c.cossaboom@usace.army.

B. BILLING INFORMATION - Optional (Mail WM Invoices To:) ☐ Same as above

1. Company Name: Bristol Environmental Remediation Services, LLC
2. Address: 111 W. 16th Avenue, Third Floor, Anchorage, Alaska, 99501
3. Contact: Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist
4. Telephone: (907) 563-0013 P.O. Box: ____________
5. Special Billing Requirements: ____________
6. Email: tellingboe@bristol-companies.com

C. RECERTIFICATION INFORMATION

1. Waste Name: Treated Wood-Weathered
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
3. Have you changed the raw materials used in the waste generating process or the process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain ture and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist

Signature: ____________ Date: March 1, 2012

This is an extension of the original WM Decision. All conditions continue to apply.

Acceptable for use in the following states as sanctioned by Waste Management's waste review and approval process. Some waste streams will require the use of a new profile rather than the re-certification form.

AK, AL, AR, CO, DE, FL, GA, HI, IL, IN, KY, LA, MA, MD, ME, MI, MS, NC, NH, NY, OK, OR, SC, TX, VA & WA.

FOR WM USE ONLY

Management Method: ☐ Landfill ☐ Bioremediation ☐ Non-hazardous solidification ☐ Other: ____________ ☐ Transfer ☐ See attached conditions

Approval Decision: ☐ Approved ☐ Not Approved

Waste Approval Expiration Date: ____________

Management Facility Precautions, Special Handling Procedures or Limitation on approval: ____________

☐ Shall not contain free liquid
☐ Shipment must be scheduled into disposal facility
☐ Approval number must accompany each shipment
☐ Waste Manifest must accompany load

WM Authorization Name / Title: ____________ Date: ____________

State Authorization (if Required): ____________ Date: ____________

WASTE MANAGEMENT, INC ....NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST

Columbia Ridge Landfill

18177 Cedar Springs Lane, Arlington Oregon 97812

Profile # 100514AK

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated _____ _________.

EXPIRES: 4/30/2012

GENERATOR: US ARMY CORPS OF ENGINEERS, ALASKA DISTRICT

DESCRIPTION: *TREATED WOOD*	**VOLUME:** *10*
☒SPECIAL WASTE ☐PCS ☐CLEAN-UP MATERIAL	
LOCATION: *SAVOONGA, ALASKA ST. LAWRENCE NEC FACILITY -WIDE, NE CAPE*	**COUNTY:***
CONTACT: *TYLER ELLINGBOE*	**PHONE:** *907-563-0013*
	FAX : *907-563-6713*

BILLING: *Landfill account BRISTOL ENVIRONMENTAL REMEDIATION*	**PO#:** *32110002*	**JOB#:** *N/A*

TYPE OF DISPOSAL/ SPECIAL HANDLING/LOAD TYPE: *BULK, CO-MINGLE, NO FREE LIQUIDS*

****

ALL LOADS MUST BE SCHEDULED 24 HOURS IN ADVANCE.
CONTACT GREG AT 541-454-3220 OR JULIE AT 541-454-3310

APPROVED: KC *KRISTIN CASTNER* DATE: ***03/01/11 3:28:57 PM***

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

WM

WASTE MANAGEMENT

Style F25 LABELMASTER® (800) 621-5808 www.labelmaster.com

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: AK0000228395

2. Page 1 of 2

3. Emergency Response Phone: (800) 424-9300

4. Manifest Tracking Number: 004376108 FLE

5. Generator's Name and Mailing Address:
USACE, AK District, NE Cape
P.O. Box 6898, CEPOA-EN-EE-ER
JBER, AK 99506-6898

Generator's Site Address (if different than mailing address):
USACE, Alaska District
St. Lawrence NEC Facility-Wide, NE Cape
St. Lawrence Island, Savoonga, AK 99769

Generator's Phone: (907) 753-2689

6. Transporter 1 Company Name: Northland Services, Inc. — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: Roadlink — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address: CWMNW, Inc.
17629 Cedar Springs Lane
Arlington, OR 97812-6512
U.S. EPA ID Number: ORD089452353

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ, UN3077, Waste Environmentally Hazardous Substances, Solid, N.O.S. (arsenic), 9, PG III, RQ = 1 lb., ERG #171	001	BA	12460	P	D004		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1) #OR306188 Arsenic contaminated soil; Container Type: 7 cy bag; Bag # 21-01A
Please mail ORIGINAL manifest, scale ticket & CD to: Bristol Environmental Remediation Services, LLC, Attn: Molly Welker, 111 W. 16th Avenue, Third Floor, Anchorage, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: AK0000228395
2. Page 1 of: 2
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 004376109 FLE

5. Generator's Name and Mailing Address:
USACE, AK District, NE Cape
P.O. Box 6898, CEPOA-EN-EE-ER
JBER, AK 99506-6898

Generator's Site Address (if different than mailing address):
USACE, Alaska District
St. Lawrence NEC Facility-Wide, NE Cape
St. Lawrence Island, Savoonga, AK 99769

Generator's Phone: (907) 753-2689

6. Transporter 1 Company Name: Northland Services, Inc. — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: Roadlink — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address: CWMNW, Inc.
17629 Cedar Springs Lane
Arlington, OR 97812-6512
U.S. EPA ID Number: ORD089452353

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3077, Waste Environmentally Hazardous Substances, Solid, N.O.S. (arsenic), 9, PG III RQ = 1 lb., ERG #171	001	BA	17100	P	D004
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306188 Arsenic contaminated soil; Container Type: 7 cy bag; Bag # 21-01B
Please mail ORIGINAL manifest, scale ticket & CD to: Bristol Environmental Remediation Services, LLC, Attn: Molly Welker, 111 W. 16th Avenue, Third Floor, Anchorage, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

CWMI

e print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952639 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address — U.S. EPA ID Number: ORD089452353
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	11,195	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H31-1
PCB Out of Service: Date: 8/2/11 ; Weight: 11195 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Rm Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

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e print or type. (Form designed for use on elite (12-pitch) typewriter.)　　Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number: AK0000228395	2. Page 1 of 2	3. Emergency Response Phone: (800) 424-9300	4. Manifest Tracking Number: 003952640 FLE

5. Generator's Name and Mailing Address:
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Site Address (if different than mailing address):
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

Generator's Phone: (907) 753-2689

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC　　U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK　　U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address:
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512

U.S. EPA ID Number: ORD089452353

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9816	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129:PCB Contaminated Soil 50-500PPM: ERG# 171: (RQ=1Lb) 0.454Kg: Container #: H31-2
PCB Out of Service: Date: 8/17/11 ; Weight: 9816 ; Type: BAG
PLEASE MAIL ORIGINAL MANIFEST SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles　　Signature: Ron Broyles on behalf of DoD　　Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.　　Port of entry/exit:
Transporter signature (for exports only):　　Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name　　Signature　　Month Day Year
Transporter 2 Printed/Typed Name　　Signature　　Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)　　U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator)　　Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name　　Signature　　Month Day Year

CWMI

ase print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952641 FLE

5. Generator's Name and Mailing Address

USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)

USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address — U.S. EPA ID Number: ORD089452353

CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II,(PCB)	001	BA	10097	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H31-3
PCB Out of Service: Date: 8/17/11 ; Weight: 10097 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

NIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952642 FLE

Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
enerator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
acility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

a. M	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9652	K	X002		
	2.							
	3.							
	4.							

4. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-1
PCB Out of Service: Date: 7/28/11 ; Weight: 9652 ; Type: BAG
PLEASE MAIL ORIGINAL MANIFEST SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

enerator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
ansporter signature (for exports only): Date leaving U.S.:

. Transporter Acknowledgment of Receipt of Materials
ansporter 1 Printed/Typed Name — Signature — Month Day Year
ansporter 2 Printed/Typed Name — Signature — Month Day Year

Discrepancy
a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
). Alternate Facility (or Generator) — U.S. EPA ID Number
ility's Phone:
. Signature of Alternate Facility (or Generator) — Month Day Year

Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
ted/Typed Name — Signature — Month Day Year

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Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
AK0000228395	2	(800) 424-9300	003952643 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC
U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK
U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512

U.S. EPA ID Number: ORD089452353

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	8237	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-2
PCB Out of Service: Date: 8/8/11 ; Weight: 8237 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
Ron Broyles	Ron Broyles on behalf of DoD	09	21	11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1					
Transporter 2					

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

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e print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952644 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	8255	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-3
PCB Out of Service: Date: 8/8/11 ; Weight: 8255 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month Day Year: 09 21 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

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print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

NIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number AK0000228395	2. Page 1 of 2	3. Emergency Response Phone (800) 424-9300	4. Manifest Tracking Number 003952645 FLE

Generator's Name and Mailing Address

USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Site Address (if different than mailing address)

USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

Generator's Phone: (907) 753-2689

Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

Designated Facility Name and Site Address

CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512

U.S. EPA ID Number: ORD089452353

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9444	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-4
PCB Out of Service: Date: 8/9/11 ; Weight: 9444 ; Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

CWMI

e print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952646 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9861	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-5
PCB Out of Service: Date: 8/23/11 ; Weight: 9861 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

CWMI

se print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: A K 0 0 0 0 2 2 8 3 9 5
2. Page 1 of: 2
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 003952647 FLE

5. Generator's Name and Mailing Address:
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Site Address (if different than mailing address):
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

Generator's Phone: (907) 753-2689

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC
U.S. EPA ID Number: W A D 9 8 1 7 7 3 0 0 5

7. Transporter 2 Company Name: ROADLINK
U.S. EPA ID Number: W A H 0 0 0 0 1 6 6 8 3

8. Designated Facility Name and Site Address:
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
U.S. EPA ID Number: O R D 0 8 9 4 5 2 3 5 3

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9398	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-6
PCB Out of Service: Date: 8/23/11 ; Weight: 9398 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles
Signature: Ron Broyles on behalf of DoD
Month: 09 Day: 21 Year: 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952648 FLE

. Generator's Name and Mailing Address

USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Site Address (if different than mailing address)

USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

Generator's Phone: (907) 753-2689

. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

. Designated Facility Name and Site Address — U.S. EPA ID Number: ORD089452353

CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512

Facility's Phone: (541) 454-2643

a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9226	K	X002
	2.					
	3.					
	4.					

4. Special Handling Instructions and Additional Information

1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-7
PCB Out of Service: Date: 8/23/11 ; Weight: 9226 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

5. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
Ron Broyles	Ron Broyles on behalf of DoD	09	21	11

6. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

7. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1					
Transporter 2					

8. Discrepancy

8a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

8b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

8c. Signature of Alternate Facility (or Generator) Month Day Year

9. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

0. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

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UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952649 FLE

5. Generator's Name and Mailing Address

USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898

Generator's Site Address (if different than mailing address)

USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

Generator's Phone: (907) 753-2689

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address — U.S. EPA ID Number: ORD089452353

CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512

Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9144	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-8
PCB Out of Service: Date: 9/4/11 ; Weight: 9144 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD-TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
Ron Broyles	Ron Broyles on behalf of DoD	09	21	11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1					
Transporter 2					

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

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UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952650 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	9417	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-9
PCB Out of Service: Date: 9/11/11 ; Weight: 9417 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC, ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

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e print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	AK0000228395	2	(800) 424-9300	003952651 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	8573	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-10
PCB Out of Service: Date: 9/11/11 ; Weight: 8573 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large-quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number: AK0000228395	2. Page 1 of 2	3. Emergency Response Phone: (800) 424-9300	4. Manifest Tracking Number: 003952652 FLE

5. Generator's Name and Mailing Address
USACE, AK DISTRICT, NE CAPE
P.O.BOX 6898, CEPOA-EN-EE-ER
JBER AK 99506-6898
Generator's Phone: (907) 753-2689

Generator's Site Address (if different than mailing address)
USACE, ALASKA DISTRICT
ST. LAWRENCE NEC FACILITY-WIDE, NE CAPE
ST LAWRENCE ISLAND, SAVOONGA, AK. 99769

6. Transporter 1 Company Name: NORTHLAND SERVICES, INC — U.S. EPA ID Number: WAD981773005

7. Transporter 2 Company Name: ROADLINK — U.S. EPA ID Number: WAH000016683

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR. 97812-6512
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,POLYCHLORINATED BIPHENYLS,SOLID,9,II, (PCB)	001	BA	10297	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) #OR306129;PCB Contaminated Soil 50-500PPM; ERG# 171; (RQ=1Lb),0.454Kg; Container #: H13-11
PCB Out of Service: Date: 9/11/11 ; Weight: 10297 ;Type: BAG
PLEASE MAIL ORIGINAL MANIFEST,SCALE TICKET & CD TO: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES LLC,
ATTN: MOLLY WELKER, 111 W 16th AVE, 3RD FLOOR, ANCHORAGE, AK 99501

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ron Broyles — Signature: Ron Broyles on behalf of DoD — Month 09 Day 21 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month Day Year
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

WASTE MANAGEMENT

Profile Addendum:
RECERTIFICATION OF GENERATOR'S WASTE PROFILE SHEET

F. Additional Waste Stream Information

Profile #: OR304352 Expiration/renewal Date:

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District
2. Address: St. Lawrence NEC Facility-Wide, NE Cape, St. Lawrence Island, Savoonga, Alaska, 99769
3. Technical Contact: CAREY COSSABOOM
4. Telephone: (907) 753-2689 Fax #: (907) 384-7441

B. BILLING INFORMATION - Optional (Mail WM Invoices To:)

1. Company Name: Bristol Environmental Remediation Services, LLC
2. Address: 111 W. 16th Avenue, Third Floor, Anchorage, Alaska, 99501
3. Contact: Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist
4. Telephone: (907) 563-013 P.O. Box:
5. Special Billing Requirements:

C. RECERTIFICATION INFORMATION

1. Waste Name: PCB Contaminated Soil 50-500 ppm
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
   We will submit new analytical once we get back into the field and prior to shipment.
3. Have you changed the raw materials used in the waste generating process or the waste generating process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain true and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) TYLER ELLINGBOE Title: PROJECT MANAGER

Signature: Tyler G. Ellingboe Date: JUNE 27, 2011

WM Approval: Date:

WASTE MANAGEMENT

Profile Addendum: RECERTIFICATION OF GENERATOR'S WASTE PROFILE SHEET

F. Additional Waste Stream Information

Profile #: AK00052AK Expiration/renewal Date: JUNE 21, 2011

A. GENERATOR INFORMATON

1. Generator Name: U.S. Army Corps of Engineers, Alaska District
2. Address: St. Lawrence NEC Facility-Wide, NE Cape, St. Lawrence Island, Savoonga, Alaska, 99769
3. Technical Contact: CAREY COSSABOOM
4. Telephone: (907) 753-2689 Fax #: (907) 384-7441

B. BILLING INFORMATION - Optional (Mail WM Invoices To:)

1. Company Name: Bristol Environmental Remediation Services, LLC
2. Address: 111 W. 16th Avenue, Third Floor, Anchorage, Alaska, 99501
3. Contact: Tyler Ellingboe Title: Project Manager/Sr. Waste Specialist
4. Telephone: (907) 563-0013 P.O. Box:
5. Special Billing Requirements:

C. RECERTIFICATION INFORMATION

1. Waste Name: Petroleum Contaminated Soil (Diesel Fuel)
2. Have you obtained any laboratory analysis of this waste within the past year? ☐ Yes ☑ No
   Will submit new analytical once we go back into the field and before shipment.
3. Have you changed the raw materials used in the waste generating process or the waste generating process itself? ☐ Yes ☑ No
4. Is the laboratory analysis and/or other pertinent information previously submitted still representative of the waste as presently generated? ☑ Yes ☐ No

NOTE: IF YOU ANSWERED YES TO QUESTION 2 OR 3 LISTED ABOVE, PLEASE ATTACH APPROPRIATE DOCUMENTATION.

D. RECERTIFICATION STATEMENT.

By signing this form, the generator hereby certifies: The information provided in this document, the attached Waste Management Generator's Waste Profile Sheet, and all other attached documents contain true and accurate descriptions of this waste material. All new information regarding known or suspected hazards in the possession of the generator has been disclosed. The Generator hereby certifies this waste is not a "Hazardous Waste" as defined by the USEPA or Canadian Federal regulation and/or the state/province and this waste does not contain regulated radioactive materials or regulated concentrations of PCB's.

Name: (Print) TYLER ELLINGBOE Title: PROJECT MANAGER

Signature: Tyler G. Ellingboe Date: JUNE 21, 2011

WM Approval: Date:

WASTE MANAGEMENT

Profile Amendment Request

TYLER ELLINGBOE (BRISTOL) hereby requests an amendment to WMI profile #: AK00052AK
(Contact Name)

to include the following:

Amendment Type: ☐ One Time Only Request (Event) ☑ Permanent Addition to Profile (Base)

☐ Additional Analytical/MSDS to be added to profile (see attached)

☑ Volume Increase (specify volume) 20,000 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify) ______

☑ Constituent(s) to be added and/or modify current range in chemical composition:

Chemicals or constituents to be added/modify	Low	High	Units
DIESEL RANGE ORGANICS	0	3	%
POLYCHLORINATED BIPHENYLS	0	<50	mg/kg

☐ Change current ranges on profile (specify below)

pH Range _____ to _____ Free Liquid Range _____ to _____

☑ Other (specify) Will submit new analytical once we get back into the field and prior to first shipment.

GENERATOR CERTIFICATION

By signing this form, the Generator hereby certifies:

The information provided in this document, the referenced Waste Management Generator's Waste Profile Sheet, and all other referenced documents contain true and accurate descriptions of the waste material. All information regarding known or suspected hazards in the possession of the Generator has been disclosed.

Generator/Customer Signature: Tyler S. Ellingboe Date: JULY 5, 2011

Company Name: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES, LLC

Name (Print): TYLER ELLINGBOE Title: PROJECT MANAGER

FOR WASTE MANAGEMENT USE ONLY

Submitted By: ______ (W.M. Initials) Date: ______ Time: ______

WM Approval: ______ Date: ______

Agency Approval Required: ☐ Yes ☐ No

☐ Profile Extension

Original Approval Date ______

Requested Extension ______

New Approval Date ______

☐ Analytical Extension

Analytical Due Date ______

Requested Extension ______

New Analytical Due Date ______

Conditions/Precautions: ______

WASTE MANAGEMENT, INC .... NON HAZARDOUS WASTE DISPOSAL SOLUTIONS FOR THE PACIFIC NORTHWEST

Columbia Ridge Landfill

18177 Cedar Springs Lane, Arlington Oregon 97812

Profile # 100052AK

PERMIT TO DISPOSE OF NON-HAZARDOUS MATERIALS

This permit authorizes disposal of Customer's waste materials in accordance with the Industrial Waste & Disposal Services Agreement dated _____ _________.

EXPIRES: 8/20/12

GENERATOR: US ARMY ENGINEER DISTRICT, AK

DESCRIPTION: *PCS*	**VOLUME:** *150 tons*
☐ SPECIAL WASTE ☒ PCS ☐ CLEAN-UP MATERIAL	
LOCATION: *ST. LAWRENCE ISLAND, SAVOONGA, ALASKA ST. LAWRENCE NEC FACILITY WIDE, NE CAPE*	**COUNTY:***
CONTACT: *TYLER ELLINGBOE*	**PHONE:** *907-563-0013*
	FAX : *907-563-6713*

BILLING: *Landfill account BRISTOL ENVIRONMENTAL REMEDIATION SERVICES*	**PO#:** *N/A*	**JOB#:** *N/A*

TYPE OF DISPOSAL/ SPECIAL HANDLING/LOAD TYPE: *BULK, ADC OR CO-MINGLE AT LANDFILL DISCRETION, NO FREE LIQUIDS*
6/21/2011 SAMPLES WILL BE TAKEN IN FIELD, ANALYZED AND SUBMITTED PRIOR TO SHIPPING

****

ALL LOADS MUST BE SCHEDULED 24 HOURS IN ADVANCE.
CONTACT GREG AT 541-454-3220 OR JULIE AT 541-454-3310

APPROVED: KC *KRISTIN CASTNER* DATE: ***06/23/11 1:40:43 PM***

A COPY OF THIS PERMIT MUST BE SHOWN BY EACH DRIVER

WM

WASTE MANAGEMENT

Profile Amendment Request Form

WASTE MANAGEMENT

TYLER ELLINGBOE (BRISTOL) hereby requests an amendment to WMI profile #: 106581OR
(Contact Name)

to include the following:

Amendment Type: ☐ One Time Only Request (Event) ☑ Permanent Addition to Profile (Base)

☐ Additional Analytical/MSDS to be added to profile (see attached)

☑ Volume Increase (specify volume) 40 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify) ____________

☑ Constituent(s) to be added and/or modify current range in chemical composition:

Chemicals or constituents to be added/modify	Low	High	Units
CONCRETE	0	20	%

☐ Change current ranges on profile (specify below)

pH Range _____ to _____ Free Liquid Range _____ to _____

☐ Other (specify) ____________________

GENERATOR CERTIFICATION

By signing this form, the Generator hereby certifies:
The information provided in this document, the referenced Waste Management Generator's Waste Profile Sheet, and all other referenced documents contain true and accurate descriptions of the waste material. All information regarding known or suspected hazards in the possession of the Generator has been disclosed.

Generator/Customer Signature: ____________________ Date: ____________

Company Name: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES, LLC

Name (Print): TYLER ELLINGBOE Title: PROJECT MANAGER

FOR WASTE MANAGEMENT USE ONLY

Submitted By: ____________________ Date: ________ Time: ____________
(W.M. Initials)

WM Approval: ____________________ Date: ____________

Agency Approval Required: ☐ Yes ☐ No

☐ Profile Extension

Original Expiration Date ____________

Requested Extension ____________

New Expiration Date ____________

☐ Analytical Extension

Analytical Due Date ____________

Requested Extension ____________

New Analytical Due Date ____________

Conditions/Precautions: ____________________

WASTE MANAGEMENT

Profile Amendment Request Form

TYLER ELLINGBOE (BRISTOL) hereby requests an amendment to WMI profile #: 106581OR
(Contact Name)

to include the following:

Amendment Type: ☐ One Time Only Request (Event) ☑ Permanent Addition to Profile (Base)

☐ Additional Analytical/MSDS to be added to profile (see attached)

☑ Volume Increase (specify volume) 40 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify) ____________

☑ Constituent(s) to be added and/or modify current range in chemical composition:

Chemicals or constituents to be added/modify	Low	High	Units
CONCRETE	0	20	%

☐ Change current ranges on profile (specify below)

pH Range _____ to _____ Free Liquid Range _____ to _____

☐ Other (specify) ____

GENERATOR CERTIFICATION

By signing this form, the Generator hereby certifies:
The information provided in this document, the referenced Waste Management Generator's Waste Profile Sheet, and all other referenced documents contain true and accurate descriptions of the waste material. All information regarding known or suspected hazards in the possession of the Generator has been disclosed.

Generator/Customer Signature: ______________________ Date: ____________

Company Name: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES, LLC

Name (Print): TYLER ELLINGBOE Title: PROJECT MANAGER

FOR WASTE MANAGEMENT USE ONLY

Submitted By: ______________________ Date: __________ Time: ____________
(W.M. Initials)

WM Approval: ______________________ Date: ____________

Agency Approval Required: ☐ Yes ☐ No

☐ Profile Extension

Original Expiration Date ____________

Requested Extension ____________

New Expiration Date ____________

☐ Analytical Extension

Analytical Due Date ____________

Requested Extension ____________

New Analytical Due Date ____________

Conditions/Precautions: ____

WASTE MANAGEMENT

Generator's Non-hazardous Waste Profile Sheet

Requested Disposal Facility: Columbia Ridge Landfill   Profile Number: 106581OR

☐ Renewal for Profile Number: ______   Waste Approval Expiration Date: ______

☐ Check here if there are multiple generating locations for this waste. Attach additional locations.

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: U.S. ARMY CORPS OF ENGINEERS, AK DISTRICT
2. Site Address: ST. LAWRENCE ISLAND NEC FACILITY
3. City/ZIP: SAVOONGA, 99769
4. State: ALASKA
5. County: Nome
6. Contact Name/Title: CAREY COSSABOOM/PROJECT
7. Email Address: carey.c.cossaboom@usace.army.mil
8. Phone: (907) 753-2689   9. FAX: (907) 753-2829
10. NAICS Code: 928110
11. Generator USEPA ID #: AK0000228395
12. State ID# (if applicable): ______

B. Customer Information ☐ same as above   P. O. Number: 34110008

1. Customer Name: BRISTOL ENVIRONMENTAL
2. Billing Address: 111 W. 16TH AVENUE, THIRD FLOOR
3. City, State and ZIP: ANCHORAGE, ALASKA, 99501
4. Contact Name: Tyler Ellingboe
5. Contact Email: tellingboe@bristol-companies.com
6. Phone: (907) 563-0013   FAX: (907) 563-6713
7. Transporter Name: NORTHLAND SERVICES, INC.
8. Transporter ID # (if appl.): WAD981773005
9. Transporter Address: P.O. BOX 24527
10. City, State and ZIP: SEATTLE, WASHINGTON, 98124

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: Roofing Tar (Solid)

State Waste Code(s): ______

b. Describe Process Generating Waste or Source of Contamination:

Clean-Up of FUDS Site

c. Typical Color(s): Black

d. Strong Odor? ☐ Yes ☑ No Describe: ______

e. Physical State at 70°F: ☑ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other: ______

f. Layers? ☑ Single layer ☐ Multi- layer ☐ NA

g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: ______

h. Free Liquid Range (%): ______ to ______ ☑ NA(solid)

i. pH Range: 4 to 10 ☑ NA(solid)

j. Liquid Flash Point: ☐ < 140°F ☐ 140°- 199°F ☐ ≥ 200°F ☑ NA(solid)

k. Flammable Solid: ☐ Yes ☑ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents (Total Composition Must be ≥ 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1. Roofing Tar	80	%	100	%
2. Rocks/Vegetation	0	%	20	%
3.				
4.				
5.				
6.				

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ☑ One Time Event ☐ Base ☐ Repeat Event

b. Estimated Annual Quantity: 225 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): ______

c. Shipping Frequency: 1 Units per ☐ Month ☐ Quarter ☑ Year ☐ One Time ☐ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No

e. USDOT Shipping Description (if applicable): ______

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Level D

D. Regulatory Status (Please check appropriate responses)

1. Waste Identification:
   a. Does the waste meet the definition of a USEPA listed or characteristic hazardous waste as defined by 40 CFR Part 261? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
   b. Does the waste meet the definition of a state hazardous waste other than identified in D.1.a? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   ☐ Delisted Hazardous Waste ☐ Excluded Wastes Under 40CFR 261.4
   ☐ Treated Hazardous Waste Debris ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   (If yes, list in Chemical Composition - C.1.l)
   a. If yes, are the PCBs regulated by 40 CFR 761? ☐ Yes ☐ No
   b. If yes, is it remediation waste from a project being performed under the Self-Implementing option provided in 40 CFR 761.61(a)? ☐ Yes ☐ No
   c. If yes, were the PCBs imported into the US? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No
   a. If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   a. If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certifcation (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the contractor if applicable).
5. Check all that apply:
   ☑ a. Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: 11NCTarSS001 thru 11NCTarSS024 # Pages: 1
   ☐ b. Only the analysis identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: ______
   ☐ c. Additional information necessary to characterize the profiled waste has been attached (other then analytical, such as MSDS). Indicate the number of attached pages: ______
   ☑ d. I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.

Certification Signature: Tyler S. Ellingboe

Title: Project Manager/Sr. Waste Specialist

Company Name: BRISTOL ENVIRONMENTAL REMEDIATION SERVICES, LLC

Name (Print): Tyler Ellingboe

Date: October 26, 2011

WASTE MANAGEMENT

Generator's Non-hazardous Waste Profile Sheet

Requested Disposal Facility: Columbia Ridge Landfill Profile Number: 109338OR

❑ Renewal for Profile Number: ______ Waste Approval Expiration Date: ______

❑ Check here if there are multiple generating locations for this waste. Attach additional locations.

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: U.S. ARMY CORPS OF ENGINEERS, AK DISTRICT
2. Site Address: ST. LAWRENCE ISLAND NEC FACILITY
3. City/ZIP: SAVOONGA, 99769
4. State: ALASKA
5. County: Nome
6. Contact Name/Title: CAREY COSSABOOM/PROJECT
7. Email Address: carey.c.cossaboom@usace.army.mil
8. Phone: (907) 753-2689 9. FAX: (907) 753-2829
10. NAICS Code: 928110
11. Generator USEPA ID #: AK0000228395
12. State ID# (if applicable): ______

B. Customer Information ❑ same as above P. O. Number: 34110008

1. Customer Name: BRISTOL ENVIRONMENTAL
2. Billing Address: 111 W. 16TH AVENUE, THIRD FLOOR
3. City, State and ZIP: ANCHORAGE, ALASKA, 99501
4. Contact Name: Tyler Ellingboe
5. Contact Email: tellingboe@bristol-companies.com
6. Phone: (907) 563-0013 FAX: (907) 563-6713
7. Transporter Name: NORTHLAND SERVICES, INC.
8. Transporter ID # (if appl.): WAD981773005
9. Transporter Address: P.O. BOX 24527
10. City, State and ZIP: SEATTLE, WASHINGTON, 98124

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: Roofing Tar (Solid)

State Waste Code(s): ______

b. Describe Process Generating Waste or Source of Contamination:

Clean-Up of FUDS Site

c. Typical Color(s): Black

d. Strong Odor? ❑ Yes ☑ No Describe: ______

e. Physical State at 70°F: ☑ Solid ❑ Liquid ❑ Powder ❑ Semi-Solid or Sludge ❑ Other: ______

f. Layers? ☑ Single layer ❑ Multi- layer ❑ NA

g. Water Reactive? ❑ Yes ☑ No If Yes, Describe: ______

h. Free Liquid Range (%): ______ to ______ ☑ NA(solid)

i. pH Range: 4 to 10 ☑ NA(solid)

j. Liquid Flash Point: ❑ < 140°F ❑ 140°- 199°F ❑ ≥ 200°F ☑ NA(solid)

k. Flammable Solid: ❑ Yes ☑ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ❑ (See Attached)

Constituents (Total Composition Must be ≥ 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1. Roofing Tar	80	%	100	%
2. Rocks/Vegetation	0	%	20	%
3.				
4.				
5.				
6.				

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ☑ One Time Event ❑ Base ❑ Repeat Event

b. Estimated Annual Quantity: 225 ☑ Tons ❑ Cubic Yards ❑ Drums ❑ Gallons ❑ Other (specify): ______

c. Shipping Frequency: 1 Units per ❑ Month ❑ Quarter ☑ Year ❑ One Time ❑ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ❑ Yes ☑ No

e. USDOT Shipping Description (if applicable): ______

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): Level D

D. Regulatory Status (Please check appropriate responses)

1. Waste Identification:
   a. Does the waste meet the definition of a USEPA listed or characteristic hazardous waste as defined by 40 CFR Part 261? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
   b. Does the waste meet the definition of a state hazardous waste other than identified in D.1.a? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   - ☐ Delisted Hazardous Waste
   - ☐ Excluded Wastes Under 40CFR 261.4
   - ☐ Treated Hazardous Waste Debris
   - ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   (If yes, list in Chemical Composition - C.1.l)
   a. If yes, are the PCBs regulated by 40 CFR 761? ☐ Yes ☐ No
   b. If yes, is it remediation waste from a project being performed under the Self-Implementing option provided in 40 CFR 761.61(a)? ☐ Yes ☐ No
   c. If yes, were the PCBs imported into the US? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No
   a. If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   a. If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certifcation (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the contractor if applicable).
5. Check all that apply:
   - ☑ a. Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: 11NCTarSS001 thru 11NCTarSS024 # Pages: 1
   - ☐ b. Only the analysis identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: ______
   - ☐ c. Additional information necessary to characterize the profiled waste has been attached (other then analytical, such as MSDS). Indicate the number of attached pages: ______
   - ☑ d. I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.

Certification Signature: Tyler S. Ellingboe

Title: Project Manager/Sr. Waste Specialist

Company Name: Bristol Environmental Remediation Services, LLC

Name (Print): Tyler Ellingboe

Date: October 26, 2011

APPENDIX G

Analytical Results Tables

Table 1 Reference Limits and Evaluation Criteria for Soil

Analyte	Analytical Group	Units	NOAA SQuiRT Sediment Screening Criteria		Site-Specific Cleanup Criteria		Achievable Laboratory Limits		
			SEDIMENT-TEL[3]	SEDIMENT-PEL[3]	SEDIMENT	SOIL	DL	LOD	LOQ
Petroleum, Oil, and Lubricants (POL)									
Gasoline Range Organics (GRO) - C_6 to C_{10}	FUELS	mg/Kg	NS	NS	NS	300[2]	0.46	1	4
Diesel Range Organics (DRO) - C_{10} to C_{25}	FUELS	mg/Kg	NS	NS	3500[1]	9200[1]	2.3	6.17	20
Residual Range Organics (RRO) - C_{25} to C_{36}	FUELS	mg/Kg	NS	NS	3500[1]	9200[1]	10	31.7	50
Volatile Organic Compounds (VOCs)									
Benzene	VOC	µg/kg	NS	NS	NS	2000[1]	4	10.0	16.0
Ethylbenzene	VOC	µg/kg	NS	NS	NS	6900[2]	10.00	30.0	40.0
Toluene	VOC	µg/kg	NS	NS	NS	6500[2]	10.00	30.0	40.0
m-Xylene & p-Xylene	VOC	µg/kg	NS	NS	NS	NS	10.0	30.0	40
o-Xylene	VOC	µg/kg	NS	NS	NS	NS	10.00	30.0	40.0
Xylenes, total	VOC	µg/kg	NS	NS	NS	63000[2]	10.00	30.0	40.0
Polynuclear Aromatic Hydrocarbons (PAHs)									
Acenaphthene	PAH	µg/kg	6.71	88.9	500[1]	180000[2]	1.5	2.5	5.0
Acenaphthylene	PAH	µg/kg	5.87	128	NS	180000[2]	1.5	2.5	5.0
Anthracene	PAH	µg/kg	46.9	245	NS	3000000[2]	1.5	2.5	5.0
Benzo(a)anthracene	PAH	µg/kg	31.7	385	NS	3600[2]	1.5	2.5	5.0
Benzo(b)fluoranthene	PAH	µg/kg	NS	NS	NS	12000[2]	1.5	2.5	5.0
Benzo(k)fluoranthene	PAH	µg/kg	NS	NS	NS	120000[2]	1.5	2.5	5.0
Benzo(a)pyrene	PAH	µg/kg	370	782	NS	2100[2]	1.5	2.5	5.0
Benzo(g,h,i)perylene	PAH	µg/kg	170	NS	1.7[1]	38700000[2]	1.5	2.5	5.0
Chrysene	PAH	µg/kg	57.1	862	NS	360000[2]	1.5	5.0	5.0
Dibenz(a,h)anthracene	PAH	µg/kg	6.22	135	NS	4000[2]	1.5	2.5	5.0
Fluoranthene	PAH	µg/kg	111	2355	2000[1]	1400000[2]	1.5	2.5	5.0
Fluorene	PAH	µg/kg	21.2	144	800[1]	220000[2]	1.5	2.5	5.0
Indeno(1,2,3-cd)pyrene	PAH	µg/kg	NS	NS	3200[1]	41000[2]	1.5	2.5	5.0
2-Methylnaphthalene	PAH	µg/kg	NS	NS	600[1]	6100[2]	2.0	5.0	5.0
Phenanthrene	PAH	µg/kg	41.9	515	4800[1]	3000000[2]	1.5	2.5	5.0
Pyrene	PAH	µg/kg	53	875	NS	1000000[2]	1.5	2.5	5.0
Polychlorinated Biphenyls (PCBs)									
PCB-1221	PCB	mg/kg	NS	NS	0.7[1]	1[1]	0.0032	0.008	0.010
PCB-1016	PCB	mg/kg	NS	NS	0.7[1]	1[1]	0.0080	0.010	0.010
PCB-1232	PCB	mg/kg	NS	NS	0.7[1]	1[1]	0.0070	0.010	0.010
PCB-1242	PCB	mg/kg	NS	NS	0.7[1]	1[1]	0.0021	0.006	0.010
PCB-1248	PCB	mg/kg	NS	NS	0.7[1]	1[1]	0.0013	0.003	0.010
PCB-1254	PCB	mg/kg	.06	.34	0.7[1]	1[1]	0.0021	0.006	0.010
PCB-1260	PCB	mg/kg	NS	NS	0.7[1]	1[1]	0.0030	0.008	0.010
PCBs (sum)	PCB	mg/kg	0.034	0.277	0.7[1]	1[1]	NS	NS	NS
Total Metals									
Arsenic	Metals	mg/kg	5900	17000	93[1]	11[1]	0.368	1	0.50
Barium	Metals	mg/kg	NS	NS	NS	3.9[2]	0.012	0.03	0.20
Cadmium	Metals	mg/kg	596	3530	NS	5.0[2]	0.008	0.02	0.20
Chromium	Metals	mg/kg	37300	90000	270[1]	25[2]	0.072	0.2	0.20
Lead	Metals	mg/kg	35000	91300	530[1]	400[2]	0.007	0.020	0.20
Mercury	Metals	mg/kg	174	486	NS	1.4[2]	0.0063	0.01	0.20
Nickel	Metals	mg/kg	18000	36000	NS	86[2]	0.02	0.05	0.20
Selenium	Metals	mg/kg	NS	NS	NS	3.4[2]	0.6	1.6	0.70
Silver	Metals	mg/kg	NS	NS	NS	11.2[2]	0.007	0.02	0.20
Vanadium	Metals	mg/kg	NS	NS	NS	3400[2]	0.223	0.6	0.50
Zinc	Metals	mg/kg	123000	315000	960[1]	4100[2]	0.201	0.28	0.70

Notes:

[1]Site-Specific Cleanup Values Established in 2009 Decision Document

[2]Cleanup Levels from 18 AAC 75 Section 341, Tables B1 and B2, migration to groundwater

[3]Screening Values from NOAA SQuiRT Tables, Freshwater Sediment, 2009

µg/kg = micrograms per kilogram
AAC = Alaska Administrative Code
DL= detection limit
LOD = limit of detection
LOQ = limit of quantitation
mg/kg = milligrams per kilogram
NOAA = National Oceanic and Atmospheric Administration
NS = not specified
SQuiRT = Screening Quick Reference Tables

Table 2 Reference Limits and Evaluation Criteria for Water

Analyte	Analytical Group	Analytical Method	CASRN	Prep Method	Units	Site-Specific Cleanup Levels	Achievable Laboratory Limits		
						ADEC Cleanup Levels[1]	DL	LOD	LOQ
Petroleum, Oil, and Lubricants (POL)									
Gasoline Range Organics (GRO) - C_6 to C_{10}	TPH	AK101	NS	SW5030B	mg/L	1.3[2]	0.015	0.044	0.05
Diesel Range Organics (DRO) - C_{10} to C_{25}	TPH	AK102	NS	SW3510C	mg/L	1.5	0.022	0.06	0.1
Residual Range Organics (RRO) - C_{25} to C_{36}	TPH	AK103	NS	SW3510C	mg/L	1.1	0.027	0.06	0.1
Volatile Organic Compounds (VOCs)									
Benzene	VOC	SW8260B	71-43-2	SW5030B	µg/L	5.0	0.15	0.45	1.0
Ethylbenzene	VOC	SW8260B	100-41-4	SW5030B	µg/L	700	0.15	0.45	1.0
Toluene	VOC	SW8260B	108-88-3	SW5030B	µg/L	1,000	0.15	0.45	1.0
m-Xylene & p-Xylene	VOC	SW8260B	1330-20-7	SW5030B	µg/L	NS	0.30	0.9	2.0
o-Xylene	VOC	SW8260B	95-47-6	SW5030B	µg/L	NS	0.15	0.45	1.0
Xylenes, total	VOC	SW8260B	1330-20-7	SW5030B	µg/L	10,000	0.45	1.35	3.0
Polynuclear Aromatic Hydrocarbons (PAHs)									
Acenaphthene	PAH	SW8270C-SIM	83-32-9	SW3510C	µg/L	2,200	0.03	0.075	0.13
Acenaphthylene	PAH	SW8270C-SIM	208-96-8	SW3510C	µg/L	2,200	0.03	0.075	0.10
Anthracene	PAH	SW8270C-SIM	120-12-7	SW3510C	µg/L	11,000	0.03	0.075	0.10
Benzo(a)anthracene	PAH	SW8270C-SIM	56-55-3	SW3510C	µg/L	1.2	0.03	0.075	0.10
Benzo(b)fluoranthene	PAH	SW8270C-SIM	205-99-2	SW3510C	µg/L	1.2	0.03	0.075	0.10
Benzo(k)fluoranthene	PAH	SW8270C-SIM	207-08-9	SW3510C	µg/L	12	0.03	0.075	0.10
Benzo(a)pyrene	PAH	SW8270C-SIM	50-32-8	SW3510C	µg/L	0.2	0.03	0.075	0.20
Benzo(g,h,i)perylene	PAH	SW8270C-SIM	191-24-2	SW3510C	µg/L	1,100	0.03	0.075	0.10
Chrysene	PAH	SW8270C-SIM	218-01-9	SW3510C	µg/L	120	0.03	0.075	0.10
Dibenz(a,h)anthracene	PAH	SW8270C-SIM	53-70-3	SW3510C	µg/L	0.12	0.03	0.075	0.10
Fluoranthene	PAH	SW8270C-SIM	206-44-0	SW3510C	µg/L	1,500	0.03	0.075	0.10
Fluorene	PAH	SW8270C-SIM	86-73-7	SW3510C	µg/L	1,500	0.03	0.075	0.10
Indeno(1,2,3-cd)pyrene	PAH	SW8270C-SIM	193-39-5	SW3510C	µg/L	1.2	0.03	0.08	0.10
1-Methylnaphthalene	PAH	SW8270C-SIM	90-12-0	SW3510C	µg/L	150	0.03	0.075	0.10
2-Methylnaphthalene	PAH	SW8270C-SIM	91-57-6	SW3510C	µg/L	150	0.03	0.075	0.10
Naphthalene	PAH	SW8270C-SIM	91-20-3	SW3510C	µg/L	730	0.04	0.075	0.10
Phenanthrene	PAH	SW8270C-SIM	94-09-7	SW3510C	µg/L	11,000	0.03	0.075	0.10
Pyrene	PAH	SW8270C-SIM	129-00-0	SW3510C	µg/L	1,100	0.03	0.075	0.10
Metals									
Arsenic (total)	Metals	SW6020A	7440-38-2	SW3005A	µg/L	NS	0.24	0.4	2.0
Arsenic (dissolved)	Metals	SW6020A	7440-38-2	SW3005A	µg/L	10	0.24	0.4	2.0
Barium (total)	Metals	SW6010C	7440-39-3	SW3005A	µg/L	NS	0.27	0.4	6
Barium (dissolved)	Metals	SW6010C	7440-39-3	SW3005A	µg/L	2,000	0.27	0.4	6
Cadmium (total)	Metals	SW6020A	7440-43-9	SW3005A	µg/L	NS	0.140	0.4	2.0
Cadmium (dissolved)	Metals	SW6020A	7440-43-9	SW3005A	µg/L	5	0.140	0.4	2.0
Chromium (total)	Metals	SW6010C	7440-70-2	SW3005A	µg/L	NS	0.37	0.4	2
Chromium (dissolved) (includes Cr+3 and Cr+6)	Metals	SW6010C	7440-47-3	SW3005A	µg/L	100	0.37	0.4	2
Lead (total)	Metals	SW6010C	7439-89-6	SW3005A	µg/L	NS	0.17	0.4	2
Lead (dissolved)	Metals	SW6020A	7439-92-1	SW3005A	µg/L	15	0.17	0.4	2.0
Mercury (total)	Metals	SW6020A	7439-96-5	SW3005A	µg/L	NS	0.04	0.1	0.2
Mercury (dissolved)	Metals	SW7470A	7439-97-6	SW7470A	µg/L	2	0.490	1.000	4.00
Molybdenum (total)	Metals	SW7470A	7439-97-6	SW7470A	µg/L	NS	0.490	1.000	4.00
Molybdenum (dissolved)	Metals	SW6010C	7439-98-7	SW3005A	µg/L	NS	0.5	1.0	4
Nickel (total)	Metals	SW6010C	7439-98-7	SW3005A	µg/L	NS	0.2	0.4	2
Nickel (dissolved)	Metals	SW6010C	7440-02-0	SW3005A	µg/L	100	0.2	0.4	2
Selenium (total)	Metals	SW6010C	7440-09-7	SW3005A	µg/L	NS	0.34	0.4	2
Selenium (dissolved)	Metals	SW6020A	7782-49-2	SW3005A	µg/L	50	0.34	0.4	2.0
Silver (total)	Metals	SW6020A	7782-49-2	SW3005A	µg/L	NS	0.15	0.4	2.0
Silver (dissolved)	Metals	SW6020A	7440-22-4	SW3005A	µg/L	100	0.150	0.4	2.0
Vanadium (total)	Metals	SW6020A	7440-31-5	SW3005A	µg/L	NS	0.23	0.4	10
Vanadium (dissolved)	Metals	SW6020A	7440-31-5	SW3005A	µg/L	260	0.23	0.4	10
Zinc (total)	Metals	SW6010C	7440-62-2	SW3005A	µg/L	NS	2.0	5.0	7
Zinc (dissolved)	Metals	SW6020A	7440-66-6	SW3005A	µg/L	5,000	2.0	5	7
Polychlorinated biphenyls (PCBs)									
PCB-1221	PCB	SW8082A	11104-28-2	SW3520C	µg/L	0.005	0.045	0.08	0.5
PCB-1016	PCB	SW8082A	12674-11-2	SW3520C	µg/L	0.005	0.062	0.06	0.5
PCB-1232	PCB	SW8082A	11141-16-5	SW3520C	µg/L	0.005	0.041	0.05	0.5
PCB-1242	PCB	SW8082A	53469-21-9	SW3520C	µg/L	0.005	0.041	0.06	0.5
PCB-1248	PCB	SW8082A	12672-29-6	SW3520C	µg/L	0.005	0.071	0.06	0.5
PCB-1254	PCB	SW8082A	11097-69-1	SW3520C	µg/L	0.005	0.044	0.06	0.5
PCB-1260	PCB	SW8082A	11096-82-5	SW3520C	µg/L	0.005	0.039	0.08	0.5

Notes:

[1]Cleanup Levels Stated in 18 AAC 75 Section 345, Table C, Groundwater Cleanup Levels
[2]Site-Specific Cleanup Values Established in 2009 Decision Document

µg/L = micrograms per liter
AAC = Alaska Administrative Code
ADEC = Alaska Department of Environmental Conservation
AK = Alaska Test Method
CASRN = Chemical Abstracts Service Registry Number
DL= detection limit
EPA = U.S. Environmental Protection Agency
LOD = limit of detection
LOQ = limit of quantitation
mg/L= milligrams per liter
NS = not specified
SIM = selective ion monitoring
SW = EPA Solid Waste Test Method

Table 3 MOC Well MNA Parameters

2011 MNA Results

	Well ID (Sample ID)		MW10-1 (WA01)	26MW1 (WA02)	22MW2 (WA03)	20MW1 (WA04)	17MW1 (WA05)	MW88-5 (WA06)	MW88-5 (WA07-DUP)	MW88-4 (WA08)	MW 88-1 (WA09)	88-10 (WA10)
	Collection Date		7/15/11	7/16/11	7/16/11	7/17/11	7/17/11	7/17/11	7/17/11	7/17/11	7/18/11	7/18/11
Analyte	Units	Method detection limit										
Ferrous Iron	mg/L	0.01	0.09	0.05	<0.01	<0.01	0.06	3.30	3.30	3.30	0.04	0.02
Manganese	mg/L	0.2	0.10	0.20	<0.2	<0.2	0.10	0.30	0.70	0.40	0.30	0.40
Sulfate	mg/L	2	4.00	10.00	7.00	24.00	15.00	46.00	42.00	1.00	8.00	8.00
Nitrate	mg/L	0.4	0.40	1.30	1.00	1.30	0.70	0.90	0.50	0.20	1.50	0.90
Alkalinity	mg/L	0	40	40	40	80	40	180	180	180	40	40
Temp	°C	NA	6.03	3.47	6.40	2.33	2.73	2.59	2.59	1.16	2.30	4.43
Spec Cond	µS/cm	NA	56	61	60	82	67	241	241	173	60	61
pH	NA	NA	5.45	5.74	5.63	5.89	5.78	6.64	6.64	6.80	5.75	5.78
ORP	mV	NA	85.50	202.80	53.70	125.80	237.10	-100.30	-100.30	-86.20	70.90	47.7
DO	mg/L	NA	4.74	12.63	10.99	10.78	4.47	0.58	0.58	0.27	2.09	1.55
Methane	µg/L	NA	0.29 J	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.29)	630	620	2100	0.44 J	1.8

2010 MNA Results

	Well ID (Sample ID)		MW10-1 (10WA01	26MW1 (26WA01)	22M2 (22WA01)	20MW1 (20WA01)	17MW1 (17WA01)	MW 88-5 (27WA03	88-4 (27WA01)	88-4 (27WA02 Dup)	88-1 (19WA01)	88-10 (19WA02)
	Date		8/14/10	8/16/10	8/14/10	8/4/10	8/4/10	8/15/10	8/3/10	8/3/10	8/4/10	8/15/10
Analyte	Units	Method detection limit										
Ferrous Iron	mg/L	0.01	<0.01	<0.01	<0.01	NR	0.01	45.50	21.40	20.00	<0.01	<0.01
Manganese	mg/L	0.2	<0.2	<0.2	<0.2	NR	<0.2	<0.2	0.3	0.5	0.3	1.0
Sulfate	mg/L	2	3.0	6.0	12.0	NR	16	6	4	1	7	6.0
Nitrate	mg/L	0.4	0.3	0.3	0.6	NR	0.2	0.3	2.0	<0.4	0.3	0.1
Alkalinity	mg/L	0	0.0	0.0	0.0	NR	0	80	120	120	40	40.0
Temp	°C	NA	6.6	3.0	3.9	3.6	3.09	2.21	3.28	3.28	2.85	2.9
Spec Cond	µS/cm	NA	63.0	47.0	65.0	63.0	68	221	190	190	68	65.0
pH	NA	NA	5.6	6.8	6.1	6.3	5.76	8.25	6.93	6.93	5.59	7.6
ORP	mV	NA	202.5	202.1	234.2	101.4	160.8	-69.3	-72.1	-72.1	190.1	146.0
DO	mg/L	NA	5.6	11.5	10.1	4.0	7.32	0.81	0.68	0.68	1.26	0.8
Methane	µg/L	NA	0.5	0.4	0.8	ND (0.19)	ND (0.19)	99	1900	2100	0.34	0.4

Notes:

J = result is an estimate
ND = non-detect; limit of detection in parentheses
< = less than
°C = degrees Celsius
µg/L = micrograms per liter
µS/cm = microsiemens per centimeter
DO = dissolved oxygen
DUP = sample is a duplicate of the previous sample
mg/L = milligrams per liter
MNA = monitored natural attenuation
MOC = Main Operations Complex
mV = millivolts
NA = not applicable
NR = not reported
ORP = oxidation-reduction potential
pH = potential hydrogen
Spec Cond = specific conductance
Temp = temperature

Table 4 MOC Groundwater Well Results

	Sample ID	11NCMOCWA01	11NCMOCWA02	11NCMOCWA03	11NCMOCWA04	11NCMOCWA05	11NCMOCWA06	11NCMOCWA07-DUP	11NCMOCWA08	11NCMOCWA09	11NCMOCWA10
	Laboratory ID	580-27518-1	580-27518-2	580-27518-3	580-27518-4	580-27518-5	580-27518-6	580-27518-7	580-27518-8	580-27518-9	580-27518-10
	Location ID	MW-10-1	26MW1	22MW2	20MW1	17MW1	MW88-5	MW88-5	MW88-4	MW-88-1	MW88-10
	Date Collected	7/15/2011	7/16/2011	7/16/2011	7/17/2011	7/17/2011	7/17/2011	7/17/2011	7/17/2011	7/18/2011	7/18/2011
Analyte	**ADEC Cleanup Levels**										
Dissolved Metals by EPA 6020 (mg/L)											
Arsenic	0.01	ND (0.0038)	ND (0.0038)	ND (0.0038)	ND (0.0038)	ND (0.0038)	0.0052	0.0049 J	**0.011**	ND (0.0038)	ND (0.0038)
Barium	2	0.029	0.0058 J	0.0093	0.021	0.017	0.055	0.054	0.028	0.0083	0.012
Cadmium	0.005	ND (0.0003)	ND (0.0003)	ND (0.0003)	0.00021 J	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	0.00018 J	0.00053 J
Chromium	0.1	0.0021	0.0015 J	0.0027	0.0024 J	0.0019 J	0.0029 J	0.0026 J	0.0023	0.0017 J	0.0073
Lead	0.015	0.00038 J	ND (0.00035)	0.00017 J	ND (0.00035)	0.0003 J	0.00049 J	0.00046 J	0.00032 J	0.00021 J	0.00035 J
Nickel	0.1	0.0034 J	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.013 J	0.012 J	ND (0.002)	ND (0.002)	0.0078 J
Selenium	0.05	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)
Silver	0.1	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)
Vanadium	0.26	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	0.0079 J	0.0087 J	ND (0.01)	ND (0.01)	ND (0.01)
Dissolved Mercury by EPA 7470A (mg/L)											
Mercury	0.002	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Total Recoverable Metals by EPA 6020 (mg/L)											
Arsenic	NS	ND (0.0038)	ND (0.0038)	ND (0.0038)	ND (0.0038)	ND (0.0038)	0.0057	0.0058	0.01	ND (0.0038)	ND (0.0038)
Barium	NS	0.018 D	0.0067	0.01	0.024	0.018	0.062	0.064	0.03	0.01	0.013
Cadmium	NS	ND (0.0003)	ND (0.0003)	ND (0.0003)	0.0002 J	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	0.00022 J	0.00055 J
Chromium	NS	0.0029 QN	0.0023 QN	0.0038 QN	0.0028 QN	0.0029 QN	0.0041 QN	0.004 QN	0.0026 QN	0.0032 QN	0.021 QN
Lead	NS	0.00086 J	0.0006 J	0.0003 J	0.00045 J	0.00019 J	0.0019 J	0.0019 J	0.0013 J	0.0016 J	0.00083 J
Nickel	NS	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.002)	0.014 J	0.014 J	0.0023 J	0.0058 J	0.013 J
Selenium	NS	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)	ND (0.0036)
Silver	NS	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)	ND (0.0003)
Vanadium	NS	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	ND (0.010)	0.0051 J	0.0069 J	ND (0.010)	ND (0.010)	ND (0.010)
Total Recoverable Mercury by EPA 7470A (mg/L)											
Mercury	NS	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
PCBs by EPA 8082A (µg/L)											
PCBs-ALL	0.5	ND (0.077)	ND (0.077)	ND (0.077)	ND (0.077)	ND (0.077)	ND (0.075) QL	ND (0.077)	ND (0.078)	ND (0.076)	ND (0.076)
BTEX by EPA 8260 (µg/L)											
Benzene	5	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	**20**	**16**	**9.4**	ND (0.45)	ND (0.45)
Toluene	1,000	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	2.1	1.9	2.2	ND (0.45)	ND (0.45)
Ethylbenzene	700	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	3.3	3.2	29	ND (0.45)	ND (0.45)
m-Xylene & p-Xylene	NS	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	6.0	6.1	33	ND (0.90)	ND (0.90)
o-Xylene	NS	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	4.1	3.9	9.4	ND (0.45)	ND (0.45)
Xylenes (Total)	10,000	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	10.1	10	42.4	ND (0.45)	ND (0.45)
PAHs by EPA 8270-SIM (µg/L)											
1-Methylnaphthalene	150	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	25	ND (0.072)	ND (0.074)
2-Methylnaphthalene	150	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	27	ND (0.072)	ND (0.074)
Acenaphthene	2,200	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	0.12	0.16	0.52	0.029 J	ND (0.074)
Acenaphthylene	2,200	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	0.17	ND (0.072)	ND (0.074)
Anthracene	11,000	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	0.064 J	ND (0.071)	ND (0.072)	ND (0.074)
Benzo(a)anthracene	1.2	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Benzo(a)pyrene	0.2	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Benzo(b)fluoranthene	1.2	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Benzo(g,h,i)perylene	1,100	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Benzo(k)fluoranthene	12	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Chrysene	120	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Dibenz(a,h)anthracene	0.12	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Fluoranthene	1,500	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Fluorene	1,500	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	0.048 J	0.73	0.048	ND (0.074)
Indeno(1,2,3-cd)pyrene	1.2	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Naphthalene	730	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	0.78	0.84	75	ND (0.072)	ND (0.074)
Phenanthrene	11,000	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	0.19	ND (0.072)	ND (0.074)
Pyrene	1,100	ND (0.071)	ND (0.073)	ND (0.073)	ND (0.072)	ND (0.072)	ND (0.071)	ND (0.071)	ND (0.071)	ND (0.072)	ND (0.074)
Gasoline Range Organics (GRO) by AK101 (mg/L)											
GRO	1.3	0.017 J	ND (0.044)	0.021	0.017 J B	0.015 J B	0.24	0.23	0.4	ND (0.044)	ND (0.044)
Diesel Range Organics (DRO) by AK102 (mg/L)											
DRO	1.5	0.46	0.083	0.023	0.036 J	0.037 J	**7.2**	**7.5**	**2.3**	0.74	0.54
Residual Range Organics (RRO) by AK103 (mg/L)											
RRO	1.1	0.59	0.073 J	0.052 J	0.081 J	0.056 J	**1.8**	**2.0**	0.55	0.26	0.15
Methane	NS	0.29 QH	ND (0.29)	ND (0.29)	ND (0.29)	ND (0.29)	630	620	2100	0.44 J	1.8

Notes:

Bold indicates results above cleanup levels

B = analyte was detected in the method blank at a concentration less than 10 times the sample result

D = sample was analyzed at a dilution

J = result is an estimate

ND = non-detect, limit of detection in parentheses

QH = result considered estimated biased high due to a high laboratory control sample recovery

QL = surrogate recovery was below acceptance limit; results are considered estimates with low bias

QN = result considered estimated with uncertain bias

µg/L = micrograms per Liter
ADEC = Alaska Department of Environmental Conservation
AK = Alaska Test Method
BTEX = benzene, toluene, ethylbenzene, and xylenes
DUP=Sample is field duplicate of previous Sample
EPA = U.S. Environmental Protection Agency

mg/L = milligrams per Liter
MOC = Main Operations Complex
NS = not stated
PAH = polynuclear aromatic hydrocarbons
PCB = polychlorinated biphenyls
SIM = selective ion monitoring

Table 5 Site 8 Monitored Natural Attenuation Parameters 2010

	Sample Location	UDU B10	UDU C09	UDU A08	UDU C07	UDU A06	UDU D05	UDU D04	UDU A08	UDU C02	UDU C02	MDU D09	MDU D08	MDU D04	MDU D04	MDU A03
	Date Collected	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/27/2010	7/26/2010	7/26/2010	7/26/2010	7/26/2010	7/26/2010
	Sample ID	19	20	21	22	23	24	25	26 (Field Dup)	27	27 (Lab Dup)	10	11	12	13 (Field Dup)	14
Analyte	**Units**															
Manganese	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ferrous Iron	mg/L	0.04	0.10	<0.01	0.04	0.02	<0.01	0.03	0.03	0.03	0.03	0.05	0.02	0.01	0.01	0.01
Sulfate	mg/L	5	2	<2	<2	<2	7	<2	<2	2	3	<2	<2	<2	<2	<2
Nitrate	mg/L	0.5	0.4	0.2	0.5	0.7	0.3	0.4	0.2	0.4	0.3	0.5	0.5	0.9	0.9	0.3
Alkalinity	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temp	°C	7.91	8.37	7.23	7.68	6.39	8.3	8.37	7.23	8.01	8.01	11	11.01	11.09	11.09	10.31
Spec Cond	mS/cm	0.076	0.105	0.078	0.072	0.059	0.066	0.067	0.078	0.076	0.076	0.078	0.084	0.073	0.073	0.073
pH	NA	5.35	5.78	5.76	5.58	5.23	5.71	5.8	5.76	5.48	5.48	5.7	6.08	5.4	5.4	5.43
ORP	mV	177	46.3	115.1	102	194.9	116.7	128.4	115.1	51.2	51.2	38.9	-19.5	-31	-31	42
DO	mg/L	5.9	4.46	6.1	7.82	8.9	5.97	5.43	6.1	8.28	8.28	4.323	4.477	2.86	2.86	3.3966
Methane	µg/L	ND (0.19)	ND (0.19)	5.9	ND (0.19)	0.48	2.9	3.8	1.6	0.52	ND (0.19)	0.25	ND (0.19)	1.9	2	0.24

Table 5 Site 8 Monitored Natural Attenuation Parameters 2010 (continued)

	Sample Location	MDU C02	MDU C01	MDU B08	MDU D06	MDU D06	LDU A09	LDU B05	LDU B06	LDU C03	LDU C03	LDU C08	LDU C10	LDU C10Dup	LDU D04	LDU D07
	Date Collected	7/26/2010	7/26/2010	7/26/2010	7/26/2010	7/26/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010	7/28/2010
	Sample ID	15	16	17	18	18 (Lab Dup)	2	6	5	8	9 (Field Dup)	3	1	1 (Lab Dup)	7	4
Analyte	**Units**															
Manganese	mg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ferrous Iron	mg/L	0.01	0.02	0.09	0.11	0.11	0.08	0.01	0.04	0.05	0.02	0.04	<0.01	0.02	0.02	0.07
Sulfate	mg/L	<2	<2	<2	<2	<2	80	<2	<2	1	<2	<2	6	16	<2	<2
Nitrate	mg/L	1.1	0.2	0.3	0.3	0.4	0.0	0.3	0.2	0.2	0.2	0.6	0.1	0.1	0.2	0.1
Alkalinity	mg/L	0	0	0	0	0	80	0	0	0	0	0	180	180	0	0
Temp	°C	11	10.13	11.31	10.95	10.95	9.09	12.79	12.48	10.04	10.04	9.5	11.04	11.04	11.14	11.42
Spec Cond	mS/cm	0.077	0.073	0.0311	0.092	0.092	0.185	0.074	0.145	0.183	0.183	0.215	0.869	0.869	0.166	0.176
pH	NA	5.46	5.55	5.56	5.64	5.64	6.37	5.96	5.8	6.28	6.28	5.8	8.86	8.86	5.99	5.3
ORP	mV	36	-8.6	42.8	5.8	5.8	-42.6	-48.8	39.8	-44.6	-44.6	-21.3	-203.5	-204	-28	38.9
DO	mg/L	3.322	1.8645	2.7032	4.697	4.697	1	2.53	3.27	2.55	2.55	3.23	0.72	0.72	1.34	2.63
Methane	µg/L	ND (0.19)	ND (0.19)	96	ND (0.19)	ND (0.19)	0.55	ND (0.19)	ND (0.19)	ND (0.19)	ND (0.19)	1.1	ND (0.19)	ND (0.19)	ND (0.19)	ND (0.19)

Notes:
LDU = lower decision unit
MDU = middle decision unit
UDU = upper decision unit
ND = non-detect; limit of detection in parentheses

< = less than
°C = degrees Celsius
µg/L = micrograms per liter
DO = dissolved oxygen
Dup = duplicate sample
mg/L = milligram per liter
mS/cm = millisiemens per centimeter
mV = millivolts
NA = not applicable
ORP = oxidation-reduction potential
pH = potential hydrogen
Spec Cond = specific conductance
Temp = temperature

Table 6 Site 8 Monitored Natural Attenuation Parameters 2011

Grid	DU	Sample ID (methane)	Lab Sample ID (methane)	Collection Date	Time	Methane (µg/L)	Mn (mg/L)	Fe (mg/L)	Sulfate (mg/L)	Alkalinity	Nitrate (mg/L)	Turbidity (NTU)	Temp °C	pH	Spec Cond µs/cm	Dissolved Oxygen (mg/L)	ORP (mV)
D9	LDU	11NC08WA001	580-27899-27	8/4/2011	11:00	350	0.2	0.07	1	40	0.6	15.6	7.79	6.04	135	3.53	-41.1
C8	LDU	11NC08WA002	580-27899-28	8/4/2011	11:10	130	0	0.07	0	40	0.6	8.56	8.04	5.7	51	5.49	-5.7
C7	LDU	11NC08WA003	580-27899-29	8/4/2011	11:20	25	0	0.02	0	40	0.4	6.44	8.33	5.64	49	5.54	20.3
C5	LDU	11NC08WA004	580-27899-30	8/4/2011	11:30	25	0	0.03	0	40	0.5	3.13	8.65	5.73	48	6.68	10.4
A3	LDU	11NC08WA005	580-27899-31	8/4/2011	13:00	91	0	0.05	0	40	0.6	18.9	7.27	5.04	158	7.09	67.7
B3	LDU	11NC08WA006	580-27899-32	8/4/2011	13:15	14	0	0.06	0	40	0.3	8.8	7.44	5.38	103	7.57	14
B3*	LDU	11NC08WA009*	580-27899-35	8/4/2011	13:45	21	0	0.05	0	40	0.5						
C2	LDU	11NC08WA007	580-27899-33	8/4/2011	13:30	6.9	0.2	0.02	0	40	0.9	6.31	7.13	5.71	43	7.36	-9.9
D1	LDU	11NC08WA008	580-27899-34	8/4/2011	13:40	13	0	0.03	0	40	0.8	2.28	7.49	5.77	45	7.18	-23.8
A2	MDU	11NC08WA010	580-27899-36	8/4/2011	16:15	7.7	0	0.07	0	40	0.4	6.79	6.8	5.14	31	7.27	13.7
B3	MDU	11NC08WA011	580-27899-37	8/4/2011	16:05	14	0	0.03	0	40	0.6	5.15	7	5.35	36	2.76	-1.1
A3	MDU	11NC08WA012	580-27899-38	8/4/2011	16:00	36	0	0.06	0	40	0.9	2.23	6.74	5.32	37	5.64	-2.4
A4	MDU	11NC08WA013	580-27899-39	8/4/2011	15:50	170	0	0.04	0	40	0.3	5.14	7.05	5.46	54	5.07	-30
C5	MDU	11NC08WA014	580-27899-40	8/5/2011	15:40	8.0	0	0.04	0	40	0.3	2.92	7.35	5.49	38	6.34	4.1
C5*	MDU	11NC08WA018*	580-27899-44	8/5/2011	15:10	8.8	0		0	40							
B6	MDU	11NC08WA015	580-27899-41	8/5/2011	15:30	28	0	0.01	0	40	0.2	2.43	7.26	5.59	35	5.63	-5.8
B7	MDU	11NC08WA016	580-27899-42	8/5/2011	15:20	48	0	0.02	0	40	0.2	9.59	7.09	5.52	50	3.72	16.9
D10	MDU	11NC08WA017	580-27899-43	8/5/2011	15:15	11	0	0.01	0	40	0.3	2.75	7.65	5.88		8.03	-13.5
A1	UDU	11NC08WA019	580-27899-45	8/5/2011	14:40	2.8 J	0	0.03	0	40	0.4	2.49	7.47	5.32	43	5.45	-6
D1	UDU	11NC08WA020	580-27899-46	8/5/2011	14:30	170	0.2	0.01	15	40	0.6	27.6	7.35	5.82	97	3.11	-45
C2	UDU	11NC08WA021	580-27899-47	8/5/2011	14:20	10	0	0.12	0	40	0.3	3.96	8.05	5.46	37	7.34	-19.6
A3	UDU	11NC08WA022	580-27899-48	8/5/2011	14:10	1.1 J	0	0.02	0	40	0.3	3.42	6.64	5.12	35	7.64	-3.9
C3	UDU	11NC08WA023	580-27899-49	8/5/2011	14:00	0.73 J	0	0	3	40	0.3	0.38	8.17	5.36	43	9.16	-44.4
D5	UDU	11NC08WA024	580-27899-50	8/5/2011	13:50	43	0	0.04	0	40	0.4	3.62	8.42	5.81	40	6.59	-77.6
D8	UDU	11NC08WA025	580-27899-51	8/5/2011	13:40	15	0	0.01	0	40	0.3	4.11	7.63	5.69	50	4.74	-51.3
B9	UDU	11NC08WA026	580-27899-52	8/5/2011	13:30	20	0	0.05	0	40	0.3	10.3	9.33	5.94	47	7.65	-45.1
B9*	UDU	11NC08WA027*	580-27899-53	8/5/2011	13:25	30	0		0	40							
Method detection limit						NA	0.2	0.01	2	0	0.4	NA					

Notes:
* = Sample is a duplicate
LDU = lower decision unit
MDU = middle decision unit
UDU = upper decision unit

°C = degrees Celsius
µg/L = micrograms per liter
µs/cm = microsiemens per centimeter
DU = decision unit
Fe = iron
mg/L = milligrams per liter
Mn = manganese

NA = not applicable
ORP = oxygen reduction potential
pH = potential hydrogen
NTU = nephelometric turbidity units
mV=millivolts
Spec Cond = specific conductance
Temp = temperature

Table 7 Site 8 Surface Water Results

				Field Sample ID	11NC08WA01	11NC08WA02	11NC08WA03-DUP
				Lab Sample ID	580-27633-11	580-27633-12	580-27633-13
				Location ID	8-01	8-02	8-02
				Date Collected	7/23/2011	7/23/2011	7/23/2011
Analysis Method	**Analyte**	**Units**	**ADEC Cleanup Level**				
8270C SIM/DoD	1-Methylnaphthalene	µg/L	Total Aqueous Hydrocarbons (TaqH) 15 µg/L		ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	2-Methylnaphthalene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Acenaphthene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Acenaphthylene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Anthracene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Benzo(a)anthracene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Benzo(a)pyrene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Benzo(b)fluoranthene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Benzo(g,h,i)perylene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Benzo(k)fluoranthene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Chrysene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Dibenz(a,h)anthracene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Fluoranthene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Fluorene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Indeno(1,2,3)pyrene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Naphthalene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Phenanthrene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
8270C SIM/DoD	Pyrene	µg/L			ND (0.075)	ND (0.073)	ND (0.073)
AK102	DRO	mg/L	1.5		0.061 J	0.19 QN	0.28 QN
AK103	RRO	mg/L	1.1		0.058J	0.28 QN	0.44 QN

Notes:

J = result is an estimate

ND = non-detect; limit of detection in parentheses

QN = result is an estimate due to high RPD in field duplicates

µg/L = micrograms per Liter

ADEC = Alaska Department of Environmental Conservation

AK = Alaska Test Method

DoD = U.S. Department of Defense

DRO = diesel range organics

DUP = sample is a field duplicate of previous sample

mg/L = milligrams per liter

RPD = relative percent difference

RRO = residual range organics

SIM = selective ion monitoring

Table 8 2011 Site 8 Soil Composite Results

Analysis Method	Analyte	Units	Cleanup Level	11NC08SS001	11NC08SS002	11NC08SS003	11NC08SS004-DUP
			Lab Sample ID	580-27899-54	580-27899-55	580-27899-56	580-27899-57
			Location ID	UDU-1	MDU-1	LDU-1	LDU-1
			Date Collected	8/5/2011	8/5/2011	8/5/2011	8/5/2011
8270C SIM/DoD	Acenaphthene	µg/kg	180,000	ND (3.4)	ND (4.2)	20	ND (4.2)
8270C SIM/DoD	Acenaphthylene	µg/kg	180,000	ND (3.4)	ND (4.2)	8.9 J	ND (4.2)
8270C SIM/DoD	Anthracene	µg/kg	3,000,000	ND (3.4)	5.2 J	ND (4.7)	6.0 J
8270C SIM/DoD	Benzo(a)anthracene	µg/kg	3,600	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Benzo(a)pyrene	µg/kg	2,100	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Benzo(b)fluoranthene	µg/kg	12,000	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Benzo(g,h,i)perylene	µg/kg	38,700,000	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Benzo(k)fluoranthene	µg/kg	120,000	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Chrysene	µg/kg	360,000	ND (3.4)	11	ND (4.7)	9.7
8270C SIM/DoD	Dibenz(a,h)anthracene	µg/kg	4,000	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Fluoranthene	µg/kg	1,400,000	ND (3.4)	12	ND (4.7)	9
8270C SIM/DoD	Fluorene	µg/kg	220,000	6.1 J	48	53	47
8270C SIM/DoD	Indeno(1,2,3-cd)pyrene	µg/kg	41,000	ND (3.4)	ND (4.2)	ND (4.7)	ND (4.2)
8270C SIM/DoD	Naphthalene	µg/kg	120,000*	ND (3.4)	46	240 QN	42 QN
8270C SIM/DoD	Phenanthrene	µg/kg	3,000,000	3.5 J	45	42	39
8270C SIM/DoD	Pyrene	µg/kg	1,000,000	3.2 J B	13 B	4.3 J B QN	11 B QN
8270C SIM/DoD	1-Methylnaphthalene	µg/kg	6,200	2.3 J	300	300 QN	130 QN
8270C SIM/DoD	2-Methylnaphthalene	µg/kg	6,100	3.5 J	150	210 QN	92 QN
9060	Total Organic Carbon	mg/kg	NS	81000 J	110000	140000	97000
AK102	DRO (nC10-<nC25)	mg/kg	9,200*	58	1800	550 QN	1500 QN
AK103	RRO (nC25-nC36)	mg/kg	9,200*	380	1100 MH	820	690
AK102 with SG	DRO (nC10-<nC25)	mg/kg	9,200*	36	1800	550 QN	1600 QN
AK103 with SG	RRO (nC25-nC36)	mg/kg	9,200*	320 J, MH	1800 MH	1300 MH	1200 MH

Notes:
*Site-specific cleanup level
LDU = lower decision unit
MDU = middle decision unit
UDU = upper decision unit
B = analyte also detected in method blank
J = result is an estimate
MH = result is an estimate with potential high bias due to matrix interference
ND = non-detect; limit of detection in parentheses
QN = result is an estimate due to high RPD in field duplicates
µg/kg = micrograms per kilogram
AK = Alaska Test Method
DoD = U.S. Department of Defense
DRO = diesel range organics
DUP = sample is a field duplicate of the previous sample
mg/kg = milligrams per kilogram
NS = not specified
RRO = residual range organics
SIM = selective ion monitoring

Table 9 2010 Site 8 Soil Composite Results

			Field Sample ID		10NC08SB01	10NC08SB02	10NC08SB03[D]	10NC08SB04
			Lab Sample ID		20762-28	20762-29	20762-30	20762-31
			Location ID		08-LDU	08-MDU	08-MDU	08-UDU
			Date Collected		7/25/2010	7/26/2010	7/26/2010	7/27/2010
Matrix	**Analysis Method**	**Analyte**	**Cleanup Level**	**Unit**				
Soil	8270C SIM/DoD	1-Methylnaphthalene	6,200	µg/kg	1200	5000	5100	4 J
Soil	8270C SIM/DoD	2-Methylnaphthalene	6,100	µg/kg	1200	**7500**	**7600**	6.8 J
Soil	8270C SIM/DoD	Acenaphthene	180,000	µg/kg	72	220	240	ND (1.7)
Soil	8270C SIM/DoD	Acenaphthylene	180,000	µg/kg	56 J	ND (1.9) J	100 J	3.4 J
Soil	8270C SIM/DoD	Anthracene	3,000,000	µg/kg	ND (1.7) J	180 J	ND (0.82) J	ND (0.68) J
Soil	8270C SIM/DoD	Benzo(a)anthracene	3,600	µg/kg	ND (4.3)	5.5 J	7.1 J	2.4 J
Soil	8270C SIM/DoD	Benzo(a)pyrene	2,100	µg/kg	ND (1.7) J	6.6 J	ND (0.82) J	ND (0.68) J
Soil	8270C SIM/DoD	Benzo(b)fluoranthene	12,000	µg/kg	ND (4.3)	9.3 J	13	ND (1.7)
Soil	8270C SIM/DoD	Benzo(g,h,i)perylene	38,700,000	µg/kg	ND (4.3)	ND (1.9)	ND (2)	ND (1.7)
Soil	8270C SIM/DoD	Benzo[k]fluoranthene	120,000	µg/kg	ND (4.3)	5.4 J	14	ND (1.7)
Soil	8270C SIM/DoD	Chrysene	360,000	µg/kg	ND (4.3)	26	24	6.4 J
Soil	8270C SIM/DoD	Dibenz(a,h)anthracene	4,000	µg/kg	ND (4.3)	ND (1.9)	ND (2)	ND (1.7)
Soil	8270C SIM/DoD	Fluoranthene	1,400,000	µg/kg	11 J	37	37	3.2 J
Soil	8270C SIM/DoD	Fluorene	220,000	µg/kg	200	630	820	13
Soil	8270C SIM/DoD	Indeno(1,2,3-cd)pyrene	41,000	µg/kg	ND (4.3)	2.8 J	2.9 J	1.8 J
Soil	8270C SIM/DoD	Naphthalene	20,000	µg/kg	340	1600	1600	ND (8.5)
Soil	8270C SIM/DoD	Phenanthrene	3,000,000	µg/kg	120	520	460	ND (1.7)
Soil	8270C SIM/DoD	Pyrene	1,000,000	µg/kg	19 J	26	42	3.9 J
Soil	EPA 9060	Total Organic Carbon - Quad	NS	mg/kg	130000	100000	100000	100000
Soil	AK102	DRO (nC10-<nC25)	9,200	mg/kg	2800	7100	**9300**	660
Soil	AK103	RRO (nC25-nC36)	9,200	mg/kg	1600	3300	5300 QH	6300 QH
Soil	AK102-SG	DRO with Silica Gel	9,200	mg/kg	3100 HL	6700 HL	8500 HL	310 HL
Soil	AK103-SG	RRO with Silica Gel	9,200	mg/kg	1000 HL	1300 HL	2100 HL	3000 QH, HL

Notes:

BOLD indicates sample concentration exceeded site-specific cleanup levels

Indicates duplicate of previous sample

LDU = lower decision unit

MDU = middle decision unit

UDU = upper decision unit

HL = sample result is an estimate due to analytical holding time exceedance; the result may have a low bias

J =the analyte was positively identified; the quantitation is an estimation

QH = estimated with a high bias

ND = non-detect; limit of detection in parentheses

µg/kg = micrograms per kilogram

AK = Alaska Test Method

DRO = diesel range organics

EPA = U.S. Environmental Protection Agency

mg/kg = milligrams per kilogram

NS = not specified

RRO = residual range organics

SG = extract was filtered through silica gel prior to analysis

SIM/DoD = Selective Ion Monitoring/U.S. Department of Defense

Table 10 MOC J1A DRO and RRO Soil Excavation Results

	Sample ID	11NCMOCSS001	11NCMOCSS002	11NCMOCSS003	11NCMOCSS004	11NCMOCSS005	11NCMOCSS006	11NCMOCSS007	11NCMOCSS008	11NCMOCSS009
	Laboratory ID	580-27882-1	580-27882-2	580-27882-3	580-27882-4	580-27882-5	580-27882-6	580-27882-7	580-27882-8	580-27882-9
	Location ID	MOCJ1A001	MOCJ1A002	MOCJ1A003	MOCJ1A004	MOCJ1A005	MOCJ1A006	MOCJ1A007	MOCJ1A008	MOCJ1A009
	Date Collected	08/02/11	08/02/11	08/02/11	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11
Analyte	Site-Specific Cleanup Level									
DRO by AK102 (mg/kg)	9,200	43	22	11	1300	4500	6600	640	11000	16000
RRO by AK103 (mg/kg)	9,200	ND (12)	ND (12)	ND (11)	ND (45)	ND (100)	ND (230)	ND (11)	ND (240)	ND (280)

Table 10 MOC J1A DRO and RRO Soil Excavation Results (continued)

	Sample ID	11NCMOCSS010	11NCMOCSS011	11NCMOCSS012	11NCMOCSS020	11NCMOCSS013-DUP	11NCMOCSS021	11NCMOCSS014-DUP	11NCMOCSS015	11NCMOCSS016
	Laboratory ID	580-27882-10	580-27882-11	580-27882-12	580-27882-20	580-27882-13	580-27882-21	580-27882-14	580-27882-15	580-27882-16
	Location ID	MOCJ1A010	MOCJ1A011	MOCJ1A012	MOCJ1A013	MOCJ1A013	MOCJ1A014	MOCJ1A014	MOCJ1A015	MOCJ1A016
	Date Collected	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11	08/03/11
Analyte	**Site-Specific Cleanup Level**									
DRO by AK102 (mg/kg)	**9,200**	4900 J	3300	10000	4600	5800	11000	14000	11000	9200
RRO by AK103 (mg/kg)	**9,200**	ND (120)	ND (110)	ND (250)	ND (230)	ND (120)	ND (480)	ND (610)	ND (450)	ND (430)

Table 10 MOC J1A DRO and RRO Soil Excavation Results (continued)

	Sample ID	11NCMOCSS017	11NCMOCSS018	11NCMOCSS019	11NCMOCSS022	11NCMOCSS023	11NCMOCSS025-DUP	11NCMOCSS024	11NCMOCSS061	11NCMOCSS062
	Laboratory ID	580-27882-17	580-27882-18	580-27882-19	580-28199-1	580-28199-2	580-28199-4	580-28199-3	580-28786-1	580-28786-2
	Location ID	MOCJ1A017	MOCJ1A018	MOCJ1A019	MOCJ1A022	MOCJ1A023	MOCJ1A023	MOCJ1A024	MOCJ1A061	MOCJ1A062
	Date Collected	08/03/11	08/03/11	08/03/11	08/20/11	08/20/11	08/20/11	08/20/11	09/16/11	09/16/11
Analyte	**Site-Specific Cleanup Level**									
DRO by AK102 (mg/kg)	**9,200**	29000	3400	140	22 B	460	310	24 B	2.4 J	330
RRO by AK103 (mg/kg)	**9,200**	ND (710)	ND (110)	ND (11)	23 J	20 J	13 J	12 J	ND (36)	ND (35)

Table 10 MOC J1A DRO and RRO Soil Excavation Results (continued)

	Sample ID	11NCMOCSS063	11NCMOCSS064	11NCMOCSS065	11NCMOCSS073-DUP	11NCMOCSS066	11NCMOCSS067	11NCMOCSS072-DUP
	Laboratory ID	580-28786-3	580-28786-4	580-28786-5	580-28786-13	580-28786-6	580-28786-7	580-28786-12
	Location ID	MOCJ1A063	MOCJ1A064	MOCJ1A065	MOCJ1A065	MOCJ1A066	MOCJ1A067	MOCJ1A067
	Date Collected	09/19/11	09/19/11	09/19/11	09/19/11	09/19/11	09/19/11	09/19/11
Analyte	Site-Specific Cleanup Level							
DRO by AK102 (mg/kg)	9,200	5200	130	6900	5100	3400	330	330
RRO by AK103 (mg/kg)	9,200	800	150	340 QN	750 QN	23 J	54 J	64 J

Notes
Red highlight = result is above site-specific cleanup level
B = analyte was detected in the method blank at a concentration less than 10 times the sample result
J = result is an estimate
ND = non-detect; the limit of detection is in parentheses
QN = result is an estimate due to a quality control failure; bias is unknown

AK = Alaska Test Method
DRO = diesel range organics
DUP = field duplicate of previous sample
mg/kg = milligrams per kilogram
MOC = Main Operations Complex
RRO = residual range organics

Table 11 MOC A1 DRO and RRO Soil Excavation Results

Sample ID	11NCMOCSS026	11NCMOCSS027	11NCMOCSS028	11NCMOCSS029	11NCMOCSS030	11NCMOCSS031	11NCMOCSS032	11NCMOCSS035	11NCMOCSS036	11NCMOCSS051-DUP	11NCMOCSS037	11NCMOCSS040
Laboratory ID	580-28350-1	580-28350-2	580-28350-3	580-28350-4	580-28350-5	580-28350-6	580-28350-7	580-28350-8	580-28350-9	580-28350-24	580-28350-10	580-28350-13
Location ID	MOCA1001	MOCA1002	MOCA1003	MOCA1004	MOCA1005	MOCA1006	MOCA1007	MOCA1010	MOCA1011	MOCA1011	MOCA1012	MOCA1015
Date Collected	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11
DRO by AK102 (mg/kg)	690	7100	4500	14000	5300	9600	4600	3100	2200	3500	2800	6200
RRO by AK103 (mg/kg)	310	78	30 J	67	ND (34)	270	38 J	ND (34)	43 J	ND (35)	90	240

Table 11 MOC A1 DRO and RRO Soil Excavation Results (continued)

Sample ID	11NCMOCSS041	11NCMOCSS042	11NCMOCSS043	11NCMOCSS044	11NCMOCSS045	11NCMOCSS046	11NCMOCSS047	11NCMOCSS048	11NCMOCSS049	11NCMOCSS050	11NCMOCSS052	11NCMOCSS053
Laboratory ID	580-28350-14	580-28350-15	580-28350-16	580-28350-17	580-28350-18	580-28350-19	580-28350-20	580-28350-21	580-28350-22	580-28350-23	580-28350-25	280-20411-1
Location ID	MOCA1016	MOCA1017	MOCA1018	MOCA1019	MOCA1020	MOCA1021	MOCA1022	MOCA1023	MOCA1024	MOCA1008	MOCA1009	MOCA1053
Date Collected	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/24/11	8/26/11	09/15/11
DRO by AK102 (mg/kg)	22 B	1900	8600	2400	30000	22 B	330 ML	5100	3600	2200	2400	58
RRO by AK103 (mg/kg)	28 J	98	160	240	2400 QH	54	1700 ML	31 J	34 J	28 J	88	150

Table 11 MOC A1 DRO and RRO Soil Excavation Results (continued)

Sample ID	11NCMOCSS055-DUP	11NCMOCSS054	11NCMOCSS056-DUP	11NCMOCSS057	11NCMOCSS058	11NCMOCSS059	11NCMOCSS060	11NCMOCSS068	11NCMOCSS069	11NCMOCSS070	11NCMOCSS071	Site-Specific Cleanup Levels (mg/kg)
Laboratory ID	280-20411-3	280-20411-2	280-20411-4	280-20411-5	280-20411-6	280-20411-7	280-20411-8	580-28786-8	580-28786-9	580-28786-10	580-28786-11	
Location ID	MOCA1053	MOCA1054	MOCA1054	MOCA1057	MOCA1058	MOCA1059	MOCA1060	MOCA1068	MOCA1069	MOCA1070	MOCA1071	
Date Collected	09/15/11	09/15/11	09/15/11	09/16/11	09/16/11	09/16/11	09/16/11	09/19/11	09/19/11	09/19/11	09/19/11	
DRO by AK102 (mg/kg)	51	1600 QN	5800 D QN	330 QN	2900	3800	1300	12000 J	2700	5400	1200	9,200
RRO by AK103 (mg/kg)	130	79 J	260 J	9.7 J	99 J	100 J	55 J	580	210	68	220	9,200

Notes:
Red highlight = results are above cleanup level
B = analyte was detected in the method blank at a concentration less than 10 times the result
D = sample was analyzed at a dilution
J = result is an estimate
ML = estimated bias low due to matrix effects
MOC = Main Operations Complex
ND = non-detect; limit of detection in parentheses
QH = one or more quality control criteria was outside of control limits with high bias
QN = result considered estimated with uncertain bias

AK = Alaska Test Method
DRO = diesel range organics
DUP = field duplicate of previous sample
mg/kg = milligrams per kilogram
RRO = residual range organics

Table 12 MOC Impoundment Water Results

Analyte	Cleanup Level		11NCMOCWA011	11NCMOCWA012-DUP	11NCMOCWA013	11NCMOCWA014
		Field Sample ID	11NCMOCWA011	11NCMOCWA012-DUP	11NCMOCWA013	11NCMOCWA014
		Lab Sample ID	580-28349-1	580-28349-2	580-20500-1	580-20500-2
		Location ID	11NCMOC-026	11NCMOC-026	Pad 98 Sump	Pad 98 Sump
		Date Collected	8/28/2011	8/28/2011	9/18/2011	9/18/2011
BTEX by EPA SW8260B (µg/L)						
Benzene	Total Aromatic Hydrocarbons (BTEX) less than 10 µg/L		ND (0.45)	ND (0.45)	ND (0.2) ML	ND (0.2) ML
Ethylbenzene			ND (0.45)	ND (0.45)	ND (0.2) ML	ND (0.2) ML
m-Xylene & p-Xylene			ND (0.90)	ND (0.90)	ND (0.8) ML	ND (0.8) ML
o-Xylene			ND (0.45)	ND (0.45)	ND (0.4) ML	ND (0.4) ML
Toluene			ND (0.45)	ND (0.45)	ND (0.4) ML	ND (0.4) ML
PAHs by EPA SW8270C SIM (µg/L)						
1-Methylnaphthalene	Total Aqueous Hydrocarbons (BTEX plus PAHs) less than 15 µg/L		0.065 J QL	0.078 J QL	ND (0.0099)	0.0055 J
2-Methylnaphthalene			ND (0.075) QL	0.039 J QL	ND (0.0099)	0.0059 J
Acenaphthene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.019)
Acenaphthylene			ND (0.075) QL	ND (0.075) QL	ND (0.02)	ND (0.0097)
Anthracene			ND (0.075) QL	ND (0.075) QL	ND (0.02)	ND (0.0097)
Benzo(a)anthracene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Benzo(a)pyrene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Benzo(b)fluoranthene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Benzo(g,h,i)perylene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Benzo(k)fluoranthene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Chrysene			ND (0.075) QL	ND (0.075) QL	0.0037 J	0.0034 J
Dibenz(a,h)anthracene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Fluoranthene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Fluorene			ND (0.075) QL	ND (0.075) QL	ND (0.02)	ND (0.0097)
Indeno(1,2,3-cd)pyrene			ND (0.075) QL	ND (0.075) QL	ND (0.02)	ND (0.0097)
Naphthalene			0.097 J QL	0.095 J QL	0.011 J	0.011 J
Phenanthrene			ND (0.075) QL	ND (0.075) QL	ND (0.0099)	ND (0.0097)
Pyrene			ND (0.075) QL	ND (0.075) QL	0.0088 J	ND (0.0097)

Notes:
J = result is an estimate
ND = non-detect; limit of detection in parentheses
QL = surrogate recovery was below acceptance limit; results are considered estimates with low bias
ML = result is an estimate due to MS/MSD recoveries outside of acceptance limits

µg/L = micrograms per liter
BTEX = benzene, toluene, ethylbenzene, and xylenes
DUP = Sample is a field duplicate of the previous sample
EPA = U.S. Environmental Protection Agency
MOC = Main Operations Complex

MS/MSD = matrix spike/matrix spike duplicate
PAH = polynuclear aromatic hydrocarbons
SW = EPA Solid Waste Test Method
SIM = selective ion monitoring

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg)

	Sample ID	11NC13SS001	11NC13SS003	11NC13SS004	11NC13SS006	11NC13SS007	11NC13SS009	11NC13SS138-DUP	11NC13SS010	11NC13SS139-DUP	11NC13SS011	11NC13SS140-DUP	11NC13SS012	11NC13SS013
	Laboratory Sample ID	280-20054-1	280-20054-3	280-20054-4	280-20054-6	280-20054-7	280-20054-9	280-20054-138	280-20054-10	280-20054-139	280-20054-11	280-20054-140	280-20054-12	280-20054-13
	Location ID	013-01	013-03	013-04	013-06	013-07	013-09	013-09	013-10	013-10	013-11	013-11	013-12	013-13
Analyte	Date Collected	9/3/11	9/3/11	9/3/11	9/4/11	9/3/11	9/3/11*	9/4/11*	9/3/11*	9/4/11*	9/3/11*	9/4/2011 *	9/3/11	9/3/11
Aroclor 1016 (µg/kg)		ND (22)	ND (21)	ND (11)	ND (81)	ND (43)	ND (41)	ND (42)	ND (110)	ND (54)	ND (41)	ND (53)	ND (9.9)	ND (11)
Aroclor 1221 (µg/kg)		ND (44)	ND (42)	ND (22)	ND (40)	ND (86)	ND (81)	ND (84)	ND (210)	ND (110)	ND (83)	ND (110)	ND (20)	ND (22)
Aroclor 1232 (µg/kg)		ND (22)	ND (21)	ND (11)	ND (40)	ND (43)	ND (41)	ND (42)	ND (110)	ND (54)	ND (41)	ND (53)	ND (9.9)	ND (11)
Aroclor 1242 (µg/kg)		ND (22)	ND (21)	ND (11)	ND (40)	ND (43)	ND (41)	ND (42)	ND (110)	ND (54)	ND (41)	ND (53)	ND (9.9)	ND (11)
Aroclor 1248 (µg/kg)		ND (22)	ND (21)	ND (11)	ND (40)	ND (43)	ND (41)	ND (42)	ND (110)	ND (54)	ND (41)	ND (53)	ND (9.9)	ND (11)
Aroclor 1254 (µg/kg)		ND (22)	ND (21)	ND (11)	ND (40)	ND (43)	ND (41)	ND (42)	ND (110)	ND (54)	ND (41)	420 MN	ND (9.9)	ND (11)
Aroclor 1260 (µg/kg)		450	340	250	870	540	340 QN	340 QN	1600 QN	790 QN	890 QN	1100 MN	160	120
Total PCBs (µg/kg)		450	340	250	870	540	341 QN	341 QN	1600 QN	790 QN	890 QN	1520 MN	160	120

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS014	11NC13SS015	11NC13SS016	11NC13SS022	11NC13SS024	11NC13SS025	11NC13SS026	11NC13SS027	11NC13SS030	11NC13SS145-DUP	11NC13SS031	11NC13SS036	11NC13SS037	11NC13SS039
	Laboratory Sample ID	280-20054-14	280-20054-15	280-20054-16	280-20054-22	280-20054-24	280-20054-25	280-20054-26	280-20054-27	280-20054-30	280-20054-145	280-20054-31	280-20054-36	280-20054-37	280-20054-39
	Location ID	013-14	013-15	013-16	013-22	013-24	013-25	013-26	013-27	013-30	013-30	013-31	013-36	013-37	013-39
Analyte	Date Collected	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11
Aroclor 1016 (µg/kg)		ND (20)	ND (30)	ND (11)	ND (50)	ND (11)	ND (11)	ND (11)	ND (51)	ND (40)	ND (41)	ND (51)	ND (1100)	ND (22)	ND (11)
Aroclor 1221 (µg/kg)		ND (40)	ND (60)	ND (21)	ND (99)	ND (21)	ND (22)	ND (22)	ND (100)	ND (81)	ND (83)	ND (100)	ND (2200)	ND (44)	ND (22)
Aroclor 1232 (µg/kg)		ND (20)	ND (30)	ND (11)	ND (50)	ND (11)	ND (11)	ND (11)	ND (51)	ND (40)	ND (41)	ND (51)	ND (1100)	ND (22)	ND (11)
Aroclor 1242 (µg/kg)		ND (20)	ND (30)	ND (11)	ND (50)	ND (11)	ND (11)	ND (11)	ND (51)	ND (40)	ND (41)	ND (51)	ND (1100)	ND (22)	ND (11)
Aroclor 1248 (µg/kg)		ND (20)	ND (30)	ND (11)	ND (50)	ND (11)	ND (11)	ND (11)	ND (51)	ND (40)	ND (41)	ND (51)	ND (1100)	ND (22)	ND (11)
Aroclor 1254 (µg/kg)		ND (20)	ND (30)	ND (11)	ND (50)	ND (11)	ND (11)	ND (11)	ND (51)	ND (40)	ND (41)	ND (51)	ND (1100)	ND (22)	ND (11)
Aroclor 1260 (µg/kg)		360 QH	570 QH	270	800	240	240	61	690	530	440	640	31000	420	210 ML
Total PCBs (µg/kg)		360 QH	570 QH	270	800	240	240	61	690	530	440	640	31000	420	210 ML

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS042	11NC13SS043	11NC13SS046	11NC13SS047	11NC13SS048	11NC13SS049	11NC13SS050	11NC13SS051	11NC13SS052	11NC13SS053	11NC13SS054	11NC13SS055	11NC13SS056	11NC13SS057
	Laboratory Sample ID	280-20054-42	280-20054-43	280-20054-46	280-20054-47	280-20054-48	280-20054-49	280-20054-50	280-20054-51	280-20054-52	280-20054-53	280-20054-54	280-20054-55	280-20054-56	280-20054-57
	Location ID	013-42	013-43	013-46	013-47	013-48	013-49	013-50	013-51	013-52	013-53	013-54	013-55	013-56	013-57
Analyte	Date Collected	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11
Aroclor 1016 (µg/kg)		ND (31)	ND (49)	ND (11)	ND (11)	ND (52)	ND (11)	ND (11)	ND (110)	ND (53)	ND (110)	ND (10)	ND (12)	ND (52)	ND (100)
Aroclor 1221 (µg/kg)		ND (62)	ND (99)	ND (22)	ND (22)	ND (100)	ND (21)	ND (21)	ND (220)	ND (110)	ND (220)	ND (20)	ND (23)	ND (100)	ND (210)
Aroclor 1232 (µg/kg)		ND (31)	ND (49)	ND (11)	ND (11)	ND (52)	ND (11)	ND (11)	ND (110)	ND (53)	ND (110)	ND (10)	ND (12)	ND (52)	ND (100)
Aroclor 1242 (µg/kg)		ND (31)	ND (49)	ND (11)	ND (11)	ND (52)	ND (11)	ND (11)	ND (110)	ND (53)	ND (110)	ND (10)	ND (12)	ND (52)	ND (100)
Aroclor 1248 (µg/kg)		ND (31)	ND (49)	ND (11)	ND (11)	ND (52)	ND (11)	ND (11)	ND (110)	ND (53)	ND (110)	ND (10)	ND (12)	ND (52)	ND (100)
Aroclor 1254 (µg/kg)		ND (31)	ND (49)	ND (11)	ND (11)	ND (52)	ND (11)	ND (11)	320 MN	740 MN	2200 MN	ND (10)	ND (12)	700 MN	570 MN
Aroclor 1260 (µg/kg)		480	1100	110	97	480	240	200	1300 MN	970 MN	2500 MN	260	160	1400 MN	2300 MN
Total PCBs (µg/kg)		480	1100	110	97	480	240	200	1620 MN	1710 MN	4700 MN	260	160	2100 MN	2870 MN

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS058	11NC13SS059	11NC13SS060	11NC13SS061	11NC13SS062	11NC13SS070	11NC13SS079	11NC13SS080	11NC13SS081	11NC13SS082	11NC13SS083	11NC13SS084	11NC13SS085	11NC13SS086
	Laboratory Sample ID	280-20054-58	280-20054-59	280-20054-60	280-20054-61	280-20054-62	280-20054-70	280-20054-79	280-20054-80	280-20054-81	280-20054-82	280-20054-83	280-20054-84	280-20054-85	280-20054-86
	Location ID	013-58	013-59	013-60	013-61	013-62	013-70	013-79	013-80	013-81	013-82	013-83	013-84	013-85	013-86
Analyte	Date Collected	9/4/11	9/4/11	9/3/11	9/3/11	9//2011	9/3/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11
Aroclor 1016 (µg/kg)		ND (31)	ND (59)	ND (10)	ND (110)	ND (10)	ND (55)	ND (11)	ND (100)	ND (51)	ND (11)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1221 (µg/kg)		ND (63)	ND (120)	ND (21)	ND (210)	ND (20)	ND (110)	ND (23)	ND (200)	ND (100)	ND (23)	ND (220)	ND (22)	ND (22)	ND (21)
Aroclor 1232 (µg/kg)		ND (31)	ND (59)	ND (10)	ND (110)	ND (10)	ND (55)	ND (11)	ND (100)	ND (51)	ND (11)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1242 (µg/kg)		ND (31)	ND (59)	ND (10)	ND (110)	ND (10)	ND (55)	ND (11)	ND (100)	ND (51)	ND (11)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1248 (µg/kg)		ND (31)	ND (59)	ND (10)	ND (110)	ND (10)	ND (55)	ND (11)	ND (100)	ND (51)	ND (11)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1254 (µg/kg)		ND (31)	ND (59)	ND (10)	ND (110)	ND (10)	ND (55)	ND (11)	1300 MN	ND (51)	ND (11)	ND (110)	ND (11)	36 MN	99 MN
Aroclor 1260 (µg/kg)		580	930	250	1100	37	260	180 MH	1700 MN	760	110	1800	ND (11)	130 MN	240 MN
Total PCBs (µg/kg)		580	930	250	1100	37	260	180 MH	3000 MN	760	110	1800	ND (22)	166 MN	339 MN

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS087	11NC13SS088	11NC13SS089	11NC13SS096	11NC13SS097	11NC13SS105	11NC13SS108	11NC13SS111	11NC13SS114	11NC13SS123	11NC13SS124	11NC13SS125	11NC13SS126
	Laboratory Sample ID	280-20054-87	280-20054-88	280-20054-89	280-20054-96	280-20054-97	280-20054-105	280-20054-108	280-20054-111	280-20054-114	280-20054-123	280-20054-124	280-20054-125	280-20054-126
	Location ID	013-87	013-88	013-89	013-96	013-97	013-105	013-108	013-111	013-114	013-123	013-124	013-125	013-126
Analyte	Date Collected	9/4/11	9/4/11	9/4/11	9/4/11	9/3/11	9/3/11	9/3/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11
Aroclor 1016 (µg/kg)		ND (11)	ND (11)	ND (55)	ND (11)	ND (52)	ND (11)	ND (10)	ND (10)	ND (53)	ND (10)	ND (11)	ND (210)	ND (10)
Aroclor 1221 (µg/kg)		ND (22)	ND (21)	ND (110)	ND (22)	ND (100)	ND (22)	ND (21)	ND (21)	ND (110)	ND (20)	ND (23)	ND (410)	ND (21)
Aroclor 1232 (µg/kg)		ND (11)	ND (11)	ND (55)	ND (11)	ND (52)	ND (11)	ND (10)	ND (10)	ND (53)	ND (10)	ND (11)	ND (210)	ND (10)
Aroclor 1242 (µg/kg)		ND (11)	ND (11)	ND (55)	ND (11)	ND (52)	ND (11)	ND (10)	ND (10)	ND (53)	ND (10)	ND (11)	ND (210)	ND (10)
Aroclor 1248 (µg/kg)		ND (11)	ND (11)	ND (55)	ND (11)	ND (52)	ND (11)	ND (10)	ND (10)	ND (53)	ND (10)	ND (11)	ND (210)	ND (10)
Aroclor 1254 (µg/kg)		ND (11)	ND (11)	710 MN	ND (11)	ND (52)	ND (11)	ND (10)	ND (10)	ND (53)	ND (10)	36 J MN	ND (210)	230 MN
Aroclor 1260 (µg/kg)		150	ND (11)	910 MN	ND (11)	820 MN	ND (11)	ND (10)	56	1200	ND (10)	110 MN	4300	300 MN
Total PCBs (µg/kg)		150	ND (21)	1620 MN	ND (22)	820 MN	ND (22)	ND (21)	56	1200	ND (20)	146 J MN	4300	530 MN

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS127	11NC13SS128	11NC13SS129	11NC13SS130	11NC13SS131	11NC13SS141	11NC13SS142	11NC13SS143	11NC13SS144	11NC13SS Composite 1	11NC13SS Composite 2	11NC13SS Composite 3
	Laboratory Sample ID	280-20054-127	280-20054-128	280-20054-129	280-20054-130	280-20054-131	280-20054-141	280-20054-142	280-20054-143	280-20054-144	280-20054-146	280-20054-147	280-20054-148
	Location ID	013-127	013-128	013-129	013-130	013-131	013-12	013-13	013-36	013-37			
Analyte	Date Collected	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11
Aroclor 1016 (µg/kg)		ND (53)	ND (51)	ND (53)	ND (10)	ND (11)	ND (110)	ND (11)	ND (11)	ND (1100)	ND (220)	ND (100)	ND (51)
Aroclor 1221 (µg/kg)		ND (110)	ND (100)	ND (110)	ND (21)	ND (22)	ND (220)	ND (23)	ND (22)	ND (2100)	ND (430)	ND (210)	ND (100)
Aroclor 1232 (µg/kg)		ND (53)	ND (51)	ND (53)	ND (10)	ND (11)	ND (110)	ND (11)	ND (11)	ND (1100)	ND (220)	ND (100)	ND (51)
Aroclor 1242 (µg/kg)		ND (53)	ND (51)	ND (53)	ND (10)	ND (11)	ND (110)	ND (11)	ND (11)	ND (1100)	ND (220)	ND (100)	ND (51)
Aroclor 1248 (µg/kg)		ND (53)	ND (51)	ND (53)	ND (10)	ND (11)	ND (110)	ND (11)	ND (11)	ND (1100)	ND (220)	ND (100)	ND (51)
Aroclor 1254 (µg/kg)		1200 MN	280 MN	680 MN	ND (10)	ND (11)	ND (110)	ND (11)	ND (11)	ND (1100)	ND (220)	910 MN	380 MN
Aroclor 1260 (µg/kg)		960 MN	640 MN	1400 MN	4 J	39	1500	270	190	11000	3200	980 MN	400 MN
Total PCBs (µg/kg)		2160 MN	920 MN	2080 MN	4 J	39	1500	270	190	11000	3200	1890 MN	780 MN

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 4	11NC13SS Composite 5	11NC13SS Composite 6	11NC13SS Composite 7	11NC13SS Composite 8	11NC13SS Composite 9	11NC13SS Composite 10	11NC13SS Composite 11	11NC13SS Composite 12	11NC13SS Composite 13	11NC13SS Composite 14	11NC13SS Composite 15
	Laboratory Sample ID	280-20054-149	280-20054-150	280-20054-151	280-20054-152	280-20054-153	280-20054-154	280-20054-155	280-20054-156	280-20054-157	280-20054-158	280-20054-159	280-20054-160
	Location ID												
Analyte	Date Collected	9/4/11	9/4/11	9/4/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/4/11	9/3/11	9/3/11
Aroclor 1016 (µg/kg)		ND (11)	ND (11)	ND (210)	ND (210)	ND (11)	ND (57)	ND (11)	ND (42)	ND (11)	ND (52)	ND (9.9)	ND (11)
Aroclor 1221 (µg/kg)		ND (22)	ND (22)	ND (410)	ND (430)	ND (22)	ND (110)	ND (22)	ND (84)	ND (22)	ND (100)	ND (20)	ND (22)
Aroclor 1232 (µg/kg)		ND (11)	ND (11)	ND (210)	ND (210)	ND (11)	ND (57)	ND (11)	ND (42)	ND (11)	ND (52)	ND (9.9)	ND (11)
Aroclor 1242 (µg/kg)		ND (11)	ND (11)	ND (210)	ND (210)	ND (11)	ND (57)	ND (11)	ND (42)	ND (11)	ND (52)	ND (9.9)	ND (11)
Aroclor 1248 (µg/kg)		ND (11)	ND (11)	ND (210)	ND (210)	ND (11)	ND (57)	ND (11)	ND (42)	ND (11)	ND (52)	ND (9.9)	ND (11)
Aroclor 1254 (µg/kg)		ND (11)	ND (11)	3000 MN	ND (210)	ND (11)	ND (57)	ND (11)	ND (42)	ND (11)	ND (52)	ND (9.9)	ND (11)
Aroclor 1260 (µg/kg)		11 J	63	3400 MN	3700	ND (11)	620	44	420	290	450	110	290
Total PCBs (µg/kg)		11 J	63	6400 MN	3700	ND (22)	620	44	420	290	450	110	290

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 16	11NC13SS Composite 17	11NC13SS Composite 18	11NC13SS Composite 19	11NC13SS Composite 20	11NC13SS Composite 21	11NC13SS Composite 22	11NC13SS Composite 23	11NC13SS Composite 24	11NC13SS Composite 25	11NC13SS Composite 26	11NC13SS Composite 27
	Laboratory Sample ID	280-20054-161	280-20054-162	280-20054-163	280-20054-164	280-20054-165	280-20054-166	280-20054-167	280-20054-168	280-20054-169	280-20054-170	280-20054-171	280-20054-172
	Location ID												
Analyte	Date Collected	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11	9/3/11
Aroclor 1016 (µg/kg)		ND (21)	ND (9.8)	ND (11)	ND (20)	ND (10)	ND (50)	ND (11)	ND (10)	ND (11)	ND (42)	ND (12)	ND (11)
Aroclor 1221 (µg/kg)		ND (41)	ND (20)	ND (22)	ND (40)	ND (21)	ND (99)	ND (22)	ND (21)	ND (21)	ND (85)	ND (23)	ND (22)
Aroclor 1232 (µg/kg)		ND (21)	ND (9.8)	ND (11)	ND (20)	ND (10)	ND (50)	ND (11)	ND (10)	ND (11)	ND (42)	ND (12)	ND (11)
Aroclor 1242 (µg/kg)		ND (21)	ND (9.8)	ND (11)	ND (20)	ND (10)	ND (50)	ND (11)	ND (10)	ND (11)	ND (42)	ND (12)	ND (11)
Aroclor 1248 (µg/kg)		ND (21)	ND (9.8)	ND (11)	ND (20)	ND (10)	ND (50)	ND (11)	ND (10)	ND (11)	ND (42)	ND (12)	ND (11)
Aroclor 1254 (µg/kg)		ND (21)	ND (9.8)	ND (11)	ND (20)	ND (10)	ND (50)	ND (11)	ND (10)	ND (11)	ND (42)	ND (12)	ND (11)
Aroclor 1260 (µg/kg)		270	94	62	330	270	570	64	11 J	240	440	ND (12)	45
Total PCBs (µg/kg)		270	94	62	330	270	570	64	11 J	240	440	ND (12)	45

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 28	11NC13SS Composite 29	11NC13SS Composite 30	11NC13SS Composite 31	11NC13SS Composite 32	11NC13SS Composite 36-DUP*	11NC13SS Composite 33	11NC13SS Composite 35-DUP*	11NC13SS Composite 34	11NC13SS146	11NC13SS149	11NC13SS150	11NC13SS151
	Laboratory Sample ID	280-20054-173	280-20054-174	280-20054-175	280-20054-176	280-20054-177	280-20054-181	280-20054-178	280-20054-180	280-20054-179	280-20410-1	280-20410-4	280-20410-5	280-20410-6
	Location ID										013-146	013-149	013-150	013-151
Analyte	Date Collected	9/3/11	9/3/11	9/3/11	9/3/11	9/4/11	9/4/11	9/4/11	9/4/11	9/4/11	9/13/11	9/13/11	9/13/11	9/13/11
Aroclor 1016 (µg/kg)		ND (11)	ND (11)	ND (43)	ND (11)	ND (330)	ND (210)	ND (22)	ND (54)	ND (10)	ND (11)	ND (12)	ND (11) QL	ND (11)
Aroclor 1221 (µg/kg)		ND (22)	ND (22)	ND (86)	ND (23)	ND (660)	ND (420)	ND (45)	ND (110)	ND (21)	ND (22)	ND (23)	ND (22) QL	ND (21)
Aroclor 1232 (µg/kg)		ND (11)	ND (11)	ND (43)	ND (11)	ND (330)	ND (210)	ND (22)	ND (54)	ND (10)	ND (11)	ND (12)	ND (11) QL	ND (11)
Aroclor 1242 (µg/kg)		ND (11)	ND (11)	ND (43)	ND (11)	ND (330)	ND (210)	ND (22)	ND (54)	ND (10)	ND (11)	ND (12)	ND (11) QL	ND (11)
Aroclor 1248 (µg/kg)		ND (11)	ND (11)	ND (43)	ND (11)	ND (330)	ND (210)	ND (22)	ND (54)	ND (10)	ND (11)	ND (12)	ND (11) QL	ND (11)
Aroclor 1254 (µg/kg)		ND (11)	ND (11)	ND (43)	ND (11)	ND (330)	ND (210)	ND (22)	ND (54)	ND (10)	ND (11)	ND (12)	ND (11) QL	ND (11)
Aroclor 1260 (µg/kg)		46	21 J	560	88	5800	4000	300	620	150	300	88	330 QL	ND (11)
Total PCBs (µg/kg)		46	21 J	560	88	5800	4000	300	620	150	300	88	330 QL	ND (21)

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS152	11NC13SS Composite 1	11NC13SS Composite 2	11NC13SS Composite 3	11NC13SS Composite 8-DUP	11NC13SS Composite 4	11NC13SS Composite 5	11NC13SS Composite 6	11NC13SS Composite 7	11NC13SS Composite 9	11NC13SS177	11NC13SS178	11NC13SS181	11NC13SS182
	Laboratory Sample ID	280-20410-7	280-20410-32	280-20410-33	280-20410-34	280-20410-39	280-20410-35	280-20410-36	280-20410-37	280-20410-38	280-20410-40	280-20698-1	280-20698-2	280-20698-5	280-20698-6
	Location ID	013-152										013-177	013-178	013-181	013-182
Analyte	Date Collected	9/13/11	9/13/11	9/13/11	9/13/11	9/13/11	9/13/11	9/13/11	9/13/11	9/13/11	9/13/11	9/21/11	9/21/11	9/21/11	9/21/11
Aroclor 1016 (µg/kg)		ND (110)	ND (11)	ND (12)	ND (13)	ND (12)	ND (11)	ND (10)	ND (10)	ND (11)	ND (11) QL	ND (11)	ND (11)	ND (11) QL	ND (10)
Aroclor 1221 (µg/kg)		ND (220)	ND (23)	ND (24)	ND (25)	ND (24)	ND (21)	ND (21)	ND (21)	ND (23)	ND (22) QL	ND (21)	ND (21)	ND (23) QL	ND (21)
Aroclor 1232 (µg/kg)		ND (110)	ND (11)	ND (12)	ND (13)	ND (12)	ND (11)	ND (10)	ND (10)	ND (11)	ND (11) QL	ND (11)	ND (11)	ND (11) QL	ND (10)
Aroclor 1242 (µg/kg)		ND (110)	ND (11)	ND (12)	ND (13)	ND (12)	ND (11)	ND (10)	ND (10)	ND (11)	ND (11) QL	ND (11)	ND (11)	ND (11) QL	ND (10)
Aroclor 1248 (µg/kg)		ND (110)	ND (11)	ND (12)	ND (13)	ND (12)	ND (11)	ND (10)	ND (10)	ND (11)	ND (11) QL	ND (11)	ND (11)	ND (11) QL	ND (10)
Aroclor 1254 (µg/kg)		ND (110)	ND (11)	ND (12)	ND (13)	ND (12)	ND (11)	ND (10)	ND (10)	ND (11)	ND (11) QL	ND (11)	ND (11)	ND (11) QL	ND (10)
Aroclor 1260 (µg/kg)		1700	78	ND (12)	ND (13)	ND (12)	35	39	ND (10)	ND (11)	280 QL	170	71	70 QL	47 QL
Total PCBs (µg/kg)		1700	78	ND (24)	ND (25)	ND (24)	35	39	ND (21)	ND (23)	280 QL	170	71	70 QL	47 QL

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS183	11NC13SS184	11NC13SS195	11NC13SS419-DUP	11NC13SS191	11NC13SS210	11NC13SS211	11NC13SS214	11NC13SS223	11NC13SS216	11NC13SS420-DUP	11NC13SS225	11NC13SS226
	Laboratory Sample ID	280-20698-7	280-20698-8	280-20698-19	280-20698-243	280-20698-15	280-20698-34	280-20698-35	280-20698-38	280-20698-47	280-20698-40	280-20698-244	280-20698-49	280-20698-50
	Location ID	013-183	013-184	013-195	013-195	13-191	13-210	013-211	013-214	013-223	013-216	013-216	013-225	013-226
Analyte	Date Collected	9/21/11	9/21/11	9/21/2011 *	9/22/11*	9/21/11	9/21/11	9/13/11	9/13/11	9/13/11	9/21/11*	9/22/11*	9/21/11	9/21/11*
Aroclor 1016 (µg/kg)		ND (10)	ND (11)	ND (44)	ND (11)	ND (10)	ND (420)	ND (11)	ND (51)	ND (11)	ND (44)	ND (22)	ND (43)	ND (11) QL
Aroclor 1221 (µg/kg)		ND (20)	ND (21)	ND (88)	ND (22)	ND (20)	ND (840)	ND (22)	ND (100)	ND (22)	ND (88)	ND (44)	ND (86)	ND (21) QL
Aroclor 1232 (µg/kg)		ND (10)	ND (11)	ND (44)	ND (11)	ND (10)	ND (420)	ND (11)	ND (51)	ND (11)	ND (44)	ND (22)	ND (43)	ND (11) QL
Aroclor 1242 (µg/kg)		ND (10)	ND (11)	ND (44)	ND (11)	ND (10)	ND (420)	ND (11)	ND (51)	ND (11)	ND (44)	ND (22)	ND (43)	ND (11) QL
Aroclor 1248 (µg/kg)		ND (10)	ND (11)	ND (44)	ND (11)	ND (10)	ND (420)	ND (11)	ND (51)	ND (11)	ND (44)	ND (22)	ND (43)	ND (11) QL
Aroclor 1254 (µg/kg)		ND (10)	ND (11)	ND (44)	ND (11)	ND (10)	ND (420)	ND (11)	ND (51)	ND (11)	ND (44)	ND (22)	ND (43)	ND (11) QL
Aroclor 1260 (µg/kg)		110	59 MN	730 QN	280 QN	13 J	9600	29 J	890	150	660 QN	500 QN	780	170 QL QN
Total PCBs (µg/kg)		110	59 MN	730 QN	280 QN	13 J	9600	29 J	890	150	660 QN	500 QN	780	170 QL QN

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS421-DUP	11NC13SS227	11NC13SS230	11NC13SS231	11NC13SS236	11NC13SS237	11NC13SS422-DUP	11NC13SS238	11NC13SS241	11NC13SS242	11NC13SS243	11NC13SS244	11NC13SS245	11NC13SS246
	Laboratory Sample ID	280-20698-245	280-20698-51	280-20698-54	280-20698-55	280-20698-60	280-20698-61	280-20698-246	280-20698-62	280-20698-65	280-20698-66	280-20698-67	280-20698-68	280-20698-69	280-20698-70
	Location ID	013-226	013-227	013-230	013-231	013-236	013-237	013-237	013-238	013-241	013-242	013-243	013-244	013-245	013-246
Analyte	Date Collected	9/22/11*	9/21/11	9/21/11	9/21/11	9/21/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (11)	ND (21)	ND (12)	ND (52)	ND (11)	ND (52)	ND (54)	ND (11)	ND (11)	ND (11)	ND (110)	ND (55)	ND (11)	ND (12)
Aroclor 1221 (µg/kg)		ND (21)	ND (41)	ND (23)	ND (100)	ND (22)	ND (100)	ND (110)	ND (21)	ND (23)	ND (23)	ND (220)	ND (110)	ND (22)	ND (23)
Aroclor 1232 (µg/kg)		ND (11)	ND (21)	ND (12)	ND (52)	ND (11)	ND (52)	ND (54)	ND (11)	ND (11)	ND (11)	ND (110)	ND (55)	ND (11)	ND (12)
Aroclor 1242 (µg/kg)		ND (11)	ND (21)	ND (12)	ND (52)	ND (11)	ND (52)	ND (54)	ND (11)	ND (11)	ND (11)	ND (110)	ND (55)	ND (11)	ND (12)
Aroclor 1248 (µg/kg)		ND (11)	ND (21)	ND (12)	ND (52)	ND (11)	ND (52)	ND (54)	ND (11)	ND (11)	ND (11)	ND (110)	ND (55)	ND (11)	ND (12)
Aroclor 1254 (µg/kg)		ND (11)	ND (21)	ND (12)	ND (52)	ND (11)	ND (52)	ND (54)	ND (11)	ND (11)	ND (11)	ND (110)	ND (55)	ND (11)	ND (12)
Aroclor 1260 (µg/kg)		95 QN	370	ND (12)	1100	ND (11)	930 QN	1100 QN	39	98 ML	240 ML	2300	890	110	250
Total PCBs (µg/kg)		95 QN	370	ND (23)	1100	ND (22)	930 QN	1100 QN	39	98 ML	240 ML	2300	890	110	250

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS247	11NC13SS248	11NC13SS249	11NC13SS250	11NC13SS251	11NC13SS252	11NC13SS255	11NC13SS256	11NC13SS257	11NC13SS258	11NC13SS259	11NC13SS260	11NC13SS261	11NC13SS262
	Laboratory Sample ID	280-20698-71	280-20698-72	280-20698-73	280-20698-74	280-20698-75	280-20698-76	280-20698-79	280-20698-80	280-20698-81	280-20698-82	280-20698-83	280-20698-84	280-20698-85	280-20698-86
	Location ID	013-247	013-248	013-249	013-250	013-251	013-252	013-255	013-256	013-257	013-258	013-259	013-260	013-261	013-262
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (43)	ND (11) QL	ND (550)	ND (110)	ND (11)	ND (11)	ND (11)	ND (11)	ND (44)	ND (10)	ND (11)	ND (2100)	ND (220)	ND (110)
Aroclor 1221 (µg/kg)		ND (86)	ND (22) QL	ND (1100)	ND (220)	ND (22)	ND (22)	ND (22)	ND (21)	ND (87)	ND (20)	ND (22)	ND (4300)	ND (440)	ND (220)
Aroclor 1232 (µg/kg)		ND (43)	ND (11) QL	ND (550)	ND (110)	ND (11)	ND (11)	ND (11)	ND (11)	ND (44)	ND (10)	ND (11)	ND (2100)	ND (220)	ND (110)
Aroclor 1242 (µg/kg)		ND (43)	ND (11) QL	ND (550)	ND (110)	ND (11)	ND (11)	ND (11)	ND (11)	ND (44)	ND (10)	ND (11)	ND (2100)	ND (220)	ND (110)
Aroclor 1248 (µg/kg)		ND (43)	ND (11) QL	ND (550)	ND (110)	ND (11)	ND (11)	ND (11)	ND (11)	ND (44)	ND (10)	ND (11)	ND (2100)	ND (220)	ND (110)
Aroclor 1254 (µg/kg)		ND (43)	ND (11) QL	ND (550)	ND (110)	ND (11)	ND (11)	ND (11)	ND (11)	ND (44)	ND (10)	ND (11)	ND (2100)	ND (220)	ND (110)
Aroclor 1260 (µg/kg)		520	79 QL	9700	2100	ND (11)	300	67	ND (11)	290	ND (10)	260	33000	3300	2000
Total PCBs (µg/kg)		520	79 QL	9700	2100	ND (22)	300	67	ND (21)	290	ND (20)	260	33000	3300	2000

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS265	11NC13SS266	11NC13SS267	11NC13SS273	11NC13SS281	11NC13SS424-DUP	11NC13SS282	11NC13SS432-DUP	11NC13SS283	11NC13SS425-DUP	11NC13SS284	11NC13SS427-DUP	11NC13SS285
	Laboratory Sample ID	280-20698-89	280-20698-90	280-20698-91	280-20698-97	280-20698-105	280-20698-248	280-20698-106	280-20698-256	280-20698-107	280-20698-249	280-20698-108	280-20698-251	280-20698-109
	Location ID	013-265	013-266	013-267	013-273	013-281	013-281	013-282	013-282	013-283	013-283	013-284	013-284	013-285
Analyte	Date Collected	9/22/11	9/22/11	9/21/11	9/21/11	9/21/11	9/22/11	9/21/11	9/22/11	9/21/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (10)	ND (10)	ND (10)	ND (53)	ND (11)	ND (89)	ND (11)	ND (11)	ND (11)	ND (10)	ND (11)	ND (11)	ND (9.9)
Aroclor 1221 (µg/kg)		ND (20)	ND (21)	ND (21)	ND (110)	ND (22)	ND (180)	ND (22)	ND (23)	ND (22)	ND (20)	ND (21)	ND (23)	ND (20)
Aroclor 1232 (µg/kg)		ND (10)	ND (10)	ND (10)	ND (53)	ND (11)	ND (89)	ND (11)	ND (11)	ND (11)	ND (10)	ND (11)	ND (11)	ND (9.9)
Aroclor 1242 (µg/kg)		ND (10)	ND (10)	ND (10)	ND (53)	ND (11)	ND (89)	ND (11)	ND (11)	ND (11)	ND (10)	ND (11)	ND (11)	ND (9.9)
Aroclor 1248 (µg/kg)		ND (10)	ND (10)	ND (10)	ND (53)	ND (11)	ND (89)	ND (11)	ND (11)	ND (11)	ND (10)	ND (11)	ND (11)	ND (9.9)
Aroclor 1254 (µg/kg)		ND (10)	ND (10)	ND (10)	ND (53)	ND (11)	ND (89)	ND (11)	ND (11)	ND (11)	ND (10)	ND (11)	ND (11)	ND (9.9)
Aroclor 1260 (µg/kg)		120	61	260	900	28 J QN	1600 QN	270 QN	38 QN	92 QN	36 QN	67	49	170 QN
Total PCBs (µg/kg)		120	61	260	900	28 J QN	1600 QN	270 QN	38 QN	92 QN	36 QN	67	49	170 QN

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS428-DUP	11NC13SS286	11NC13SS429-DUP	11NC13SS287	11NC13SS430-DUP	11NC13SS288	11NC13SS431-DUP	11NC13SS289	11NC13SS426-DUP	11NC13SS290	11NC13SS291	11NC13SS268-DUP
	Laboratory Sample ID	280-20698-252	280-20698-110	280-20698-253	280-20698-111	280-20698-254	280-20698-112	280-20698-255	280-20698-113	280-20698-250	280-20698-114	280-20698-115	280-20698-92
	Location ID	013-285	013-286	013-286	013-287	013-287	013-288	013-288	013-289	013-289	013-290	013-291	013-291
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/21/11
Aroclor 1016 (µg/kg)		ND (11)	ND (42)	ND (110)	ND (9900)	ND (2000)	ND (110)	ND (220)	ND (53)	ND (1100)	ND (11)	ND (110)	ND (220)
Aroclor 1221 (µg/kg)		ND (22)	ND (84)	ND (220)	ND (20000)	ND (4000)	ND (220)	ND (440)	ND (110)	ND (2100)	ND (21)	ND (220)	ND (450)
Aroclor 1232 (µg/kg)		ND (11)	ND (42)	ND (110)	ND (9900)	ND (2000)	ND (110)	ND (220)	ND (53)	ND (1100)	ND (11)	ND (110)	ND (220)
Aroclor 1242 (µg/kg)		ND (11)	ND (42)	ND (110)	ND (9900)	ND (2000)	ND (110)	ND (220)	ND (53)	ND (1100)	ND (11)	ND (110)	ND (220)
Aroclor 1248 (µg/kg)		ND (11)	ND (42)	ND (110)	ND (9900)	ND (2000)	ND (110)	ND (220)	ND (53)	ND (1100)	ND (11)	ND (110)	ND (220)
Aroclor 1254 (µg/kg)		ND (11)	ND (42)	ND (110)	ND (9900)	ND (2000)	ND (110)	ND (220)	ND (53)	ND (1100)	ND (11)	ND (110)	ND (220)
Aroclor 1260 (µg/kg)		16 J QN	430 QN	1200 QN	230000 QN	46000 QN	1400 QN	4700 QN	600 QN	30000 QN	220	2000	4600
Total PCBs (µg/kg)		16 J QN	430 QN	1200 QN	230000 QN	46000 QN	1400 QN	4700 QN	600 QN	30000 QN	220	2000	4600

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS300	11NC13SS301	11NC13SS433-DUP	11NC13SS302	11NC13SS434-DUP	11NC13SS303	11NC13SS304	11NC13SS305	11NC13SS306	11NC13SS323	11NC13SS324	11NC13SS325
	Laboratory Sample ID	280-20698-124	280-20698-125	280-20698-257	280-20698-126	280-20698-258	280-20698-127	280-20698-128	280-20698-129	280-20698-130	280-20698-147	280-20698-148	280-20698-149
	Location ID	013-300	013-301	013-301	013-302	013-302	013-303	013-304	013-305	013-306	013-323	013-324	013-325
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/21/11	9/21/11	9/21/11
Aroclor 1016 (µg/kg)		ND (1100)	ND (110)	ND (54)	ND (220)	ND (210)	ND (11)	ND (11)	ND (10)	ND (11)	ND (54)	ND (11)	ND (110)
Aroclor 1221 (µg/kg)		ND (2200)	ND (210)	ND (110)	ND (430)	ND (430)	ND (22)	ND (22)	ND (20)	ND (22)	ND (110)	ND (22)	ND (220)
Aroclor 1232 (µg/kg)		ND (1100)	ND (110)	ND (54)	ND (220)	ND (210)	ND (11)	ND (11)	ND (10)	ND (11)	ND (54)	ND (11)	ND (110)
Aroclor 1242 (µg/kg)		ND (1100)	ND (110)	ND (54)	ND (220)	ND (210)	ND (11)	ND (11)	ND (10)	ND (11)	ND (54)	ND (11)	ND (110)
Aroclor 1248 (µg/kg)		ND (1100)	ND (110)	ND (54)	ND (220)	ND (210)	ND (11)	ND (11)	ND (10)	ND (11)	ND (54)	ND (11)	ND (110)
Aroclor 1254 (µg/kg)		ND (1100)	ND (110)	ND (54)	ND (220)	ND (210)	ND (11)	ND (11)	ND (10)	ND (11)	ND (54)	ND (11)	ND (110)
Aroclor 1260 (µg/kg)		25000	2100 QN	680 QN	3300 QN	4100	ND (11)	6.7 J	110	3.1 J	760	330	2100
Total PCBs (µg/kg)		25000	2100 QN	680 QN	3300 QN	4100	ND (22)	6.7 J	110	3.1 J	760	330	2100

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

Analyte	Sample ID	11NC13SS326	11NC13SS333	11NC13SS334	11NC13SS335	11NC13SS336	11NC13SS337	11NC13SS338	11NC13SS340	11NC13SS341	11NC13SS342	11NC13SS343	11NC13SS344
	Laboratory Sample ID	280-20698-150	280-20698-157	280-20698-158	280-20698-159	280-20698-160	280-20698-161	280-20698-162	280-20698-164	280-20698-165	280-20698-166	280-20698-167	280-20698-168
	Location ID	013-326	013-333	013-334	013-335	013-336	013-337	013-338	013-340	013-341	013-342	013-343	013-344
	Date Collected	9/21/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (5500)	ND (1100)	ND (11)	ND (50)	ND (11)	ND (1100)	ND (10)	ND (11)	ND (11)	ND (10)	ND (84)	ND (11)
Aroclor 1221 (µg/kg)		ND (11000)	ND (2300)	ND (22)	ND (99)	ND (22)	ND (2100)	ND (21)	ND (21)	ND (21)	ND (21)	ND (170)	ND (22)
Aroclor 1232 (µg/kg)		ND (5500)	ND (1100)	ND (11)	ND (50)	ND (11)	ND (1100)	ND (10)	ND (11)	ND (11)	ND (10)	ND (84)	ND (11)
Aroclor 1242 (µg/kg)		ND (5500)	ND (1100)	ND (11)	ND (50)	ND (11)	ND (1100)	ND (10)	ND (11)	ND (11)	ND (10)	ND (84)	ND (11)
Aroclor 1248 (µg/kg)		ND (5500)	ND (1100)	ND (11)	ND (50)	ND (11)	ND (1100)	ND (10)	ND (11)	ND (11)	ND (10)	ND (84)	ND (11)
Aroclor 1254 (µg/kg)		ND (5500)	ND (1100)	ND (11)	ND (50)	ND (11)	ND (1100)	ND (10)	ND (11)	ND (11)	ND (10)	ND (84)	ND (11)
Aroclor 1260 (µg/kg)		81000	15000	350	470	160	16000 D	180	71	110	5.5 J	1500	69
Total PCBs (µg/kg)		81000	15000	350	470	160	16000 D	180	71	110	5.5 J	1500	69

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS345	11NC13SS346	11NC13SS347	11NC13SS348	11NC13SS349	11NC13SS350	11NC13SS351	11NC13SS352	11NC13SS353	11NC13SS354	11NC13SS355	11NC13SS356
	Laboratory Sample ID	280-20698-169	280-20698-170	280-20698-171	280-20698-172	280-20698-173	280-20698-174	280-20698-175	280-20698-176	280-20698-177	280-20698-178	280-20698-179	280-20698-180
	Location ID	013-345	013-346	013-347	013-348	013-349	013-350	013-351	013-352	013-353	013-354	013-355	013-356
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (50)	ND (11)	ND (450)	ND (420)	ND (41)	ND (10)	ND (12)	ND (44)	ND (43)	ND (100)	ND (540)	ND (530)
Aroclor 1221 (µg/kg)		ND (100)	ND (22)	ND (890)	ND (850)	ND (83)	ND (21)	ND (24)	ND (88)	ND (86)	ND (210)	ND (1100)	ND (1100)
Aroclor 1232 (µg/kg)		ND (50)	ND (11)	ND (450)	ND (420)	ND (41)	ND (10)	ND (12)	ND (44)	ND (43)	ND (100)	ND (540)	ND (530)
Aroclor 1242 (µg/kg)		ND (50)	ND (11)	ND (450)	ND (420)	ND (41)	ND (10)	ND (12)	ND (44)	ND (43)	ND (100)	ND (540)	ND (530)
Aroclor 1248 (µg/kg)		ND (50)	ND (11)	ND (450)	ND (420)	ND (41)	ND (10)	ND (12)	ND (44)	ND (43)	ND (100)	ND (540)	ND (530)
Aroclor 1254 (µg/kg)		ND (50)	ND (11)	ND (450)	ND (420)	ND (41)	ND (10)	ND (12)	ND (44)	ND (43)	ND (100)	ND (540)	ND (530)
Aroclor 1260 (µg/kg)		1200	150	12000	7700 D	650	ND (10)	24 J	550	940	2400	14000	10000
Total PCBs (µg/kg)		1200	150	12000	7700 D	650	ND (21)	24 J	550	940	2400	14000	10000

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS357	11NC13SS358	11NC13SS359	11NC13SS360	11NC13SS362	11NC13SS379	11NC13SS380	11NC13SS381	11NC13SS382	11NC13SS383	11NC13SS384	11NC13SS385
	Laboratory Sample ID	280-20698-181	280-20698-182	280-20698-183	280-20698-184	280-20698-186	280-20698-203	280-20698-204	280-20698-205	280-20698-206	280-20698-207	280-20698-208	280-20698-209
	Location ID	013-357	013-358	013-359	013-360	013-362	013-379	013-380	013-381	013-382	013-383	013-384	013-385
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (540)	ND (1100)	ND (11)	ND (11)	ND (11)	ND (9.7)	ND (11)	ND (50)	ND (110)	ND (51)	ND (10)	ND (11)
Aroclor 1221 (µg/kg)		ND (1100)	ND (2200)	ND (21)	ND (22)	ND (22)	ND (19)	ND (21)	ND (100)	ND (210)	ND (100)	ND (21)	ND (21)
Aroclor 1232 (µg/kg)		ND (540)	ND (1100)	ND (11)	ND (11)	ND (11)	ND (9.7)	ND (11)	ND (50)	ND (110)	ND (51)	ND (10)	ND (11)
Aroclor 1242 (µg/kg)		ND (540)	ND (1100)	ND (11)	ND (11)	ND (11)	ND (9.7)	ND (11)	ND (50)	ND (110)	ND (51)	ND (10)	ND (11)
Aroclor 1248 (µg/kg)		ND (540)	ND (1100)	ND (11)	ND (11)	ND (11)	ND (9.7)	ND (11)	ND (50)	ND (110)	ND (51)	ND (10)	ND (11)
Aroclor 1254 (µg/kg)		ND (540)	ND (1100)	ND (11)	ND (11)	ND (11)	ND (9.7)	ND (11)	ND (50)	ND (110)	ND (51)	ND (10)	ND (11)
Aroclor 1260 (µg/kg)		12000	17000	200 MN	ND (11)	77	88	ND (11)	780	1100	750	110	320
Total PCBs (µg/kg)		12000	17000	200 MN	ND (22)	77	88	ND (21)	780	1100	750	110	320

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS386	11NC13SS387	11NC13SS388	11NC13SS389	11NC13SS390	11NC13SS391	11NC13SS392	11NC13SS393	11NC13SS394	11NC13SS395	11NC13SS396	11NC13SS397
	Laboratory Sample ID	280-20698-210	280-20698-211	280-20698-212	280-20698-213	280-20698-214	280-20698-215	280-20698-216	280-20698-217	280-20698-218	280-20698-219	280-20698-220	280-20698-221
	Location ID	013-386	013-387	013-388	013-389	013-390	013-391	013-392	013-393	013-394	013-395	013-396	013-397
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (11)	ND (570)	ND (21000)	ND (11)	ND (550)	ND (570)	ND (2200)	ND (10)	ND (9.9)	ND (12)	ND (11)	ND (13)
Aroclor 1221 (µg/kg)		ND (22)	ND (1100)	ND (41000)	ND (23)	ND (1100)	ND (1100)	ND (4400)	ND (21)	ND (20)	ND (24)	ND (22)	ND (26)
Aroclor 1232 (µg/kg)		ND (11)	ND (570)	ND (21000)	ND (11)	ND (550)	ND (570)	ND (2200)	ND (10)	ND (9.9)	ND (12)	ND (11)	ND (13)
Aroclor 1242 (µg/kg)		ND (11)	ND (570)	ND (21000)	ND (11)	ND (550)	ND (570)	ND (2200)	ND (10)	ND (9.9)	ND (12)	ND (11)	ND (13)
Aroclor 1248 (µg/kg)		ND (11)	ND (570)	ND (21000)	ND (11)	ND (550)	ND (570)	ND (2200)	ND (10)	ND (9.9)	ND (12)	ND (11)	ND (13)
Aroclor 1254 (µg/kg)		ND (11)	ND (570)	ND (21000)	ND (11)	ND (550)	ND (570)	ND (2200)	ND (10)	ND (9.9)	ND (12)	ND (11)	ND (13)
Aroclor 1260 (µg/kg)		43	11000	270000	13 J	9000	11000	35000	8.1 J	20 J	ND (12)	ND (11)	ND (13)
Total PCBs (µg/kg)		43	11000	270000	13 J	9000	11000	35000	8.1 J	20 J	ND (24)	ND (22)	ND (26)

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS398	11NC13SS399	11NC13SS400	11NC13SS401	11NC13SS402	11NC13SS403	11NC13SS404	11NC13SS405	11NC13SS406	11NC13SS407	11NC13SS408	11NC13SS435
	Laboratory Sample ID	280-20698-222	280-20698-223	280-20698-224	280-20698-225	280-20698-226	280-20698-227	280-20698-228	280-20698-229	280-20698-230	280-20698-231	280-20698-232	280-20698-259
	Location ID	013-398	013-399	013-400	013-401	013-402	013-403	013-404	013-405	013-406	013-407	013-408	013-435
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (11)	ND (10)	ND (11)	ND (11)	ND (11)	ND (11)	ND (10)	ND (10)	ND (11)	ND (10)	ND (11)	ND (57)
Aroclor 1221 (µg/kg)		ND (21)	ND (21)	ND (21)	ND (22)	ND (22)	ND (21)	ND (21)	ND (21)	ND (21)	ND (20)	ND (22)	ND (110)
Aroclor 1232 (µg/kg)		ND (11)	ND (10)	ND (11)	ND (11)	ND (11)	ND (11)	ND (10)	ND (10)	ND (11)	ND (10)	ND (11)	ND (57)
Aroclor 1242 (µg/kg)		ND (11)	ND (10)	ND (11)	ND (11)	ND (11)	ND (11)	ND (10)	ND (10)	ND (11)	ND (10)	ND (11)	ND (57)
Aroclor 1248 (µg/kg)		ND (11)	ND (10)	ND (11)	ND (11)	ND (11)	ND (11)	ND (10)	ND (10)	ND (11)	ND (10)	ND (11)	ND (57)
Aroclor 1254 (µg/kg)		ND (11)	ND (10)	ND (11)	ND (11)	ND (11)	ND (11)	ND (10)	ND (10)	ND (11)	ND (10)	ND (11)	ND (57)
Aroclor 1260 (µg/kg)		160	ND (10)	9.4 J	ND (11)	ND (11)	ND (11)	9.3 J	ND (10)	ND (11)	ND (10)	ND (11)	890
Total PCBs (µg/kg)		160	ND (21)	9.4 J	ND (22)	ND (22)	ND (21)	9.3 J	ND (21)	ND (21)	ND (20)	ND (22)	890

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS436	11NC13SS437	11NC13SS438	11NC13SS439	11NC13SS440	11NC13SS441	11NC13SS442	11NC13SS443	11NC13SS444	11NC13SS445	11NC13SS446	11NC13SS447
	Laboratory Sample ID	280-20698-260	280-20698-261	280-20698-262	280-20698-263	280-20698-264	280-20698-265	280-20698-266	280-20698-267	280-20698-268	280-20698-269	280-20698-270	280-20698-271
	Location ID	013-436	013-437	013-438	013-439	013-440	013-441	013-442	013-443	013-444	013-445	013-446	013-447
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (11)	ND (54)	ND (53)	ND (1100)	ND (11)	ND (11)	ND (110)	ND (11)	ND (10)	ND (10)	ND (10)	ND (10)
Aroclor 1221 (µg/kg)		ND (22)	ND (110)	ND (110)	ND (2200)	ND (21)	ND (22)	ND (220)	ND (22)	ND (21)	ND (21)	ND (21)	ND (21)
Aroclor 1232 (µg/kg)		ND (11)	ND (54)	ND (53)	ND (1100)	ND (11)	ND (11)	ND (110)	ND (11)	ND (10)	ND (10)	ND (10)	ND (10)
Aroclor 1242 (µg/kg)		ND (11)	ND (54)	ND (53)	ND (1100)	ND (11)	ND (11)	ND (110)	ND (11)	ND (10)	ND (10)	ND (10)	ND (10)
Aroclor 1248 (µg/kg)		ND (11)	ND (54)	ND (53)	ND (1100)	ND (11)	ND (11)	ND (110)	ND (11)	ND (10)	ND (10)	ND (10)	ND (10)
Aroclor 1254 (µg/kg)		ND (11)	ND (54)	ND (53)	ND (1100)	ND (11)	ND (11)	ND (110)	ND (11)	ND (10)	ND (10)	ND (10)	ND (10)
Aroclor 1260 (µg/kg)		13 J	770	850	21000	ND (11)	ND (11)	1400	40	170	92 ML	36	39
Total PCBs (µg/kg)		13 J	770	850	21000	ND (21)	ND (22)	1400	40	170	92 ML	36	39

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 1	11NC13SS Composite 2	11NC13SS Composite 3	11NC13SS Composite 4	11NC13SS Composite 5	11NC13SS Composite 6	11NC13SS Composite 7	11NC13SS Composite 8	11NC13SS Composite 9	11NC13SS Composite 10	11NC13SS Composite 11	11NC13SS Composite 12
	Laboratory Sample ID	280-20698-272	280-20698-273	280-20698-274	280-20698-275	280-20698-276	280-20698-277	280-20698-278	280-20698-279	280-20698-280	280-20698-281	280-20698-282	280-20698-283
	Location ID												
Analyte	Date Collected	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/22/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11
Aroclor 1016 (µg/kg)		ND (220)	ND (11)	ND (11)	ND (21)	ND (10)	ND (11)	ND (10)	ND (11)	ND (9.7)	ND (50)	ND (11)	ND (11)
Aroclor 1221 (µg/kg)		ND (440)	ND (22)	ND (22)	ND (43)	ND (21)	ND (22)	ND (20)	ND (22)	ND (19)	ND (100)	ND (21)	ND (21)
Aroclor 1232 (µg/kg)		ND (220)	ND (11)	ND (11)	ND (21)	ND (10)	ND (11)	ND (10)	ND (11)	ND (9.7)	ND (50)	ND (11)	ND (11)
Aroclor 1242 (µg/kg)		ND (220)	ND (11)	ND (11)	ND (21)	ND (10)	ND (11)	ND (10)	ND (11)	ND (9.7)	ND (50)	ND (11)	ND (11)
Aroclor 1248 (µg/kg)		ND (220)	ND (11)	ND (11)	ND (21)	ND (10)	ND (11)	ND (10)	ND (11)	ND (9.7)	ND (50)	ND (11)	ND (11)
Aroclor 1254 (µg/kg)		ND (220)	ND (11)	ND (11)	ND (21)	ND (10)	ND (11)	ND (10)	ND (11)	ND (9.7)	ND (50)	ND (11)	ND (11)
Aroclor 1260 (µg/kg)		3800	160	100	320	210	280	130	50	160	830	85	200
Total PCBs (µg/kg)		3800	160	100	320	210	280	130	50	160	830	85	200

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 13	11NC13SS Composite 14	11NC13SS Composite 15	11NC13SS Composite 16	11NC13SS Composite 17	11NC13SS Composite 18	11NC13SS Composite 19	11NC13SS Composite 20	11NC13SS Composite 21	11NC13SS Composite 22	11NC13SS Composite 23	11NC13SS Composite 24
	Laboratory Sample ID	280-20698-284	280-20698-285	280-20698-286	280-20698-287	280-20698-288	280-20698-289	280-20698-290	280-20698-291	280-20698-292	280-20698-293	280-20698-294	280-20698-295
	Location ID												
Analyte	Date Collected	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11
Aroclor 1016 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (53)	ND (12)	ND (11)	ND (11)	ND (11)	ND (110)
Aroclor 1221 (µg/kg)		ND (21)	ND (22)	ND (23)	ND (22)	ND (21)	ND (22)	ND (110)	ND (23)	ND (21)	ND (21)	ND (22)	ND (220)
Aroclor 1232 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (53)	ND (12)	ND (11)	ND (11)	ND (11)	ND (110)
Aroclor 1242 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (53)	ND (12)	ND (11)	ND (11)	ND (11)	ND (110)
Aroclor 1248 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (53)	ND (12)	ND (11)	ND (11)	ND (11)	ND (110)
Aroclor 1254 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (11)	ND (53)	ND (12)	ND (11)	ND (11)	ND (11)	ND (110)
Aroclor 1260 (µg/kg)		310	200	140	100	ND (11)	38	820	ND (12)	ND (11)	17 J	63	1500
Total PCBs (µg/kg)		310	200	140	100	ND (21)	38	820	ND (23)	ND (21)	17 J	63	1500

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 25	11NC13SS Composite 26	11NC13SS Composite 27	11NC13SS Composite 28	11NC13SS Composite 29	11NC13SS Composite 30	11NC13SS Composite 31	11NC13SS Composite 32	11NC13SS Composite 33	11NC13SS Composite 34	11NC13SS Composite 35	11NC13SS Composite 36
	Laboratory Sample ID	280-20698-296	280-20698-297	280-20698-298	280-20698-299	280-20698-300	280-20698-301	280-20698-302	280-20698-303	280-20698-304	280-20698-305	280-20698-306	280-20698-307
	Location ID												
Analyte	Date Collected	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11
Aroclor 1016 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (550)	ND (110)	ND (11)	ND (11)	ND (54)	ND (11)	ND (270)	ND (540)	ND (53)
Aroclor 1221 (µg/kg)		ND (22)	ND (22)	ND (21)	ND (1100)	ND (220)	ND (23)	ND (22)	ND (110)	ND (22)	ND (540)	ND (1100)	ND (110)
Aroclor 1232 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (550)	ND (110)	ND (11)	ND (11)	ND (54)	ND (11)	ND (270)	ND (540)	ND (53)
Aroclor 1242 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (550)	ND (110)	ND (11)	ND (11)	ND (54)	ND (11)	ND (270)	ND (540)	ND (53)
Aroclor 1248 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (550)	ND (110)	ND (11)	ND (11)	ND (54)	ND (11)	ND (270)	ND (540)	ND (53)
Aroclor 1254 (µg/kg)		ND (11)	ND (11)	ND (11)	ND (550)	ND (110)	ND (11)	ND (11)	ND (54)	ND (11)	ND (270)	ND (540)	ND (53)
Aroclor 1260 (µg/kg)		59	17 J	64	11000	2000	54	150	840	75	5500	7100	810
Total PCBs (µg/kg)		59	17 J	64	11000	2000	54	150	840	75	5500	7100	810

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS Composite 37	11NC13SS Composite 38	11NC13SS Composite 39	11NC13SS Composite 40	11NC13SS Composite 41	11NC13SS Composite 42	11NC13SS263	11NC13SS264	11NC13SS269	11NC13SS270	11NC13SS271	11NC13SS272	11NC13SS274
	Laboratory Sample ID	280-20698-308	280-20698-309	280-20698-310	280-20698-311	280-20698-312	280-20698-313	280-20698-87	280-20698-88	280-20698-93	280-20698-94	280-20698-95	280-20698-96	280-20698-98
	Location ID							013-263	013-264	013-269	013-270	013-271	013-272	013-274
Analyte	Date Collected	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/22/11	9/22/11	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11
Aroclor 1016 (µg/kg)		ND (110)	ND (51)	ND (40)	ND (10)	ND (53)	ND (42)	ND (42)	ND (11)	ND (11)	ND (21)	ND (11)	ND (210)	ND (12)
Aroclor 1221 (µg/kg)		ND (210)	ND (100)	ND (80)	ND (21)	ND (110)	ND (85)	ND (83)	ND (21)	ND (21)	ND (42)	ND (22)	ND (430)	ND (23)
Aroclor 1232 (µg/kg)		ND (110)	ND (51)	ND (40)	ND (10)	ND (53)	ND (42)	ND (42)	ND (11)	ND (11)	ND (21)	ND (11)	ND (210)	ND (12)
Aroclor 1242 (µg/kg)		ND (110)	ND (51)	ND (40)	ND (10)	ND (53)	ND (42)	ND (42)	ND (11)	ND (11)	ND (21)	ND (11)	ND (210)	ND (12)
Aroclor 1248 (µg/kg)		ND (110)	ND (51)	ND (40)	ND (10)	ND (53)	ND (42)	ND (42)	ND (11)	ND (11)	ND (21)	ND (11)	ND (210)	ND (12)
Aroclor 1254 (µg/kg)		ND (110)	ND (51)	ND (40)	ND (10)	ND (53)	ND (42)	ND (42)	ND (11)	ND (11)	ND (21)	ND (11)	ND (210)	ND (12)
Aroclor 1260 (µg/kg)		1400	560	520	140	710	610	720	140	110	490	230	6000	4.4 J
Total PCBs (µg/kg)		1400	560	520	140	710	610	720	140	110	490	230	6000	4.4 J

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS275	11NC13SS276	11NC13SS278	11NC13SS279	11NC13SS280	11NC13SS423-DUP	11NC13SS295	11NC13SS296	11NC13SS297	11NC13SS298	11NC13SS299	11NC13SS307	11NC13SS308
	Laboratory Sample ID	280-20698-99	280-20698-100	280-20698-102	280-20698-103	280-20698-104	20698-247	280-20698-119	280-20698-120	280-20698-121	280-20698-122	280-20698-123	280-20698-131	280-20698-132
	Location ID	013-275	013-276	013-278	013-279	013-280	013-280	013-295	013-296	013-297	013-298	013-299	013-307	013-308
Analyte	Date Collected	9/21/11	9/21/11	9/21/11	9/21/11	9/21/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (11)	ND (51)	ND (9.9)	ND (54)	ND (11)	ND (11)	ND (98)	ND (10)	ND (210)	ND (11)	ND (44)	ND (100)	ND (11)
Aroclor 1221 (µg/kg)		ND (22)	ND (100)	ND (20)	ND (110)	ND (22)	ND (21)	ND (200)	ND (20)	ND (410)	ND (21)	ND (88)	ND (210)	ND (22)
Aroclor 1232 (µg/kg)		ND (11)	ND (51)	ND (9.9)	ND (54)	ND (11)	ND (11)	ND (98)	ND (10)	ND (210)	ND (11)	ND (44)	ND (100)	ND (11)
Aroclor 1242 (µg/kg)		ND (11)	ND (51)	ND (9.9)	ND (54)	ND (11)	ND (11)	ND (98)	ND (10)	ND (210)	ND (11)	ND (44)	ND (100)	ND (11)
Aroclor 1248 (µg/kg)		ND (11)	ND (51)	ND (9.9)	ND (54)	ND (11)	ND (11)	ND (98)	ND (10)	ND (210)	ND (11)	ND (44)	ND (100)	ND (11)
Aroclor 1254 (µg/kg)		ND (11)	ND (51)	ND (9.9)	ND (54)	ND (11)	ND (11)	ND (98)	ND (10)	ND (210)	ND (11)	ND (44)	ND (100)	ND (11)
Aroclor 1260 (µg/kg)		ND (11)	720	180	960	ND (11)	ND (11)	1700	ND (10)	5300	240	620	2200	230
Total PCBs (µg/kg)		ND (22)	720	180	960	ND (22)	ND (21)	1700	ND (20)	5300	240	620	2200	230

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS309	11NC13SS310	11NC13SS311	11NC13SS312	11NC13SS313	11NC13SS314	11NC13SS315	11NC13SS316	11NC13SS317	11NC13SS318	11NC13SS321	11NC13SS322
	Laboratory Sample ID	280-20698-133	280-20698-134	280-20698-135	280-20698-136	280-20698-137	280-20698-138	280-20698-139	280-20698-140	280-20698-141	280-20698-142	280-20698-145	280-20698-146
	Location ID	013-309	013-310	013-311	013-312	013-313	013-314	013-315	013-316	013-317	013-318	013-321	013-322
Analyte	Date Collected	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11	9/22/11
Aroclor 1016 (µg/kg)		ND (11)	ND (53)	ND (100)	ND (21)	ND (100)	ND (10)	ND (11)	ND (1100)	ND (11)	ND (1100)	ND (11)	ND (21)
Aroclor 1221 (µg/kg)		ND (22)	ND (110)	ND (210)	ND (42)	ND (210)	ND (20)	ND (22)	ND (2200)	ND (22)	ND (2200)	ND (21)	ND (42)
Aroclor 1232 (µg/kg)		ND (11)	ND (53)	ND (100)	ND (21)	ND (100)	ND (10)	ND (11)	ND (1100)	ND (11)	ND (1100)	ND (11)	ND (21)
Aroclor 1242 (µg/kg)		ND (11)	ND (53)	ND (100)	ND (21)	ND (100)	ND (10)	ND (11)	ND (1100)	ND (11)	ND (1100)	ND (11)	ND (21)
Aroclor 1248 (µg/kg)		ND (11)	ND (53)	ND (100)	ND (21)	ND (100)	ND (10)	ND (11)	ND (1100)	ND (11)	ND (1100)	ND (11)	ND (21)
Aroclor 1254 (µg/kg)		ND (11)	ND (53)	ND (100)	ND (21)	ND (100)	ND (10)	ND (11)	ND (1100)	ND (11)	ND (1100)	ND (11)	ND (21)
Aroclor 1260 (µg/kg)		220	790	2700	470	2700	320	7.9 J	22000	120	14000	83	340
Total PCBs (µg/kg)		220	790	2700	470	2700	320	7.9 J	22000	120	14000	83	340

Table 13 PCB Soil Results for Site 13 Analyzed by EPA Method 8082A (results are in µg/kg) (continued)

	Sample ID	11NC13SS327	11NC13SS330	11NC13SS331	11NC13SS332	11NC13SS339	11NC13SS363	11NC13SS368	11NC13SS373	Site-Specific Cleanup Level (µg/Kg)
	Laboratory Sample ID	280-20698-151	280-20698-154	280-20698-155	280-20698-156	280-20698-163	280-20698-187	280-20698-192	280-20698-197	
	Location ID	013-327	013-330	013-331	013-332	013-339	013-363	013-368	013-373	
Analyte	Date Collected	9/21/11	9/21/11	9/21/11	9/21/11	9/22/11	9/22/11	9/22/11	9/22/11	
Aroclor 1016 (µg/kg)		ND (11)	ND (110)	ND (530)	ND (270)	ND (53)	ND (11)	ND (10)	ND (11)	1000
Aroclor 1221 (µg/kg)		ND (22)	ND (230)	ND (1100)	ND (540)	ND (110)	ND (23)	ND (21)	ND (22)	1000
Aroclor 1232 (µg/kg)		ND (11)	ND (110)	ND (530)	ND (270)	ND (53)	ND (11)	ND (10)	ND (11)	1000
Aroclor 1242 (µg/kg)		ND (11)	ND (110)	ND (530)	ND (270)	ND (53)	ND (11)	ND (10)	ND (11)	1000
Aroclor 1248 (µg/kg)		ND (11)	ND (110)	ND (530)	ND (270)	ND (53)	ND (11)	ND (10)	ND (11)	1000
Aroclor 1254 (µg/kg)		ND (11)	ND (110)	ND (530)	ND (270)	ND (53)	ND (11)	ND (10)	ND (11)	1000
Aroclor 1260 (µg/kg)		280	2900	12000	6300	1200	12 J	100	48	1000
Total PCBs (µg/kg)		280	2900	12000	6300	1200	12 J	100	48	1000

Notes

*Duplicate and sample have different dates to confuse the lab; actually taken on same date

Blue highlight indicates non-detect result is greater than the cleanup level

Green highlight indicates composite sample result failed the 1/n rule

Red highlight indicates results are above the cleanup level

Purple highlight indicates the sample is a duplicate

D = sample was diluted prior to analysis

J = result is an estimate

MH = result is an estimate due to sample matrix with high bias

ML = result is an estimate due to sample matrix with low bias

MN = result is an estimate due to sample matrix; bias is unknown

ND = results were non-detect; limit of detection in parentheses

Q = MS/MSD and surrogate recoveries were not reported due to high dilution in presence of high concentrations of target analyte; unknown bias

QH = surrogate recovery exceeded acceptance limit; result may have high bias

QL = surrogate recovery less than acceptance limit; result may have low bias

QN = result is an estimate due to a quality control failure; bias is unknown

µg/kg = micrograms per kilogram

DUP = sample is a field duplicate of the previous sample

EPA = U.S. Environmental Protection Agency

MS = matrix spike

MSD = matrix spike duplicate

PCB = polychlorinated biphenyls

Table 14 Site 13 Wipe Sample Results

Sample ID	Units µg/100 cm^2
W 01	0.514
W 02	0.264*
W 03	0.630*
W 04	0.111
W 05	0.609
W 06	0.044
W 07	0.153*
W 08	ND
W 09	ND
W 10	0.014
W 11	ND
W 12	ND
W 13	ND
W 14	0.005
W 15	ND
W 16	ND
W 17	ND
W 18	ND
W 19	ND
W 20	ND
W 21	ND
W 22	0.16
W 23	ND
W 24	0.03
W 25	0.04*
W 26	0.06
W 27	ND
W 28	ND
W 29	ND
W 30	ND
W 31	ND
W 32	ND
W 33	ND
W 34	ND
W 35	ND

*Surrogate Exceeded upper acceptance criteria
µg = micrograms
cm^2 =square centimeters
ND = non-detect

Table 15 Site 31 Soil Confirmation Results

Sample ID	11NC31SS Composite 1	11NC31SS Composite 2	11NC31SS Composite 3	11NC31SS Composite 4	11NC31SS Composite 5	11NC31SS Composite 6	11NC31SS Composite 7	11NC31SS Composite 8	11NC31SS Composite 9	11NC31SS Composite 10	11NC31SS Composite 11	11NC31SS Composite 12	11NC31SS Composite 13	11NC31SS Composite 46-DUP
Laboratory ID	280-20446-201	280-20446-202	280-20446-203	280-20446-204	280-20446-205	280-20446-206	280-20446-207	280-20446-208	280-20446-209	280-20446-210	280-20446-211	280-20446-212	280-20446-213	280-20446-246
Location ID	Comp 1	Comp 2	Comp 3	Comp 4	Comp 5	Comp 6	Comp 7	Comp 8	Comp 9	Comp 10	Comp 11	Comp 12	Comp 13	Comp 13
Date Collected	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/17/11	9/17/11	9/18/11
Aroclor 1016 (µg/kg)	ND (22)	ND (220)	ND (58)	ND (10)	ND (110)	ND (11)	ND (11)	ND (43)	ND (100)	ND (110)	ND (110)	ND (40)	ND (42)	ND (44)
Aroclor 1221 (µg/kg)	ND (44)	ND (440)	ND (120)	ND (21)	ND (210)	ND (22)	ND (22)	ND (87)	ND (210)	ND (230)	ND (220)	ND (80)	ND (85)	ND (88)
Aroclor 1232 (µg/kg)	ND (22)	ND (220)	ND (58)	ND (10)	ND (110)	ND (11)	ND (11)	ND (43)	ND (100)	ND (110)	ND (110)	ND (40)	ND (42)	ND (44)
Aroclor 1242 (µg/kg)	ND (22)	ND (220)	ND (58)	ND (10)	ND (110)	ND (11)	ND (11)	ND (43)	ND (100)	ND (110)	ND (110)	ND (40)	ND (42)	ND (44)
Aroclor 1248 (µg/kg)	ND (22)	ND (220)	ND (58)	ND (10)	ND (110)	ND (11)	ND (11)	ND (43)	ND (100)	ND (110)	ND (110)	ND (40)	ND (42)	ND (44)
Aroclor 1254 (µg/kg)	ND (22)	ND (220)	ND (58)	ND (10)	ND (110)	ND (11)	ND (11)	ND (43)	ND (100)	ND (110)	ND (110)	ND (40)	ND (42)	ND (44)
Aroclor 1260 (µg/kg)	430	3700	850	250	1600	300	240	480	1500	2100	2000	490	570	560
Total PCBs (µg/kg)	430	3700	850	250	1600	300	240	480	1500	2100	2000	490	570	560

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS Composite 14	11NC31SS Composite 15	11NC31SS Composite 16	11NC31SS Composite 17	11NC31SS Composite 18	11NC31SS Composite 19	11NC31SS Composite 20	11NC31SS Composite 21	11NC31SS Composite 47-DUP	11NC31SS Composite 22	11NC31SS Composite 23	11NC31SS Composite 48 DUP	11NC31SS Composite 24	11NC31SS Composite 25
Laboratory ID	280-20446-214	280-20446-215	280-20446-216	280-20446-217	280-20446-218	280-20446-219	280-20446-220	280-20446-221	280-20446-247	280-20446-222	280-20446-223	280-20446-248	280-20446-224	280-20446-225
Location ID	Comp 14	Comp 15	Comp 16	Comp 17	Comp 18	Comp 19	Comp 20	Comp 21	Comp 47	Comp 22	Comp 23	Comp 48	Comp 24	Comp 25
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/18/11	9/17/11	9/17/11	9/18/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (10)	ND (10)	ND (10)	ND (54)	ND (9.7)	ND (22)	ND (10)	ND (10)	ND (11)	ND (22)	ND (11)	ND (11)	ND (21)	ND (11)
Aroclor 1221 (µg/kg)	ND (20)	ND (20)	ND (20)	ND (110)	ND (19)	ND (44)	ND (21)	ND (21)	ND (22)	ND (45)	ND (23)	ND (22)	ND (43)	ND (22)
Aroclor 1232 (µg/kg)	ND (10)	ND (10)	ND (10)	ND (54)	ND (9.7)	ND (22)	ND (10)	ND (10)	ND (11)	ND (22)	ND (11)	ND (11)	ND (21)	ND (11)
Aroclor 1242 (µg/kg)	ND (10)	ND (10)	ND (10)	ND (54)	ND (9.7)	ND (22)	ND (10)	ND (10)	ND (11)	ND (22)	ND (11)	ND (11)	ND (21)	ND (11)
Aroclor 1248 (µg/kg)	ND (10)	ND (10)	ND (10)	ND (54)	ND (9.7)	ND (22)	ND (10)	ND (10)	ND (11)	ND (22)	ND (11)	ND (11)	ND (21)	ND (11)
Aroclor 1254 (µg/kg)	ND (10)	ND (10)	ND (10)	ND (54)	ND (9.7)	ND (22)	ND (10)	ND (10)	ND (11)	ND (22)	ND (11)	ND (11)	ND (21)	ND (11)
Aroclor 1260 (µg/kg)	210 MH	280	240 MH	1100	230	430	300	110	78	420	240 QN	140 QN	420	240
Total PCBs (µg/kg)	210 MH	280	240 MH	1100	230	430	300	110	78	420	240 QN	140 QN	420	240

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS Composite 26	11NC31SS Composite 27	11NC31SS Composite 28	11NC31SS Composite 29	11NC31SS Composite 30	11NC31SS Composite 31	11NC31SS Composite 32	11NC31SS Composite 33	11NC31SS Composite 34	11NC31SS Composite 35	11NC31SS Composite 36	11NC31SS Composite 37	11NC31SS Composite 38	11NC31SS Composite 39
Laboratory ID	280-20446-226	280-20446-227	280-20446-228	280-20446-229	280-20446-230	280-20446-231	280-20446-232	280-20446-233	280-20446-234	280-20446-235	280-20446-236	280-20446-237	280-20446-238	280-20446-239
Location ID	Comp 26	Comp 27	Comp 28	Comp 29	Comp 30	Comp 31	Comp 32	Comp 33	Comp 34	Comp 35	Comp 36	Comp 37	Comp 38	Comp 39
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/18/11	9/17/11	9/17/11	9/18/11	9/18/11
Aroclor 1016 (µg/kg)	ND (12)	ND (11)	ND (21)	ND (220)	ND (10)	ND (44)	ND (11)	ND (54)	ND (44)	ND (10)	ND (210)	ND (11)	ND (11)	ND (530)
Aroclor 1221 (µg/kg)	ND (23)	ND (23)	ND (42)	ND (450)	ND (21)	ND (89)	ND (22)	ND (110)	ND (88)	ND (21)	ND (420)	ND (22)	ND (22)	ND (1100)
Aroclor 1232 (µg/kg)	ND (12)	ND (11)	ND (21)	ND (220)	ND (10)	ND (44)	ND (11)	ND (54)	ND (44)	ND (10)	ND (210)	ND (11)	ND (11)	ND (530)
Aroclor 1242 (µg/kg)	ND (12)	ND (11)	ND (21)	ND (220)	ND (10)	ND (44)	ND (11)	ND (54)	ND (44)	ND (10)	ND (210)	ND (11)	ND (11)	ND (530)
Aroclor 1248 (µg/kg)	ND (12)	ND (11)	ND (21)	ND (220)	ND (10)	ND (44)	ND (11)	ND (54)	ND (44)	ND (10)	ND (210)	ND (11)	ND (11)	ND (530)
Aroclor 1254 (µg/kg)	ND (12)	ND (11)	ND (21)	ND (220)	ND (10)	ND (44)	ND (11)	ND (54)	ND (44)	ND (10)	ND (210)	ND (11)	ND (11)	ND (530)
Aroclor 1260 (µg/kg)	9.9 J	300	400	3700	240	560	180	1100	630	86	3600	180	51	10000
Total PCBs (µg/kg)	9.9 J	300	400	3700	240	560	180	1100	630	86	3600	180	51	10000

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS Composite 40	11NC31SS Composite 41	11NC31SS Composite 42	11NC31SS Composite 43	11NC31SS Composite 44	11NC31SS Composite 45	11NC31SS001	11NC31SS002	11NC31SS182-DUP	11NC31SS003	11NC31SS004	11NC31SS183-DUP	11NC31SS005	11NC31SS007
Laboratory ID	280-20446-240	280-20446-241	280-20446-242	280-20446-243	280-20446-244	280-20446-245	280-20446-1	280-20446-2	280-20446-182	280-20446-3	280-20446-4	280-20446-183	280-20446-5	280-20446-7
Location ID	Comp 40	Comp 41	Comp 42	Comp 43	Comp 44	Comp 45	031-01	031-02	031-02	031-03	031-04	031-04	031-05	031-07
Date Collected	9/18/11	9/17/11	9/17/11	9/18/11	9/18/11	9/18/11	9/16/11	9/16/11	9/18/11*	9/16/11	9/16/11	9/18/11*	9/16/11	9/16/11
Aroclor 1016 (µg/kg)	ND (11)	ND (52)	ND (110)	ND (11)	ND (11)	ND (9.8)	ND (11)	ND (210)	ND (21)	ND (220)	ND (10)	ND (110)	ND (21)	ND (11)
Aroclor 1221 (µg/kg)	ND (22)	ND (100)	ND (220)	ND (23)	ND (21)	ND (20)	ND (22)	ND (430)	ND (43)	ND (440)	ND (21)	ND (210)	ND (41)	ND (22)
Aroclor 1232 (µg/kg)	ND (11)	ND (52)	ND (110)	ND (11)	ND (11)	ND (9.8)	ND (11)	ND (210)	ND (21)	ND (220)	ND (10)	ND (110)	ND (21)	ND (11)
Aroclor 1242 (µg/kg)	ND (11)	ND (52)	ND (110)	ND (11)	ND (11)	ND (9.8)	ND (11)	ND (210)	ND (21)	ND (220)	ND (10)	ND (110)	ND (21)	ND (11)
Aroclor 1248 (µg/kg)	ND (11)	ND (52)	ND (110)	ND (11)	ND (11)	ND (9.8)	ND (11)	ND (210)	ND (21)	ND (220)	ND (10)	ND (110)	ND (21)	ND (11)
Aroclor 1254 (µg/kg)	ND (11)	ND (52)	ND (110)	ND (11)	ND (11)	ND (9.8)	ND (11)	ND (210)	ND (21)	ND (220)	ND (10)	ND (110)	ND (21)	ND (11)
Aroclor 1260 (µg/kg)	300	960	2100	310	69	24 J	41	3500 QN	380 QN	3500	74 QN	1400 QN	210 MH	76
Total PCBs (µg/kg)	300	960	2100	310	69	24 J	41	3500 QN	380 QN	3500	74 QN	1400 QN	210 MH	76

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS008	11NC31SS184-DUP	11NC31SS010	11NC31SS011	11NC31SS012	11NC31SS014	11NC31SS015	11NC31SS016	11NC31SS017	11NC31SS020	11NC31SS021	11NC31SS185-DUP	11NC31SS022
Laboratory ID	280-20446-8	280-20446-184	280-20446-10	280-20446-11	280-20446-12	280-20446-14	280-20446-15	280-20446-16	280-20446-17	280-20446-20	280-20446-21	280-20446-185	280-20446-22
Location ID	031-08	031-08	031-10	031-11	031-12	031-14	031-15	031-16	031-17	031-20	031-21	031-21	031-22
Date Collected	9/16/11	9/18/11*	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/18/11*	9/16/11
Aroclor 1016 (µg/kg)	ND (11)	ND (11)	ND (110)	ND (560)	ND (44)	ND (11)	ND (10)	ND (57)	ND (110)	ND (22)	ND (52)	ND (30)	ND (9.8)
Aroclor 1221 (µg/kg)	ND (23)	ND (22)	ND (220)	ND (1100)	ND (88)	ND (23)	ND (21)	ND (110)	ND (220)	ND (43)	ND (100)	ND (60)	ND (20)
Aroclor 1232 (µg/kg)	ND (11)	ND (11)	ND (110)	ND (560)	ND (44)	ND (11)	ND (10)	ND (57)	ND (110)	ND (22)	ND (52)	ND (30)	ND (9.8)
Aroclor 1242 (µg/kg)	ND (11)	ND (11)	ND (110)	ND (560)	ND (44)	ND (11)	ND (10)	ND (57)	ND (110)	ND (22)	ND (52)	ND (30)	ND (9.8)
Aroclor 1248 (µg/kg)	ND (11)	ND (11)	ND (110)	ND (560)	ND (44)	ND (11)	ND (10)	ND (57)	ND (110)	ND (22)	ND (52)	ND (30)	ND (9.8)
Aroclor 1254 (µg/kg)	ND (11)	ND (11)	ND (110)	ND (560)	ND (44)	ND (11)	ND (10)	ND (57)	ND (110)	ND (22)	ND (52)	ND (30)	ND (9.8)
Aroclor 1260 (µg/kg)	42 QN	120 QN	3200	11000	540	ND (11)	230	1100 QH	2300	150	1100 QN, QH	490 QN	33
Total PCBs (µg/kg)	42 QN	120 QN	3200	11000	540	ND (11)	230	1100 QH	2300	150	1100 QN, QH	490 QN	33

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS023	11NC31SS024	11NC31SS025	11NC31SS026	11NC31SS027	11NC31SS028	11NC31SS029	11NC31SS030	11NC31SS031	11NC31SS032	11NC31SS033	11NC31SS034	11NC31SS186-DUP
Laboratory ID	280-20446-23	280-20446-24	280-20446-25	280-20446-26	280-20446-27	280-20446-28	280-20446-29	280-20446-30	280-20446-31	280-20446-32	280-20446-33	280-20446-34	280-20446-186
Location ID	031-23	031-24	031-25	031-26	031-27	031-28	031-29	031-30	031-31	031-32	031-33	031-34	031-34
Date Collected	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/16/11	9/18/11*
Aroclor 1016 (µg/kg)	ND (31)	ND (21)	ND (21)	ND (22)	ND (53)	ND (54)	ND (110)	ND (110)	ND (57)	ND (330)	ND (11)	ND (21)	ND (100)
Aroclor 1221 (µg/kg)	ND (62)	ND (42)	ND (43)	ND (44)	ND (110)	ND (110)	ND (220)	ND (230)	ND (110)	ND (670)	ND (23)	ND (42)	ND (210)
Aroclor 1232 (µg/kg)	ND (31)	ND (21)	ND (21)	ND (22)	ND (53)	ND (54)	ND (110)	ND (110)	ND (57)	ND (330)	ND (11)	ND (21)	ND (100)
Aroclor 1242 (µg/kg)	ND (31)	ND (21)	ND (21)	ND (22)	ND (53)	ND (54)	ND (110)	ND (110)	ND (57)	ND (330)	ND (11)	ND (21)	ND (100)
Aroclor 1248 (µg/kg)	ND (31)	ND (21)	ND (21)	ND (22)	ND (53)	ND (54)	ND (110)	ND (110)	ND (57)	ND (330)	ND (11)	ND (21)	ND (100)
Aroclor 1254 (µg/kg)	ND (31)	ND (21)	ND (21)	ND (22)	ND (53)	ND (54)	ND (110)	ND (110)	ND (57)	ND (330)	ND (11)	ND (21)	ND (100)
Aroclor 1260 (µg/kg)	540 QH	480	430	340	1300 QH	450	2700	3000	570	4100	23 J	510 QN, QH	640 QN
Total PCBs (µg/kg)	540 QH	480	430	340	1300 QH	450	2700	3000	570	4100	23 J	510 QN, QH	640 QN

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS035	11NC31SS036	11NC31SS187-DUP	11NC31SS039	11NC31SS188-DUP	11NC31SS040	.1NC31SS189-DU|	11NC31SS044	11NC31SS047	11NC31SS048	11NC31SS049	11NC31SS050	11NC31SS051
Laboratory ID	280-20446-35	280-20446-36	280-20446-187	280-20446-39	280-20446-188	280-20446-40	280-20446-189	280-20446-44	280-20446-47	280-20446-48	280-20446-49	280-20446-50	280-20446-51
Location ID	031-35	031-36	031-36	031-39	031-39	031-40	031-40	031-44	031-47	031-48	031-49	031-50	031-51
Date Collected	9/16/11	9/17/2011 0	9/18/11*	9/17/11	9/18/11	9/17/11	9/18/2011*	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (10)	ND (32)	ND (110)	ND (23)	ND (22)	ND (22)	ND (89)	ND (9.9)	ND (53)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1221 (µg/kg)	ND (20)	ND (64)	ND (220)	ND (45)	ND (44)	ND (44)	ND (44)	ND (20)	ND (110)	ND (220)	ND (22)	ND (22)	ND (22)
Aroclor 1232 (µg/kg)	ND (10)	ND (32)	ND (110)	ND (23)	ND (22)	ND (44)	ND (44)	ND (9.9)	ND (53)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1242 (µg/kg)	ND (10)	ND (32)	ND (110)	ND (23)	ND (22)	ND (44)	ND (44)	ND (9.9)	ND (53)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1248 (µg/kg)	ND (10)	ND (32)	ND (110)	ND (23)	ND (22)	ND (44)	ND (44)	ND (9.9)	ND (53)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1254 (µg/kg)	ND (10)	ND (32)	ND (110)	ND (23)	ND (22)	ND (44)	ND (44)	ND (9.9)	ND (53)	ND (110)	ND (11)	ND (11)	ND (11)
Aroclor 1260 (µg/kg)	61	610 QN, QH	1400 QN	560	370	250 QN	720 QN	190	1200 QH	1800	280	66	30 J
Total PCBs (µg/kg)	61	610 QN, QH	1400 QN	560	370	250 QN	720 QN	190	1200 QH	1800	280	66	30 J

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS052	11NC31SS053	11NC31SS054	11NC31SS063	11NC31SS067	11NC31SS068	11NC31SS071	11NC31SS072	11NC31SS073	11NC31SS074	11NC31SS075	11NC31SS076	11NC31SS077
Laboratory ID	280-20446-52	280-20446-53	280-20446-54	280-20446-63	280-20446-67	280-20446-68	280-20446-71	280-20446-72	280-20446-73	280-20446-74	280-20446-75	280-20446-76	280-20446-77
Location ID	031-52	031-53	031-54	031-63	031-67	031-68	031-71	031-72	031-73	031-74	031-75	031-76	031-77
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (11)	ND (12)	ND (220)	ND (11)	ND (10)	ND (200)	ND (110)	ND (58)	ND (11)	ND (11)	ND (11)	ND (11)	ND (12)
Aroclor 1221 (µg/kg)	ND (22)	ND (24)	ND (430)	ND (23)	ND (21)	ND (410)	ND (220)	ND (120)	ND (22)	ND (22)	ND (23)	ND (23)	ND (23)
Aroclor 1232 (µg/kg)	ND (11)	ND (12)	ND (220)	ND (11)	ND (10)	ND (200)	ND (110)	ND (58)	ND (11)	ND (11)	ND (11)	ND (11)	ND (12)
Aroclor 1242 (µg/kg)	ND (11)	ND (12)	ND (220)	ND (11)	ND (10)	ND (200)	ND (110)	ND (58)	ND (11)	ND (11)	ND (11)	ND (11)	ND (12)
Aroclor 1248 (µg/kg)	ND (11)	ND (12)	ND (220)	ND (11)	ND (10)	ND (200)	ND (110)	ND (58)	ND (11)	ND (11)	ND (11)	ND (11)	ND (12)
Aroclor 1254 (µg/kg)	ND (11)	ND (12)	ND (220)	ND (11)	ND (10)	ND (200)	ND (110)	ND (58)	ND (11)	ND (11)	ND (11)	ND (11)	ND (12)
Aroclor 1260 (µg/kg)	84	7.5 J	3100	39 J, MH	150	3200	1700	840	160	24 J	ND (11)	44	ND (12)
Total PCBs (µg/kg)	84	7.5 J	3100	39 J, MH	150	3200	1700	840	160	24 J	ND (11)	44	ND (12)

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS078	11NC31SS079	11NC31SS080	11NC31SS081	11NC31SS082	11NC31SS083	11NC31SS084	11NC31SS085	11NC31SS086	11NC31SS087	11NC31SS088	11NC31SS089	11NC31SS096
Laboratory ID	280-20446-78	280-20446-79	280-20446-80	280-20446-81	280-20446-82	280-20446-83	280-20446-84	280-20446-85	280-20446-86	280-20446-87	280-20446-88	280-20446-89	280-20446-96
Location ID	031-78	031-79	031-80	031-81	031-82	031-83	031-84	031-85	031-86	031-87	031-88	031-89	031-96
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (11)	ND (110)	ND (57)	ND (23)	ND (56) QL	ND (10)	ND (12)	ND (110)	ND (55)	ND (55)	ND (11)	ND (57)	ND (12)
Aroclor 1221 (µg/kg)	ND (22)	ND (210)	ND (110)	ND (47)	ND (110) QL	ND (21)	ND (23)	ND (220)	ND (110)	ND (110)	ND (23)	ND (110)	ND (23)
Aroclor 1232 (µg/kg)	ND (11)	ND (110)	ND (57)	ND (23)	ND (56) QL	ND (10)	ND (12)	ND (110)	ND (55)	ND (55)	ND (11)	ND (57)	ND (12)
Aroclor 1242 (µg/kg)	ND (11)	ND (110)	ND (57)	ND (23)	ND (56) QL	ND (10)	ND (12)	ND (110)	ND (55)	ND (55)	ND (11)	ND (57)	ND (12)
Aroclor 1248 (µg/kg)	ND (11)	ND (110)	ND (57)	ND (23)	ND (56) QL	ND (10)	ND (12)	ND (110)	ND (55)	ND (55)	ND (11)	ND (57)	ND (12)
Aroclor 1254 (µg/kg)	ND (11)	ND (110)	ND (57)	ND (23)	ND (56) QL	ND (10)	ND (12)	ND (110)	ND (55)	ND (55)	ND (11)	ND (57)	ND (12)
Aroclor 1260 (µg/kg)	6.3 J	950	660	420	820 QL	18 J	ND (12)	2900	1000	980	ND (11)	810	ND (12)
Total PCBs (µg/kg)	6.3 J	950	660	420	820 QL	18 J	ND (12)	2900	1000	980	ND (11)	810	ND (12)

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS097	11NC31SS098	11NC31SS099	11NC31SS100	11NC31SS101	11NC31SS102	11NC31SS104	11NC31SS106	11NC31SS107	11NC31SS108	11NC31SS109	11NC31SS110	11NC31SS113
Laboratory ID	280-20446-97	280-20446-98	280-20446-99	280-20446-100	280-20446-101	280-20446-102	280-20446-104	280-20446-106	280-20446-107	280-20446-108	280-20446-109	280-20446-110	280-20446-113
Location ID	031-97	031-97	031-99	031-100	031-101	031-102	031-104	031-106	031-107	031-108	031-109	031-110	031-113
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (11)	ND (110)	ND (10)	ND (1100)	ND (11)	ND (12)	ND (11)	ND (11)	ND (57)	ND (12)	ND (9800)	ND (22)	ND (35)
Aroclor 1221 (µg/kg)	ND (23)	ND (230)	ND (20)	ND (2200)	ND (22)	ND (24)	ND (22)	ND (22)	ND (110)	ND (23)	ND (20000)	ND (44)	ND (70)
Aroclor 1232 (µg/kg)	ND (11)	ND (110)	ND (10)	ND (1100)	ND (11)	ND (12)	ND (11)	ND (11)	ND (57)	ND (12)	ND (9800)	ND (22)	ND (35)
Aroclor 1242 (µg/kg)	ND (11)	ND (110)	ND (10)	ND (1100)	ND (11)	ND (12)	ND (11)	ND (11)	ND (57)	ND (12)	ND (9800)	ND (22)	ND (35)
Aroclor 1248 (µg/kg)	ND (11)	ND (110)	ND (10)	ND (1100)	ND (11)	ND (12)	ND (11)	ND (11)	ND (57)	ND (12)	ND (9800)	ND (22)	ND (35)
Aroclor 1254 (µg/kg)	ND (11)	ND (110)	ND (10)	ND (1100)	ND (11)	ND (12)	ND (11)	ND (11)	ND (57)	ND (12)	ND (9800)	ND (22)	ND (35)
Aroclor 1260 (µg/kg)	9.1 J	1800	44	22000	190	140	71	11 J	1400	25 J	250000	450	610
Total PCBs (µg/kg)	9.1 J	1800	44	22000	190	140	71	11 J	1400	25 J	250000	450	610

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS114	11NC31SS115	11NC31SS116	11NC31SS117	11NC31SS118	11NC31SS119	11NC31SS124	11NC31SS125	11NC31SS126	11NC31SS127	11NC31SS128	11NC31SS129	11NC31SS130
Laboratory ID	280-20446-114	280-20446-115	280-20446-116	280-20446-117	280-20446-118	280-20446-119	280-20446-124	280-20446-125	280-20446-126	280-20446-127	280-20446-128	280-20446-129	280-20446-130
Location ID	031-114	031-115	031-116	031-117	031-118	031-119	031-124	031-125	031-126	031-127	031-128	031-129	031-130
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (220)	ND (12)	ND (12)	ND (11)	ND (88)	ND (23)	ND (220)	ND (220)	ND (110)	ND (21)	ND (220)	ND (22)	ND (11)
Aroclor 1221 (µg/kg)	ND (430)	ND (24)	ND (25)	ND (21)	ND (180)	ND (45)	ND (430)	ND (440)	ND (230)	ND (41)	ND (440)	ND (43)	ND (23)
Aroclor 1232 (µg/kg)	ND (220)	ND (12)	ND (12)	ND (11)	ND (88)	ND (23)	ND (220)	ND (220)	ND (110)	ND (21)	ND (220)	ND (22)	ND (11)
Aroclor 1242 (µg/kg)	ND (220)	ND (12)	ND (12)	ND (11)	ND (88)	ND (23)	ND (220)	ND (220)	ND (110)	ND (21)	ND (220)	ND (22)	ND (11)
Aroclor 1248 (µg/kg)	ND (220)	ND (12)	ND (12)	ND (11)	ND (88)	ND (23)	ND (220)	ND (220)	ND (110)	ND (21)	ND (220)	ND (22)	ND (11)
Aroclor 1254 (µg/kg)	ND (220)	ND (12)	ND (12)	ND (11)	ND (88)	ND (23)	ND (220)	ND (220)	ND (110)	ND (21)	ND (220)	ND (22)	ND (11)
Aroclor 1260 (µg/kg)	5800	ND (12)	ND (12)	92	1300	250	6000	6800	3400	180	5100	190	86
Total PCBs (µg/kg)	5800	ND (12)	ND (12)	92	1300	250	6000	6800	3400	180	5100	190	86

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS132	11NC31SS133	11NC31SS134	11NC31SS135	11NC31SS139	11NC31SS140	11NC31SS141	11NC31SS142	11NC31SS143	11NC31SS144	11NC31SS145	11NC31SS146	11NC31SS147
Laboratory ID	280-20446-132	280-20446-133	280-20446-134	280-20446-135	280-20446-139	280-20446-140	280-20446-141	280-20446-142	280-20446-143	280-20446-144	280-20446-145	280-20446-146	280-20446-147
Location ID	031-132	031-133	031-134	031-135	031-139	031-140	031-141	031-142	031-143	031-144	031-145	031-146	031-147
Date Collected	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11	9/17/11
Aroclor 1016 (µg/kg)	ND (540)	ND (110)	ND (57)	ND (110)	ND (110)	ND (11)	ND (110)	ND (110)	ND (11)	ND (11)	ND (57)	ND (210)	ND (110)
Aroclor 1221 (µg/kg)	ND (1100)	ND (220)	ND (110)	ND (210)	ND (220)	ND (22)	ND (220)	ND (210)	ND (22)	ND (22)	ND (110)	ND (420)	ND (220)
Aroclor 1232 (µg/kg)	ND (540)	ND (110)	ND (57)	ND (110)	ND (110)	ND (11)	ND (110)	ND (110)	ND (11)	ND (11)	ND (57)	ND (210)	ND (110)
Aroclor 1242 (µg/kg)	ND (540)	ND (110)	ND (57)	ND (110)	ND (110)	ND (11)	ND (110)	ND (110)	ND (11)	ND (11)	ND (57)	ND (210)	ND (110)
Aroclor 1248 (µg/kg)	ND (540)	ND (110)	ND (57)	ND (110)	ND (110)	ND (11)	ND (110)	ND (110)	ND (11)	ND (11)	ND (57)	ND (210)	ND (110)
Aroclor 1254 (µg/kg)	ND (540)	ND (110)	ND (57)	ND (110)	ND (110)	ND (11)	ND (110)	ND (110)	ND (11)	ND (11)	ND (57)	ND (210)	ND (110)
Aroclor 1260 (µg/kg)	8700	1500	1200	1600	3200	200	2100	2000	260	130	990	3200	2000
Total PCBs (µg/kg)	8700	1500	1200	1600	3200	200	2100	2000	260	130	990	3200	2000

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS148	11NC31SS150	11NC31SS151	11NC31SS153	11NC31SS154	11NC31SS158	11NC31SS159	11NC31SS160	11NC31SS165	11NC31SS166	11NC31SS173	11NC31SS174	11NC31SS181
Laboratory ID	280-20446-148	280-20446-150	280-20446-151	280-20446-153	280-20446-154	280-20446-158	280-20446-159	280-20446-160	280-20446-165	280-20446-166	280-20446-173	280-20446-174	280-20446-181
Location ID	031-148	031-150	031-151	031-153	031-154	031-158	031-159	031-160	031-165	031-166	031-173	031-174	031-181
Date Collected	9/17/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11	9/18/11
Aroclor 1016 (µg/kg)	ND (110)	ND (12)	ND (11)	ND (10)	ND (10)	ND (10)	ND (12)	ND (11)	ND (11)	ND (100)	ND (11)	ND (11)	ND (10)
Aroclor 1221 (µg/kg)	ND (220)	ND (23)	ND (21)	ND (21)	ND (21)	ND (21)	ND (23)	ND (22)	ND (22)	ND (200)	ND (22)	ND (21)	ND (20)
Aroclor 1232 (µg/kg)	ND (110)	ND (12)	ND (11)	ND (10)	ND (10)	ND (10)	ND (12)	ND (11)	ND (11)	ND (100)	ND (11)	ND (11)	ND (10)
Aroclor 1242 (µg/kg)	ND (110)	ND (12)	ND (11)	ND (10)	ND (10)	ND (10)	ND (12)	ND (11)	ND (11)	ND (100)	ND (11)	ND (11)	ND (10)
Aroclor 1248 (µg/kg)	ND (110)	ND (12)	ND (11)	ND (10)	ND (10)	ND (10)	ND (12)	ND (11)	ND (11)	ND (100)	ND (11)	ND (11)	ND (10)
Aroclor 1254 (µg/kg)	ND (110)	ND (12)	ND (11)	ND (10)	ND (10)	ND (10)	ND (12)	ND (11)	ND (11)	ND (100)	ND (11)	ND (11)	ND (10)
Aroclor 1260 (µg/kg)	2400	5.8 J, MH	ND (11)	ND (10)	62	ND (10)	130	220	ND (11)	2600	180	ND (11)	62
Total PCBs (µg/kg)	2400	5.8 J,MH	ND (11)	ND (10)	62	ND (10)	130	220	ND (11)	2600	180	ND (11)	62

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS152	11NC31SS155	11NC31SS169	11NC31SS170	11NC31SS201	11NC31SS202	11NC31SS203	11NC31SS204	11NC31SS207	11NC31SS208	11NC31SS209	11NC31SS210	11NC31SS211
Laboratory ID	280-20446-152	280-20446-155	280-20446-169	280-20446-170	580-28787-1	580-28787-2	580-28787-3	580-28787-4	580-28787-7	580-28787-8	580-28787-9	580-28787-10	580-28787-11
Location ID	031-152	031-155	031-169	031-170	031-201	031-202	031-203	031-204	031-207	031-208	031-209	031-210	031-211
Date Collected	9/18/11	9/18/11	9/18/11	9/18/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11
Aroclor 1016 (µg/kg)	ND (110)	ND (11)	ND (210)	ND (500)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.6)	ND (5.3)	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.3)
Aroclor 1221 (µg/kg)	ND (220)	ND (22)	ND (420)	ND (990)	ND (8.7)	ND (8.7)	ND (8.7)	ND (9)	ND (8.4)	ND (8.7)	ND (8.7)	ND (8.8)	ND (8.5)
Aroclor 1232 (µg/kg)	ND (110)	ND (11)	ND (210)	ND (500)	ND (8.7)	ND (8.7)	ND (8.7)	ND (9)	ND (8.4)	ND (8.7)	ND (8.7)	ND (8.8)	ND (8.5)
Aroclor 1242 (µg/kg)	ND (110)	ND (11)	ND (210)	ND (500)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.6)	ND (5.3)	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.3)
Aroclor 1248 (µg/kg)	ND (110)	ND (11)	ND (210)	ND (500)	ND (3.3)	ND (3.3)	ND (3.3)	ND (3.4)	ND (3.2)	ND (3.2)	ND (3.3)	ND (3.3)	ND (3.2)
Aroclor 1254 (µg/kg)	ND (110)	ND (11)	ND (210)	ND (500)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.6)	ND (5.3)	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.3)
Aroclor 1260 (µg/kg)	2100	ND (11)	3800	15000	17	7500	4300	14	120	3.4 J	4600	3100	230
Total PCBs (µg/kg)	2100	ND (11)	3800	15000	17	7500	4300	14	120	3.4 J	4600	3100	230

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS214	11NC31SS288-DUP	11NC31SS215	11NC31SS289-DUP	11NC31SS216	11NC31SS290-DUP	11NC31SS217	11NC31SS218	11NC31SS220	11NC31SS222	11NC31SS223	11NC31SS225	11NC31SS226
Laboratory ID	580-28787-14	580-28787-88	580-28787-15	580-28787-89	580-28787-16	580-28787-90	580-28787-17	580-28787-18	580-28787-20	580-28787-22	580-28787-23	580-28787-25	580-28787-26
Location ID	031-214	031-214	031-215	031-215	031-216	031-216	031-217	031-218	031-220	031-222	031-223	031-225	031-226
Date Collected	9/19/11	9/20/11	9/19/11	9/20/11	9/19/11	9/20/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11
Aroclor 1016 (µg/kg)	ND (5.2)	ND (5.2)	ND (5.3)	ND (5.4)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.6)	ND (5.5)	ND (5.6)	ND (6.2)	ND (5.3)	ND (5.4)
Aroclor 1221 (µg/kg)	ND (8.3)	ND (8.3)	ND (8.5)	ND (8.6)	ND (8.7)	ND (8.7)	ND (8.9)	ND (9)	ND (8.8)	ND (9)	ND (9.8)	ND (8.6)	ND (8.6)
Aroclor 1232 (µg/kg)	ND (8.3)	ND (8.3)	ND (8.5)	ND (8.6)	ND (8.7)	ND (8.7)	ND (8.9)	ND (9)	ND (8.8)	ND (9)	ND (9.8)	ND (8.6)	ND (8.6)
Aroclor 1242 (µg/kg)	ND (5.2)	ND (5.2)	ND (5.3)	ND (5.4)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.6)	ND (5.5)	ND (5.6)	ND (6.2)	ND (5.3)	ND (5.4)
Aroclor 1248 (µg/kg)	ND (3.1)	ND (3.1)	ND (3.2)	ND (3.2)	ND (3.2)	ND (3.3)	ND (3.3)	ND (3.4)	ND (3.3)	ND (3.4)	ND (3.7)	ND (3.2)	ND (3.2)
Aroclor 1254 (µg/kg)	ND (5.2)	ND (5.2)	ND (5.3)	ND (5.4)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.6)	ND (5.5)	ND (5.6)	ND (6.2)	ND (5.3)	ND (5.4)
Aroclor 1260 (µg/kg)	110 QN	210 QN	1000	1100	1100	1400	1100	23000	1600	520	2000	12	2300
Total PCBs (µg/kg)	110 QN	210 QN	1000	1100	1100	1400	1100	23000	1600	520	2000	12	2300

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS233	11NC31SS236	11NC31SS291-DUP	11NC31SS237	11NC31SS292-DUP	11NC31SS238	11NC31SS239	11NC31SS240	11NC31SS253	11NC31SS275	11NC31SS276	11NC31SS277	11NC31SS278
Laboratory ID	580-28787-33	580-28787-36	580-28787-91	580-28787-37	580-28787-92	580-28787-38	580-28787-39	580-28787-40	580-28787-53	580-28787-75	580-28787-76	580-28787-77	580-28787-78
Location ID	031-233	031-236	031-236	031-237	031-237	031-238	031-239	031-240	031-253	031-275	031-276	031-277	031-278
Date Collected	9/19/11	9/19/11	9/20/11	9/19/11	9/20/11	9/19/11	9/19/11	9/19/11	9/19/11	9/20/11	9/20/11	9/20/11	9/20/11
Aroclor 1016 (µg/kg)	ND (5.5)	ND (5.4)	ND (5.6)	ND (5.2)	ND (5.3)	ND (5.2)	ND (5.3)	ND (5.8)	ND (5.9)	ND (5.3)	ND (5.4)	ND (5.1)	ND (5)
Aroclor 1221 (µg/kg)	ND (8.7)	ND (8.6)	ND (9)	ND (8.3)	ND (8.4)	ND (8.3)	ND (8.4)	ND (9.3)	ND (9.4)	ND (8.5)	ND (8.7)	ND (8.1)	ND (8.1)
Aroclor 1232 (µg/kg)	ND (8.7)	ND (8.6)	ND (9)	ND (8.3)	ND (8.4)	ND (8.3)	ND (8.4)	ND (9.3)	ND (9.4)	ND (8.5)	ND (8.7)	ND (8.1)	ND (8.1)
Aroclor 1242 (µg/kg)	ND (5.5)	ND (5.4)	ND (5.6)	ND (5.2)	ND (5.3)	ND (5.2)	ND (5.3)	ND (5.8)	ND (5.9)	ND (5.3)	ND (5.4)	ND (5.1)	ND (5)
Aroclor 1248 (µg/kg)	ND (3.3)	ND (3.2)	ND (3.4)	ND (3.1)	ND (3.2)	ND (3.1)	ND (3.2)	ND (3.5)	ND (3.5)	ND (3.2)	ND (3.3)	ND (3.1)	ND (3)
Aroclor 1254 (µg/kg)	ND (5.5)	ND (5.4)	ND (5.6)	ND (5.2)	ND (5.3)	ND (5.2)	ND (5.3)	ND (5.8)	ND (5.9)	ND (5.3)	ND (5.4)	ND (5.1)	ND (5)
Aroclor 1260 (µg/kg)	3100	1600	1000	3200 QN	240 QN	320	3400	16	490	21000	150 MN	39	590
Total PCBs (µg/kg)	3100	1600	1000	3200 QN	240 QN	320	3400	16	490	21000	150 MN	39	590

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS279	11NC31SS295	11NC31SS296	11NC31SS297	11NC31SS298	11NC31SS299	11NC31SS300	11NC31SS301	11NC31SS302	11NC31SS303	11NC31SS304	11NC31SS305	11NC31SS306
Laboratory ID	580-28787-79	580-28787-95	580-28787-96	580-28787-97	580-28787-98	580-28787-99	580-28787-100	580-28787-101	580-28787-102	580-28787-103	580-28787-104	580-28787-105	580-28787-106
Location ID	031-279	031-295	031-296	031-297	031-298	031-299	031-300	031-301	031-302	031-303	031-304	031-305	031-306
Date Collected	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11	9/20/11
Aroclor 1016 (µg/kg)	ND (5.7)	ND (5.2)	ND (5.5)	ND (5.6)	ND (5.7)	ND (5.3)	ND (5.4)	ND (5.5)	ND (5.7)	ND (5.5)	ND (5.5)	ND (5.9)	ND (5.4)
Aroclor 1221 (µg/kg)	ND (9)	ND (8.3)	ND (8.8)	ND (8.9)	ND (9.2)	ND (8.5)	ND (8.7)	ND (8.9)	ND (9.2)	ND (8.8)	ND (8.8)	ND (9.4)	ND (8.7)
Aroclor 1232 (µg/kg)	ND (9)	ND (8.3)	ND (8.8)	ND (8.9)	ND (9.2)	ND (8.5)	ND (8.7)	ND (8.9)	ND (9.2)	ND (8.8)	ND (8.8)	ND (9.4)	ND (8.7)
Aroclor 1242 (µg/kg)	ND (5.7)	ND (5.2)	ND (5.5)	ND (5.6)	ND (5.7)	ND (5.3)	ND (5.4)	ND (5.5)	ND (5.7)	ND (5.5)	ND (5.5)	ND (5.9)	ND (5.4)
Aroclor 1248 (µg/kg)	ND (3.4)	ND (3.1)	ND (3.3)	ND (3.3)	ND (3.4)	ND (3.2)	ND (3.3)	ND (3.3)	ND (3.4)	ND (3.3)	ND (3.3)	ND (3.5)	ND (3.3)
Aroclor 1254 (µg/kg)	ND (5.7)	ND (5.2)	ND (5.5)	ND (5.6)	ND (5.7)	ND (5.3)	ND (5.4)	ND (5.5)	ND (5.7)	ND (5.5)	ND (5.5)	ND (5.9)	ND (5.4)
Aroclor 1260 (µg/kg)	69	330	ND (5.5)	15	17	7 J	21	32	580	14	20	4500	820
Total PCBs (µg/kg)	69	330	ND (5.5)	15	17	7 J	21	32	580	14	20	4500	820

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	11NC31SS307	Comp Group 1	Comp Group 22-DUP	Comp Group 2	Comp Group 3	Comp Group 4	Comp Group 5	Comp Group 6	Comp Group 7	Comp Group 8	Comp Group 9	Comp Group 10	Comp Group 11
Laboratory ID	580-28787-107	580-28787-124	580-28787-129	580-28787-128	580-28787-114	580-28787-115	580-28787-109	580-28787-123	580-28787-127	580-28787-122	580-28787-110	580-28787-121	580-28787-111
Location ID	031-307												
Date Collected	9/20/11	9/19/11	9/19/11	9/20/11	9/19/11	9/19/11	9/19/11	9/19/11	9/20/11	9/19/11	9/19/11	9/19/11	9/19/11
Aroclor 1016 (µg/kg)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.1)	ND (5.4)	ND (5.8)	ND (5.4)	ND (5.3)	ND (5)	ND (5.2)	ND (5.6)	ND (5.1)	ND (5.4)
Aroclor 1221 (µg/kg)	ND (8.7)	ND (8.7)	ND (8.7)	ND (8.2)	ND (8.6)	ND (9.3)	ND (8.7)	ND (8.5)	ND (8.1)	ND (8.3)	ND (8.9)	ND (8.1)	ND (8.6)
Aroclor 1232 (µg/kg)	ND (8.7)	ND (8.7)	ND (8.7)	ND (8.2)	ND (8.6)	ND (9.3)	ND (8.7)	ND (8.5)	ND (8.1)	ND (8.3)	ND (8.9)	ND (8.1)	ND (8.6)
Aroclor 1242 (µg/kg)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.1)	ND (5.4)	ND (5.8)	ND (5.4)	ND (5.3)	ND (5)	ND (5.2)	ND (5.6)	ND (5.1)	ND (5.4)
Aroclor 1248 (µg/kg)	ND (3.3)	ND (3.3)	ND (3.3)	ND (3.1)	ND (3.2)	ND (3.5)	ND (3.3)	ND (3.2)	ND (3)	ND (3.1)	ND (3.3)	ND (3.1)	ND (3.2)
Aroclor 1254 (µg/kg)	ND (5.4)	ND (5.4)	ND (5.5)	ND (5.1)	ND (5.4)	ND (5.8)	ND (5.4)	ND (5.3)	ND (5)	ND (5.2)	ND (5.6)	ND (5.1)	ND (5.4)
Aroclor 1260 (µg/kg)	610	330 QN	81 QN	23	310	200	120	140	140	610	120	420	300
Total PCBs (µg/kg)	610	330 QN	81 QN	23	310	200	120	140	140	610	120	420	300

Table 15 Site 31 Soil Confirmation Results (continued)

Sample ID	Comp Group 12	Comp Group 13	Comp Group 14	Comp Group 15	Comp Group 16	Comp Group 17	Comp Group 18	Comp Group 19	Comp Group 20	Comp Group 21	Site-Specific Cleanup Level (µg/kg)
Laboratory ID	580-28787-116	580-28787-126	580-28787-108	580-28787-113	580-28787-117	580-28787-120	580-28787-125	580-28787-112	580-28787-118	580-28787-119	
Location ID											
Date Collected	9/19/11	9/20/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	9/19/11	
Aroclor 1016 (µg/kg)	ND (5.5)	ND (5)	ND (5.5)	ND (5.3)	ND (5.7)	ND (5.6)	ND (5.4)	ND (5.2)	ND (5.6)	ND (5.6)	1,000
Aroclor 1221 (µg/kg)	ND (8.8)	ND (7.9)	ND (8.8)	ND (8.5)	ND (9.1)	ND (8.9)	ND (8.7)	ND (8.4)	ND (8.9)	ND (8.9)	1,000
Aroclor 1232 (µg/kg)	ND (8.8)	ND (7.9)	ND (8.8)	ND (8.5)	ND (9.1)	ND (8.9)	ND (8.7)	ND (8.4)	ND (8.9)	ND (8.9)	1,000
Aroclor 1242 (µg/kg)	ND (5.5)	ND (5)	ND (5.5)	ND (5.3)	ND (5.7)	ND (5.6)	ND (5.4)	ND (5.2)	ND (5.6)	ND (5.6)	1,000
Aroclor 1248 (µg/kg)	ND (3.3)	ND (3)	ND (3.3)	ND (3.2)	ND (3.4)	ND (3.3)	ND (3.3)	ND (3.1)	ND (3.3)	ND (3.4)	1,000
Aroclor 1254 (µg/kg)	ND (5.5)	ND (5)	ND (5.5)	ND (5.3)	ND (5.7)	ND (5.6)	ND (5.4)	ND (5.2)	ND (5.6)	ND (5.6)	1,000
Aroclor 1260 (µg/kg)	300	120	17	270	1500	110	130	16	240	45	1,000
Total PCBs (µg/kg)	300	120	17	270	1500	110	130	16	240	45	1,000

Notes:
*Duplicate and sample have different dates to confuse the lab; actually taken on same date
Red highlight indicates results are above the cleanup level
Green highlight indicates composite sample result failed the 1/n rule
Purple highlight indicates the sample is a duplicate
J = result is an estimate
DUP = sample is a field duplicate of the previous sample
MH = result is an estimate with potential high bias due to matrix interference
MN = result is an estimate due to sample matrix; bias is unknown
ND = results were non-detect; limit of detection in parentheses
QH = surrogate recovery exceeded acceptance limit; result may have high bias
QL = surrogate recovery less than acceptance limit; result may have low bias
QN = result is an estimate due to a quality control failure; bias is unknown

µg/Kg = micrograms per kilogram
Comp = composite
MS = matrix spike
MSD = matrix spike duplicate
PCB = polychlorinated biphenyl

Table 16 Site 31 Concrete Wipe Sample Results by EPA Method 8082

Sample ID	Units µg/100 cm^2
31W1	ND
31W2	0.17
31W3	ND
31W4	ND
31W5	ND
31W6	ND
31W7	ND
31W8	ND
31W9	0.76
31W10	ND
31W11	0.10
31W12	0.09
31W13	ND
31W14	ND
31W15	1.82
31W16	ND
31W17	ND

µg = micrograms
cm^2 = square centimeters
EPA = U.S. Environmental Protection Agency
ND = non-detect

Table 17 Site 21 Arsenic by EPA 6020 in Soil Background Results (mg/kg)

Sample ID	11NC21SS01	11NC21SS02	11NC21SS03	11NC21SS10-DUP	11NC21SS04	11NC21SS05
Laboratory Sample ID	580-27633-1	580-27633-2	580-27633-3	580-27633-10	580-27633-4	580-27633-5
Location ID	21-01	21-02	21-03	21-03	21-04	21-05
Date Collected	7/22/2011	7/22/2011	7/22/2011	7/22/2011	7/22/2011	7/22/2011
Arsenic Result (mg/Kg)	5.4	3.1	3.5	2.9	6	6

Table 17 Site 21 Arsenic by EPA 6020 in Soil Background Results (mg/kg) (continued)

Sample ID	11NC21SS06	11NC21SS07	11NC21SS08	11NC21SS09	Site-Specific Cleanup Level[1]
Laboratory Sample ID	580-27633-6	580-27633-7	580-27633-8	580-27633-9	
Location ID	21-06	21-07	21-08	21-09	
Date Collected	7/22/2011	7/22/2011	7/22/2011	7/22/2011	
Arsenic Result (mg/Kg)	10	6.3	3.6	**22**	**11**

Notes:

[1]Cleanup level based on NE Cape 2009 Decision Document

BOLD = result is above site-specific cleanup Level

DUP = duplicate of previous sample

EPA = U.S. Environmental Protection Agency

mg/kg = milligrams per kilogram

Table 18 Site 21 Arsenic in Soil by EPA 6020

Sample ID	11NC21SS001	11NC21SS002	11NC21SS003	11NC21SS004	11NC21SS007 DUP	11NC21SS005	11NC21SS006	11NC21SS008
Laboratory Sample ID	580-28199-5	580-28199-6	580-28199-7	580-28199-8	580-28199-11	580-28199-9	580-28199-10	580-28199-12
Location ID	21-001	21-002	21-003	21-004	21-004	21-005	21-006	21-008
Date Collected	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011
Arsenic Result (mg/kg)	**56**	**32**	**22**	**100**	**140**	**180**	**74**	**80**
Site-Specific Cleanup Level[1]	**11 mg/kg**							

Notes:

[1]Cleanup level based on NE Cape 2009 Decision Document

Red highlight = results are above cleanup level

DUP = duplicate of previous sample

EPA = U.S. Environmental Protection Agency

mg/kg = milligrams per kilogram

Table 19 MOC Tar Results for Disposal by EPA Method 8270C (µg/kg)

Laboratory ID	580-27899-1	580-27899-2
Sample ID	11NCTAR001	11NCTAR002
Date Collected	7/30/2011	7/30/2011
Analyte		
1,4-Dichlorobenzene	ND (120) QL	ND (120) QL
2,4,5-Trichlorophenol	ND (120) QL	ND (120) QL
2,4,6-Trichlorophenol	ND (120) QL	ND (120) QL
2,4-Dinitrotoluene	ND (120) QL	ND (120) QL
2-Methylphenol	ND (120) J QL	ND (120) QL
3 & 4 Methylphenol	ND (120) QL	ND (120) QL
Hexachlorobenzene	ND (61) QL	ND (60) QL
Hexachlorobutadiene	ND (120) QL	ND (120) QL
Hexachloroethane	ND (120) QL	ND (120) QL
Nitrobenzene	ND (310) QL	ND (300) QL
Pentachlorophenol	ND (310) QL	ND (300) QL
Pyridine	ND (3100) QL	ND (3000) QL

Notes:
J = MS/MSD recovery on this sample exceeded RPD limits
ND = Result is non-detect; limit of detection in parentheses
QL = Holding time exceedance; results are considered estimated with low bias

µg/kg = micrograms per kilogram
EPA = U.S. Environmental Protection Agency
MOC = Main Operations Complex
MS/MSD = matrix spike/matrix spike duplicate
RPD = relative percent difference

Table 20 Soil Confirmation Results for Tar Removal Area by EPA Method 8270 SIM in µg/kg

Analyte	Sample ID	11NCTARSS001	11NCTARSS002	11NCTARSS003	11NCTARSS004	11NCTARSS005	11NCTARSS006	11NCTARSS007	11NCTARSS008
	Laboratory ID	580-27899-3	580-27899-4	580-27899-5	580-27899-6	580-27899-7	580-27899-8	580-27899-9	580-27899-10
	Location ID	TAR-2	TAR-3	TAR-4	TAR-5	TAR-6	TAR-7	TAR-8	TAR-9
	Date Collected	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011
	Site-Specific and ADEC Cleanup Levels (µg/kg)								
Anthracene	3,000,000	ND (51)	ND (3.1)	110	ND (14)	1.7 J QH	2.9 J QH	ND (2.8)	110
Acenaphthene	180,000	ND (51)	ND (3.1)	16 J	ND (14)	ND (3.0)	ND (3.0)	ND (2.8)	22 J
Acenaphthylene	180,000	ND (51)	ND (3.1)	260	ND (14)	2.5 J QH	0.64 J QH	ND (2.8)	1.6 J
Benzo(a)anthracene	3,600	83 J	ND (3.1)	260	ND (14)	6.4 QH	11 QH	ND (2.8)	220
Benzo(b)fluoranthene	12,000	88 J	ND (3.1)	420	ND (14)	9.3 QH	8.3 QH	ND (2.8)	120
Benzo(k)fluoranthene	120,000	ND (51)	ND (3.1)	150	ND (14)	2.6 J QH	3 J QH	ND (2.8)	46
Benzo(a)pyrene	2,100	49 J	ND (3.1)	440	ND (14)	4.1 J QH	4.2 J QH	ND (2.8)	66
Benzo(g,h,i)perylene	38,700,000	25 J	ND (3.1)	180	ND (14)	2.5 J QH	1.9 J QH	ND (2.8)	17 J
Chrysene	360,000	200	2.3 J QH	500	13 J	15 QH	27 QH	ND (2.8)	280
Dibenz(a,h)anthracene	4,000	ND (51)	ND (0.0031)	64 J	ND (14)	ND (3.0)	ND (3.0)	ND (2.8)	11 J
Fluoranthene	1,400,000	160	1.6 J QH	230	ND (14)	12 QH	7.2 QH	ND (2.8)	450
Fluorene	220,000	ND (51)	ND (3.1)	ND (53)	ND (14)	1.9 J QH	0.97 J QH	ND (2.8)	42
Indeno(1,2,3-cd)pyrene	41,000	ND (51)	ND (3.1)	190	ND (14)	2.7 J QH	1.8 J QH	ND (2.8)	22 J
Naphthalene	120,000*	ND (51)	0.51 J QH	11 J	ND (14)	0.73 J QH	0.53 J QH	0.38 J	6.3 J
Phenanthrene	3,000,000	74 J	1.4 J QH	94 J	ND (14)	5.3 J QH	5.1 J QH	ND (2.8)	350
Pyrene	1,000,000	140	2.2 J QH	540	8.3 J	14 QH	9 QH	ND (2.8)	330
1-Methylnaphthalene	NS	ND (51)	0.48 J QH	8.1 J	ND (14)	0.37 J QH	ND (3.0)	ND (2.8)	4.7 J
2-Methylnaphthalene	6,100	ND (51)	ND (3.1)	12 J	ND (14)	0.51 J QH	ND (3.0)	ND (2.8)	7.8 J

Table 20 Soil Confirmation Results for Tar Removal Area by EPA Method 8270 SIM in µg/kg (continued)

	Sample ID	11NCTARSS024-Dup	11NCTARSS009	11NCTARSS010	11NCTARSS011	11NCTARSS022-Dup	11NCTARSS012	11NCTARSS013	11NCTARSS014
	Laboratory ID	580-27899-26	580-27899-11	580-27899-12	580-27899-13	580-27899-24	580-27899-14	580-27899-15	580-27899-16
	Location ID	TAR-9	TAR-10	TAR-11	TAR-12	TAR-12	TAR-13	TAR-14	TAR-15
	Date Collected	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011
Analyte	Site-Specific and ADEC Cleanup Levels (µg/kg)								
Anthracene	3,000,000	4.7 J	ND (59)	17 J	ND (30)	98 QH	36 J	950	36
Acenaphthene	180,000	ND (14)	ND (59)	ND (59)	ND (30)	15 QH	7.3 J	200	3.2 J
Acenaphthylene	180,000	2.7 J	ND (59)	ND (59)	2.9 J	4.1 J QH	15 J	150	61
Benzo(a)anthracene	3,600	18 J	53 J	53 J	12 J	250 QH	39 J	1800	130
Benzo(b)fluoranthene	12,000	ND (14)	72 J	58 J	ND (30)	200 QH	ND (26)	1100	170
Benzo(k)fluoranthene	120,000	ND (14)	ND (59)	ND (59)	ND (30)	63 QH	ND (26)	450	58
Benzo(a)pyrene	2,100	15 J	50 J	29 J	11 J	110 QH	29 J	750	130
Benzo(g,h,i)perylene	38,700,000	10 J	24 J	ND (59)	ND (30)	36 QH	14 J	230	67
Chrysene	360,000	48	150	160	54 J	270 QH	100	2100	170
Dibenz(a,h)anthracene	4,000	ND (14)	ND (59)	ND (59)	ND (30)	19 QH	ND (26)	120	25 J
Fluoranthene	1,400,000	25 J	83 J	96 J	16 J	450 QH	53	3500	160
Fluorene	220,000	2.9 J	ND (59)	ND (59)	ND (30)	7.3 QH	9.4 J	330	13 J
Indeno(1,2,3-cd)pyrene	41,000	ND (14)	ND (59)	ND (59)	ND (30)	42 QH	ND (26)	280	70
Naphthalene	120,000*	ND (14)	ND (59)	ND (59)	ND (30)	1.3 J QH	ND (26)	35	2.6 J
Phenanthrene	3,000,000	11 J	65 J	70 J	ND (30)	240 QH	45 J	2400	45
Pyrene	1,000,000	33	120	130	26 J	360 QH	26 J	3000	180
1-Methylnaphthalene	NS	ND (14)	ND (59)	ND (59)	ND (30)	2.0 J QH	3.3 J	39	1.7 J
2-Methylnaphthalene	6,100	ND (14)	ND (59)	ND (59)	ND (30)	2.1 J QH	5.7 J	49	2.5 J

Table 20 Soil Confirmation Results for Tar Removal Area by EPA Method 8270 SIM in µg/kg (continued)

	Sample ID	11NCTARSS015	11NCTARSS016	11NCTARSS023-Dup	11NCTARSS017	11NCTARSS018	11NCTARSS019	11NCTARSS020	11NCTARSS021
	Laboratory ID	580-27899-17	580-27899-18	580-27899-25	580-27899-19	580-27899-20	580-27899-21	580-27899-22	580-27899-23
	Location ID	TAR-16	TAR-17	TAR-17	TAR-18	TAR-19	TAR-20	TAR-21	TAR-22
	Date Collected	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011	8/7/2011
Analyte	Site-Specific and ADEC Cleanup Levels (µg/kg)								
Anthracene	3,000,000	ND (16)	30	17 QH	430 J	14 J	ND (13)	27 J	ND (2.8)
Acenaphthene	180,000	ND (16)	3.9 J	2.2 J QH	79 J	ND (27)	ND (13)	ND (27)	ND (2.8)
Acenaphthylene	180,000	ND (16)	63	26 QH	1200	13 J	ND (13)	57	0.56 J
Benzo(a)anthracene	3,600	ND (16)	90	50 QH	1200	17 J	ND (13)	59	ND (2.8)
Benzo(b)fluoranthene	12,000	ND (16)	140	64 QH	2300	ND (27)	ND (13)	110	ND (2.8)
Benzo(k)fluoranthene	120,000	ND (16)	49	21 QH	640	ND (27)	ND (13)	28 J	ND (2.8)
Benzo(a)pyrene	2,100	ND (16)	150	61 QH	2300	19 J	ND (13)	120	ND (2.8)
Benzo(g,h,i)perylene	38,700,000	ND (16)	59	23 QH	1000	ND (27)	ND (13)	51 J	ND (2.8)
Chrysene	360,000	ND (16)	120	60 QH	2600	35 J	ND (13)	120	ND (2.8)
Dibenz(a,h)anthracene	4,000	ND (16)	20 J	8.1 QH	340 J	ND (27)	ND (13)	17 J	ND (2.8)
Fluoranthene	1,400,000	ND (16)	20 J	67 QH	1300	54	ND (13)	59	ND (2.8)
Fluorene	220,000	3.8 J	9.2 J	7.3 QH	150 J	8.7 J	ND (13)	8.6 J	0.8 J
Indeno(1,2,3-cd)pyrene	41,000	ND (16)	63	25 QH	1000	ND (27)	ND (13)	52 J	ND (2.8)
Naphthalene	120,000*	ND (16)	ND (15)	1.0 J QH	44 J	ND (27)	ND (13)	ND (27)	ND (2.8)
Phenanthrene	3,000,000	ND (16)	26 J	25 QH	370 J	23 J	ND (13)	23 J	ND (2.8)
Pyrene	1,000,000	ND (16)	150	83 QH	3300	87	ND (13)	130	ND (2.8)
1-Methylnaphthalene	NS	ND (16)	ND (15)	0.56 J QH	ND (270)	ND (27)	ND (13)	ND (27)	ND (2.8)
2-Methylnaphthalene	6,100	ND (16)	1.8 J	0.93 J QH	46 J	ND (27)	ND (13)	ND (27)	ND (2.8)

Notes:

*Site-specific cleanup level

J = Result is an estimate

ND = Non-detect; limit of detection in parentheses

QH = Surrogate recovery exceeded upper acceptance limit. Sample results may have high bias.

µg/kg = micrograms per kilogram

ADEC = Alaska Department of Environmental Conservation

Dup = Sample is a field duplicate of the previous sample

EPA = U.S. Environmental Protection Agency

NS = not specified

SIM = selective ion monitoring

Table 21
Site 9 Surface Water Results by EPA 8260B (Volatile Organic Compounds) in µg/L

	Sample ID	11NC09WA006	11NC09WA007	11NC09WA008	11NC09WA009	11NC09WA010-DUP
	Laboratory ID	580-28786-14	580-28786-15	580-28786-16	580-28786-17	580-28786-18
	Location ID	009-01	009-02	009-03	009-04	009-04
	Date Collected	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011
Analyte	**ADEC Cleanup Level**					
1,1,1,2-Tetrachloroethane	Total Aromatic Hydrocarbons (TAH) 5 µg/L	ND (0.45) ML	ND (0.45) ML	ND (0.45) ML	ND (0.45) ML	ND (0.45) ML
1,1,1-Trichloroethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,1,2,2-Tetrachloroethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,1,2-Trichloroethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,1-Dichloroethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,1-Dichloroethene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,1-Dichloropropene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2,3-Trichlorobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2,3-Trichloropropane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2,4-Trichlorobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2,4-Trimethylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2-Dibromo-3-Chloropropane		ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)
1,2-Dibromoethane		ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)
1,2-Dichlorobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2-Dichloroethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,2-Dichloropropane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,3,5-Trimethylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,3-Dichlorobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,3-Dichloropropane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
1,4-Dichlorobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
2,2-Dichloropropane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
2-Butanone (MEK)		ND (4.5)	ND (4.5)	ND (4.5)	ND (4.5)	ND (4.5)
2-Chlorotoluene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
2-Hexanone		ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)
4-Chlorotoluene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
4-Methyl-2-pentanone (MIBK)		ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)
Acetone		ND (4.5)	ND (4.5)	ND (4.5)	ND (4.5)	ND (4.5)
Benzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Bromobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Bromochloromethane		ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)	ND (0.70)
Bromodichloromethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Bromoform		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Bromomethane		ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)
Carbon disulfide		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Carbon tetrachloride		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Chlorobenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Chlorodibromomethane		ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)
Chloroethane		ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)
Chloroform		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Chloromethane		ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)	ND (2.3)
cis-1,2-Dichloroethene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
cis-1,3-Dichloropropene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Dibromomethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Dichlorodifluoromethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Ethylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Hexachlorobutadiene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Isopropylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
m,p-Xylene		ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)	ND (0.90)
Methyl tert-butyl ether		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Methylene Chloride		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Naphthalene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
n-Butylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
N-Propylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
o-Xylene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
p-Isopropyltoluene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
sec-Butylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Styrene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
tert-Butylbenzene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Tetrachloroethene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Toluene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
trans-1,2-Dichloroethene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
trans-1,3-Dichloropropene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Trichloroethene		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Trichlorofluoromethane		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)
Vinyl chloride		ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)	ND (0.45)

Notes:
ML = result is an estimate biased low due to MS/MSD recoveries below the acceptance limits
ND = non-detect; limit of detection in parentheses

µg/L = micrograms per liter
ADEC = Alaska Department of Environmental Conservation
DUP = Sample is a field duplicate of the previous sample
EPA = U.S. Environmental Protection Agency

MEK = methyl ethyl ketone
MIBK = methyl isobutyl ketone
MS/MSD = matrix spike/matrix spike duplicate

APPENDIX H

Field Notes

Eric Barnhill

Bristol Environmental

Northeast Cape 2011

HTRW Remedial Actions

"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 351

Job # 34110008

7-13-11 — 8-3-11

July 12, 2011
Northeast 2011

- Arrive at Anchorage International airport ≈ 0900 hours

- Depart to Nome Alaska @≈ 1130

- Arrive Nome

- Shuttle to Bering Air

- Bering air is in contact with NE cape, Chuck Crowley. Winds have been high and rain is plentiful.

- Flight to St Lawrence Island has been canceled. on hold until Wednesday July 13.

- Holding in Nome Alaska

July 13, 2011

Nome

1000 hours - To store to get Supplies
1030 Check out, heading to Bering Air

Taking off to Northeast Cape on Bering Air.

- Arrive NE cape, St Lawrence Island Windy + rainy

- Checkin to Camp

- unpacked personal and Environmental gear

- Drove to work site; looked at MOC, site 31 and 13, site 8.

- ~~Slowly~~ EB

1730 done for the day

July 14, 2011 Fairly Calm, dry, Cloudy 42°, SW winds 10mph

0700 Safety meeting
- vehicles
- Medical
- Introductions

0730 - 1200
Environmental Conex Cleaning and Organization.

1230 - 1400
- Environmental Conex Organizing

1400 - 1430
- MOC; talking to Eco Land Inc.

1430 - 1500
- Configuring work Computer

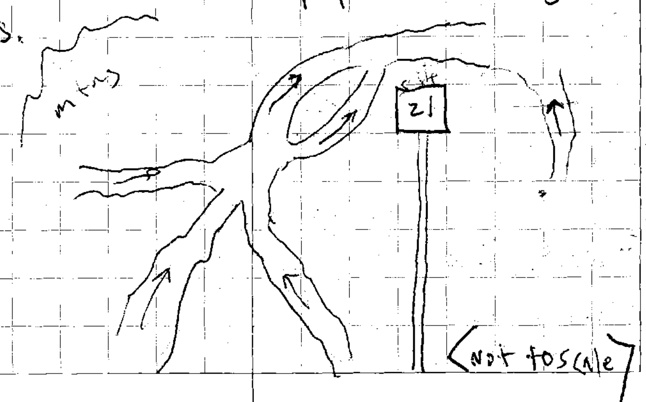
1500 - 1730
- Organizing the Conex that holds the Empty Coolers and Sampling glassware.
1730 - 1800 office

July 15, 2011

Mostly Cloudy, dry, Calm

0700 -
Safety meeting
- Buddy system
- Auto use - more people use well

0730 - 0855 (misting/light rain)
went with L. Kleppin and R. James to walk and sketch the drainages surrounding site 21.
Molly welker wants a sense of what the water is doing in the area of the formerly sampled (arsenic) site 21 and Bristol's proposed Background areas.



July 15, 2011 (continued)

0900 - 1200

- Office/Paperwork
- downloading Job files

- Collecting fill material from borrow source. Collected in 5 gallon bucket.

1230 - 1700

dislodging cap from well for preparation for sampling

Site 28:
walked site 28 drainage; observed conditions:
- water plentiful not particularly deep.
- H_2O coming from several smaller streams.

July 15, 2011 (continued)

Site 28:
- Photographs + 1 video of H_2O
- Drums
- Corrugated steel

Samplin well with Lyndsey Kleppin

- went with CQCSM to look at fuel containment area

Downloading camera pictures

1730 dinner

July 16, 2011
47°; winds SW ≈ 13mph; Partly Cloudy

0700
Safety Meeting: New people, Medic, Auto sharing, timesheets,

0730 - 0845
Water Sampling prep:
- Calibration
- bottle Collection
- Labels

Truck won't start. Johnny Willie got started

0845 - 1 water VOA froze in the fridge, sample from MW-1. Lab will be one short. Chemist (Marty Hannah) says OK.

0900 - 1030
Office going over QUAPP

1045
Groundwater Sampling

July 16, 2011 (cont)

Sampling 26MW-1

1220
Lunch

1250 - 1500
Sample management office

1500 Preparatory phase meeting
Digs - sites 13, 31 and MOC
Water Sampling - MOC

*Sample under stock pile area - we will field lab sample (on site lab) the proposed area for POL

Stockpile liners will be at Site 31, 13 and MOC stockpile areas

Foundations - wipe test

July 16, 2011 (continued)

Waste Characterization - 1 scoop from each of 7 bags.

MOC impoundment - water will be scrubbed

1545 - 1945
MOC
- MOC Tank Pad Excavation
  - Bulk bag Sampling

Bulk Bag ID: MOCT-1A → 1F
then continue to MOCT-1A → 1F and so on...

Bags Bagged and weighed today
MOCT-1A-1

July 17, 2011

97% humidity, low clouds, Cloudy

0700 Safety meeting
- Mosquitoes
- Winds/vehicles
- rain preparation

0710 - Environmeeting with Chuck/
Preparatory Phase Meeting

- Pad 98 moving of the bags left in place last year
- Sampling - Site 28 Primary and background samples; will get buy in from Corps.

Screening overburden Pulled off of site 31 and 13 for Cleanliness

wipe tests — PCB Concrete
↓
every 20 linear feet; 250 Sq Feet

0800 - 1200
Bulk bay sampling at MOC
tank pad Excavation

1230
MOC Tank Pad Excavation

Field lab Samples taken at MOC
tank pad Excavation (Easternmost Pad)
Pad floor about 70% exposed.
5 samples taken for on site lab
at 1345
MOCT 1
MOCT 2
MOCT 3
MOCT 4
MOCT 5

an additional load frame has been added
to the site for a total of 2.
MOCT 5, 6, 7, 8, 9 → Field Samples
for on site field lab

1930 → stop

July 18, 2011
Cloudy, misty, cool

0700
Safety meeting
- Excavator / Excavation safety
- focus in the face of weather
Environmental - Samples on Tues
0730
Gathering bulk bay sampling
equipment
AT MOC Bulk Bay Sampling
starting with Bay MOCT-6C

Gather stockpile of pens, pinflags
a table ... other things for Connex
on site at MOC

1200 lunch
1230
MOC Tank pads - beginning
excavation on Westernmost Pad.

Russell James is taking samples for field lab
from the area at site 13 where

July 18, 2011 (continued)

Stock piles will be placed on liner
• samples will be 13PSPXX
sequentially

Lyndsey Kleppin is dealing with obstruction in well and possibly sampling well that has been in a traffic area and that has had some prior surface water infiltration

MOC Tank Pads Sampling finished at 1820 hours.

Begin Sampling proposed POL stockpile area to the east of Site 13

Samples Named: POLSPXX
Samples 1-23 of 23 taken from a 50' x 100' grid

Samples to lab at 1945

July 19, 2011
Overcast, light breeze/mist

Safety Meeting
• Transitioning to new phases
0700
Environmental Meeting
• pre sampling of PCB liner area. (5x5 grid)
• Continuing sampling of 5x5 grid today

0830 - 1200
Grid Sampling in site 13 Stockpile proposed area

Lyndsey Kleppin ~~taking~~ packaging samples for Afternoon flight.

Samples for field lab taken in prior to lunch. <60 samples>.

July 19, 2011

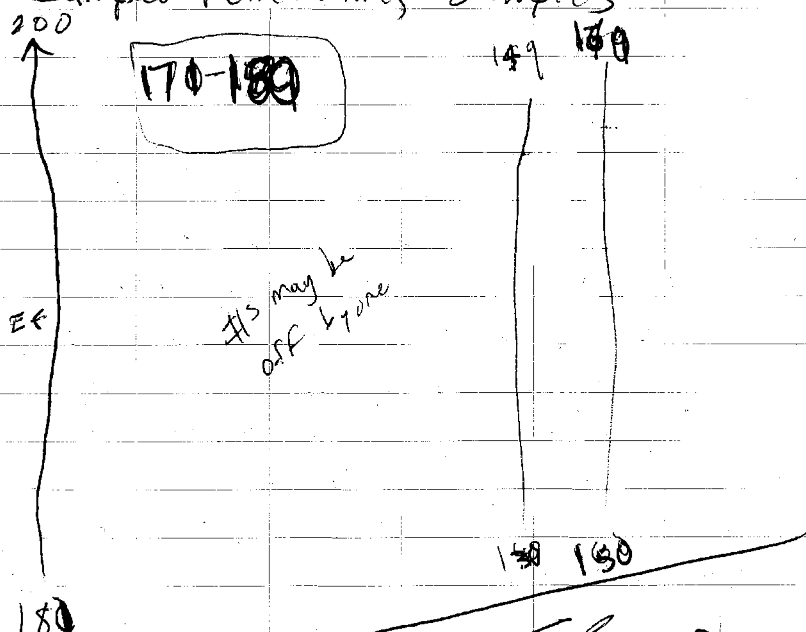
1230

site 13 proposed stockpile area Sampling

- L. Kleppin packaging coolers for ~1600 hrs flight

• Sampling continued

Sampled remaining samples



July 20, 2011

0655 Safety meeting
- laying down liner
- possible warm day ahead

Environmental Meeting
- PCB sampling for lay down yard done
- 30 x 50 stockpile area at site 31. (upgradient)

0730

Reconaissance of site 21 Arsenic background areas. Dug a few holes to see if the orange soil observed at the ~~2008~~ 2010 arsenic dig could be found in another area to be used as a background source for sampling. Lyndsey Kleppin will be going back to do a thorough investigation. No soil similar to the 2010 was observed in the initial short

July 20, 2011
0830

Heading to site 31 to ~~plot~~ sample area for a 30 x 50 stockpile.
will be laying out a 30 x 50 rectangle and sampling in 5 foot grids.

N

1	11	21	31	41	51
2	12	22	32	42	52
3	13	23	33	43	53
4	14	24	34	44	54
5	15	25	35	45	55
6	16	26	36	46	56
7	17	27	37	47	57
8	18	28	38	48	58
9	19	29	39	49	59
10	20	30	40	50	60

W E

S

1 ▨ = 5 ~~feet~~ ^{2}

Site 31 - (31PSP) Pre stockpile sampling grid.

60 samples. Taken to be Composited by field (on site) lab.

Ø730 stop

July 21, 2011
0655 Calm, partly cloudy, buggy
Safety meeting
- slips - trips - Falls; watch rough terrain.
- 3 point mount/dismount

Environmental meeting

- Site 21 background - may not be able to find a similar spot with the orange like soil.
  ?. compare and contrast levels of soil - was soil orange the only high results?

QAR (Jeremy Craner) will check into what the Corps is keying in on.

L. Kleppin is at MDC dig (JIA) bagging / taking bulk bag samples.

1200 lunch
1230
Checking out sites

July 21, 2011
Mostly cloudy, calm
Site 31:
Excavater pulling the clean overburden that was placed on top of liners. Overburden is being placed on a liner South of the site 31 dig

Site 13:
Site 13 overburden has been pulled off and stockpiled. Liner has been placed in an open top, awaiting some proper disposal

MDC (JIA)
dig continues. High odor.

July 22, 2011
partly cloudy,
0655
- Safety Meeting
  - Camp water is safe!
  - Friday safety award - Doug Byers!!

Environmental Meeting
- Surveyors are taking the Polaris
- Arsenic dig will (background)
- Bag sampling fresh air breaks!
- Possible Fit testing... more to be revealed

MOC J1A excavation:
Excavation continues. Taking Bulk bag samples

L. Kleppin is taking Site 21 arsenic background samples.

1200-1230 Lunch

1230
MOC J1A Excavation
Bulk Bag

July 22, 2011

Site 21
GPSing, with Trimble,
Arsenic samples taken in the morning by L. Kleppin

July 23, 2011
Cloudy, grey, mist/rain, cool, calm

0656
Safety Meeting
- dust + rain is slick
- USACE electrical safety
  - grounding
  - GFCI for generators

Environmental Meeting

- MOC continuing
- that is all!

0800
Site 8 prep -
- re-locating grid corners
- selecting sampling grids with random number generator.
- Marking grid area with lath
- grid is prepared for sampling.

1200 lunch

July 23, 2011
1230
QUAPP/ Work Plan -
looking at sampling protocol for site 8
1330
Site 13 ~~Sampling~~ Ex
Cleaning out the bottom of Excavation. There was liner with clean fill on top. Liner was removed and some clean fill fell onto the Excavation floor. That clean fill is being treated as possibly dirty and is going to be placed in bags.

Site 31
Same procedure as site 13 earlier today.

July 24, 2011
Foggy, light breeze, low visibility

Safety Meeting
- smart ash
- Fire extinguisher

Environmental Meeting
- continuing site 31 cleanup
- site 13 + 31 floor sampling

0800
Site 31 floor cleanout.
Bulk waste sampling.

1800 site 13 material review
- gathering supplies - Figures for sampling the areas of site 13 that were borderline clean/dirty when Composited in 2010.
Floor samples from approximately the middle of the excavation (16) were collected for analysis in

EV3

July 24, 2011

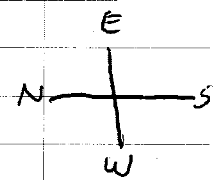
the on site field lab.

2010 Sample #	2011 re Sample #
37	13-1
38	13-2
47	13-3
48	13-4
58	13-5
66	13-6
67	13-7
68	13-8
33	13-9
34	13-10
43	13-11
44	13-12
53	13-13
54	13-14
63	13-15
73	13-16

EV3

July 24, 2011

Site 13 Samples Proximity



38	37	
48	47	
58	~~[illegible]~~	
68	67	66

— — — — — —

34	33
44	43
54	53
	63
	73

stop 1945

July 25, 2011

Very Foggy, misty, cool

0655

- Sloping of JIA - Osha slope at 5'
  Bristol sloping at 4'
  , stabilization compromised by - geology
  water, vibration

- FOG = Road safety / radio
- Tool replacement
- Tyvek - no eating or drinking

Environmental Meeting

- Bagging
-

0830
Site 31
- re-creating grid at site 31
  WS

1200 lunch

WA

July 25, 2011

1230
- Site 21 Arsenic and Site 8
Sug. R. water samples
• Packaging samples c COC,
Temp blanks; gold stream # 2303 1772

1500
Site 31 -
Flagging Sample sites
Sample names - WAL-XX
Sampling Site 31 to start July 26 A.M.

0730 stop

July 26, 2011
Cloudy, Foggy, Misty - relatively warm!

Safety Meeting

hand signals - one person signaling!
- 1 Finger circular up/down to go up/down all the way
- rotate hands forward/backwards to move forward/backwords.
* COMMUNICATE!

Environmental Meeting

- Continuing on
- Setting up site 28 transects
- Tar - not sure what will happen
- switching to PCBs as necessary but also some time in the near future so we can see if it can be cleared up

0830 → 1200
Site 31 Floor Sampling
WAL-01 → WAL-40
given to lab

July 26, 2011
1230
Camp
Site 31 floor sampling
WAL - 41→75

1700 start digging at site 13 (PCBs)
Lyrdsen Kleppin running dig at MOC (JIA)

Simultaneous digs

Bulk waste samples - Site 13

13 - 2A
13 - 2B
13 - 2C
13 - 2D

1930 stop

July 27, 2011

Foggy, Sunny, Calm

0700
Safety meeting

- Camp courtesy
  - respect for fellow worker
  - Chuck Croley is leaving for a few days. Chain of command...

Environmental Meeting

POL dig - no new info

PCB dig 13 - continuing
- adding boot washes

0800
Sampling - Bulk waste samples at site 13.
BULK SAMPLES (Bags)
13 - 2E
13 - 2F
13 - 2G

$\boxed{13BWØ2}$

July 27, 2011 <continued>

13 - 3A
13 - 3B
13 - 3C
13 - 3D
13 - 3E
13 - 3F
13 - 3G

Site 13
- Removing dirty soil. Much debris in holes. ≈ 12' x 5' concrete platform with similar wooden form found in bottom of southernmost Excavation.

13BW03

13 - 4A
13 - 4B
13 - 4C
13 - 4D
13 - 4E
13 - 4F
13 - 4G

13BWØ4

13 - 5A
13 - 5B
13 - 5C
13 - 5D
13 - 5E

1930 STOP

July 28, 2011
Partly Cloudy, Calm, dry

~~Environmental~~ Safety meeting 0658
- Dehydration
  - Plenty of water
  - Breaks
- Road Safety
  - locals

Site 31 Excavation - Bag/Bulk Waste

13-5F
13-5G

13BWØ5

13-6A
13-6B
13-6C
13-6D
13-6E

☆ H13 - 1 TSCA Over 50 ppm ☆

H13BWØ1

July 28, 2011

13-6F
13-6G

13BW06

site 13
sidewalls being
shaved back between
12"+18". Floor ^6"
all 3 Excavations have
been done similarly
widening excavation. Avoiding
floor that has been sampled
to determine if already clean

13-7A
(last bulk bag for now)

Field sampling site 13 -
• surdey

Weather Stop

Stop @ 1800

July 29, 2011 Wet, windy, 37° windchill

Safety meeting
- Stay warm
- clean windows
- Keep dry

Environmental Meeting
- MOC continues
- Site 13 field Sampling

Sampling with Excavator - Sampling site 13 with excavator. Two of the three holes (southernmost two) finished up.
LUNCH 1200
~~5~~
1230

Site 31 Excavations
BAGS
31-4A
31-4B
31-4C
31-4D
31-4E
STOP @ 1730

July 30, 2011
mostly cloudy, calm, cool
Safety meeting
- Safety award - Alan Dennis
- BE CAREFUL → Long way to Hospital
- Spotters for bag lift - pick one, let loader know, stick to it, clear away

Site 31 Excavation Bulk Waste Samples

31-4F
31-4G
31BWØ4

31-5A
31-5B
31-5C
LUNCH 1200-1230
Now Moving to tar site.
Moving box.
we will be doing a double bag

Took a Tar sample. Sample consists of a large chunk of tar and soil around it. 16 ounce Jar 11NCTAR001 (Primary)
NC 11NCTAR002 (dup)

July 30, 2011

Bagging operation for tar is going on without an Environmental scientist to supervise, as we are not Bulk Waste Sampling the individual super sacks

Site 31 -
- Finishing pre sampling and sampling the section of the excavation that the culvert was found in in 2010. The area that was slated for 2011 Excavation without pre-sampling was reduced by 1 foot on the floor and sidewall. (Sampled on a 5x5 grid)

Presamples WAL76 → 97 + WAL 131, 132, 133
New samples 98 → 130 samples from the additional 1 foot shaving from culvert excavation

STOP 1945

July 31, 2011
Partly Cloudy, rainbow, showers, high clouds
0700 safety meeting
- speed limit - slow down
- Tempers - Take a break
- PPE - Keep on top of it. Make it a habit

Environmental
- Tar continuing
- JIA continuing
- site 20 - deciding transects with Corps.
- Lab - full/making progress

0800
Site 13
• Site preparation for sampling newly Excavated areas

1200 - 1230 Lunch
site 13 Sampling

13-120 → 13-158
Samples for field lab
Sample Maps

August 1, 2011
High clouds, calm, ≈40, dry
0700
Safety Meeting
- slips trips + falls
• Preventative measures "good house keeping"
- Safe Lifting
• No Jerking - if you can't lift it slow don't lift it alone.
- Cross Contamination
Environmental Meeting
- MOC paused - out of soil awaiting lab results
- Tar finishing
- site 13 dig will re-start after Tar finishes.

1200-1230 Lunch
- Tar removal area
• finished - TAR-01 → TAR 24
- Site 13
• dig re-starting
First bay:
13-7B
13-7C

August 1, 2011
Site 13
Bulk Waste Sampling

13-7D
13-7E
13-7F

Site 13 Grid re-created after the removal of approximately 1' of soil.

Tar site - Photos taken

END 1900

August 2, 2011
Partly Cloudy; Calm
Safety Meeting
- "Hurry up can hurt"

Environmental Meeting

- Site 31 Sample results

Site 31
Excavating ~~Hot~~ Sites

31-5D
31-5E
31-5F (equivalent to H31-1)
31-5G

$\boxed{31BWØ7}$

Lunch 1200-1230

Site 31 - more excavation

★ H31-1 $\boxed{H31BWØ1}$
TSCA
over 50PPM

August 2, 2011 [Continued]

31- 6A
31- 6B
31- 6C

Site 13
Grid

Step 1945

August 3, 2011
STORM - windy, rainy, cloudy

0700 Safety
- Bristol (corporate) safety reminder
  · take your time be safe

Environmental
- Surveyors - surveying JIA MOC site to get water level.
  · document 2' below water
- Moving Rubble pile on Pad at 13 to stage for future wipe samples

ERIC BARNHILL

Bristol Environmental

Northeast Cape 2011

HTRW Remedial actions

"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 351

Job# 34110008

8-3-11 → 9-1-11

August 3, 2011 <continued>

Site 13 -
- Sampling
- Crew is cleaning top of Pad
Putting loose debris in bag

+ Bag filled and Sampled

13-7AG

13BW07

Samples 13-159 → 13-212 sampled and in lab.

13-8A
13-8B

Site 31
Sampling

August 4, 2011
grey, cool, raining

Safety
Slips Trips Fall
+ 3 point dismount - rough terrain
+ Visibility
• heavy lifting + pulling

Environmental
Site 31 - No new results
Site 13 - No new results
Site 9 - Marty will talk with Molly
Aaron thinks perhaps the lab will pay for a re-test.
MOC - pulling from the bottom, maybe moving to another site

Site 8 water sampling
- instrument Calibration
- sampling
[raining and windy all day]
Sampled Lower decision unit and Middle decision unit

August 5, 2011

Mostly clear, calm

Safety meeting

- Communication
  - Keep it up
- More people coming to camp - with 4 wheelers
  - be aware - new people include more locals

1° below freezing chill factor yesterday
1° above freezing chill factor today

Environmental meeting - few new results

Calibrating YSI

Site 31

Setting up a grid for a proposed new stockpile area to move site #31 to (clean fill from 2010 excavation). Original stockpile area came back with lab results that were high & positive for PCB

Sampled a 55' x 35' area.

77 samples taken [31PSP02-1 → 31PSP02-77]

[signature]

August 6, 2011

safety meeting

- don't let stress get to you. Calm down think.

Environmental Meeting

- Lab - Finishing a majority of samples For PCB results
- J1A and A1 · overburden mostly off of A1 and J1A may continue digging and start de-watering

- PCB wipe area
- Lab Haul Kits ?

0800

Marking out Concrete areas to be cleaned for PCB swab/wipes

site 8 methane sample label making

Site - POL stock pile sampling.

August 6, 2011

adding on to POL stock pile (clean) area.

Sampled a 100' x 100' area.

42 samples taken

PSP2-01 → PSP2-42

Site 13

- Concrete PCB wipe tests - exposed concrete
  - 26 taken
    - rubble
    - sidewalls
    - floors

August 7, 2011
Partly cloudy, calm, cool
Safety meeting.
- Keep in operators site
- communicate
- Lots of people in a tight area
- lift with legs

Environmental

Shaking/screening MOC area soils.
- Shipping/Sample management

Preparing ~~for~~ samples for shipping.
- Tar TCLPs + PAHs
- site 8 soils
- site 8 waters

Sampling site Tar.
Confirmation samples -

IINCTARSS001 → IINCTARSS024
including 2 MS/MSDs + 3 duplicates

August 7, 2011 (continued)

Tar site duplicates.
011 has duplicate 022
016 has duplicate 023
008 has duplicate 024

Tar site Sample times

IINCTARSS001 +MS/MSD	@	1700
002	@	1704
003	@	1708
004	@	1712
005	@	1716
006	@	1720
007	@	1724
008	@	1728
009	@	1732
010	@	1736
011	@	1740
012	@	1744
013	@	1748
014	@	1752
015	@	1756
016	@	1800

August 7, 2011

11NCTAR[illegible]SS017 @ 1804

018	@	1808
019	@	1812
020	@	1816
021	@	1820
022	@	1824
023	@	1828
024	@	1832
~~025~~	~~@~~	~~1836~~ ES
~~026~~	~~@~~	~~1840~~ ES

Bulk Bay 137B was duplicated the ~~[illegible]~~ 137B @ 23,800 lbs changed to 137B2

0730 dinner

0800-0830 site MOC going over procedure with L. Kleppin prior to her departure

0900-0945 site 8 + Tar COCs

Sample Management

August 8, 2011

Calm, mostly cloudy

safety

- working in close quarters
  - be vigilant

Safety Award: Jebb Adkins - radio contact in fog

Site 13

Dig maps

- Samples

shipping samples

site 8: soil

site 8: waters

Tar area: TCLP & PAHs

JIA: Confirmation samples

shipped on Bering Air

Site 13

digging

Bags

H13-1
H13-2
H13-3

STOP 0930

15 hrs

August 9, 2011
Calm, dry, dark, foggy, mostly cloudy

Safety meeting
- ~~NS~~ Hearing safety - (concrete busting)
- Proper PPE

Environmental
- Site 13 dig continues
- Concrete breaking
- S9A - good for now; A1 - Perimeter sampling

Site 13

More bagging

13-8C
13-8D
13-8E 0846
13-8F 0930
13-8G 1003

~~BW~~ wb 13BWØ8

A-1 POL Plume
Noyuk Peacock is laying out places for field sampling.
Field sampling will occur after site 13 is done bagging. Sampling will happen from an excavator bucket

August 9, 2011

13-9A
13-9B 1050
13-9C 1118
13-9D 1142
13-9E 1316
13-9F 1422

13BWØ9

13-10A 1505
13-10B 1542
13-10C 1620
13-10D —

Stop 1730

10 hours

August 10, 2011

Safety

- PPE
  - Site 13 - Tyvek (everyone and operator)
  - Smoke breaks by connex, not frame
  - wear all all of the time
- Careful backing up long ways - heavy equipment

Environmental

- Site 13 - start digging straight away
- Barge landing craft to be in at 0800
- Lab issues - catching up - wipes close

Drawing map of site 13 conjoined digs

Site 13 Bagging

13-10 E 0915
F
G 1027

$\boxed{\text{13BW 10}}$

13-11 A
13-11 B 1115
13-11 C 1140

Lunch

13-11 D 1338
13-11 E 1355
13-11 F 1419
13-11 G 1439

$\boxed{\text{13 BW 11}}$

13-12 A 1538
13-12 B 1555
13-12 C 1648
13-12 D 1703

Stop 1730

10 hours

August 11, 2011
cloudy, warmish, rainy!, calm

Safety
- Screening Plant Safety
  - level D
  - hearing protection
  - eye protection

Environmental

- Need a re-do on the Hexane concrete wipes.
- Site 13 finish up diggings. NO 31 today
- Starting shaking / moving dirt from A-1 and J1A today

13-12E
13-12F
13-12G

0815

13BW12

August 11, 2011

13-13A
13-13B
13-13C

0952

MOC Soil screening.
Nayuk - Screening Samples
all operations occur on pad 98

Site 13 - Gathering field samples for onsite lab
Samples 13-213 → 13-242

Break for dinner @ 1745-1800

1800 - 1930
Connex - Env. to Connex
Cleanup and organization.

11.75 hours

August 12, 2011

Slight breeze, misty cloudy, slightly dark

Safety

- Communication
  - Safety recognition - Charles Kava

Environmental

- ~~B~~ Shaking at Pad 98 to continue
- Possibly site 13 **bucket** Sampling

Site - MOC + JIA A1 - shaking (screening) - Bagging and Sampling.

Julie Clark arrived from Anchorage - for site 28

1200 - 1230 Lunch

Continuing bagging & Sampling JIA and A1 soil

STOP 1730

August 13, 2011

misty, grey, calm 40

Safety

Safety in bagging area
Stay aware

Environmental

- PCB wipes came back clean for Concrete.
- Site 28 - Julie Clark is here to start on
- A1 soil results imminent

I will wait for a site 98 Excavator to be available and will Sample site 13 with an excavator from the bucket.

Site 13 Field lab Sampling

August 14, 2011

Grey, rainy, calm high 30s low 40s

Safety
- stay warm and dry
- take breaks
- with this weather cuts may fester up - be aware of clothing dryness etc.

Environmental

- A1 is almost devoid of dirt, pending lab results
- Site 28 transect sampling continues

Site 28 transect sampling

Stop 1745

EB

August 15, 2010
Dark, warm, dry, calm

SAFETY MEETING
- BE SAFE; TAKE NOTICE OF SURROUNDINGS / WEATHER
- KEEP VEHICLES CLEAN; UP ON OIL etc.
- WIND

ENVIRONMENTAL MEETING
- New AI results - hot spots
- No New PCB diggings
- Site 28 transect Sampling continuing with Julie Clark,

0700 - 1100 Sample Management
- bubble wrapping and Ziploc bagging Soil samples from site 28. Packed Samples with 10+ pieces of ice each 3 coolers, two with Volatiles each contained 20 +/- methanol filled GRO BTEX Samples. Each had one Trip blank inside.

1100 - 1200
- Site 28 transect Sampling

August 15, 2010
1230

USACE wants site 28 to continue along similar lines: wants notes to reflect when auger reaches refusal, what we think it is (rock/permafrost) wants to make one transect into one that follows stream bed.
Sample density is not an issue, wants to make sure we cover sedimented areas well, even if samples close ~~direct~~ so
Some transects will not get the full # of Samples (ie 2ft depths, refusal areas) these samples can be "banked" for directed sampling along/in streams, ponds and other likely contaminated areas that may have sediment.

- Sampling site 28
stop 1745
Prep Samples 1900 - 2030

Total 11.75 hours

August 16, 2011
calm, 40° +/-, dry

Safety Meeting

- Moving drums - be aware of swinging loads
- use proper lifting techniques

site 28 sampling - 0800 - 1200

1230 - 1745
site 28 sampling
1745 - 1815 Dinner

1815 - 2100
Sample Prep. - bubble wrapping / Zip Loc® bagging

12 hrs

August 17, 2011

Environmental / Safety
PPE - proper protection for the situation

Site 31 - Sampling

31-6D 1042
31-6E
31-6F
31-6G

31BWØ6

Each sampled individually

TSCA	TSCA
H31-2	H31-3

31-7A
31-7B
31-7C
31-7D 1449
31-7E 1509
31-7F
31-7G

$\boxed{31BWØ7}$

August 17, 2011 (Continued)

31-8A
31-8B
31-8C

STOP 1730

August 18, 2011
Foggy, Still dark, calm

Safety
- Courtesy + Respect for others

Environmental
Site 28 continues - sampling
Site 31 continues - bagging/sampling
New POL stockpile area to be Sampled.

@ Site 31

Site 31 Bags

31-8D
31-8E
31-8F
31-8G 31BW08

31-9A 0940
31-9B
31-9C
31-9D 1030
31-9E

August 18, 2011 Continue

31-9F
31 9G 1133 31BW09

31-10A 1145
31-10B
31-10C

Pre Stockpile Sampling for Clean Overburden,
samples PSP3-1 → PSP3-42
100 X 100 foot laydown area

August 19, 2011 Clear, warm, breeze

safety meeting

- lifting
- Proper PPE - hearing, chaps for saws
- liner placement - safety in the wind
Carl Calligan - safety award - saying what he sees on his riding lawns

Environmental Meeting

- New Lab technician
- Surveyors surveying bottom of A-1 POL Excavation, and the new POL stockpile area.
- digging on A-1 bottom

Site 28

- Sampling with Julie Clark, starting with stream transect

Site 28 sampling all day

August 20, 2011

- Partly Cloudy, calm, highs 30's to 40's, dry

Safety Meeting

- Communication between excavators + trucks
- PPE - hearing protection, hard hats, eye protection hand protection - (all as needed)

Environmental

- Site 28 continuing
- Bottom of A-1 getting scraped, more soil coming out (51A?)
- Site 31 field lab sampling

Site 28 starting with Jolie Clark

Going to site 31 - Field lab
Samples gathered -
WAL 166 - 221

Pad 98 - Excavator / Shaker - bag sampling

Stop 1730

1800 -
Spoke with surveyor

August 20, 2011 (cont)

to get volumes of stockpiles at sites 31 + 23

Each stockpile volume
13 → 235 cubic yards
31 → 232 " "

Table 2A in draft guidance used as a metric for how many samples. Table states " 3 samples plus 1 sample for each additional 200 cubic yards or portion thereof or as the ADEC determines necessary.

Each stockpile received 4 samples,
31SP01 → 4
13SP01 → 4

Stop 1945

11.75

August 21, 2011
Cloudy, calm, ~~clear~~ dry, cool

Safety
- Transition day – be careful, ask questions
- area of old excavation – lots of things sticking out.
- Arsenic in area – Proper PPE

Environmental

28 - continues
21 - Soil excavation
MOL bagging

Site 28
- Sampling
- Sample management
  - wrapping
  - bagging
  - Cooler prep

E B

August 22, 2011

Safety
Bagging
- be aware of rough terrain
- proper lifting technique

Environmental

Site-13 - digging/Bagging
Site-28 - Sample packaging/COCs
Possible overburden removal on ~~future~~ POL Plumes in near future

Site 13 Excavation
- Map construction
  Bagging
13 - 13D
13 - 13E
13 - 13F
13 - 13G   13BW 13
~~13~~

August 22, 2011

Site 13 Bulk bags

Fuel stained/ odored soil found today

13-14A
13-14B
13-14C
13-14D
13-14E
13-14F
13-14G

13BW14

13-15A
13-15B
13-15C 1520
13-15D
13-15E 1407
13-15F

Stop 1730

August 23, 2011
mostly cloudy, calm, cool, misty

Safety
Be aware of the mood of the place as we take a temporary slow down

Environmental

Site 13
13-15G 13BW15
13-16A 943
13-16B
13-16C

H13-4; H13-5; H13-6

13-16D 1300
13-16E 1328
13 16 F 1358
13-16G 1430

13BW16

August 24, 2011
mostly cloudy, cool, calm

Safety

Placing liner
- safe lifting technique

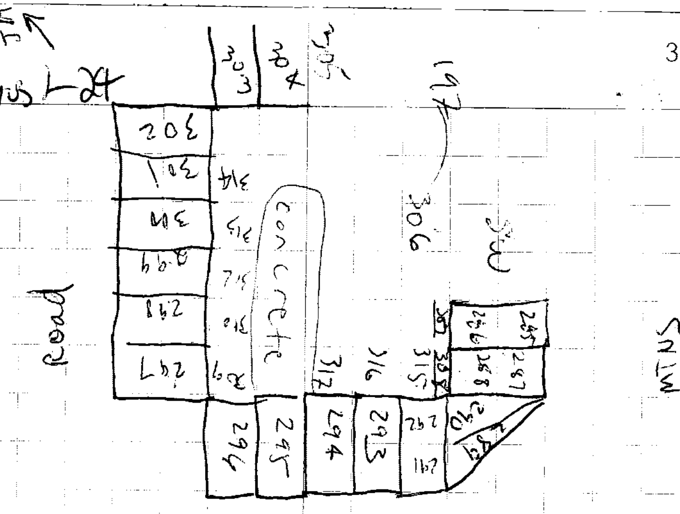
Environmental

waiting on bags

Site 13 Field sampling

13-285 → 13-317

August 24 2011



site 13 field lab samples

A-1

August ~~24~~ 5, 2011
winds, rain

Safety
- chill factor low!
- dont get overheated
- be aware of chills
- be aware of heat loss areas
  - ~~that~~ beware of neck, cuffs

Environmental
- Enviro. paperwork day.
- site 31 stockpile re-sample
-

Photo log

Bag re-number

Site 31 stockpile reconnaissance

August ~~28~~ 6, 2011
cloudy, windy, rainy, cool

Safety
inclement weather
- stay dry
Hauling bags
- decreased visibility
* Chill factor below freezing
smaller vehicle yields to larger equipment.

Environmental
- bucket sampling after lunch
  - A1
  - 13
- re-tar sample

Tar Site reconnaissance

Site 13
- Bucket Sampling

13-218 → 13-335

August 2~~6~~7, 2011
Calm, partly cloudy, cool

Safety
- working alone - we had an incident
- Buddy System?
- S scan area
I Inspect area
P Predict possible outcomes
D decide what your course of action is
E execute course of action

Grey water versus VS Black water
↓ washing etc
↓ human waste

Enviro
• starting excavation of overburden in new POL excavations.
• Sampling site 9 waters (today/tomorrow) holding area water

Re-Sample site 31 stockpile
MOC - Plumes G and H water found at ~ 9 feet

August 28, 2011
mostly cloudy, cool

Safety
- hearing Protection (@ screen plant)

Environmental
- site 9 (waters) VOCs

site 9 sample bottle prep
site 9 samples

IINC	
VOC's	@
IINC	
VOCs	@
IINC	
VOCs	@
IINC	
VOCs	@
IINC	
VOCs	@

MOC treatment water sample bottle preparation

August 29, 2011
rain, cool

Safety
Hauling from barrow
- follow spotters
- use caution backing around Screen Plant

Environmental
preparing a plan for the G+H MOC plumes next to the site 13 dig.
A lot of water has been found at a low depth.

August 30, 2011

Safety

Soil Screening
- Proper PPE

Enviro
MOC treatment holding area - water spring leak

- Conex inventory

- Site 98 pad

- Site 31 stockpile

August 31, 2011
Cloudy, cool, dry

Safety Meeting

- Fire safety ; check electrical connections
- ATVs + UTVs - Keep speeds down remind drivers.

Site ride around

1300 bags arrive

Site 31 - Bagging end of stock pile where dirty soil was found

Site 13

31-10D
31-10E

first bag in 1550

Stockpile area where dirty soil was removed was sampled as if it were a ~~stockpile~~ excavation (in 5 foot intervals) 5 samples WALSP11 → WALSP15

September 1, 2011
Calm, cloudy

Safety
excavator safety (Sites with PCBs)
- Swing / Pinch points
- Proper PPE

Good Communication!

Environmental Meeting

- Site 31
- Site 13 - Clean excavator between

31 Bulk waste

BW

31 - 10F
31 10G

0815

WALBW10
dup of * WALBW0001 10

31-11A
31-11B
31-11C
31-11D
31-11E
31-11F
31-11G

WALBW 11

31-12 A
31-12 B
31-12 C
31-12D
31-12E
31-12F
31-12G

WALBW 12

Eric Barnhill
Bristol Environmental
Northeast Cape 2011
HTRW Remedial Actions

"Rite in the Rain"®
ALL-WEATHER
FIELD
No. 351

Job # 34110008

9-2-11 - 9-19-11

September 2, 2011
Slight breeze, cloudy, rain/drizzle, cool

Safety
- PCB decontamination
  - wash tub approach are
  - clean trucks + buckets between
- Be clear of loads that are suspended
- Operators: drop bucket to ground when talking to others or paused

Safety Award
: Mylon Kingeekuk - safe in the face of new challenges (run truck training)

Environmental

Site 31 dig
Site 13 dig

Clean up of boot wash area

September 2, 2011 (Cont)

Site 31

31-13A
31-13B
31-13C
31-13D
31-13E
31-13F
31-13G WALBW13
~~Site 13~~
31 14A

13-17A
13-17B
13-17C

stop 1730
1800-1900 Labels

11 hours

September 3, 2011

light rain, calm, cool

Safety
- Darkness
  - light plants
  - Flashlights

Environmental

POL - A-1 → JI overburden pull off continues
Site 31 - Field sampling
Site 13 - Field sampling/Confirmation sampling

31 Bagging

13-17 D 0813
13-17 E
13-17 F
13-17 G MOC BW17

13-18 A
13-18 B
13-18 C
13-18 D
13-18 E

9/3/11

13-18 F
13-18 G

13-19 A
13-19 B
13-19 C
13-19 D
13-19 E
13-19 F
13-19 G 13BW19

13-20 A
13-20 B
13-20 C
13-20 D
13-20 E
13-20 F
13-20 G 13BW20

13-21 A
13-21 B

September 3, 2011

SAMPLE ID		TIME	ANALYSIS
11NC13SS001	@	1350	PCB
002	@	1351	PCBs
003	@	1352	PCB
004	@	1353	PCB
005	@	1354	PCB
006	@	1355	PCB
007	@	1356	PCB
008	@	1357	PCB
009	@	1358	PCB
010	@	1359	PCB
011	@	1400	PCB
012	@	1401	PCB
013	@	1402	PCB
014	@	1403	PCB
015	@	1404	PCB
016	@	1405	PCB
017	@	1406	PCB
018	@	1407	PCB
019	@	1408	PCB
020	@	1409	PCB
021	@	1410	PCB
022	@	1411	PCB

EB

Sept 3, 2011

SAMPLE ID		TIME	ANALYSIS
11NC13SS023	@	1412	PCB
024	@	1413	PCB
025	@	1414	PCB
026	@	1415	PCB
027	@	1416	PCB
028	@	1417	PCB
029	@	1418	PCB
030	@	1419	PCB
031	@	1420	PCB
032	@	1421	PCB
033	@	1422	PCB
034	@	1423	PCB
035	@	1424	PCB
036	@	1425	PCB
037	@	1426	PCB
038	@	1427	PCB
039	@	1428	PCB
040	@	1429	PCB
041	@	1430	PCB
042	@	1431	PCB
043	@	1432	PCB
044	@	1433	PCB
045	@	1434	PCB
046	@	1435	PCB

ID		Time	Analysis
11NC13SS047	@	1436	PCB
048	@	1437	PCB
049	@	1438	PCB
050	@	1439	PCB
051	@	1440	PCB
052	@	1441	PCB
053	@	1442	PCB
054	@	1443	PCB
055	@	1444	PCB
056	@	1445	PCB
057	@	1446	PCB
058	@	1447	PCB
059	@	1448	PCB
060	@	1449	PCB
061	@	1450	PCB
062	@	1451	PCB
063	@	1452	PCB
064	@	1453	PCB
065	@	1454	PCB
066	@	1455	PCB
067	@	1456	PCB
068	@	1457	PCB
069	@	1458	PCB
070	@	1459	PCB

EB

September 3, 2011

SAMPLE ID		TIME	ANALYSIS
11NC13SS071	@	1500	PCB
072	@	1501	PCB
11NC13SS097	@	1502	PCB
098	@	1503	PCB
099	@	1504	PCB
100	@	1505	PCB
101	@	1506	PCB
102	@	1507	PCB
103	@	1508	PCB
104	@	1509	PCB
105	@	1510	PCB
106	@	1511	PCB
107	@	1512	PCB
108	@	1513	PCB
109	@	1514	PCB
110	@	1515	PCB

Site 31 sampling
WAL 221 - 241
WALSP 16, 17, 18, 19

11 hours

ES

September 4, 2011
Rain, slight breeze

Safety
- PCB Excavation
  - exit through the boot wash
- Winds
  - picking up

Environmental

Site 31 - sampling (field)
Site 13 - Confirm / field sampling
Pad 98 - mixing muck from POL

13-21 C
D
E
F
G

first bag

13BW21

13-22 A
B

Sept 4, 2011

~~[illegible]~~

H 13 - Ø8

13 - 22 C
13 - 22 D
13 - 22 E
13 - 22 F
13 - 22 G

13BW 22

13 - 23 A
13 - 23 B
13 - 23 C
13 - 23 D
13 - 22 E
13 - 23 F
13 - 23 G

1013

13BW22

13 - 24 - A
13 - 24 - B

Sept 4, 2011

13 - 24 C
13 - 24 D
13 - 24 E

Site 13 Confirmation Samples

11NC13SS073
074
075
076
077
078
079
080
081
082
083
044
085
086
087
088
089
090
091
092

Sept 4, 2011

11NC13SS093
094
095
096
097
098
099
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115

Sept 4, 2011

11NC13SS116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
(dup of 41) 132
(dup of 46) 133
(dup of 67) 134
(dup of ~~74~~ 74) 135
(dup of ~~[illegible]~~ 75) ~~[illegible]~~ 136
(dup of 66) 137
(dup of 9) 138

(dup of 10) 11NC13SS139
(dup of 11) 140
(dup of 12) 141
(dup of 13) 142
(dup of 36) 143
(dup of 37) 144
(dup of 38) 145

Sept 5, 2011

Safety
- Chill Factor -
- Slips - Trips - Falls
- heating up and sweating in Tyvek - be careful

Environmental
Site 13 dig occuring with Lyndsey Kleppin as I do sample Management for site 13 North Excavation PCB samples

SITE 13 Bulk waste Samples

13-24 F
13-24 G

13BW24

13-25A
13-25B
13-25C
13-25D
13-25E
13-25F
13-25G

13 BW25

Sept 5, 2011

13-26A
13-26B
13-26C
13-26D
13-26E
13-26F
13-26G

13-27A
13-27B
13-27C
13-27D
13-27E
13-27F

13BW26

Sept 6, 2011

<u>Safety</u>

- winds
- park trucks correctly - Nose into wind.

<u>Environmental</u>

- Site 13 bagging

13-~~28 26~~ 27G — 13BW27

13-28 A
B
C
D
E
F
G — 13BW28

10.5 hours

September 7, 2011
windy, dry, dark

Safety

- High wind caution
- Be careful with doors = winds blowing them around
- Keep up good radio chatter

Site 13 Sampling

Site 31 B(?) samples

31-14 B
31-14 C
31-14 D
3_-_-E
3_-_-F
3_-_-G

31 BW-?

31-5 A
31-5 B
31-15 C
31-15 D

31-15E

Maps of sites after dinner

11.5 hours

Sept 8, 2011
Winds, dry

<u>safety</u>

- winds reduced, but still there - be vigilant.
- PCB - be mindful of contaminant reduction zones

<u>Environmental</u>

- site 13 results in
-

31 final sampling

31-15F
31 15G

$\boxed{13BW15}$ → 0918

31-16A
31-16B
31-16C
31-16D
31-16E
31-16F

3- 17A
17B

Sept 8, 2011

31-17C
31-17D
31-17E
31-17F

Sept 9, 2011

raining, extreme wind,

<u>Safety</u>

- High winds predicted to 50 mph
  - Control withdraws
  -

<u>Environmental</u>

- Site #31
  - PCB the emphasis - Excavating & Sampling

31- 17G $\boxed{\text{WALBW 17}}$

31 - 18 A
31 - 18 B
31 - 18 C
31 - 18 D
31 - 18 E
31 - 18 F
31 - 18 G $\boxed{\text{WALBW 18}}$

31 - 19 A

Sept 9, 2011

Site 31 -
- Field Sampling

WEATHER STOP

10 hours

Sept 10, 2011

Safety
- Keep rock trucks from edges of excavations
- Concrete demo
  - hearing protection

Site 31 -
- field sampling
sampling [illegible] [illegible] +00 – +6?

Sample management
- [illegible]

Sept 11, 2011

Safety
- Winds
- PCB removal
- Be aware of [illegible] in trucks

Environmental
- Site 13 continuing
- Concrete removal
- No new POL

13-29 A
13-29 B
13-29 C
13-29 D
13-29 E
13-29 F
13-29 G

BBW29

13-30 A
13-30 B

September 11, 2011
Site 13 Bulk waste

13-30 C
13-30 D
13-30 E
13-30 F
13-30 G

13BW30

13-31 A
13-31 B

H-1309	H1310	H1311

13-31 C
13-31 D

September 12, 2011
weather: partly cloudy, breeze

Safety
concrete demo
- hearing protection
- chaps (for Chop Saw)
- Stay clear from edges of excavations
- winds gusting and falling - be careful

13 Bay Sampling

13-31 E
13-31 F
13-31 E

13BW31

13-32 A
13-32 B
13-32 C
13-32 D

September 13, 2011

Site 31 bucket Sampling

-

13-511 →

September 13, 2011

Calm, cool, dry

Safety
- working in tight quarters
  - watch equipment / swing radii
  - PPE

Confirmation Sampling - Site 13 N Excavation + S Stockpile Ext.

11NC13SS146	@ 0800	11NC13SS163	@ 1045
" " 147	@ 0805	" " 164	@ 1050
148	@ 0810	165	1055
149	0815	166	1100
150	0820	167	1105
151	0825	168	1110
152	0830	169	1115
153	1000	170	1120
154	1003	171	1125
155	1005	172	1130
156	1010	173	1135
157	1015		
158	1020		
159	1025		
160	1030		
161	1035		
162	1040		

Site 14

Safety
- reconstruct boot wash.
- Good job on working in tight quarters

Environmental
Site 13 -
Concrete - additional wipes
Site 31 -
- [illegible] samples [illegible]

13-32E
13-32F
13-32G

13BW32
[illegible] 13BW DO1

13-33 A
B
C
D

31-19 B
C
D
E
F
G

31BW19

31-20 A
31-20 B

Sept 15, 2011

Safety
- Project wind down
- stayed past our ability to continue! worked too hard!! Good Job.

Environmental
continuing sampling hot spots at Site 31

31 - 20C
31 - 20D

Site 31 stockpile laydown area field sampling
449 → 484
Site 31 grid
Sample prep/management

11 hours

Sept 16, 2011
Calm, dry,

Safety
- excavation safety

Environmental
- stockpile (POL) #2 clean
- More PCB hot spots (13 & 31)

Site overview with - C. Croley, QAR Craner, L. Kleppin, R. James and Moze Thompson
- JIA
- A-1
- 13
- 31

Site 31 Field - Confirmation Samples

11NC31SS001
002
003
004

11NC ~~13~~31 SS005
006
007
008
009
010
011
012
013
014
015
016
017
018
019
020
021
022
023
024
025
026
027

11NC ~~13~~31 SS028
029
030
031
032
033
034
035

11 hours

September 17, 2011
Cool, calm, misting

Safety Meeting

crew safety topics
- crew keeping on each other for safety reminders
- close to edges of excavations - be mindful
- do not turn back to running equipment
- winds - cooler temps

Site 31 Confirmation Sampling

~~IINC31SS~~

IINC31SS036	048
037	049
038	050
039	051
040	052
041	053
042	054
043	055
044	056
045	057
046	058
047	

IINC31SS059	IINC31SS083
060	084
061	085
062	086
063	087
064	088
065	089
066	090
067	091
068	092
069	093
070	094
071	095
072	096
073	097
074	098
075	099
076	100
077	101
078	102
079	103
080	104
081	105
082	106

Sept 17, 2011

11NC3ISS107	11NC SS~~108~~
108	~~1309~~ 130
109	~~1310~~ 131
110	~~111~~ 132
111	~~112~~ 133
112	~~113~~ 134
113	~~114~~ 135
114	~~115~~ 136
115	~~116~~ 137
116	~~117~~ 138
117	~~118~~ 139
118	~~119~~ 140
119	~~12~~ 141
120	142
121	143
122	144
123	145
124	146
125	147
126	148
127	
128	
129	stop @ 2100

13.25

Sept 18, 2011

Calm, cool, dark, dry

Safety
- Winds
  - chill factor - hovering around freezing
  - stay dry
- Slips Trips and falls
- slower is faster

Environmental

Sept 19, 2011
Cloudy, calm, cool

Safety
Site Communications
- Fixed radios in equipment
- written directions

Eric Barnhill
Bristol Environmental
Northeast Cape 2011
HTRW Remedial Actions

"Rite in the Rain"®
ALL-WEATHER
FIELD
No. 351

Job# 34.110008

9-19-11 → 10-3-11

Sept 20, 2011
Clear, slight breeze, chilly

Safety meeting

Working in the dark
- Proper lighting
- be careful
- take time
- be aware of co-workers and equipment.

Environmental Meeting

September 21, 2011
windy, dry

Safety

Backfilling
- careful around excavations
- heavy lifting
- Buddy system

Chill factor below freezing

Environmental

September 22, 2011

Safety Meeting

Winds — chill factor near freezing
- stay warm

Darkness —
- be careful, know your surroundings

September 23
Calm, dry, cool

Safety
Concrete demo
- PPE
  - hearing protect

Lining
- slips trips falls
- Work with liners be safe

Preventable vs Un-preventable

IF you get hurt, say something!!

September 24, 2011
calm, cool, dry

Safety meeting

- Be Safe working with liners
- Stay back from excavation edges, be aware
- Be aware of machines working near and around you.

September 25, 2011

Drizzling rain, calm, cool

Safety

Liner stringing - wear PPE (hardhats etc)

September 26, 2011

rain, cool, calm

Safety

Various project breakdown activities
- Proper lifting technique (machines when possible)
- Proper PPE

Placard Placement on Hazardous waste.
- Ash bags
- PCBs
- Asbestous
- lead materials

Kleppin, Lyndsey left for Anchorage today

September 27, 2011
drizzle, breeze, cold

Safety
- Continued safety vigilance

September 28, 2011

Safety

- Chill factor ~~between~~ below freezing
  - stay dry

September 29, 2011
cold, calm, dry

Safety Meeting

Bagging Operations : Pad 98 POL Soils
- proper lifting techniques
- eye contact with operator

Last POL bag was => 89 G

First of the day

MOC 90 A
MOC 90 B
MOC 90 C
MOC 90 D
90 E
90 F
90 G
91 A
91 B
91 C
91 D
91 E
91 F

0850

91 G
92 A
92 B
92 C
92 D
92 E
92 F
92 G
93 A @ 1310 hrs

September 30, 2011
Cool, breezy,

Safety meeting

- Proper lifting techniques. SAFE!
- Keep an eye out on yourself and those around you.
- wind chill below freezing.

October 1, 2011

Snow on ground, cool, calm

Safety

- wind chill below freezing - be careful
- snow on road - be careful driving
- snow on steps other surfaces slick!

October 2, 2011

Cold, calm

SAFETY

- Cold / wind chill
- Winds picking up - dress warm
protect heat loss areas:
  - back of neck
  - wrists
  - arms
  - small of back

October 3, 2011
calm, dry, cool

Safety Meeting

- Boat loading this evening
  - stay safety conscious

Travel home

Home @ 2030hrs

Middle Decision Unit

① D-10 ~1515 hrs

pH = 5.88

DO - 67.5% / 8.03 mg/L

Conductivity ~ .067 mS/cm

ORP = -13.5

Temp = 7.65°C

② B7 1520 hrs

pH = 5.52

DO = 30.7 DO%

3.72 mg/L

Conductivity = .080 mS/cm

50 μS/cm

ORP = 16.9

Temp = 7.09°C

3 B6 1530 hrs
pH = 5.59
DO = 45.4%
~~TS 45.4~~ 5.63 mg/L
Cond = .066 mS/cm
35 µS/cm
ORP = − 5.8

Temp = 7.26°C
4 C5 1540 Dupe Collected
pH = 5.49
DO = 52.3%
6.34 mg/L
~~Cond TS~~ = Cond = .058 mS
38 µS
ORP = 4.1
Temp = 7.35°C

"Rite in the Rain"

⑤ A4 1550 hrs
pH = 5.46
DO = 41.1%
5.07 mg/L
Cond = .081 mS
54 µS
ORP = -30
Temp = 7.05°C
⑥ A3 1600 hrs
pH = 5.32
DO = 46.9%
5.64 mg/L
Cond = .057 mS
37 µS
ORP = -24
Temp = 6.74°C

"Rite in the Rain"

(7) B3 1605 hrs
PH = 5.35
DO = 22.8 %
2.76 mg/L
Cond = .055 mS
36 µS
ORP = -1.1
Temp = 7.00 °C
(8) A2 1615 hrs
PH = 5.14
DO = 58.9 %
7.27 mg/L
Cond = .048 mS
31 µS
ORP = 13.7
Temp = 6.80 °C

"Rite in the Rain"

~~Lower~~ Upper Decision Unit 8/05/11

Duplicate

26 B9

Temp°C = 9.33 spCond (µS/cm) = ~~[illegible]~~ 47

pH = 5.94 DO (mg/L) 67.1%

ORP: -45.1 7.65 mg/L

25 D8

Temp = 7.63 spCond = 50

pH = 5.69 DO = 39.7%

ORP = -51.3 4.74 mg/L

24 D5

Temp = ~~9.33°C~~ 8.42°C spCond = 40

pH = 5.81 DO = 56.4%

ORP: -77.6 6.59 mg/L

"Rite in the Rain"

LDU Sites 8/05/11

(23) C3

Temp: 8.17 SpCond - 43

pH = 5.36 DO = 78.4%

ORP - 44.4 9.16 mg/L

(22) A3

Temp = 6.64 SpCond - 35

pH = 5.12 DO 62.3%

ORP - -3.9 7.64 mg/L

(21) C2

Temp = 8.05 SpCond = 37

pH = 5.46 DO = 61.1%

ORP = -19.6 7.34 mg/L

LDU Site 8 8/05/11

20 D1 12/30 hrs
Temp: 7.35 SpCond = 97
pH = 5.82 DO = 26.6 %
ORP = -45.0 3.11 mg/L

19 A1 1440 hrs
Temp = 7.47°C SpCond = 43
pH = 5.32 DO = 45.0 %
ORP = -6.0 5.45 mg/L

"Rite in the Rain"

CONTENTS

PAGE	REFERENCE	DATE

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

ALL-WEATHER
FIELD BOOK

Name Lyndsey Kleppin
Bristol Environmental Remediation Services

Address 111 W 16th Ave
Anchorage, AK

Phone (907) 563-0013

Project NE Cape 2011 HTRW Remedial Actions
34110008

This book is printed on "Rite in the Rain" All-Weather Writing Paper - A unique paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. For best results, use a pencil or an all-weather pen.

Specifications for this book:

Page Pattern		Cover Options	
Left Page	Right Page	Polydura Cover	Fabrikoid Cover
Columnar	1/4" Grid	Item No. 350N	Item No. 350NF

7/12

ANC → NOM AKAIR 11:00 am
arrive Berry Air. M. Hannah, R James
E Barnhill, R Black, S Hummel.
Weather standby
check in at Polaris Inn

7/13 Berry Air 11 am
weather standby
depart ~ 1pm NE Cape
windy, rainy
unload cargo

environmental connex organization / equipment
locate
- YSI - hach kits
- sub. pump - turbidimeter
- peri pump - tubing
- printers - lathe / spray paint

site walks - site 13, 31 liner visible,
excavation completely backfilled
site 9 - "Allen creek" flowing, seeded
landfill cap developing
18:00 end of day

7/14/11
700 Site Orientation / Safety Meeting
- 2 bears stranded on Island, no sightings
- paramedic capabilities
- weather
- facilities

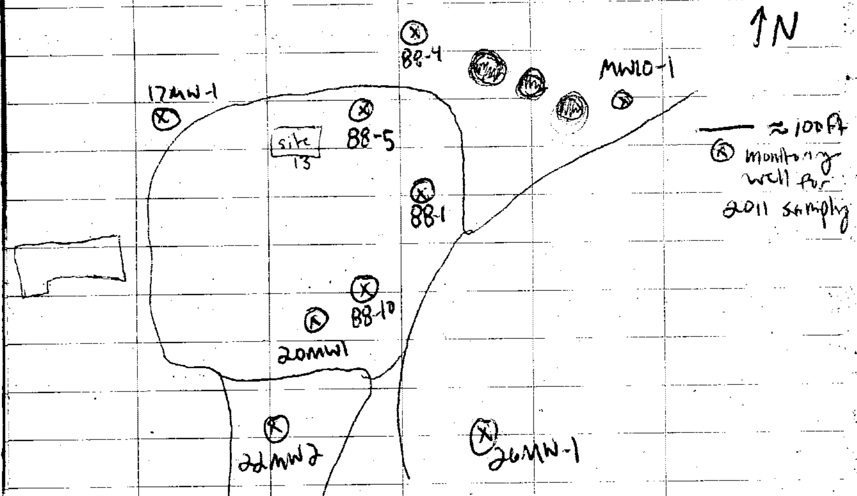
set up printer, computer in tent
site walk - MOC:
JIA area 10NC27UV17 may be "off-pad" by ~10ft. Consult with QAK.
MW 10-1 same condition as 2010
no wells will need to be decommissioned as part of JIA dig. Puddle in location of TP-3
No other standing water.
- arrange to have surveyors delineate extent of JIA unit (Russell - data)

locate Test America bottles for water sampling
unpreserved 1L ambers
40mL MeOH — 4oz tared
preserved 1L ambers HCl — 4oz jars
HNO_3 preserved poly +
unpreserved poly
trip blank VOAs
temperature blanks

7/18/11 Water level measurements (depth below TOC)

	MW 10-1	3.56
14:20	88-4	7.54 strong odor
14:30	88-5	8.90 strong odor
14:10	88-1	15.17'
14:05	88-10	obstruction @ 6.49' - dry
13:55	17MW1	10.12' (measurement taken from hole made in pvc)
	20MW1	20.11'
13:50	22MW2	30.43'
13:45	26MW1	32.84'

officejet J4680 series - driver @ hp.com



7/19/11
For MOC GW sampling:

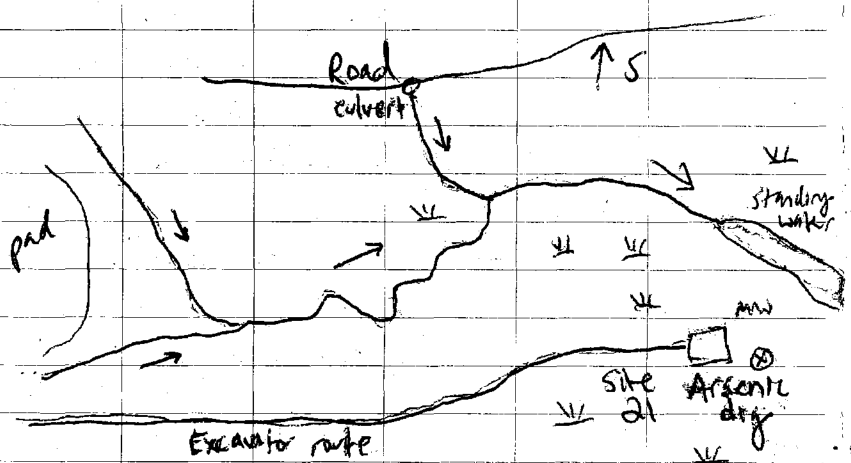
2 unpres. amber PAH
2 unpres amber PCB
2 preserved HCl amber DRO/RRO
3 VOA HCl GRO
3 VOA HCl ~~VOCs~~ BTEX
3 VOA HCl Methane
1 HNO_3 poly metals (total)
1 unpres poly MNA
1 HNO_3 poly metal (dissolved)
need filter
YSI parameters / turbidity
Hach kit: ferrous iron / manganese / nitrate / sulfate / alkalinity

18:00 stop work

7/15/11

7:00 Safety Meeting
Low winds - bug repellent / headnets
Buddy system

cloudy, drizzle, calm
- bucket of rocks for rip-rap characterization
- site 21 drainage mapping
7/15 tank footprint removal planned - well 10-1
downgradient to be sampled in afternoon



Calibrate YSI, turbidimeter
- see calibration log
YSI # 1, Turbidimeter # 1

7/15/11

gather equipment for sampling MW 10-1
submersible pump - battery powered from
truck / side-by-side
no sheen, no odor
initially orange and turbid, clear after 2 gal
purge - see sampling form for parameters
great recharge 3.5' BTOC -
essentially at ground surface
.45 micron filter clogged right away -
Switched to different .45 filter for
dissolved metals sample
→ 1~~0~~RK NC 10 WA01 16:30 7/14
location: MW 10-1 MOC
MNA poly given to lab for field Hach kit
parameters
→ temp blanks put in enviro. connex
no bubbles noted in VOAs
sub pump, WL tape, flow through cell, YSI
decon in Alconox
~~calibrate YSI / turbidimeter (see cal. log)~~
~~?6MW1 purge 3 casing volumes~~
~~no odor, no sheen, good recharge~~
~~cold + windy~~ RK
18:00 Dinner

7/15/11 7:00 Safety Meeting

One VOA for MW 10-1 sample frozen - discarded. No ice noted in other VOAS.
* Fridge adjusted warmer. Methane analysis will be run on 2 VOAs (shorted 1)
Sample integrity of other VOAs intact.

YSI #1 calibrated - see calibration log

26MW1 - MS/MSD
purged 3 casing volumes, good recharge
no drawdown, no odor/sheen

→ 11:15 11NCMOCWA02 MS/MSD
loc ID: 26MW1
see sample form, low flow purge form
QAR Jeremy arrives
Sample management, equipment decon
Preparatory meeting:
Maze, Chuck, Eric, Jeremy, Russell
MOC dig - tank footprint
JIA - stockpile 2ft
in high topo area
MOC GW Sample
Site 28 transect placement
- more new source?
- more sophisticated auger?

7/16/11

Site 21 background sampling
Site 13/31 PCB dig - field screening
2 small site 13 digs no field screening
34 58

Setup, purge 3 casing volumes for parameters to stabilize - Sub. pump has variable flow rate + must constantly be adjusted up + down.
No sheen or odor, good recharge
→ 17:45 11NCMOCWA03 7/16
loc ID 22MW2
see sample log sheet + low flow purge forms
label samples, tape
~~to~~ 11NC10WA01 changed to
11NC<u>MOC</u>WA01 - relabel

rainy, windy

19:30 Dinner

7/17/11 7:00 Safety Meeting

Check Calibration YSI w/ confidence solution - see calibration log - turbidimeter

Purge 20MW1 (see low flow purge form)

• clear, no odor, no sheen ~5 gal

misty, calm - problems with condensation on turbidity vial - difficult to keep dry for analysis

→ 11NCMOCWA04 10:10

loc ID: 20MW1

GAC purge water / peri pump

decon, move to 17MW1

clear, no odor, no sheen, very rainy

→ 11NCMOCWA05 12:00

(see low flow purge form), GAC purge water

decon, lunch

88-5 orange, cloudy, odor, no sheen

→ 11NCMOCWA06 15:15 loc ID MW88-5

11NC MOCWA07 15:30 (duplicate sample)

(see low flow purge form)

decon, GAC purge water

88-4 obstruction @ ~6 ft bgs, pump lowered down through it

clear, fuel odor, no sheen

7/17/11

→ 11NCMOCWA08 17:00

loc ID: MW 88-4

(see low flow purge form)

Ice shards of top of sub. pump

decon, purge water pumped through GAC. Rainy.

Sub. pump flow rate varies greatly and must constantly be adjusted to maintain uniform flow. Seems to be more of a problem on the 2nd well in a series - car battery problem?

Attempt to locate 88-1 flush mount. Very muddy - area around PVC casing filled with mud. Staked off to prevent further driving over with loader. Will need to be bermed during sampling to prevent surface flow into well.

88-10 still obstructed @ ~6'. Will attempt to break through with metal pole if ice is present. Send samples out on Bering Air tomorrow

19:30 Dinner

[signature]

7/18/11 7:00 Safety Meeting
Near misses - pay attention to people/other vehicles
- when driving, MOC operations
Sample labeling, sample management
Stockpile site visit for MOC PCL + PCB digs
- ok location for Chuck regarding location
of future UVOST guided digs
Attempt to ream ice in well 88-10
Carl welds rod w/handle - ream through
6' to 16'.
Calibrate YSI (see calibration log) turbidimeter
clean out mud at 88-1. Mud appears to
have run into the casing - not blocked or
inundated. Cap in place but loose.
Purge 12 gal begin recording parameters.
Stabilized except turbidity, after 1hr
sampled.
→ 11NCMOCWA09 88-1 16:30
Clear, no odor, no sheen
- checked turbidity standards, changed sample vial
all ok

GAC purge water, decon equipment move to
88-10, Carl welded new 22' rod
clear casing of ice w/ rod
Ice on pump

7/18/11
purge well - parameters slow to stabilize
pump was very variable rate due to
battery connection (?) running truck
intermittently
very silty - temp won't stabilize
60 min purge, sample
good recharge
→ 11NCMOCWA10 18:30
no odor, no sheen, clear
GAC purgewater, decon equipment
19:30 Dinner

7/19/11 7:00 Safety Meeting
7:30 Environmental Meeting
- stockpile (PCB) sampling protocol?
- screening samples for stockpile locations - follow excavation protocol

Label, package samples for shipment
11NC MOCWA01 - 10 + Trip Blank
8 gel ice/cooler
8 coolers COC # 11NC-01-1
1 DUP, 1 MS/MSD

SGS drinking water sample sent
Berry Air 16:30

Stockpile for PCB excavation site 13
sample 5x5 grid #160 - 200 for field lab
windy, foggy

19:30 Dinner

7/20/11 7:00 Safety Meeting
Environmental meeting
Site 21 background Arsenic sample location walk - similar moisture, vegetation at background location to site 21 Arsenic dig
No red clayey material observed
4 exploratory hand auger holes to 2'

J1A - 2' bgs of ~~[illegible]~~ 10NC11UVS2
~~[illegible]~~ removed and stockpiled
[illegible] re-surveyed J1A for stockpile volume
Began dig + bag at J1A

MOC J1A - 01 - MOC J1A - 04
southern sidewall strong fuel odor,
silty gravel - thin black organic layer at ~3' bgs
hit water in gravel at W side of excavation
clay on E side excavation floor

Soil clinging to rocks, black staining on rocks - Allen does not recommend screening this material

19:30 Dinner

7/21/11 7:00 Safety Meeting
Enviro meeting - site 21
looking for similar lithologies
Site 21 Arsenic dig contains debris, gravel
disturbed material. Selected background area
undisturbed, no gravel or debris

JIA excavation - appears to be just above
water table ~4 ft bgs

MOC-3C } MOCBW03 composite collected
MOC-3D
E
F
G

Site walk at background Arsenic selection
Site 21 - excavation with debris,
floating bacterial (?) mats, precipitated iron
biogenic sheen

JIA - large rocks appear stained, clumps
of clayey silt/silty clay clinging on moist
rocks. Allen does not recommend screening.
Photos taken.

Dinner 14:30

7/22/11 7:00 Safety Meeting
Environmental meeting
Field lab sidewall JIA samples - results in
Allen to excavate 10' step-out at
MOCJIA02 and MOCJIA03 on S wall
Arsenic background sampling

sample #		ft bgs	description	time
11NC21SS	01	1	organic silt wet, brown w/roots	8:45
	02	2.5	" "	8:55
	03	1.5	" "	~~9:00~~
	04	2 frozen	" "	~~9:10~~
	05	0.5	dark reddish brown	~~9:20~~
	06	1	dark reddish brown silty peat	~~9:25~~
	07	0.5		~~9:35~~
	08	1	clayey silt gray-brown - hit rock	~~9:45~~
	09		frozen brn. silt	~~10:00~~
	10		DUP of 03	~~9:05~~

hit rock

3 groups of 3 samples taken in area
selected by sampler / QAR / CQCSM.
All located in high moisture grassy
areas adjacent to standing water containing
biogenic sheen and iron precipitate.
All samples taken below active organic mat

7/22/11

11NC21SS001	1'	peat with organic silt, wet, brown 10YR 3/3 - hit rock at bottom	8:45
11NC21SS002	25'	organic silt with peat, wet, brown 10YR 3/3	9:00
11NC21SS003	1.5'	peat with organic silt, wet brown 10YR 3/3	9:15
11NC21SS004	2'	organic silt, brown, frozen 10YR 3/3	9:30
11NC21SS005	0.5'	peat with organic silt, wet 7.5 YR 3/3	9:40
11NC21SS006	1'	peat with organic silt, wet, 2.5YR 2.5/3 reddish brown	9:50
11NC21SS007	0.5'	Peat with organic silt, wet 10YR 3/2	10.00
11NC21SS008	1'	clayey ~~silt~~ peat, wet, brown 10YR 3/3	10:15
11NC21SS009	1'	Peat, brown, wet 10YR 3/3	10:30
11NC21SS010		DUP of 03	9:20

Field screening samples S wall of TIA excavation
MOLTIA05 - MOLTIA10
Bagging operation - bulk waste (41 bags today!)
Dinner 19:30

7/23/11 7:00 Safety Meeting
- electrical grounding @ camp
Environmental Meeting
- site 13/31 fill removal + stockpile to liner after lunch
Bagging operations / waste characterization
Barge arrived - load bulk bags

Calibrate YSI, turbidimeter #1 (see cal log)
need more conductivity solution

YSI parameters:

LOC10 8-01	temp: ~~16~~ 31.56	DO: 2.30 %
MS/MSD	sp. cond: 421	pH: 8.53
DRO/RRO + PAH	ORP 135.0	turb: 26.0
11NC08WA001	7/23 16:00	

locate second sample location - stake still in place

YSI parameters

LOCD 8-02	temp 12.70	DO 6.20
DUPLICATE	sp. cond 43	pH 5.80
11NC08WA002/003	7/23	ORP 82.7
17:00 / 17:15	turbidity 10.6	

Store for plane on Monday
Dinner at 19:30

7/24/11 7:00 Safety Meeting
Environmental meeting

sidewall sample south wall of JIA
MOCJIA11 – MOCJIA16
* need Jamie to survey points
analytical expected this evening
windy, foggy, drizzle
JIA floor – some water, reddish orange film
not sorbing to boom – iron precipitate?
sheen on water as well

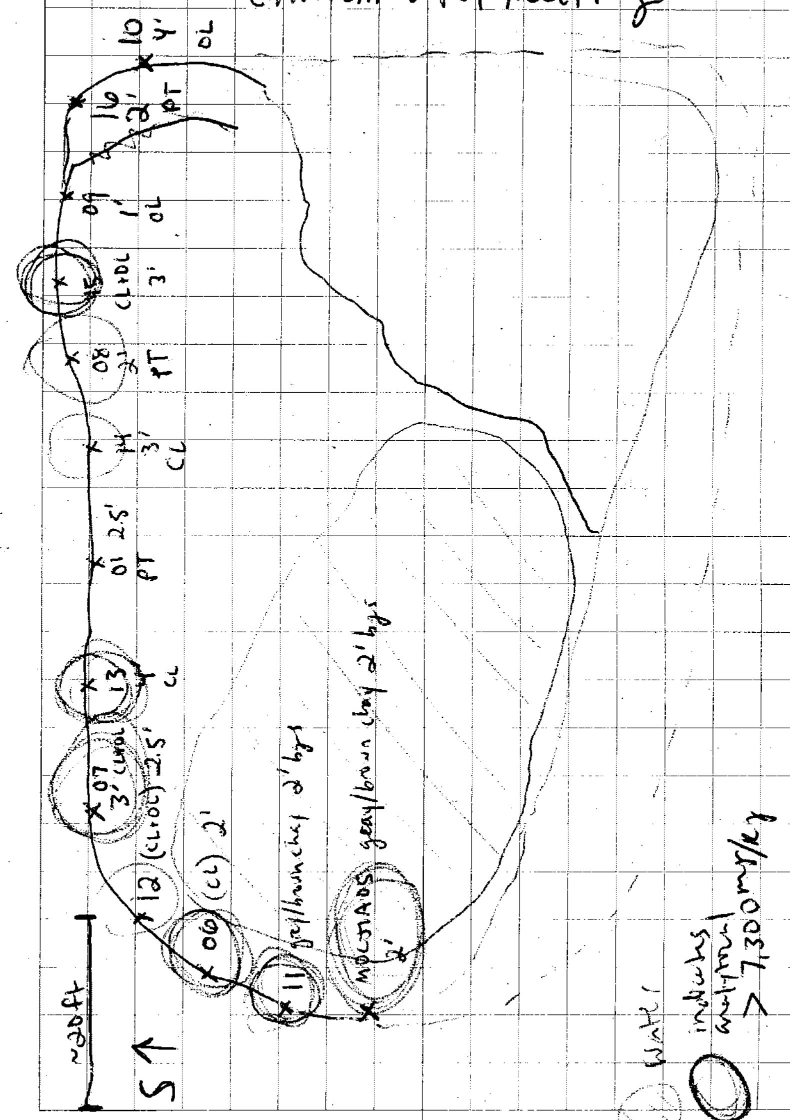
Site 31 bagging operation – some liner recovered
Allen transport screening plant from site 6 to MOC

MOC – berm constructed for soil drainage

SE edge of JIA – use [illegible] to scoop into to avoid mixing water in excavation

19:30 Dinner

7/25/11 7:00 Safety Meeting
Environmental meeting



7/25/11

SE corner of excavation - Allen recovered several drums - Eugene says there was a drum dump site there
Received analytical JIA sidewall results: hits seem highest in the brown, moist clayey silt directly above the grey silty clay
variable depth to this layer
black peat smells strongly but analytical is <9000. MOCJIA07 is >40k.

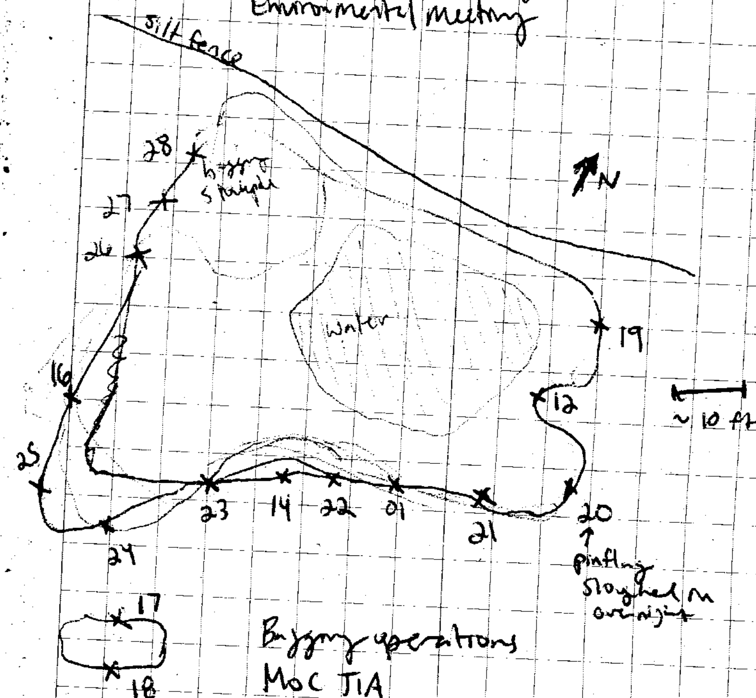
Allen will step out to dig test pit on south side of excavation.

Foggy - attempt to ship Arsenic background samples and site 8 surface water out on Penny Air on COC #2

MOCJIA17 brown clayey silt/gravel wet
MOCJIA18 brown clayey silt/gravel moist
S test pit step-out

MOCJIA19 - MOCJIA25 S sidewall
27 bags after lunch
19:30 Dinner

7/26/11 7:00 Safety Meeting
Environmental meeting



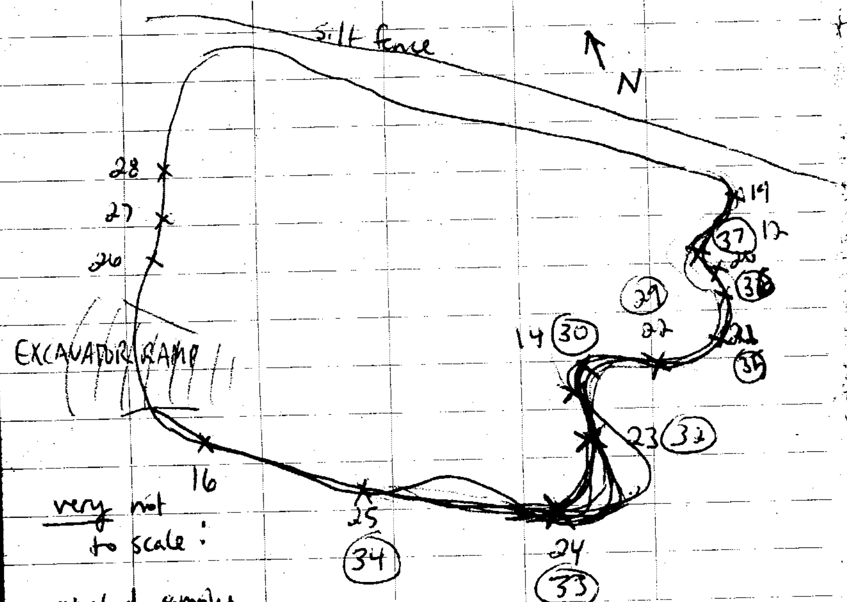
Bagging operations
MOC JIA
bulk waste composite sampling

MOC JIA 26-28 W sidewall

19:30 Dinner

7/27/11 7:00 Safety Meeting - camp courtesy
Environmental meeting

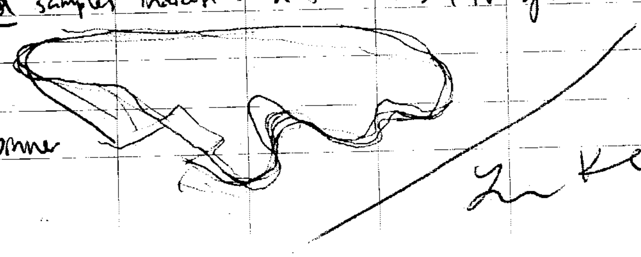
• MOC JIA 26 - 28 results returned
W Sidewall



very not to scale!

circled samples indicate those taken immediately above standing water, ~ 7.5 ft bgs @ sample 25/34

uncircled samples indicate those taken ~ 3-4 ft bgs



19:30 Dinner

7/28/11 7:00 Safety Meeting - dehydration

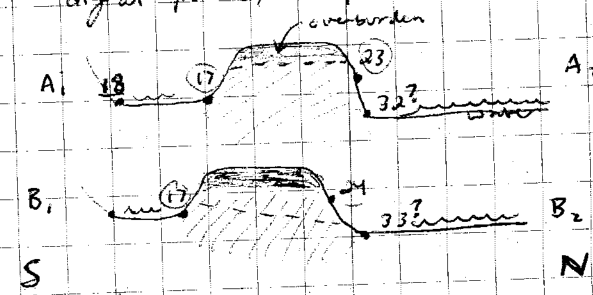
Environmental meeting - site 13, MOC

MOC JIA bulk waste sampling / bagging operation

DRO results MOC JIA 17-26 in

17, 23 > 7900

dig at points, stockpile first 2ft of material



= bag

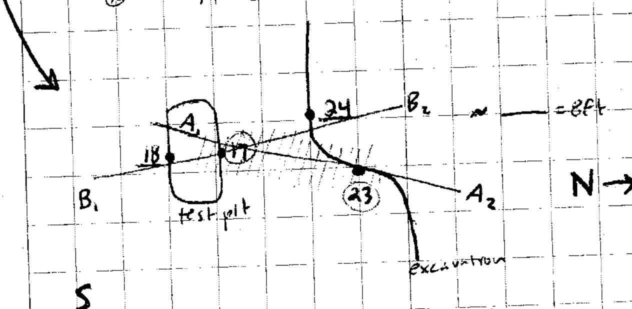
- - - = boundary line of clean v. dirty soil

= stockpile overburden ("clean")

~~~ = standing water

? = no results in yet, likely dirty as indicated by UVOST

(x) = dirty, x = clean



high winds - gusts to 42, sunny, one loader operating
~~~

7/28/11

Mike transports overburden to pit stockpile from area between MW-JIA17 and 23

Await sample results 29-37 for lateral extent of dig - stable water table, water in test pit   dig at 23 to 17

bulk waste sampled predominantly silty gravel with clay moist, strong odor

day ended early due to high winds, rain

18:00 Dinner

7/29/11   7:00 Safety Meeting
Environmental Meeting -

Eric sampling at site 13 with Jeb, move to site 31 to dig later in the day

JIA 29-37 results still pending

Jerry working on Jeb's excavator

Need additional bulk waste characterization duplicates

windy, rainy, cold

17, 31, 32 dirty - dig ~10 ft at around dirty spots, stockpile first 3 feet as overburden

17:30 Dinner

7/30/11 7:00 Safety Meeting
Environmental Meeting

MOC JIA bagging operations
dig at 31/32

field lab samples JIA 38 – 53
2 floor samples between 17 and 23

bagged material:
brown silty gravel with grey clay, moderate odor
– orange stringy foam on surface looks like pictures of crude oil spills in the ocean
greasy feeling, strong odor

May be nearing end of excavation – next dig location?

Fog – no plane today, reschedule for tommorow

Herd of reindeer @ site 31

19:30 Dinner

7/31/11 7:00 Safety Meeting
speed limits / camp manners
Environmental Meeting – site 31/13 sampling

Most of the JIA excavation scraped to 2' below standing water – grey clayey material

MOC JIA bagging operations
Awaiting results for MOCJIA 38-53
submitted yesterday
– plane arrives – Scott out / Johnny in
– barge arrives
site 31 field screening samples
120 – 158 taken
MOCBW36 – duplicate MOCBW003

19:30 Dinner

8/01/11 7:00 Safety Meeting
slips/trips/falls

Environmental meeting - continued for bagging w/Jack, awaiting site 13/31 analytical

MOCJIA 38 - 44 results in
39 - 42, ~~[illegible]~~ 44 dirty

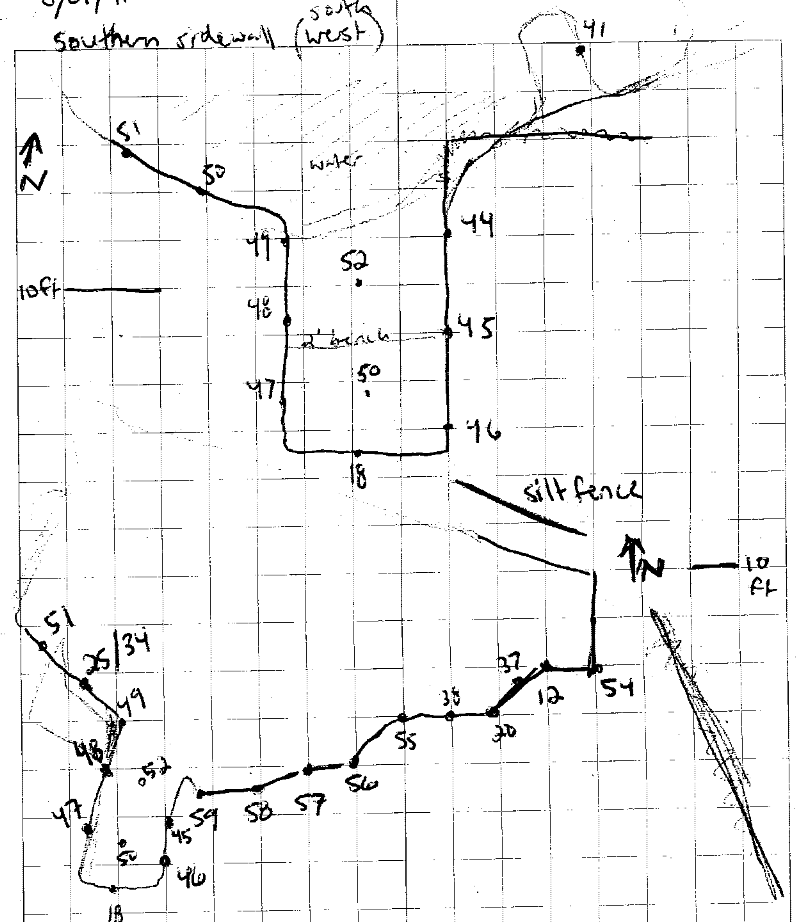
remove over-burden from promontory on
S sidewall - step at <10 ft

Mike hauls overburden to POL stockpile
Load up rock truck with dirty material from
39 - 42 redig, move to W sidewall for
loading into bulk bags

barge arrives / plane arrives

field sampling 54 -
immediately (within ~1 ft) of standing water
change out decon water - old water dumped in
POL bulk bag (~2 gal + sediment)

8/01/11
Southern sidewall (south west)



19:30 Dinner

8/02/11 7:00 Safety Meeting
"hurry up can hurt"

Environmental meeting - site 31/13 results in

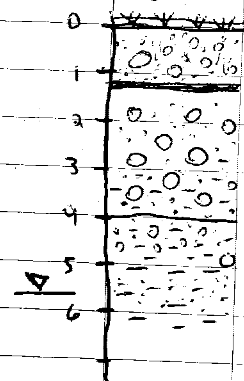
Move frames to 31 from tar pit

MOC oil bagging operations

plane today IN Aaron Sherman, Chuck Coley
OUT Jeremy Craner

Waiting on field screening samples MOCJIA 54-59

general cross section



dry silty gravel, brown

black peat, moderate odor

brown silty gravel

moist silty gravel with clay

brown and grey clayey gravel

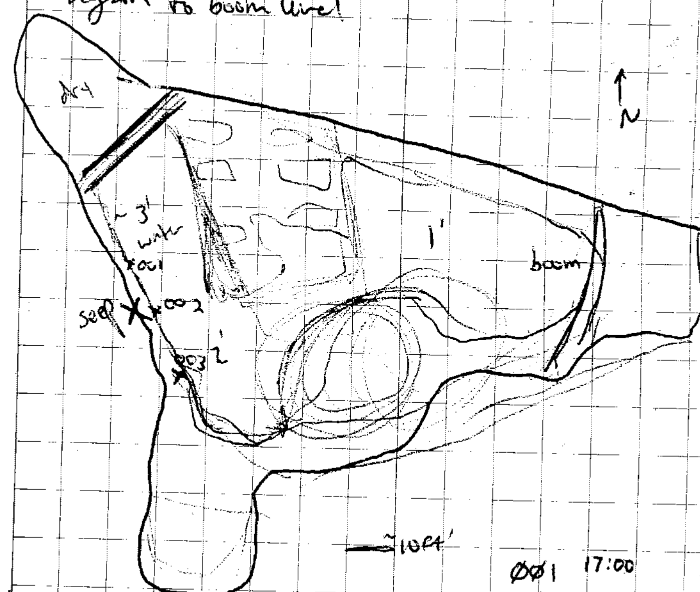
~~sandy~~ clayey gravel (grey, wet) with sand

MOCBW39 - clays from the NW corner, low area at excavation boundary. 10' deep, no water. Allen has constructed a dam to prevent inflow of water. Seeps all along southern sidewall present in the silty gravel (brown)

8/02/11

Maybe put in a series of dikes to prevent higher water table from above inundating low water table levels northward - ask Aaron + Chuck

Water below boom @ start of day - Allen removed material, water ~~table~~ level 2ft dropped - slowly filling up again to boom line!



001 17:00
002 17:10
003 17:20

11NCMOCSS001 - 003 20' apart

19:30 Dinner

8/03/11 7:00 Safety Meeting - high winds
Environmental meeting
MOCJIA 55-60 preliminary results back - all clean
Jamie + Daniel survey MOC JIA 55-60,
11NCMOCSSØØ1 - ØØ3
Allen to build ramp for excavator at ØØ2 location
high surf advisory - rainy, foggy, windy to 40 mph

confirmation sampling

11NCMOCSSØØ4	15:00	lab correlation samples
ØØ5	15:05	
ØØ6	15:10	
ØØ7	15:15	
ØØ8	15:20	MS/MSD
ØØ9	15:25	
Ø1Ø	15:30	
Ø11	15:35	
Ø12	15:40	16:20
Ø13	15:45	DUP 11NCMOCSSØ20
Ø14	15:50	DUP 11NCMOCSSØ21
Ø15	15:55	16:25
Ø16	16:00	
Ø17	16:05	
Ø18	16:10	
Ø19	16:15	

samples labeled, refridgerated
lab correlation samples given to Marty (3)
Mike + Dan driving rock trucks for
backfill / excavator ramp at JIA dig

Allen using bucket with 2' mark indicated
in orange paint - dipping bucket throughout
excavation to demonstrate depth below water
water elevation ~~62.6~~ 67.5 msl
All samples are sidewall samples taken
immediately (~1') within the water level
grey gravelly clay - samples on S sidewall
brown, wet / moist with fuel odor
samples 16 and 17 taken from
excavator bucket from soil above lower
impounded water level 62.6 msl

19:30 Dinner

8/04/11 7:00 Safety Meeting - slips, trips, falls and
Environmental Meeting - PCB sample backlog
Rainy, windy, cool
MOC55-60 rerun on GC with new calibration
- all clean

Rock trucks hauling to JIA for Alle's
excavator ramp to E sidewall
Survey data from Jamie of soil stockpiles to PCB
Stockpile volumes: 232 cubic yard site 13
~~Site 13~~ 235 cubic yards site 31
JIA excavated ~~235~~ material pushed
~~Site 31~~ up against W sidewall to drain,
prep for bagging - rain saturated dirty pile
to oozing mud - no bagging

Site 8 lower decision unit
11NC08 WA001 - WA009 methane VOAs, MNA poly
HACH kit LDU for Mn, Fe

17:30 Dinner

HACH kit training for Emily, Josh
MDU Fe
19:30 End (11 hours)

8/05/11 7:00 Safety Meeting
Environmental Meeting
- pre-clean 10cm x 10cm PCB concrete sample locations w/Air + wet brush
- Next MOC dig A1 overburden removal
- Site 8 UDU water sampling

Sunny, cool, light winds

Site 21 Arsenic dig - visit 2010 sample locs for sample depth lithology
sample locs easily identified - lathe, indents
sent 2010 sample ~~times~~ depths/descriptions to Lisa for Arsenic TM.

Site 8 UDU water sampling
methane, MNA w/ duplicate
11NC08WA0~~09~~ - 11NC08WA027

Site 8 soil composite samples
11NC08SS01, 02, 03
MS/MSD 04 DUP of 02
Lab - finished UDU Fe, Mn Hach kits

Charles, Russell + I
attempted to use striking auger - poor recovery compared to T-handle auger
- 2 4oz jars per primary sample for:
  DRO/RRO / silica gel clean up
  PAH
  TOC

organic silt, moist, brown with peat
some grey clay

Middle Decision Unit - fuel odor in composite sample. No fuel odor noted in UDU or LDU samples.

- done with peristaltic pump
- need YSI + turbidimeter for Site 9 VOC Sampling
- done with submersible pump

Site 9:

4	primary VOC samples	= 12 vials	count VOAs
1	dup	3	
2	MS/MSD	6	

19:30 Dinner

8/06/11 7:00 Safety Meeting
Environmental meeting: PCB wipe testing on concrete rubble pile - volume estimate, convert to area for average thickness of pieces
arrange for screening MoC Stockpile with Allen

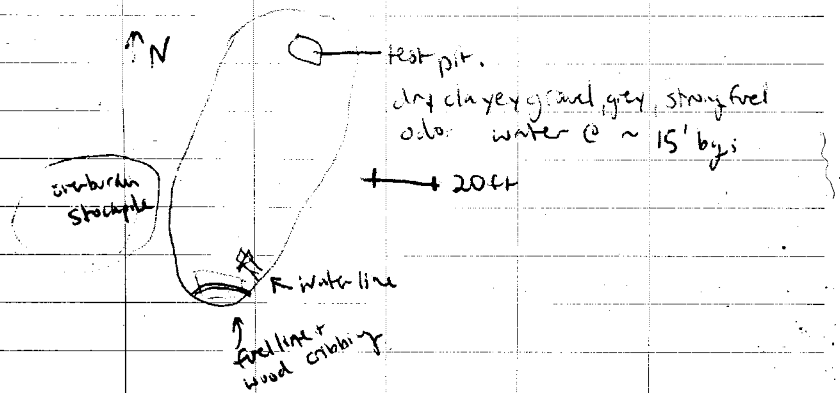
- 2-3 confirmation samples needed @ MoC JIA dig on W sidewall once bagging is done - field screening every 10'
- COC for confirmation samples JIA Site 8 soil composites
- Sample at MoC A1 10', 15' dig to 15' for water level indication
- Write up for Noyuk
- Hach kits for Site 8 water (Fe done on all units, Mn)

UVOST profiles for A1

8/06/11

Allen plans to load wet muddy material onto liner to dry, load into rock truck for transport to screen plant, mix with A1 dry material to screen + bag

A1 – Jeb digs exploratory hole to look for groundwater. Allen has removed top ~10' of clean overburden – dry silty gravel, brown 2-3' layer of rounded rocks with preferred orientation ~1-2' below surface

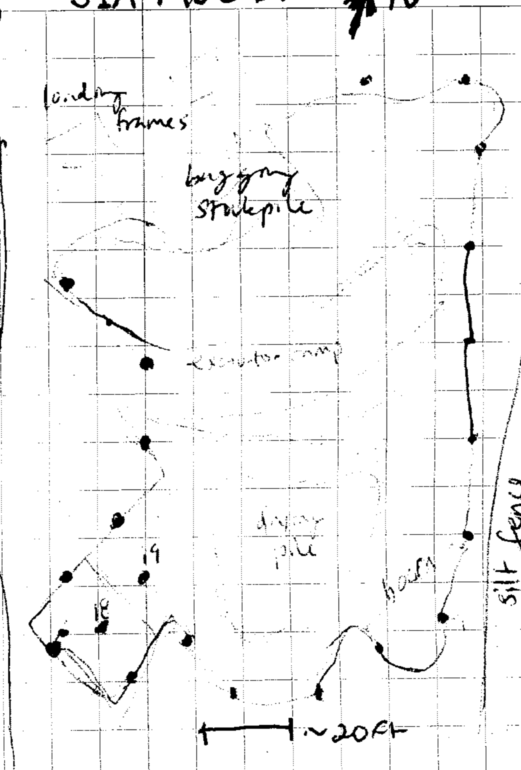


Jamie + Daniel survey extent of A1 excavation, floor, water level

-ask Jamie for J1A map w/ field screening + confirmation sampling

8/06/11 J1A MOC DIG ↑N

A1 – will not grid.
no field lab samples will be taken from excavation floor.
Sidewall samples for field lab every 10' of perimeter at depth of 15' or immediately above water (no wet samples)
Material will be screened before bagging



Eric is labeling Site 8 Methane samples
John + Emily running Site 8 Hach kits

A1 dig – down to clayey gravels @ 10' bgs
Look over UVOST profiles
Eric pre-sampling A1 stockpile area for additional room – prep for screening plant for A1 material

8/06/11

3 truckloads of JIA material on liner
MOC BW41 taken
Site 13 - PCB wipe sample locations
marked, washed using HOT-C
road repair at former tank pad

PCB wipe sampling with Russell

19:30 Dinner

8/7/11 7:00 Safety Meeting
Environmental Meeting
Moving JIA slop to liner, trucking to
screening plant pad
A1 - stockpiling overburden
Jamie create PDF of JIA sample
locations
- write up excavation instructions for Nayle
- COC # 3 for JIA confirmation samples
Alkalinity for Site 8 MNA parameters -
enter parameters into excel table

Allen to clean up west wall - may be field
screen sampled 8/8

Motor in screen plant burnt out - select
another dig location to provide work transporting
overburden until we can bag again?

Tar Area sampling w/ Erin + Russell
- Screening plant area liner and set up

19:30 Dinner - drove Erin around, update on dig POL
operations for Nayle
12.5 hrs

8/08/11 7:00 Safety Meeting
Environmental Meeting
Amy Mc OUT / Patrick, Noyuk, Cody IN
JIA ready for field lab screen samples
on W side of excavation
PCB wipe samples moved to priority

Place flags for field screening locations on
W side MOC JIA 62 - 69

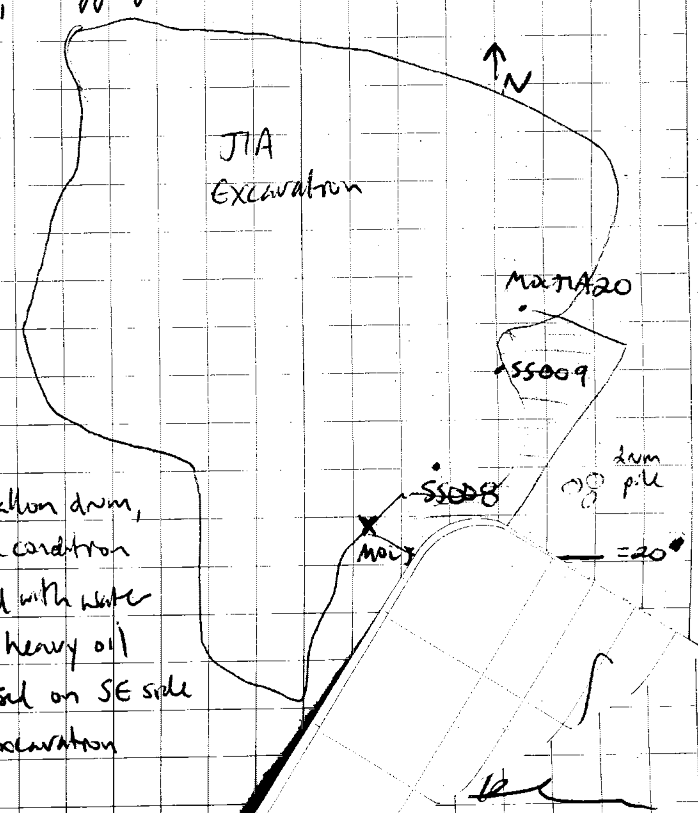
Clean at Environmental connex
Bering Air → Nome
13:30pm AkAir Nome → Kotzebue → Anc

18:00 ANC

8hours

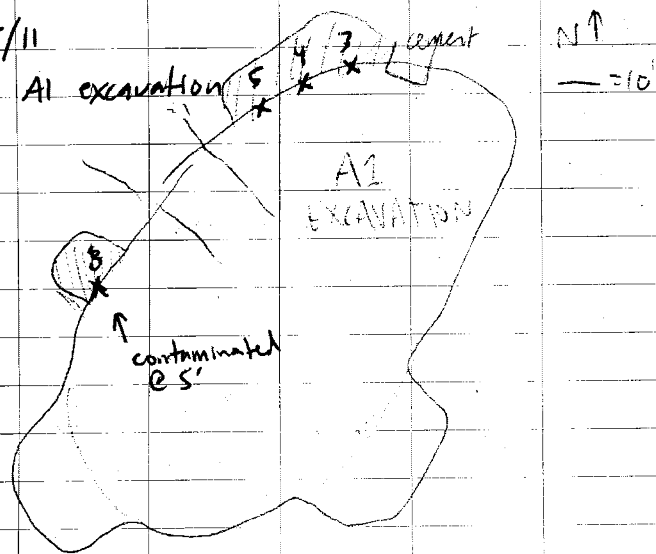
8/15/11 ANC → NOM 11:00 am AkAir
14:00 Bering Air → NE Cape

JIA - 2 confirmation samples above cleanup
11NCMOCSS008 and 009
and W sidewall JIA 61, 63, 64 ≥ 52,000
Allen digging at overburden to
4'



59 gallon drum,
good condition
filled with water
and heavy oil
exposed on SE side
of excavation

8/15/11



- waiting on other 5' bgs results from lab
- UVOST profiles nearby have no fuel signature until below 10'

Dinner at 17:30

Look over UVOST profiles near A1

7 hours

8/16/11 7:00 Safety Meeting

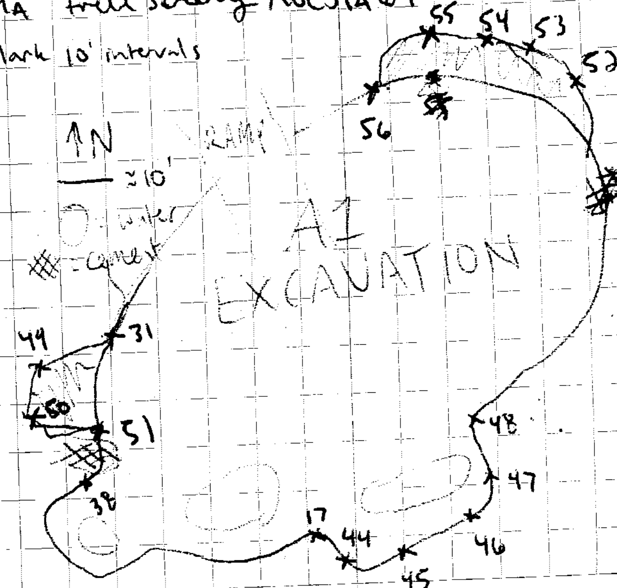
Environmental Meeting - drum removal at JIA - sling operations - avoid loading overhead drums to go in overpack. Not scoped to clean drums this year, so if pile contains additional drums leave for next year

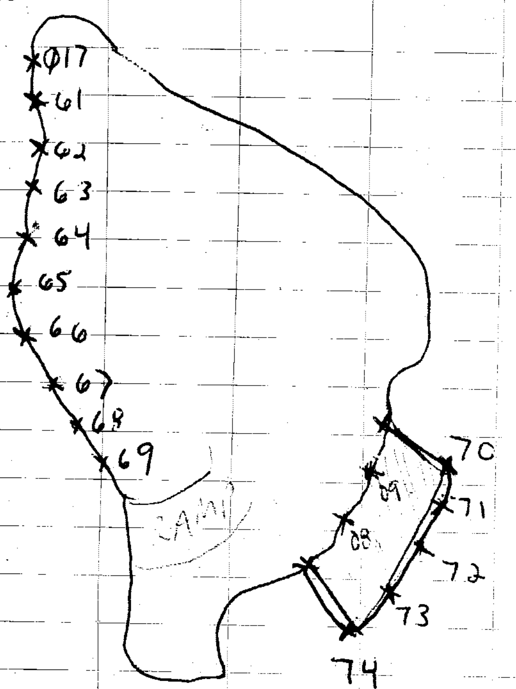
Allen determines extent of buried drum pile on W side 5 drums visible. Allen to load contaminated soil onto rock truck for bagging at screen plant

A1 field screening MOC A1 43

JIA field screening MOC JIA 69

Mark 10' intervals





Dinner @ 15:30

8/17/11 7:00 Safety Meeting
Environmental Meeting
- pre sample stockpile material

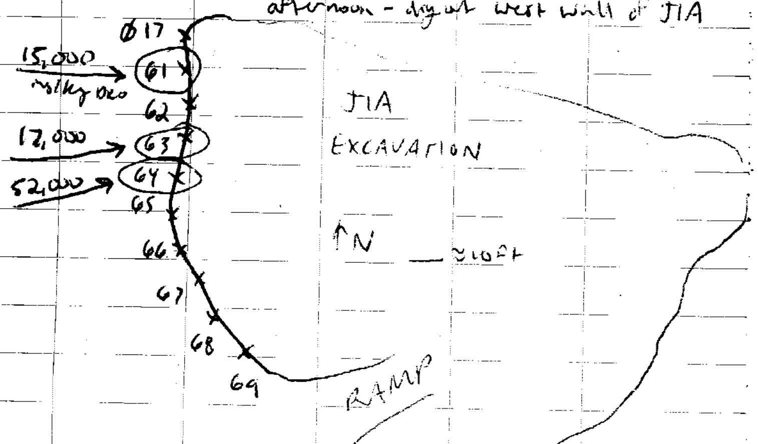
Site 31 - dig out contaminated spots from Marty's new data set

Site 28 with Charles Kava, Julie Clark
Transect 6, site 6
Prep site 28 soil samples for shipment
4 coolers w/ bubble wrap + ziplocs
- Sample notes of separate sample log sheets
1 8 oz pretared jar for GRO/BTEX
1 16 oz jar for TOC/PAH/PCB/DRO-RRO/metals
3 depths of sample/site
Transect 7, 6 sites
Transect 8, 2 sites
Dinner at 17:30

Refridgerate, package samples w/ bubble wrap + ziplocs

11 hours

8/18/11 7:00 Safety Meeting - camp courtesy
Environmental Meeting
More to dig at 31, continue Site 28 sampling
afternoon - dig out west wall of JIA



Site 28 - finish transect
8 (6 sites total in trans. 8)
Move to transect 9
Emily Conway - training on soil sampling
Matt Faust, C&CSM at site
scale has highly variable readings due to wind
slight fuel odor in organic material @ Transect 9

spray paint dig-out areas @ JIA for Allen (3)
POL pre-stockpile sampling with Eric
for additional AI/JIA overburden

Allen - stockpile ~3' overburden at JIA
MOCJIA61, 63, 64 (above dark brown organic layer)
Bagging - 4 bags, rest trucked to screen
plant due to high gravel content @ 61

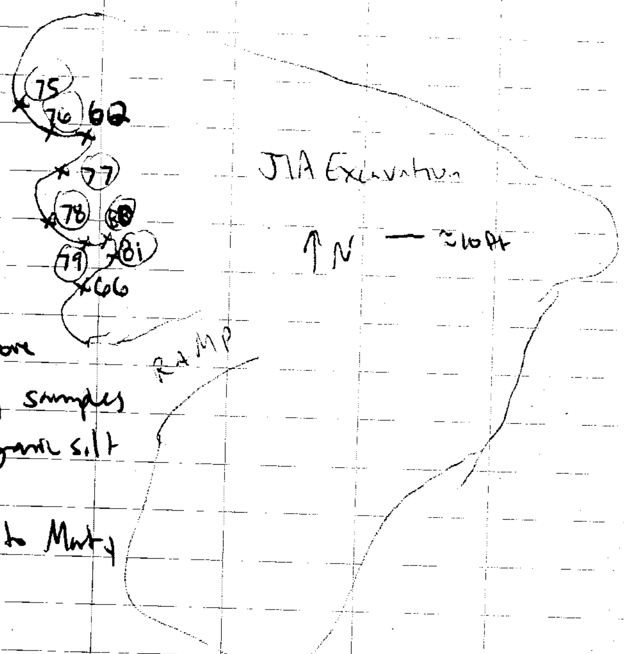
Dinner @ 17:30

Bubble wrap, ziploc Site 28 samples
low fridge space
End 20:30, 12 hours

8/19/11 7:00 Safety Meeting
Environmental Meeting
- concrete breaking @ E (future POL MOC dig site)
- JIA dig-outs
- Site 28, Julie Clark + Eric Barnhill

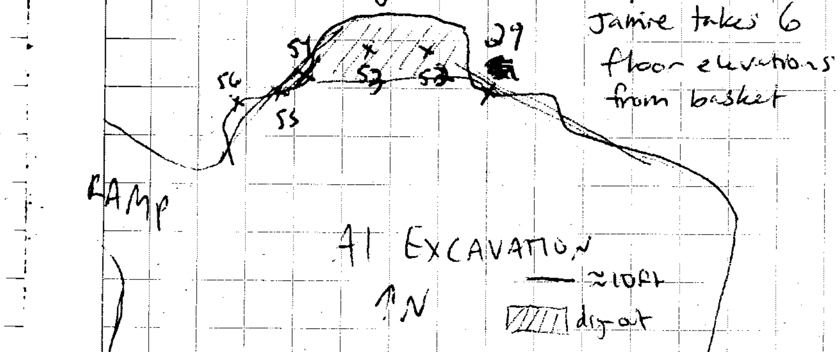
JIA 70-74 lab results in - below clean up
A1 40-56 " " 2 dig out spots, 52+53

Bucket sampling W sidewall JIA,
MOCJIA 75-81



Directly above water, dry samples mostly organic silt and peat submitted to Marty

A1 52+53 dig out areas - stockpile 10' overburden
Jamie takes 6 floor elevations from basket



Site 28 stream transect with Julie Clark
Eric Barnhill + Mylon
2 16oz jars + 1 septa
Discrete historic high sample location in MOC
up to 11INL28SSØ68
Dinner at 17:30

Packing + QC check on samples - stored in coolers with ice packs

11 hours

8/20/11 7:00 Safety Meeting
Environmental Meeting - A1 excavation to 15' - bagging in afternoon

JIA confirmation sampling from bucket

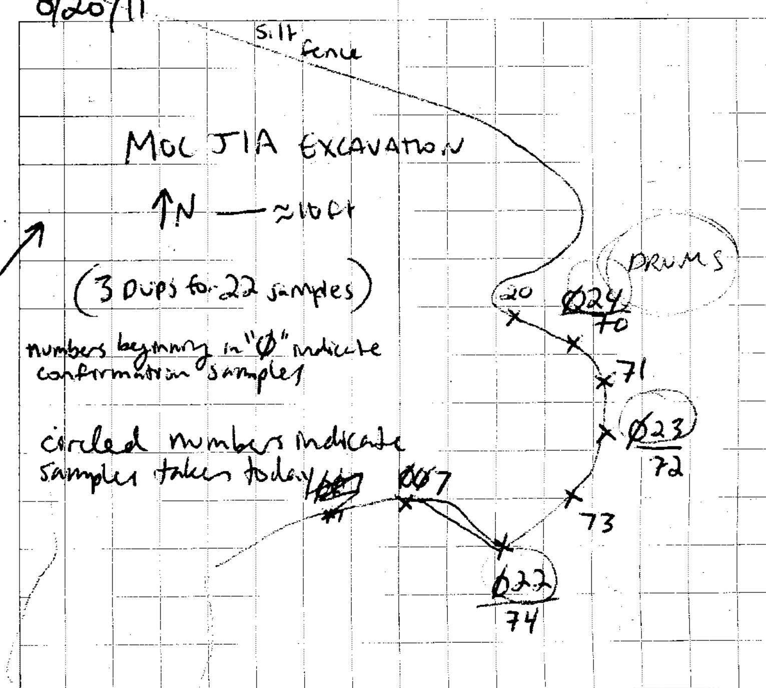
11NCMOCSSØ22	MS/MSD	8:25	Grey/brown silty clay with gravel, dry, no odor
Ø23	Brown silty clay, moist, slight odor	8:30	
Ø24	Grey + brown silty clay; dry, no odor	8:35	
Ø25	Dup of Ø23	8:40	

Site 28 sampling - discrete historic high concentrations
Julie Clark, Mylon
Eric @ Site 31 PCB dig, Matt Faust Screen plant bagging

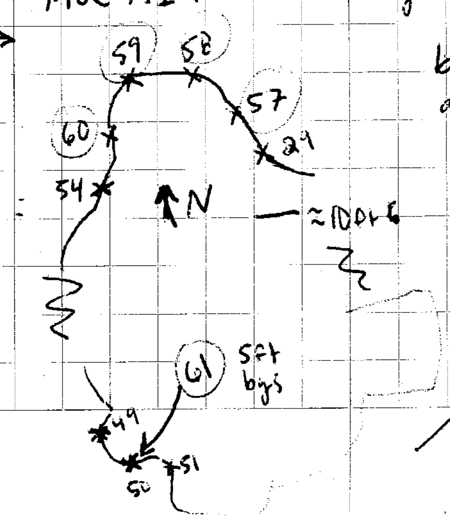
Field Screening Samples, N wall of A1
MOCA157 dry/moist clayey gravel, grey, strong odor
58 moist " "
59 moist " "
60 dry/moist sandy gravel w/clay

61 - co-located with MOCA150, taken
5' ft bgs dry, reddish brown silt
and grey clay, no fuel odor

8/20/11



MOC A1 Field Screening



bucket sampling above water level

Dinner at 17:30
10 hours

8/21/11 7:00 Safety Meeting
Environmental Meeting
- Site 21 Arsenic dig
- Remove drums @ JIA
- Screen plant bagging later in the afternoon
- Eric + Julie @ Site 28

Ongoing: - wait on results for W sidewall JIA (MOC-JIA 75-81) from Marty

- MOCA1 57-61 N sidewall A1, need to confirmation sample rest

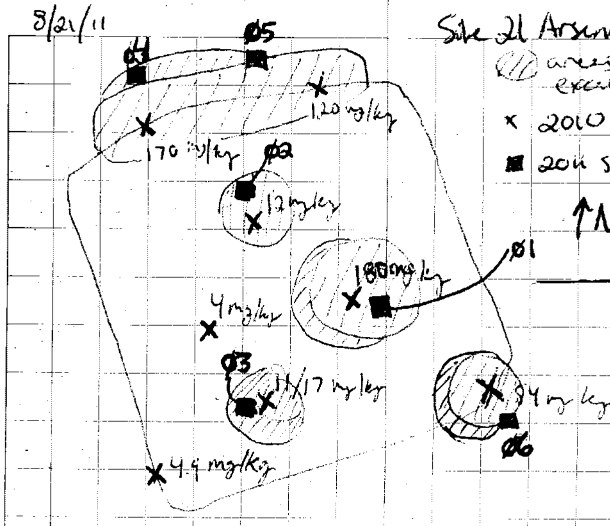
- Site 28 - 3 discrete ~~@~~ + 7 background locations (3 depths/loc)

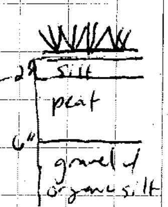
Add gel ice to enviro. freezers / Site 21 pre dig photos
Arsenic Dig, Site 21: 6 sites with [As] above 11 mg/kg
Dig out samples 10NC21SB 05, 06, 0__ (tundra mat + gravel; gravel)
Dig out samples 10NC21SBØ1, 42/43, Ø7

Take BW samples from
21-Ø1A in 4 oz jar for analytical sample
$\boxed{21BWØ1}$ → organic silt, wet, dark brown with peat
11:50
12,460 lbs 2 bags taken - Jack recommends due to moisture content + deformation

21-Ø1B reddish brown, wet organic silt
17,200 lbs

8/21/11 Site 21 Arsenic Dig





11NC21SSØØ1 ~@ 10NC21SBØ2 11:15
dark brown organic silt with peat, wet
11NC21SSØØ2 ~ @ 10NC21SBØ1 MS/MSD 11:20
dark brown organic silt, wet
11NC21SS~~Ø~~Ø3 ~ @ 10NC21SB 42/43 11:25
silty gravel with sand, dark brown, wet
11NC21SSØØ4 3" ≈6" 10NC21SBØ5 11:30 DUP (Ø7) 11:35
peat with organic silt, wet, dark reddish brown below active mat
11NC21SSØØ5 @ 10NC21SBØ6 6" bgs 11:40
dark brown peat, wet ~~trace~~ some silt
11NC21SSØØ6 @ 10NC21SBØ7
reddish brown organic silt w/some peat, wet 2" bgs 11:45

Photos post-excavation taken

8/21/11

Bulk waste sampling at screening plant
windy, cloudy - road watered for dust
MOCBW67 A1 floor material
MOCBW68

Drum removal at JIA

John Clark + Eric complete Site 28 background samples, pack + QC check
Eric @ Site 31 excavation, field sampling
Observe A1 water at floor of ~~S~~N side

JIA confirmation samples DRO

11NCMOCSSØ22	MS/MSD	8:25	8/20
Ø23		8:30	8/20
Ø24		8:35	8/20
Ø25	Dup of 23	8:40	8/20

Site 21 Arsenic Confirmation samples

11NL21SSØØ1		11:15	8/21/11
ØØ2	MS/MSD	11:20	
ØØ3		11:25	
ØØ4		11:30	
ØØ5		11:40	
ØØ6		11:45	
ØØ7	Dup of Ø4	11:35	
ØØ8		11:50	Bulk Waste

8/21/11

label + package samples, COCs
Dinner at 17:30

8/22/11 7:00 Safety Meeting
Environmental meeting – Site 31 sampling done
- Site 13, 2 areas to dig at N excavation
- flight at ~ 15:00 today

Sample management
COC#8 Site 28 soil 11 coolers
COC#9 Site 21, JIA soil 1 cooler
waybill #s 9360 9762 and 9360 9773

Berry @ site 14:30, Julie Clark depart

future excavations – dry dirt for mixing with sludge from bottom of JIA and A1
→ G1/2 and H

Review UVOST profiles, develop revised dig plan for review by corps based on JIA and A1 observations regarding fuel signatures + lateral extents observed.

Dinner 17:30

8/23/11 7:00 Safety Meeting
– camp shutdown 5 days

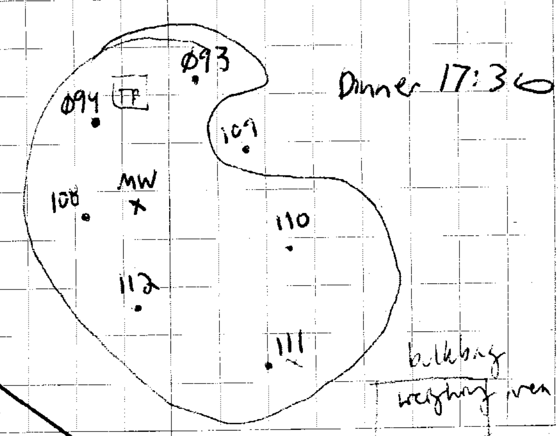
Environmental Meeting
- Site 31 results in, many dig spots
- JIA/A1 samples on the machine
- continue bagging at 13

G1/2 + H merger proposed to Molly
Jamie to mark excavation areas for overburden removal (9' and 6' stages)
concrete pads removed in anticipation of expansion – oil staining observed near surface

Bagging operations at Site 13 – last bulk bags used

G1/2 H:

↑N



Dinner 17:30

8/24/11 7:00 Safety Meeting
- crew departing @ 9am
Environmental meeting
- clean PCB stockpile results
- JIA - 2 hot results @ W sidewall
- A1 - clean. Take confirmation samples

Clean out ~~saf~~ environmental connex

Take 4 correlation samples for field lab
MOCA1 confirmation sampling:
Duplicate samples + mobile lab correlation samples homogenized in stainless steel bowl

1300 Collecting lab confirmation Samples @ A1. MF

1306 11NCMOCSS026 Grey & brown silty sands gravel, moderate petro odor, moist

1310 11NCMOCSS027 grey silty clay w/sand, moderate odor, moist

1314 11NCMOCSS028 silty sand w/ clay, moderate petro odor, moist

1316 11NCMOCSS029 brownish gray silty sand w/clay, moist, moderate petro odor

8/24/11
MF

1319 11NCMOCSS030 brownish gray silty sand w/clay & gravel, moist, moderate odor

1325 11NCMOCSS031 gray silty clay, moist, slight petro odor, MS/MSD (triple volume collected)

1330 11NCMOCSS032 brownish gray silty sand w/gravel, moist, slight oily odor

1335 11NCMOCSS033 ~~gr~~ brownish gray sandy gravel, moist, strong fuel odor Also collected duplicate 11NCMOCSS050 w/ false time of 1336

1340 11NCMOCSS034 gray clayey silt, moist, strong fuel odor

1344 11NCMOCSS035 grayish brown clayey sand w/gravel, moist, moderate fuel odor

1348 11NCMOCSS036 brownish gray silty sand, moist, moderate fuel odor

1351 11NCMOCSS037 gray clayey silt w/ brown silty sand, moist, moderate fuel odor

 8/24/11

1401 11NCMOCSS038 brown silty sand and gravel, moist, strong fuel odor

1408 11NCMOCSS039 brown silty sand and gravel, moist, strong fuel odor

1415 11NCMOCSS040 brownish gray silty sand, moist, slight ~~moderate~~ odor. Collected split for mobile lab

1425 11NCMOCSS041 brownish silty sand, moist, slight odor. Collected split for mobile lab

1427 11NCMOCSS042 brownish gray silty sand & gravel, moist, moderate fuel odor

1430 11NCMOCSS043 gray silty sand w/clay, moist, moderate odor

1432 11NCMOCSS044 brownish gray silty sand, moist, slight fuel odor

1435 11NCMOCSS045 brown sandy silt, moist, moderate odor

1440 11NCMOCSS046 brownish gray silty sand and gravel, moist, v. Slt odor, Collected split for field lab

8/24/11

1448 11NCMOCSS047 brownish gray silty, sandy, gravel moist, slight odor. Collected split for mobile lab

1450 11NCMOCSS048 Floor sample
grey sand & gravel with silt, wet, strong odor

1455 11NCMOCSS051 → DUPLICATE OF 48

1500 11NCMOCSS049 Floor sample
gray sandy gravel with silt, wet, strong odor

2 dups: 048/51 and 033/050, MS/MSD 031
26-49 : 23 primary samples
→ Need one more DUP. 052 (take from field lab correlation sample)
4 lab correlation samples
11NCMOCSS
040, 041, 046, 047
Samples with strong fuel odor (033, 034, 038, 039, 050) taken to mobile lab for field screening

8/25/11

7:00 Safety Meeting — moving bags to flats to beach

Environmental Meeting -

Photolog editing, re-writing gw sample logs to be legible

Miller + Patton paper 1971

Potassic magmatism

Site 6 - locate PCB A bag + relabel 4 to 7

Photolog of JIA excavation - excavator bucket demonstrating excavation depth below water

Dinner @ 17:30

10hrs

8/26/11

7:00 Safety Meeting

Environmental Meeting — bag hauling, CASA @ lunch, A1 sample after lunch, tar sampling

11NCMOCSS33, 34, 38, 39, 50 strong smelling A1 samples
DUP

Field screening samples taken by Nayak Peacock prior to reaching full excavation depth of 15'. Floor at ~12' during field screening sampling — Confirmation sampling 1' above water level ~14' close to smear zone, likely higher concentration

11NCMOCSSØ33 (DUP 11NCMOCSSØ5Ø) 14:15/14:10
greyish brown sandy gravel, moist, strong fuel odor

11NCMOCSS Ø34 14:20
greyish brown clayey sand, moist, moderate odor

11NCMOCSS Ø38 14:25
greyish brown sandy gravel with clay, moist, strong odor

11NCMOCSS Ø39 14:30
greyish brown sandy gravel, moist, ~~slight~~ moderate fuel odor

Dinner 17:30

8/27/11 7:00 Safety Meeting
Environmental Meeting
- working alone with reduced crew
- Site 31 stockpile / G+H excavation

Site 31 stockpile samples WAL SP05-10
5 ft from WAL SP03 (treated like
excavation) some pieces of liner visible in
stockpile

G/H excavation - S side of G begin
excavation - water seeping in on E side,
fills to ~6' bgs
10WCAQUV
① Test pit near 110, water @ ~9'
Seeps at bottom of brown silty gravel (~3-4')
② Test pit between S excavation and testpit ①

Tours - Village + region corporation arrive via
boat, visit camp and site

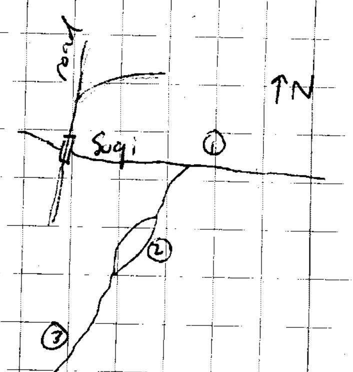
Excavation @ E side of excavation boundary
slowly filling with water - Jamie will survey
water levels + excavation extents

Dinner 17:30

8/28/11 7:00 Safety Meeting
Environmental Meeting
- tour group impressions ~16 people
- site 9 water

Calibrate YSI / turbidity meter #1
Site 9 VOC Sampling

① MS/MSD, ④ Duplicate sample ⑤



① 14:10 1.05 NTU
6.76°C ~~7.19 pH~~ 6.89 pH
76 uS/cm 85.5 ORP
13.52 mg/L

② 14:20 0.77 NTU
8.41°C 6.34 pH
69 uS/cm -70.8 ORP
11.31 mg/L

③ 14:30 3.35 NTU
8.63°C 6.56 pH
42 us/cm -2.7 ORP
10.74 mg/L DO

④ 14:35 9.72 NTU
9.27 °C 6.34 pH
70 us/cm 8.8 ORP
8.81 ~~8.80~~ mg/L DO
LK

Dinner @ 15:30

8/29/11 7:00 Safety Meeting
Environmental Meeting
- treated impoundment water sampling
- plane @ 15:00

Sample management, G/H groundwater
map - depths/elevations to find @ A1/J1A test pits

A1 confirmation samples + field lab dups MWs
52 DUP of 34

need 2 new DUPS 50 + 51

11NLMOCSSØ33 and 34 still hot (field lab)
33 → 50 11NLMOCSSØ38 → Ø50 8/26 1410
48 → 51 remains a Duplicate sample 8/24
34 → 52 11NLMOCSSØ39 → Ø52 8/26 1505
(11NLMOCSSØ33, 34, 50, 52 removed from shipment)
Ø47 MS/MSD 50 and 52 now DUPS of
38 and 39, taken from laboratory/field lab duplicate sets
M. Faust out, R. James + crew in

17:30 Dinner

8/30/11 7:00 Safety Meeting - screen plant ops
Environmental Meeting
- bags should arrive in Nome today
- new GC assembled by end of day
- leak in MOC JIA sump (treated water)

Toyo stove swap out in tent - 110V plug hot to touch (connection between tents) connection melted/burned inside housing swap out
T junction gas line set up in lab for new GC - order flexible 1/8" hose

Jamie resurvey test pit depth to water up to 7.0' bgs from 9' at time of excavation @ G plume (~UV108) maximum 1 ft of wet material assuming no diversion of water elevation approx 71 ft @ G/H, elevation of GW @ A1/JIA ~62.7 channelized preferential flowpath from South?

17:30 Dinner

8/31/11 7:00 Safety Meeting
Environmental Meeting
- plane today with bags

Dig out spots pending:
- MOC JIA ~~11NCMOCSS033~~ W wall (2 locations)
- 11NCMOCSS031 and 34 @ A1 (potentially more locations once confirmation results come back)

login to TA website for JIA SE wall confirmation results

Jamie resurvey - test pit sloughed to 7' depth E test pit water level several feet higher than when excavated. Excavate @ 10NC27UV093 take field screening above water to demonstrate its clean

Site 31 Stockpile samples - dig out hot spots (2 bags), sample every 5 ft WALSP11-15

17:30 Dinner

9/1/11 7:00 Safety Meeting - barge @ 2pm
Environmental Meeting - results in from
Site 13 - 2to3 times over calibration

Site 31 digging and bagging
* Screen plant POL bagging MOC69D
(rename today's MOC69C to MOC69F)

MOCBW69 DUPLICATE MOC BW ØØØ6

Bag screened material to MOC71G
18 bags

Low ceiling - no planes

bag shipment - plane after dinner

17:30 Dinner 10hrs

9/2/11 7:00 Safety Meeting
- decon @ PCB sites, in & out areas
Environmental Meeting - mixing JIA slop
with material on Pad 9B for bagging

Site 31 excavation

POL bagging operations @ screen plant
30 bulk bags (1 duplicate composite)
MOCBW ØØ7

17:30 Dinner

9/3/11 7:00 Safety Meeting – new light plant

Environmental Meeting

A1 → UNCMOCSS 33 - 34 [MOC A1 61 last sample]

JIA → MOC JIA 77 + 78 → 44,000 mg/kg

* Site 31 field screen sampling

Site 13 bagging/screening

(MOC JIA 81 last sample #)

A1 – excavate 10ft on either side of sample locs

7ft step cut – stockpile top 10 ft

Field screening samples MOC A1 62-66

moist grey silt + gravel, fuel odor

Site 13 excavation SW sidewall of N pit

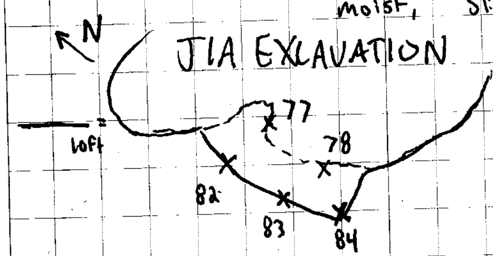
bagging

JIA – stockpile down to organic layer

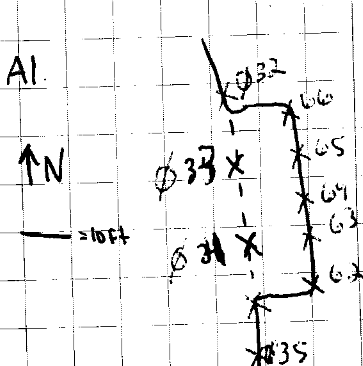
9/3/11

JIA 1' above water – organic silt/peat MOC JIA 82-84

moist, slight odor



A1.



confirmation sampling site 13, N excavation

R James, E Barnhill UNC13SS:

Ø01 - Ø7 , 97-

17:30 Dinner

9/4/11 7:00 Safety Meeting
Environmental Meeting
Increasing winds

13-21C

Eric @ Site 31

Bagging + excavating operations at site 13

13 H 8 - haz bag from E corner of N excavation

confirmation sample collection site 13
continued from yesterday

trade with Eric → move to POL
bagging operation @ screen plant

Eric finish duplicate samples (13) and MS/MSDs
@ 13

end 8 MOC 80 G

17:30 Dinner

9/5/11 7:00 Safety Meeting - high winds
Environmental Meeting
Russell + Eric prepare COCs (composite groups) and
Package site 13 confirmation samples for plane

Site 13 NW corner dig, prestockpile hot
sample dig W of 13 excavation
bagging operations - 13 BW 25, 26

POL bagging operations MOC 80 A to MOC

plane delayed due to low ceiling - 3 coolers
of samples Goldstreak

17:30 Dinner

9/06/11 7:00 Safety Meeting - high winds
Environmental Meeting

Prestockpile area - 2 PCB hot spots
Excavations 3' deep
Field screening samples 13-336 to
13-403

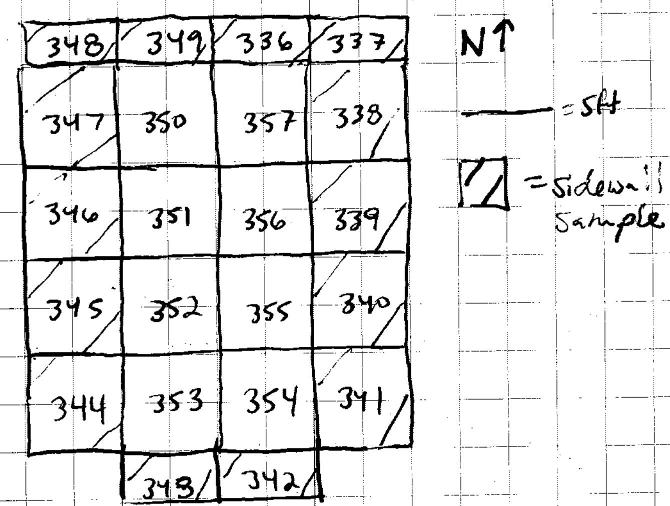
Eric + Jack bucket sampling site 13
excavated areas

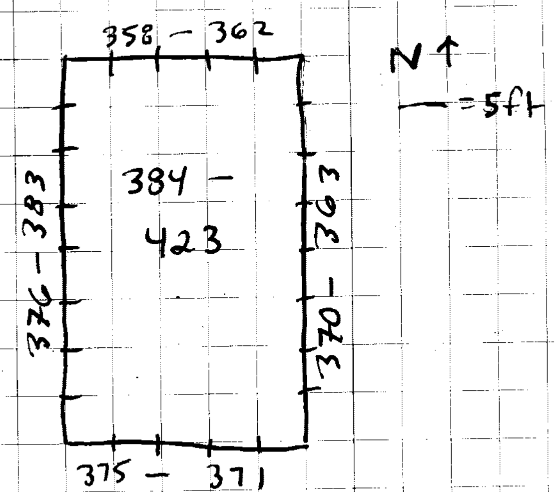
- no plane today, high winds
NALEMP crew off-duty

Russell bulk waste sampling @ Pad 98
POL stockpile

Dinner 17:30

9/6/11 Site 13 Prestockpile excavation



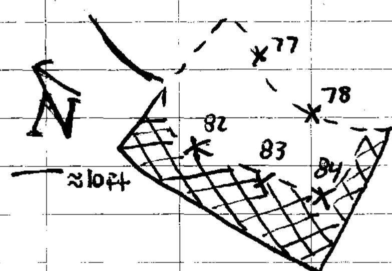


9/7/11 7:00 safety Meeting – high winds
Environmental Meeting – sampling priority over bagging, sample results from Marty in phones/internet at briefly

– 1 dig out @ A1 (66)

– 3 dig out spots @ JIA (82-84)
organic silt/peat material ~2' above water

Site 13 – field lab samples 404-423
PSP floor, 501-510 site 13 N excavation
NW corner dig out areas



JIA excavation
W sidewall
--- previous extents
— current extent
today's excavated material (to 2' below water)

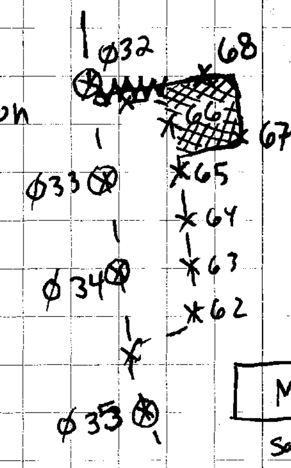
excavate overburden (3' depth)

$\boxed{\text{MOC JIA 85-88}}$

brown organic silt, moist (88 has some grey clay)

9/7/11

A1 excavation



N

excavated overburden to ~10' depth
hauled 10 to 15' (water)
= concrete
| ≈10ft
⊗ = confirmation sample
x = field screen sample

$\boxed{\text{MocA1 67 and 68}}$

Sampled – grey/brown gravelly sand with silt

Ø33 and Ø34
not sent to TA
field lab duplicates
came out above 8k

MOC Pad 98 bagging operations
(tracked-in material from A1 + JIA)

MOCBW ~~86~~ 85

17:30 Dinner

9/8/11 7:00 Safety Meeting
-winds dying down
-new operator, Dale

Environmental Meeting
- site 31 prestock pile area - 18' excavation depth, PCB results for 13 received
- POL bagging

MOC BW86 - peaty JIA material
87
88

17:30 Dinner

9/9/11 7:00 Safety Meeting - high winds
Environmental Meeting - 55 bags @ site

Test America Total Access - Al confirmation

Al confirmation results:	TA	Field Lab	
11NCMOCSS040	6200	4991	mg/kg
41	~~6200~~ 5.3	ND	
46	21	ND	
47	330	ND	
50 (38)	2200	2041	
52 (39)	2400	2197	

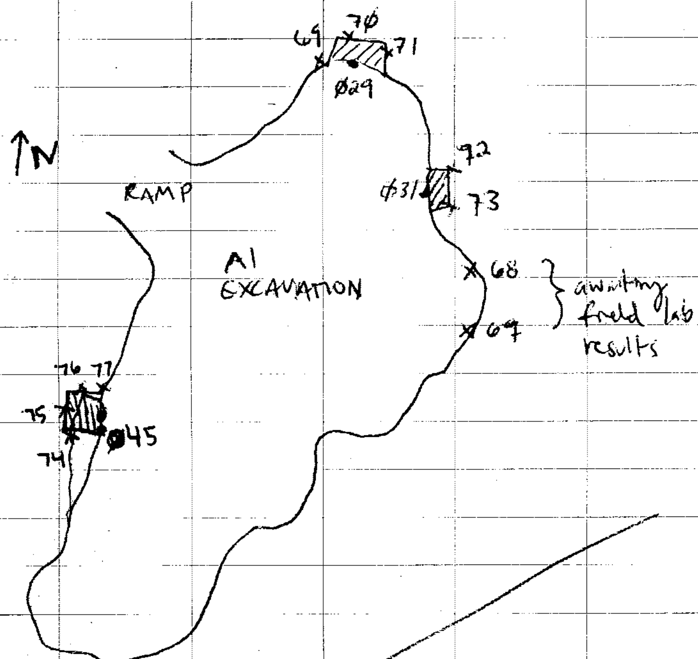
~~033/34~~ 033, 034, 038, 039 pulled from shipment
2/MS/MSD (047 031) and 1 DUP (051 = 048) for shipment of 21 primary samples

Get maps of JIA, Al from Jamie for dig out spots

9/10/11 7:00 Safety Meeting high winds
Environmental Meeting

Al results - 3 confirmation samples hot
get map from Tammie - sample prefixes incorrect - multiples of the same ID

NALEMP crew out / Suzanne + Cody out
MOC Al 69-77



17:30 Dinner

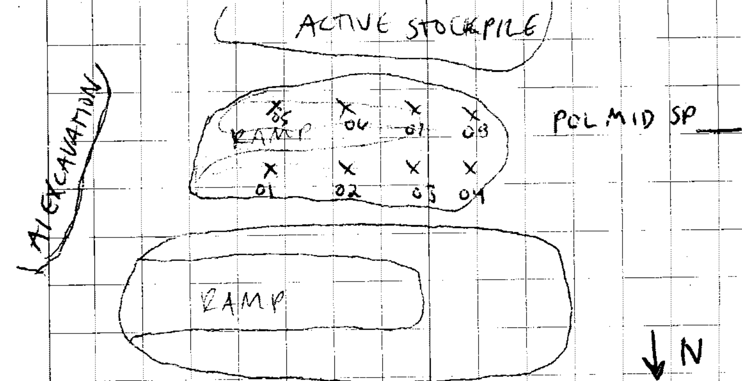
9/11/11 7:00 Safety Meeting - civic duties
Environmental Meeting

Site 13 results in - one hot PSP sample
Floor samples of large excavation
Site 13 bagging operations
Site 13 concrete removal, backfill at Al →
SE corner
high winds, cloudy, cool

- check TIA results (Test America Ø22 - Ø25)
- waiting on MOC TIA 85-88, MOC Al 67, 68
- need to sample middle POL stockpile near Al

sent in with site 21 Arsenic dig (pg 54)

~~MOC~~ POL MID SP Ø1 - ~~POL MID SP Ø8~~



17:30 Dinner

9/12/11 7:00 Safety Meeting
Environmental Meeting

Test America Total Access - JIA
11NCMOCSS022-25 results - clean Only W
sidewall remaining - on backfill
Site 13 dig at spots - field screening
sampling with Eric

Carey Cossaboom, Curtis Duncan (DEC)
arrive via security aviation for site visit

Backfill S side of A1 excavation
with stockpile 1

17:30 Dinner

9/13/11 7:00 Safety Meeting
Environmental Meeting

POL Excavation Maps

JIA - clean confirmation samples
N sidewall dirty - extends
into wet land
W sidewall field screening
samples pending

A1 - 3 dig at spot field screening
samples MOCA169-77 pending

Get excavation extent map from Jamie
send current excavation status to Jeremy
(clean confirmation, pending field lab sample
locs)

17:30 Dinner

9/14/11 7:00 Safety Meeting
Environmental Meeting
- Site 31 stockpile results
  18 dig out spots
- wipe test on N site 13 excavation
  utilidor concrete? New waste stream for concrete?

POL results for A1, JIA, POL stockpile #2 on instrument (2nd run calibration failed)

Labels, jars and flags prepared for site 13 and site 31 confirmation samples

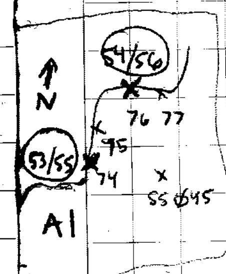
Site 31 through Ø96
Site 13 through 246

17:30 Dinner

9/15/11 7:00 Safety Meeting
Environmental Meeting

A1 dig out spots MOC A1 71, 72, 73

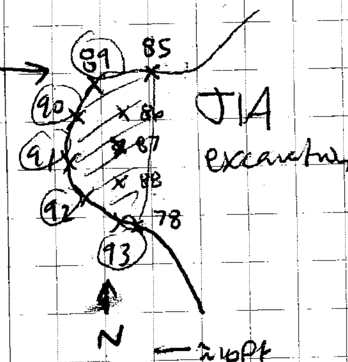
A1 confirmation samples:
11NCMOCSSØ53 (DUP 55)
colocated with MOC A1 74
9:30 (DUP 9:45)

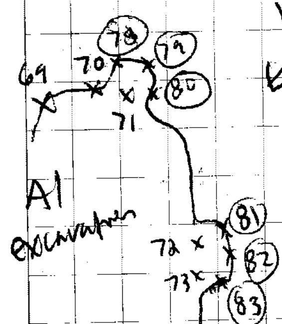


11NCMOCSSØ54 (DUP 56) MS/MSD
colocated with MOC A1 76
9:40 (DUP 9:50) clayey gravel, moist, grey, strong fuel odor

MOC JIA 89-93

MOC A1 78-83





17:30 Dinner

9/16/11 7:00 Safety Meeting
Environmental Meeting – PCB wipe samples for concrete at Site 13 and 31
Barge with bags
confirmation samples at A1

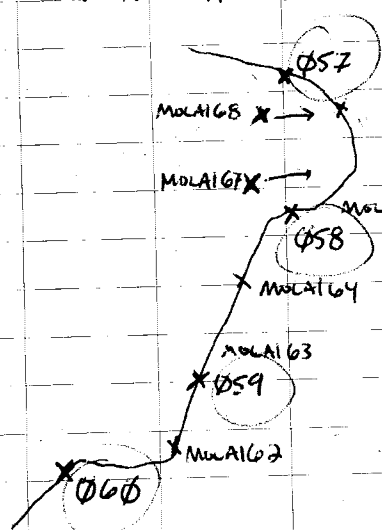
11NCMOCSS057 930

11NCMOCSS058 935

11NCMOCSS059 940

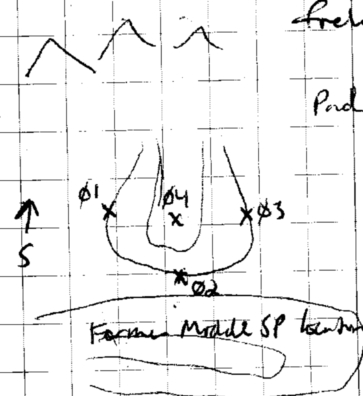
11NCMOCSS060 945

A1 EXCAVATION

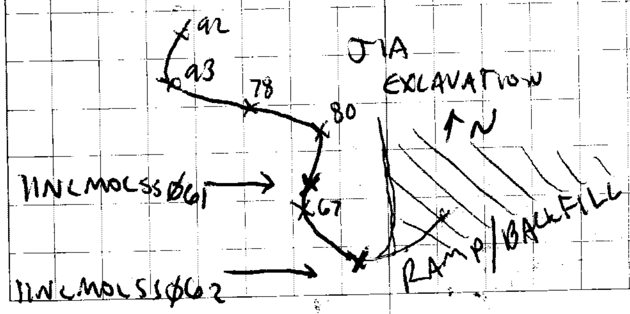


9/16/11
COC #14 11NCMOCSS053 – 060 sent with PCB confirmation samples to TA Denver

SOUTH MOZ SP01–04 taken for field lab



11NCMOCSS061 and 062 taken @ J1A 1415 and 1420 grey clay + gravel



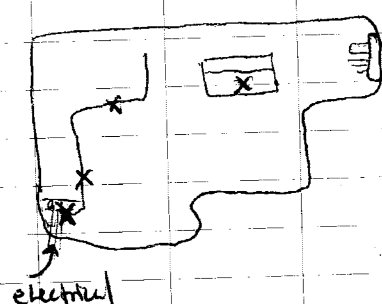
9/16/11

Mike, Michael Toole, Jeb, Dan, Emily
depart Bering Air

Site overview visit: Maze Thompson
Jeremy Craner, Em Barnhill, Chuck
Crowley ⟶

JIA: backfilled in areas with clean
confirmation samples, awaiting
field lab samples 89 - 93

Site 13: more dug-out spots, PCB
wipe test selected concrete
areas as shown:

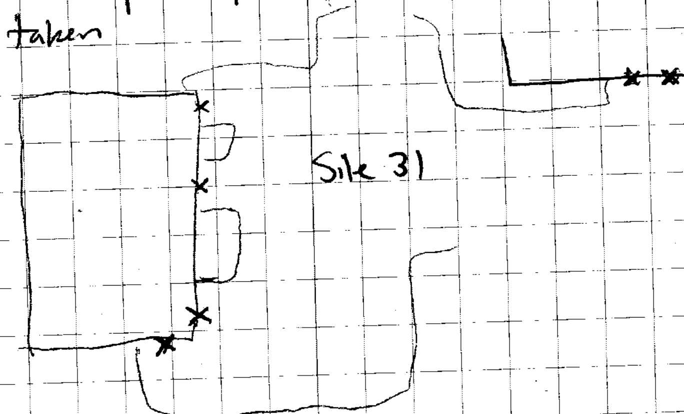


Site 31: PCB wipe samples

A1: Awaiting MOLA178 - 83
Partially backfilled

9/16/11

PCB wipe samples 31WØ1 - 31WØ17
taken



17:30 Dinner

96

9/17/11 7:00 Safety Meeting

Environmental Meeting

- face equipment, no backs to active equipment
- PPE

Confirmation sample clean areas @ Site 31

sample Pad 98 sump water

E Barnhill, K James Site 31

confirmation sampling

17:30 Dinner

97

9/18/11 7:00 Safety Meeting

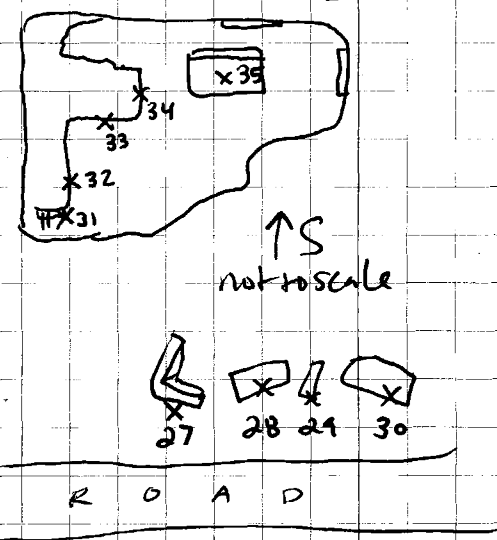
- building wind/chill factor below freezing. Work on beach.

Environmental

- POL samples pending for OTA, A1
- Pad 98 Sump, Site 9 VOC rerun

Site 13 PCB Wipe samples for concrete

13W27-13W35



YSI/turbidimeter #1 calibration

prep jars/labels for Pad 98 Sump samples

11NCMOCWA013 (MS/MSD) 1330

11NCMOCWA014 (DUP) 1340

9/18/11

Pad 98 Smp parameters

Temp	5.64°C	103 NTU
sp cond	214 uS/cm	
DO	~~117.5~~ 14.66 mg/L	
pH	8.00	
ORP	21.7	

17:30 Dinner

9/19/11

11NCMOCSS066	JIA	13:20	←
11NCMOCSS067	JIA	13:25	DUP (072) 135[illegible]
11NCMOCSS068	AI	13:30	MS/MSD
11NCMOCSS069	AI	13:35	
11NCMOCSS070	AI	13:40	
11NCMOCSS071	AI	13:45	

9/19/11 Safety Meeting - improving site communications

Environmental Meeting
- more site 31 results

Timesheets / site 98 sump water COC
Sump water shipped via Berry Air

AI ~~4~~ 6 primary samples to take

2 @ North end (@ MOCAI60, 79)
2 @ NE end (@ 83 and NOT 81)
1 new samp (MOCAI34)

JIA 5 primary samples to take, 1 DUP
MOCJIA80

Needs 2 DUPs, 1 MS/MSD (13 jars total)

73 DUP of 65 — 68 MS/MSD
72 DUP of 67

11NCMOCSS061	JIA	14:15 9/16
11NCMOCSS062	JIA	14:20 9/16
11NCMOCSS063	JIA	13:00
11NCMOCSS064	JIA	13:05
11NCMOCSS065		13:10 (DUP-073) 1355

9/20/11

7:00 Safety Meeting - morning darkness
Environmental Meeting - Site 9 VOC samples
JIA/A1 confirmation sample location survey
pit liner locations
Site 31/13 confirmation sampling

Site 9 Water VOC samples:

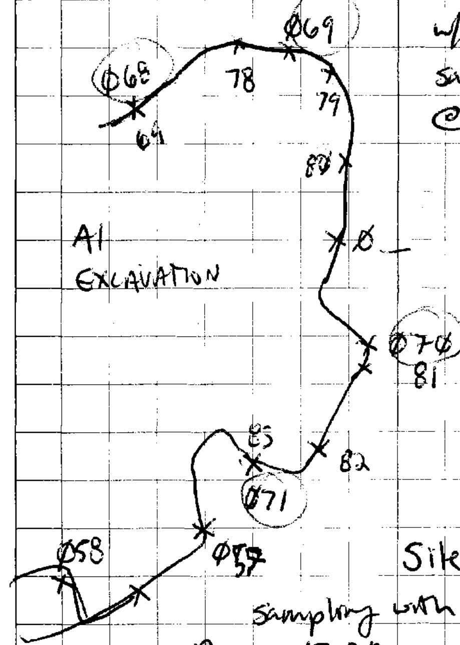
01 (11NC~~NC~~ Ø9 WA Ø6) 10:25 MS/MSD
4.15°C 7.01 pH
85 uS/cm 75.7 ORP
11.49 mg/L DO

02 (11NCØ9WAØ7) 10:35
4.99°C 6.30 pH
99 uS/cm -98.4 ORP
6.61 mg/L DO

03 (11NCØ9WAØ8) 10:40
4.66°C 6.95 pH
50 uS/cm -15.9 ORP
9.63 mg/L DO

04 (11NCØ9WAØ9 and 1Ø) DUP 1050, 1055
6.47°C 6.26 pH
71 uS/cm 16.3 ORP
8.15 mg/L

9/20/11



liner placed in areas
w/out confirmation
sample results
@ A1, JIA

Site 31 confirmation
sampling with R. James E Barnhill
Dinner 17:30
Sample management, packing

11 hours

9/21/11 7:00 Safety Meeting

Environmental Meeting

Site 13 PCB concrete pipe results (ND)

Lab shut down

Site 13 confirmation sampling

Sample shipment

COC #20 Site 9 Water VOCs

COC # ~~20~~ 19 POL confirmation

Site 13 pre stock pile area

confirmation sampling

9/21/11

POL Excavation Confirmation

J1A 11NCMOCSS Ø01 – Ø03 8/02

11NCMOCSS Ø04 – Ø19 8/03 (Ø20 + Ø21 DUPS of Ø13 and Ø14)

COC #3

[Ø08 and Ø09 dirty – dig out

Ø12 – Ø17 dirty (N wall) + Ø20 Ø21 DUPS

J1A 11NCMOCSS Ø22 – Ø24 8/20 (Ø25 DUP of Ø23)

COC #9

A1 11NCMOCSS Ø26 – Ø49 8/24 (Ø51 DUP of Ø48)

[Ø38, Ø39, Ø33, Ø34

removed from shipment

Ø50 and Ø52 DUPS of Ø38 and Ø39

A1 11NCMOCSS Ø50 and 11NCMOCSS Ø52 8/24

(21 samples, 1 DUP due to accidental removal of 2 additional DUPS – Ø38 + Ø39)

A1 11NCMOCSS Ø53 – Ø54 9/15 (Ø55 and Ø56 DUPS of Ø53 and Ø54)

J1A/A1 11NCMOCSS Ø57 – Ø60 9/16

11NCMOCSS Ø61 – Ø62 9/16

A1/J1A 11NCMOCSS Ø63 – Ø67 (Ø72 DUP of Ø67, Ø73 DUP of Ø65)

11NCMOCSS Ø68 – Ø71 9/19

COC #19

9/22/11 7:00 Safety Meeting
Environmental Meeting
- Site ~~31~~ 13 confirmation sampling
- Sump (Pad 98) sample cooler still in transit

Site 13 confirmation sampling - finish pre stockpile sampling excavation area

Site 13 Northern excavation complete - Jamie to sample survey

Dinner 17:30
sample packaging - 2 hrs

12 hours

9/23/11 7:00 Safety Meeting
Environmental Meeting
- liner in Site 13 and Site 31 excavations
- bags in on barge Saturday (maybe)
- Security flight - J. Carver, M Hernandez + Ibargwen out

Package PCB confirmation samples for cooler shipment
COC #21, 6 coolers of PCB soil samples, Site 13
Matt, Jeremy, Talon, Marty, Jeff out, lab equipment out on Bering Air Security aviation flight

17:30 dinner

9/24/11 0700 Safety Meeting - excavation safety
Environmental Meeting
- no word on barge as of this morning
- continue backfill of lined excavations
- awaiting PAH results for Pad 9B sump water

- waste connex
↳ drum for tyvek
drum for wastewater (PCB decon, YSI cal)

Jamie working on ~~final~~ prelim XE POL excavation maps for review of sample ID #s

Environment connex equipment inventory, clean up and packing

17:30 Dinner

9/25/11 0700 Safety Meeting
- no word on bags
- Jamie to leave Monday with me
Environmental meeting
- laminated haz placards for hazmat bags (will be first to load onto barge)

Maps from Jamie - review JIA/AI confirmation sample loc IDs and relative plan view locations

17:30 Dinner

9/26/11 8:00 Safety Meeting

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE CAPE
Well No.: 10-1
Job Number: 32110008
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Company: BERS
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 7/15/11
Time: 15:30
Purged by: L. Kleppin
(Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC): 6.86

Water Level Depth (WL in feet BTOC): 3.58

3.3' x 0.16 = 0.528 x 3 = 1.58 gallons

5.5'

PURGE METHOD

☐ Pump – Type:

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic.

☐ Other – Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☒ Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

15:50 Start 16:25 Stop 35 Elapsed

PURGE RATE

Initial 0.1 gpm Final 0.1 gpm

ACTUAL PURGE VOLUME

3 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T ☒ °C ☐ °F	Specific Cond. (µS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
10	3.59	5.9V		5.53	57	5.36	95.1	6.42	25.4	
15	3.55			5.65	56	5.40	91.8	5.32	19.1	
20	3.54			5.79	56	5.41	90.2	5.06	15.8	
25	3.50			6.01	57	5.42	87.3	4.84	13.5	
30	3.49			6.09	57	5.45	86.6	4.89	16.1	
35	3.51			6.03	56	5.45	85.5	4.74	14.3	3 gal
			3gal/35min							

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name: NE CAPE
Job Number: 32110008 Date: 7/15/11 Time: 16:30
Recorded by: [signature] (Signature) Sampled by: L Kleppin

WELL INFORMATION

Well Number 10-1 **Well Location** MOC

Casing Diameter (D in inches): Total Depth of Casing (TD in feet BTOC): 6.86

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ____ Water Level Depth (WL in feet BTOC): 3.58

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ☐ Grab – Type
☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Other – Type:

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
~~10~~ 11NCMOWA01		BTEX, GRO, Methane	HCl/HNO3	TA-Tacoma	
		PCB DRO/RRO/ PAH			
		Tot. Metals Diss. Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE CAPE
Well No.: 26MW1 11NCMocWA02
Job Number:
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Company: BERS
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 7/16/11 Time: 10:15
Purged by: L. KLEPPIN
(Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC): 42

Water Level Depth (WL in feet BTOC): 32.41

10' x 0.16 x 3 = 4.8 gal

37

PURGE METHOD

☐ Pump – Type:

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic.

☐ Other – Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☒ Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

10:15 Start 10:50 Stop 35 Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

5 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T ☒°C ☐°F	Specific Cond. (μS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
20	32.43	14.1V		3.71	61	5.77	203.5	12.74	18.3	
25	32.41			3.75	61	5.77	202.7	12.55	13.7	
30	32.42			3.49	61	5.74	202.8	12.68	14.8	
35	32.41			3.47	61	5.74	202.8	12.63	24.3	5 gal

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name NECAPE

Job Number ______ Date 7/10/11 Time: 11:15

Recorded by [signature] (Signature) Sampled by L. KLEPPIN

WELL INFORMATION

Well Number 26MW1 **Well Location** MOC

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ______

Total Depth of Casing (TD in feet BTOC): 42

Water Level Depth (WL in feet BTOC): 32.43

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ______ ☐ Grab – Type ______

☒ Submersible ☐ Centrifugal ☐ Bladder ______ ☐ Other – Type: ______

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA02		PCB, PAH, DRO/RRO	HCl, HNO3	TA Tacoma	no odor, sheen
		BTEX, GRO, Methane			
		Metals (Tot + Diss)			
		MNA			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.
MS/MSD	

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE CAPE
Job Number: 32110008
Company: BERS
Purged by: L. KLEPPIN

Well No.: 22MW2
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 7/16/11 Time: 17:45

(Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC):

Water Level Depth (WL in feet BTOC): 29.08

31'

PURGE METHOD

☐ Pump – Type:

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic.

☐ Other – Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

17:15 Start Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

3 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T ☒ °C ☐ °F	Specific Cond. (µS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
10	29.06	variable	X	5.91	59	5.66	49.9	12.35	6.05	
15	29.10			5.25	59	5.61	52.2	11.38	3.58	
20	29.19			6.22	60	5.65	51.4	11.00	3.02	
25	29.15			6.31	61	5.69	50.8	12.01	1.39	
30	29.08			6.40	60	5.63	53.7	10.99	1.63	3

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name: NECAPE
Job Number: 3211000B
Date: 7/16/11
Time: 17:45
Recorded by: [signature] (Signature)
Sampled by: L. Kleppin

WELL INFORMATION

Well Number: 22MW2
Well Location: MOC

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC): 29.04'

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type:
☐ Grab – Type
☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Other – Type:

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA03		BTEX, GRO, Methane	HCl, HNO3	TA Tacoma	no odor or sheen
		PCB, DRO/RRO, PAH			
		Tot Metals			
		Diss. Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE Cape
Job Number: 32110002
Company: BERS
Purged by: L. Kleppin

Well No.: 20MW1
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 7/17/11
Time: 9:30

(Signature)

11NCMOCWAC1 10:10

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC):

Water Level Depth (WL in feet BTOC): 20.01

23'

PURGE METHOD

☐ Pump – Type:

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic.

☐ Other – Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

9:30 Start 10:05 Stop 35 Elapsed

PURGE RATE

Initial ____ gpm Final ____ gpm

ACTUAL PURGE VOLUME

____ gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T ☒ °C ☐ °F	Specific Cond. (μS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
10	19.91			2.55	79	5.69	170.1	12.02	29.7	
15	19.99			2.46	81	5.77	148.2	11.58	18.3	
20	20.00			2.44	81	5.82	137.3	11.29	11.1	
25	20.01			2.36	82	5.88	129.0	10.89	10.6	
30	20.00			2.34	82	5.89	127.4	10.77	8.76	
35	20.01			2.33	82	5.89	125.8	10.78	7.87	

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name NE CAPE
Job Number 32110008 Date 7/17/11 Time: 10:10
Recorded by L. Kleppin (Signature) Sampled by L. Kleppin

WELL INFORMATION

Well Number 20MW1 **Well Location** MOC

Casing Diameter (D in inches): Total Depth of Casing (TD in feet BTOC):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ______ Water Level Depth (WL in feet BTOC): 20.01

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ______ ☐ Grab – Type ______

☒ Submersible ☐ Centrifugal ☐ Bladder ______ ☐ Other – Type: ______

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA04		BTEX, GRO, Methane, PAH	HCl, HNO_3	TA - Tacoma	
		DRO/RRO, PCB, Tot Met			
		Diss. Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE Cape
Job Number: 32110002
Company: BERS
Purged by: L. Kleppin

Well No.: 17MW1
Well Type: ☒ Monitor ☐ Extraction ☐ Other ____
Well Material: ☒ PVC ☐ St. Steel ☐ Other ____
Date: 7/17/11 Time: 11:20

(Signature)

11NCMOCWA05 12:00

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ____

Total Depth of Casing (TD in feet BTOC): ____

Water Level Depth (WL in feet BTOC): 9.99

12'

PURGE METHOD

☐ Pump – Type: ____

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic.

☐ Other – Type: ____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other

Depth in feet (BTOC): ____ Screen Interval in Feet (BTOC)

PURGE TIME

11:20 Start ____ Stop ____ Elapsed

PURGE RATE

Initial ____ gpm Final ____ gpm

ACTUAL PURGE VOLUME

____ gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T ☒ °C ☐ °F	Specific Cond. (µS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
~~5~~ 3	9.99			2.68	67	5.69	375.1	10.73	14.8	
~~10~~ 6	9.99			2.65	67	5.71	317.4	9.31	8.7	
~~15~~ 9	9.99			2.58	67	5.73	293.0	9.66	4.76	
~~20~~ 12	10			3.02	68	5.76	270.1	9.04	2.29	
~~25~~ 15	9.99			2.99	68	5.79	257.1	9.03	1.87	
~~30~~ 18	9.99			2.92	67	5.80	241.1	9.43	1.65	
21	9.99			2.73	67	5.78	239.1	9.47	1.72	

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name NE CAPE
Job Number 32110008 Date 7/17/11 Time: ~~11:20~~ 12:00 LK
Recorded by [signature] (Signature) Sampled by L. Klepper

WELL INFORMATION

Well Number 17MW1 **Well Location**

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC):

Water Level Depth (WL in feet BTOC): 9.99

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ☐ Grab – Type

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Other – Type:

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NLMOLWA05		BTEX, GRO, Methane	HCl, HNO$_3$	TA Tacoma	
		PCB, DRO/RRO, PAH			
		Total Metals, Diss Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE CAPE
Job Number:
Company: BERS
Purged by: L. Kleppin

Well No.: MW 88-5
Well Type: [X] Monitor [ ] Extraction [ ] Other
Well Material: [X] PVC [ ] St. Steel [ ] Other
Date: 7/17/11 Time: 14:30
(Signature)

11NCMOCWA06 (07 DUP)

WELL PURGING

15:15 15:30

PURGE VOLUME

Casing Diameter (D in inches):

[X] 2-inch [ ] 4-inch [ ] 6-inch [ ] Other

Total Depth of Casing (TD in feet BTOC):

Water Level Depth (WL in feet BTOC): 8.95

12'

PURGE METHOD

[ ] Pump – Type:

[X] Submersible [ ] Centrifugal [ ] Bladder [ ] Peristaltic

[ ] Other – Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top [ ] Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

14:30 Start Stop 39 Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

4 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T [X] °C [ ] °F	Specific Cond. (μS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
5	9.01			2.21	308	6.57	-116.5	2.60	16.0	
10	9.01			2.28	289	6.62	-113.0	1.82	13.3	
15	9.02			2.38	280	6.64	-111.7	1.51	13.5	
20	9.00			2.51	261	6.65	-108.1	1.21	10.00	
25	9.00			2.66	255	6.65	-105.0	1.03	9.38	
30	9.00			2.72	247	6.65	-104.1	0.80	7.01	
33	9.00			2.75	245	6.65	-103.3	0.81	7.33	
36	9.00			2.64	242	6.64	-101.0	0.68	6.18	
39	9.00			2.59	241	6.64	-100.3	0.58	6.03	4

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name NE CAPE
Job Number 32110008 Date 7/17/11 Time: 15:15
Recorded by [signature] (Signature) Sampled by L. Kleppin

WELL INFORMATION

Well Number 88-5 **Well Location** MOC

Casing Diameter (D in inches): Total Depth of Casing (TD in feet BTOC):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other Water Level Depth (WL in feet BTOC): 8.95

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ☐ Grab – Type
☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Other – Type:

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA06		BTEX, GRO, Methane	HCl, HNO$_3$	TA Tacoma	odor, sheen
		PCB, DRO/RRO, PAH			
		Tot. Metals, Diss. Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.
11NCMOCWA06	11NCMOCWA07 (15:30)

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE Cape
Job Number: 32110008
Company: BEES

Well No.: MW 88-4
Well Type: ☒ Monitor ☐ Extraction ☐ Other ______
Well Material: ☒ PVC ☐ St. Steel ☐ Other ______
Date: 7/11/11 Time: 16:23

Purged by: L. Klyn
(Signature)

11NCMOCWA08

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ______

Total Depth of Casing (TD in feet BTOC): ______

Water Level Depth (WL in feet BTOC): 7.35

PURGE METHOD

☐ Pump -- Type: ______

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic

☐ Other -- Type: ______

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other

Depth in feet (BTOC): 9' Screen Interval in Feet (BTOC) ______

PURGE TIME

16:23 Start ______ Stop 30 Elapsed

PURGE RATE

Initial ______ gpm Final ______ gpm

ACTUAL PURGE VOLUME

5 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth below MP	Pump Dial	Purge Rate (ml/min)	T ☒°C ☐°F	Specific Cond. (µS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
~~5~~ 3	7.44			1.06	126	6.73	-71.0	1.13	34.7	
~~10~~ 6	7.45			1.05	136	6.73	-71.3	1.05	24.8	
~~15~~ 9	7.45			1.03	143	6.81	-76.2	1.17	15.2	
~~20~~ 12	7.44			1.08	146	6.81	-77.2	1.05	11.1	
15	7.45			1.17	156	6.83	-80.0	0.73	9.34	
18	7.45			1.13	162	6.81	-82.4	0.45	6.97	
21	7.45			1.14	167	6.82	-83.5	0.33	6.41	
23	7.45			1.14	169	6.82	-84.0	0.34	6.20	5
26	7.45			1.13	172	6.81	-85.7	0.30	4.33	
29	7.45			1.16	173	6.80	-86.2	0.27	4.23	

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name: NE CApE
Job Number: 32110008 Date: 7/17/11 Time: 17:00
Recorded by: [signature] (Signature) Sampled by: L. Kleppin

WELL INFORMATION

Well Number 88-4 **Well Location** MOC

Casing Diameter (D in inches): Total Depth of Casing (TD in feet BTOC):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ______ Water Level Depth (WL in feet BTOC): 7.35

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ______ ☐ Grab – Type ______

☒ Submersible ☐ Centrifugal ☐ Bladder ______ ☐ Other – Type: ______

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA08		BTEX, GRO, Methane	HCl, HNO_3	TA Tacoma	odor
		PCB, DRO/RRO, PAH			
		Tot. Metals Diss Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NE CAPE
Well No.: 88-1
Job Number: 311
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Company: BERS
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 7/18/11
Time: 15:34
Purged by: L. Kloppin
(Signature)

11NEMOLWA09 16:30

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC): 24.50

Water Level Depth (WL in feet BTOC): 14.40

Mud in casing - purging until clear before taking parameters @0.4 gal/min 19

PURGE METHOD

☐ Pump – Type:

☒ Submersible ☐ Centrifugal ☐ Bladder ☐ Peristaltic

☐ Other – Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

15:34 Start Stop Elapsed

PURGE RATE

Initial 0.4 gpm Final 0.4 gpm

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth Below MP	Pump Dial	Purge Rate (ml/min)	T ☒ °C ☐ °F	Specific Cond. (µS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
36	14.42		0.4 gal/min	2.28	60	5.70	72.4	1.98	28.1	12 gal
39	14.42			2.31	60	5.71	72.3	1.97	28.3	
42	14.42			2.33	60	5.71	72.1	1.97	24.6	
45	14.42			2.33	60	5.71	72.1	2.01	21.9	
50	14.42			2.30	60	5.74	71.3	2.08	17.8	
55	14.42			2.30	60	5.75	70.9	2.09	16.2	

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name: NE CAPE
Job Number:
Date: 7/18/11
Time: 16:30
Recorded by: (Signature)
Sampled by: L. Kleppin

WELL INFORMATION

Well Number BB-1
Well Location MOC

Casing Diameter (D in inches):
☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other

Total Depth of Casing (TD in feet BTOC):
Water Level Depth (WL in feet BTOC): 14.40

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type:
☐ Grab – Type
☒ Submersible ☐ Centrifugal ☐ Bladder
☐ Other – Type:

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA09		PCB, PAH, DRO/RRO, GRO	HCl, HNO3	TA Tacoma	
		BTEX, Methane, Tot. Met			
		Dissolved metals, MNA			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

GROUNDWATER LOW-FLOW PURGING FORM

Job Name: NG CAPE
Well No.: 88-10
Job Number:
Well Type: [X] Monitor [ ] Extraction [ ] Other
Company: BERS
Well Material: [X] PVC [ ] St. Steel [ ] Other
Date: 7/18/11
Time: 17:30
Purged by: L. Kleppin
(Signature)

WNCMACWA10 18:30

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):

[X] 2-inch [ ] 4-inch [ ] 6-inch [ ] Other

Total Depth of Casing (TD in feet BTOC):

Water Level Depth (WL in feet BTOC): 18.13

20

PURGE METHOD

[ ] Pump – Type:

[X] Submersible [ ] Centrifugal [ ] Bladder [ ] Peristaltic

[ ] Other – Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top [ ] Other

Depth in feet (BTOC): Screen Interval in Feet (BTOC)

PURGE TIME

17:30 Start Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	Water Depth Below MP	Pump Dial	Purge Rate (ml/min)	T [X] °C [ ] °F	Specific Cond. (µS/cm)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Cumulative Volume Purged
30	18.18		0.1 gal/min	3.76	61	5.77	54.8	1.39	14.3	3
35	18.18		variable	3.50	58	5.79	50.6	1.88	30.3	
45	18.18		variable	2.83	60	5.76	50.6	1.77	27.5	
50	18.17			3.24	60	5.75	50.6	1.62	10.7	
55	18.20			3.84	61	5.75	49.8	1.54	12.3	
60	18.20			4.43	61	5.78	47.7	1.55	7.64	

GROUNDWATER SAMPLING FORM
(To Accompany Low-Flow Purging Form)

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Job Name NE CAPE

Job Number 34?0008 Date 7/18/11 Time: 18:30

Recorded by [signature] (Signature) Sampled by L. Kleppin

WELL INFORMATION

Well Number 88-10 **Well Location** MOC

Casing Diameter (D in inches): Total Depth of Casing (TD in feet BTOC):

☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other ______ Water Level Depth (WL in feet BTOC): 18.13

WELL SAMPLING

SAMPLING METHOD

☐ Bailer – Type: ______ ☐ Grab – Type ______

☒ Submersible ☐ Centrifugal ☐ Bladder ______ ☐ Other – Type: ______

SAMPLING DISTRIBUTION

Sample No.	Volume	Analysis Requested	Preservatives	Lab	Comments
11NCMOCWA10		BTEX, GRO, Methane	HCl, HNO_3	TA Tacoma	
		PCB, DRO/RRO, PAH			
		Tot. Metals Diss Metals			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

NE Cape 2011

"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 351

Bulk

July 16, 2011

MOCT-1A
MOCT-1B
MOCT-1C
MOCT-1D
MOCT-1E

July 17 MOCT-1F
MOCT-1G
MOCTBW01

July 17 (continued)
MOCT-2A
MOCT-2B
MOCT-2C
MOCT-2D
MOCT-2-E
MOCT-2F
MOCT-2G MOCTBW02

MOCT-3A
MOCT-3B
MOCT-3C
MOCT-3D
MOCT-3E

July 17, 2011 <continued>

MOCT-3F
MOCT-3G
MOCTBWØ3

MOCT-4A
MOCT-4B
MOCT-4C
MOCT 4D
MOCT 4E
MOCT 4F
MOCT 4G
MOCTBWØ4

MOCT-5A
MOCT-5B
MOCT-5C
MOCT-5D
MOCT-5E
MOCT-5F
MOCT-5G
MOCT BWØ5

MOCT-6A
MOCT-6B

July 18, 2011

MOCT - 6C
MOCT - 6D
MOCT - 6E
MOCT - 6F
MOCT - 6G

MOCTBWØ6

MOCT - 7A
MOCT - 7B
MOCT - 7C
MOCT - 7D
MOCT - 7E
MOCT - 7F
MOCT - 7G

MOCTBWØ7

MOCT - 8A
MOCT - 8B
MOCT - 8C
MOCT - 8D
MOCT - 8E
MOCT - 8F

MOCTBWØ8

July 18, 2011 <continued>

MOCT - 9A
MOCT - 9B
MOCT - 9C
MOCT - 9D
MOCT - 9E
MOCT - 9F
MOCT - 9G

MOCTBWØ9

MOCT - 10A
MOCT - 10B
MOCT - 10C
MOCT - 10D

July 20, 2011

MOC-1A J1A excavation, 0-4' bgs
MOC-1B
MOC-1C
MOC-1D
MOC-1E
MOC-1F MOCBW01
MOC-1G

MOC-2A
MOC-2B
MOC-2C
MOC-2D
MOC-2E
MOC-2F
MOC-2G MOCBW02

MOC-3A
MOC-3B
MOC-3C

7/21/11
(9) MOC-3D
(10) MOC-3E
(11) MOC-3F
(12) MOC-3G MOCBW03

(5) MOC-4A
(6) MOC-4B
(7) MOC-4C
(8) MOC-4D
(9) MOC-4E
(10) MOC-4F
(11) MOC-4G MOCBW04

(12) MOC-5A
(13) MOC-5B
(14) MOC-5C
(15) MOC-5D
(16) MOC-5E
(17) MOC-5F
(18) MOC-5G MOCBW05

(19) MOC-6A

July 21, 2011 (continued)

20 MOC-6B
21 MOC-6C
22 MOC-6D
23 MOC-6E
24 MOC-6F
25 MOC-6G   MOC BW06

MOC-7A 26
MOC-7B 27
MOC-7C 28
MOC-7D 29
MOC-7E 30
MOC-7F 31
MOCBWØ7

MOC-8A 32
MOC-8B 33
MOC-8C 34
MOC-8D 35
MOC-8E 36

July 22, 2011

MOC-8F   MOCBW08
MOC-8G   duplicate *MOCBWØØ1

July 22 (continued)

MOC-9A
MOC-9B
MOC-9C
MOC-9D
MOC-9E
MOC-9F
MOC-9G
MOCBWØ9

MOC-1ØA
MOC-1ØB
MOC-1ØC
MOC-1ØD
MOC-1ØE
MOC-1ØF
MOC-1ØG   MOC BW1Ø

MOC-11A
MOC-11B
MOC-11C
MOC-11D
MOC-11E
MOC-11F

July 22, 2011 (continued)

MOC - 11G MOCBW11

MOC - 12 A
MOC - 12 B
MOC - 12 C
MOC - 12 D
MOC 12 E
MOC 12 F
MOC 12 G MOCBW12

MOC 13A
MOC 13 B
MOC 13 C
MOC 13 D
MOC 13 E
MOC 13 F
MOC 13 G MOC BW 13

MOC 14A
MOC 14 B
MOC 14 C
MOC 14 D

7/23/11

MOC 14 E
MOC 14 F
MOC 14 G MOCBW14

MOC-15A
MOC-15B
MOC-15C
MOC-15D
MOC-15E
MOC-15F
MOC-15G MOCBW15

13-1A
13-1B
13-1C 13BWØ1

31-1A
31-~~2A~~ 1B

July 24, 2011

31-1C	
31-1D	
31-1E	
31-1F	
31-1G	31BWØ1
31-2A	
31-2B	
31-2C	
31-2D	
31-2E	
31-2F	
31-2G	31BWØ2
31-3A	
31-3B	31BWØ3

7/25/11

MOC 16A	clayey silt/silty clay with gravel
MOC 16B	
MOC 16C	
MOC 16D	
MOC 16E	
MOC 16F	
MOC 16G	MOCBW16
MOC17A	
MOC17B	
MOC17C	
MOC17D	
MOC17E	
MOC17F	
MOC17G	MOCBW17
MOC 18A	
MOC 18B	
MOC 18C	
MOC 18D	
MOC 18E	
MOC 18F	
MOC 18G	MOCBW18

7/25/11

MOC19A
MOC19B
MOC19C
MOC19D
MOC19E
MOC19F
MOC19G MOCBW19

MOC20A
MOC20B
MOC20C
MOC20D

7/26/11

MOC20E
MOC20F
MOC20G MOCBW20

MOC21A
MOC21B
MOC21C
MOC21D
MOC21E

7/26/11

MOC21F
MOC21G MOCBW21

MOC22A
MOC22B
MOC22C
MOC22D
MOC22E
MOC22F
MOC22G MOCBW22

MOC23A
MOC23B
MOC23C
MOC23D
MOC23E
MOC23F
MOC23G MOCBW23

MOC24A
MOC24B
MOC24C
MOC24D
0 MOC24E MOCBW24

7/26/11

Moc 24 F

Moc 24G

Moc 25A

Moc 25B

Moc 25C

Moc 25D

Moc 25E

Moc 25 F MocBW 25

Moc 25 G

7/27/11

Moc 26A

Moc 26B

Moc 26C

Moc 26D

Moc 26E

Moc 26F

Moc 26G MocBW26

Moc 27A

Moc 27B

7/27/11

Moc 27C

Moc 27D

Moc 27E

Moc 27F

Moc 27G MocBW27

Moc 28A

Moc 28B

Moc 28C

Moc 28D

Moc 28E

~~Mo~~

7/28/11

Moc 28F

Moc 28 G MocBW28

Moc 29A

Moc 29 B

Moc 29C

Moc 29 D

Moc 29 E

Moc 29 F

Moc 29G Moc BW29

7/28/11

MOC 30 B
MOC 30 C
MOC 30 D
MOC 30 E
MOC 30 F
MOC 30 G

7/29/11
MOC 31 A
MOC 31 B
MOC 31 C
MOC 31 D
MOC 31 E
MOC 31 F MOCBW31
MOC 31 G MOC BW ØØ2 Duplicate

MOC 32 A
MOC 32 B
MOC 32 C
MOC 32 D
MOC 32 E
MOC 32 F
MOC 32 G MOCBW 32

MOC 33 A
MOC 33 B

7/30/11
MOC 33 C
MOC 33 D
MOC 33 E
MOC 33 F
MOC 33 G MOCBW 33

MOC 34 A
MOC 34 B
MOC 34 C
MOC 34 D
MOC 34 E
MOC 34 F
MOC 34 G MOCBW 34

MOC 35 A
MOC 35 B
MOC 35 C
MOC 35 D
MOC 35 E

7/31/11

MOC35F
MOC35G MOCBW35

MOC36A
MOC36B
MOC36C
MOC36D
MOC36E
MOC36F
MOC36G MOCBW36
duplicate MOCBWØØ3

8/01/11

MOC37A
MOC37B
MOC37C
MOC37D
MOC37E
MOC37F MOCBW38
MOC38G

MOC38A
MOC38B
MOC38C
MOC38D
MOC38E

MOC38F
MOC38G MOCBW38

MOC39A
MOC39B

8/02/11

MOC39C
MOC39D
MOC39E
MOC39F
MOC39G MOCBW39

MOC40A
MOC40B
MOC40C
MOC40D
MOC40E
MOC40F
MOC40G MOCBW40

MOC41A
MOC41B
MOC41C

8/06/11

Moc41 D
Moc41 E
Moc 41 F
Moc 41 G MOCBW41

MOC42A
MOC42 B
MOC42C
MOC 42 D
MOC 42E
MOC 42 F
MOC 42 G MOCBW42

MOC 43 A
MOC 43 B
MOC 43 C
MOC 43 D

8/11/11
MOC43 E
MOC43 F 2180 LBS
MOC43G MOC BW 43

MOC 44 A
MOC 44 B
MOC 44 C
MOC 44 D
MOC 44 E
MOC 44 F
MOC44 G MOC BW 44

MOC 45 A
MOC 45 B
MOC 45 C
MOC 45 D

8/12/11
MOC 45 E
MOC 45 F
MOC 45 G MOC BW 45

MOC 46 A
MOC 46 B
MOC 46 C
MOC 46 D
MOC 46 E
MOC 46 F
MOC 46 G MOCBW46
Duplicate MOCBW004

8/12/11

MOC47 A	
MOC47 B	
MOC47 C	
MOC47 D	
MOC47 E	
MOC47 F	
MOC47 G	MOCBW47
MOC48 A	
MOC48 B	
MOC48 C	
MOC48 D	
MOC48 E	
MOC48 F	
MOC48 G	MOCBW 48
MOC49 A	
MOC49 B	
MOC49 C	
MOC49 D	
MOC49 E	
MOC49 F	
MOC49 G	MOC BW 49

MOC50 A	
MOC 50 B	
MOC50 C	
MOC50 D	8/13/11
MOC50 E	
MOC50 F	
MOC50 G	MOC BW50
MOC51 A	
MOC51 B	
MOC51 C	
MOC51 D	
MOC51 E	
MOC51 F	
MOC51 G	MOC BW 51
MOC52 A	
MOC52 B	
MOC52 C	
MOC52 D	
MOC52 E	
MOC52 F	
MOC52 G	MOCBW52

8/13/11

MOC53A
MOC53B
MOC53C
MOC53D
MOC53E
MOC53F
MOC53G MOCBW53

MOC54A
MOC54B
MOC54C
MOC54D
MOC54E
MOC54F
MOC54G MOCBW54

MOC55A
MOC55B
MOC55C
MOC55D
MOC55E
MOC55F
MOC55G MOCBW55

8/13/11

MOC56A
MOC56B
MOC56C
MOC56D
MOC56E
MOC56F
MOC56G MOCBW56

MOC57A
MOC57B
MOC57C
MOC57D

8/14/11

MOC57E
MOC57F
MOC57G MOCBW57

MOC58A
MOC58B
MOC58C
MOC58D
MOC58E
MOC58F MOCBW58
MOC58G MOC BW 005 Duplicate

8/14/11

MOC59A
MOC59B
MOC59C
MOC59D
MOC59E
MOC59F
MOC59G MOCBW59

MOC60A
MOC60B
MOC60C
MOC60D
MOC60E
MOC60F
MOC60G MOCBW60

8/15/11

MOC61A
MOC61B
MOC61C
MOC61D
MOC61E
MOC61F
MOC61G MOCBW61

8/15/11

MOC62A
MOC62B
MOC62C
MOC62D
MOC62E
MOC62F
MOC62G MOCBW62

8/16/11

MOC-63A
MOC-63B
MOC63C
MOC63D
MOC63E
MOC63F
MOC63G MOCBW63

MOC64A
MOC64B
MOC64C
MOC64D
MOC64E
MOC64F

8/18/11 MOC64G MOCBW64

MOC65A
MOC65B

8/20/11 MOC65C
MOC65D
MOC65E
MOC65F MOCBW65
MOC65G @ 1350
MOC66A
MOC66B
MOC66C
MOC66D
MOC66E
MOC66F
MOC66G MOCBW66
@1600

8/21/11 MOC67A
MOC67B
MOC67C

8/21/11 MOC67D
MOC67E
MOC67F
MOC67G MOCBW67

21-01A
21-01B
11NC2155008 → Test America
Arsenic Dig

MOC68A
MOC68B
MOC68C
MOC68D
MOC68E
MOC68F
MOC68G MOCBW68

MOC69A
MOC69B

9/1/11
MOC69C → rename MOC69F
MOC69D
MOC69E
MOC69G

9/1/11 MOC 70 A
MOC 70 B
MOC 70 C
MOC 70 D
MOC 70 E
MOC 70 F
MOC 70 G MOC BW 70

MOC 71 A
MOC 71 B
MOC 71 C
MOC 71 D
MOC 71 E
MOC 71 F
MOC 71 G MOC BW 71

9/2/11 MOC 72 A
MOC 72 B
MOC 72 C
MOC 72 D
MOC 72 E
MOC 72 F
MOC 72 G MOC BW 72

MOC 73 A

9/2/11
MOC 73 B
MOC 73 C
MOC 73 D
MOC 73 E
MOC 73 F
MOC 73 G MOC BW 73

MOC 74 A
MOC 74 B
MOC 74 C
MOC 74 D
MOC 74 E
MOC 74 F
MOC 74 G MOC BW 74 DUPLICATE MOC BW 0007

MOC 75 A
MOC 75 B
MOC 75 C
MOC 75 D
MOC 75 E
MOC 75 F
MOC 75 G MOC BW 75

MOC 76 A

9/2/11
MOC 76 B

9/4/11 MOC 76 C
MOC 76 D
MOC 76 E
MOC 76 F
MOC 76 G MOC BW 76

MOC 77 A
MOC 77 B
MOC 77 C
MOC 77 D
MOC 77 E
MOC 77 F
MOC 77 G MOC BW 77

MOC 78 A
MOC 78 B
MOC 78 C
MOC 78 D
MOC 78 E
MOC 78 F
MOC 78 G MOC ~~B~~BW 78

9/4/11
MOC 79 A
MOC 79 B
MOC 79 C
MOC 79 D
MOC 79 E
MOC 79 F
MOC 79 G MOC BW 79

9/5/11
MOC 80 A
MOC 80 B
MOC 80 C
MOC 80 D
MOC 80 E
MOC 80 F
MOC 80 G MOC BW 80

MOC 81 A
MOC 81 B
MOC 81 C
MOC 81 D
MOC 81 E
MOC 81 F
MOC 81 G MOC BW 81

9/5/11

Moc 82A

9/6/11

Moc82 B

Moc82C

Moc82D

Moc82 E

Moc82F

Moc82G MocBW82

Dupe MocBWCCC8

MoC83A

Moc 83 B

Moc83 C

Moc 83D

Moc83 E

Moc83 F

Moc83G MocBW83

Moc 84A

Moc 84B

Moc 84 C

Moc84 D

Moc84 E

Moc84 F

Moc84 G MocBW84 @1600hrs

Moc85A

Moc 85 B

Moc85C

Moc85 D

Moc85 E

Moc85 F End 9/6/11

9/7/11

Moc 85 G Moc BW85

Moc 86 A

Moc 86 B

Moc 86 C

Moc 86 D

Moc 86 E

~~Moc 86~~

9/8/11

Moc 86 F

Moc 86 G Moc BW 86

Moc 87 A

Moc 87 B

9/8/11

MOC 87C
MOC 87D
MOC 87 E
MOC ~~88~~ F
MOC 8~~9~~G MOC BW 87

MOC 88 A
MOC 88 B
MOC 88 C
MOC 88D
MOC 88E
MOC 88 F
MOC 88 G MOC BW 88

MOC 89A
MOC 89B
MOC 89 C
MOC 89 D
MOC 89 E
MOC 89 F
MOC 89 G

9/29/11

MOC 90 A
MOC 90 B
MOC 90 C
MOC 90 D
MOC 90 E
MOC 90 F
MOC 90 G

@ 1000
to TestAmerica
11NCMOCBW90

MOC 91 A
MOC 91 B
MOC 91 C
MOC 91 D
MOC 91 E
MOC 91 F
MOC 91 G

@ 1111
to ~~TE~~TAmerica
11NCMOCBW91

MOC 92 A
MOC 92 B
MOC 92 C
MOC 92 D
MOC 92 E
MOC 92 F
MOC 92 G

@ 1300
to TAmerica
11NCMOCBW92

September 29, 2011

1315

MOC 93A
MOC 93B
MOC 93C
MOC 93D
MOC 93E
MOC 93F
MOC 93G

@ 1405
TestAmerica
IINCMOCBW93

MOC 94 A
MOC 94 B
MOC 94 C
MOC 94 D
MOC 94 E
MOC 94 F
MOC 94 G

@1500
TestAmerica
IINCMOCBW94

1525

MOC 95 A
MOC 95 B
MOC 95 C
MOC 95 D
MOC 95 E
MOC 95 F
MOC 95 G

@ 1615
TestAmerica
IINCMOCBW 95

September 29, 2011
MOC 96 A
MOC 96 B
MOC 96 C
MOC 96 D
MOC 96 E

September 30, 2011

MOC 96 F
96 G

@ 0919
IINCMOCBW96

MOC - 97 A
MOC - 97 B
MOC - 97 C
MOC - 97 D
MOC - 97 E
MOC - 97 F
MOC - 97 G

@ 1015
IINCMOCBW 97

MOC - 98 A
MOC - 98 B

September 30, 2011

MOC - 98 - C
MOC - 98 D
MOC - 98 E
MOC - 98 F
MOC - 98 G

@1117
IINCMOCBW98

MOC - 99 A
MOC - 99 B
MOC - 99 C
MOC - 99 D
MOC - 99 E
MOC - 99 F
MOC - 99 G

@1310
IINCMOCBW99
dup IINCMOCBW104
@ 1710

MOC - 100 A
MOC - 100 B
MOC - 100 C
MOC - 100 D
MOC - 100 E
MOC - 100 F
MOC - 100 G

@ 1430
IINCMOCBW100
dup IINCMOCBW105
@ 1750

MOC - 101 A
MOC - 101 B

Sept 30 2011

MOC - 101 C
MOC - 101 D
MOC - 101 E
MOC - 101 F
MOC - 101 G

@1515
IINCMOCBW101

MOC - 102 A
MOC - 102 B
MOC - 102 C
MOC - 102 D
MOC - 102 E
MOC - 102 F
MOC - 102 G

@1615
IINCMOCBW102

MOC - 103 A
MOC - 103 B
MOC - 103 C
MOC - 103 D
MOC 103 E

@ 1656
IINCMOCBW103

Noyuk Peacock

Bristol Environmental

Northeast Cape 2011

HTRW Remedial Actions

"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 351

Job # 34110068

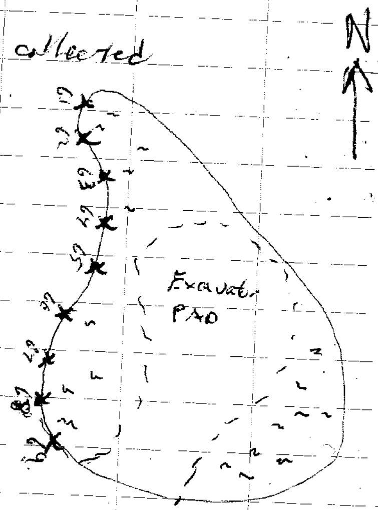
8/8/11 – 8/15/11

8/8/11

Sampled at J1A on the west side of the pit. Sampled every 10 feet 1' above water. Collected samples MOC J1A61 through MOC J1A69.

Field samples collected

MOC J1A61
MOC J1A62
MOC J1A63
MOC J1A64
MOC J1A65
MOC J1A66
MOC J1A67
MOC J1A68
MOC J1A69



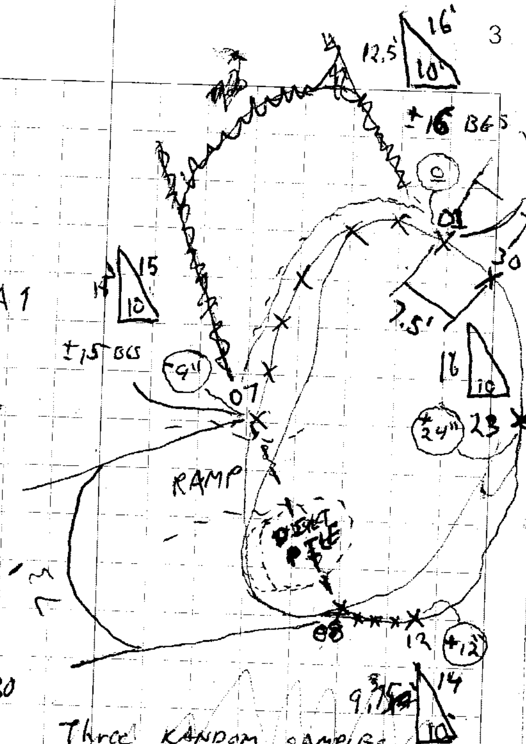
8/9/11

~~Sampl~~

laid out Sampling Locations around A1 at 10' intervals around perimeter. Sampled every 10', 1' above pit FLOOR.

FIELD SAMPLES COLLECTED WERE MOCA101 - MOCA130

Samples were not collected on Ramp or along dirt pile.



Three random samples were taken 5' BGS around perimeter for a total of 33 samples.

SAMPLED 10 RANDOM SAMPLES ALONG MOC ~~SOL~~ STOCK PILE SAMPLES COLLECTED WERE MOCSP01 - MOCSP10

SAMPLE MOCSP05 WAS MISLABELED AS MOCA105 ~~GOING~~ TO TAKE A NEW MOCA105 SAMPLE TOMORROW

8/10/11

RE SAMPLED MOC A105. THE TWO NON Distinguishable SAMPLES MOC A105 AND MOCSP05 WILL STILL BE ANALYSED BY MARTY.

MOC SP05 WILL NOT BE RE-SAMPLED. 4 OF 10 SAMPLES WILL BE USED AT MOC STOCK PILE.

8/11/11

OBSERVED AND HELPED ERIK TAKE PCB SAMPLES IN THE MORNING.

We THEN MOVED TO THE SCREEN PLANT TO START TAKING PCB SAMPLES FROM BULK ~~BAG~~ WASTE BAGS.

SAMPLED 14 BULK WASTE BAGS MOC43E - MOC45D

TWO COMPOSITE SAMPLES WERE TAKEN MOC BW43 - MOC BW44

8/12/11

SAMPLED 34 BULK WASTE BAGS
MOC 45 E - MOC 50C

FIVE COMPOSITE SAMPLES WERE
TAKEN MOC BW45 - MOC BW50

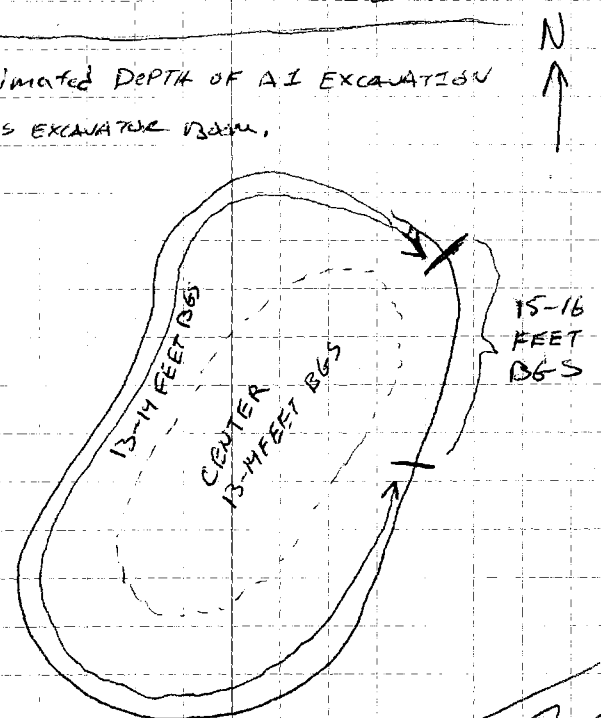
ONE DUPLICATE SAMPLE WAS TAKEN
MOC BW 46 / MOC BW ~~004~~

8/13/11

SAMPLED BULK WASTE BAGS
~~MOC~~ A TOTAL OF 50 BAGS WERE
SAMPLED MOC 50D - MOC 57D.

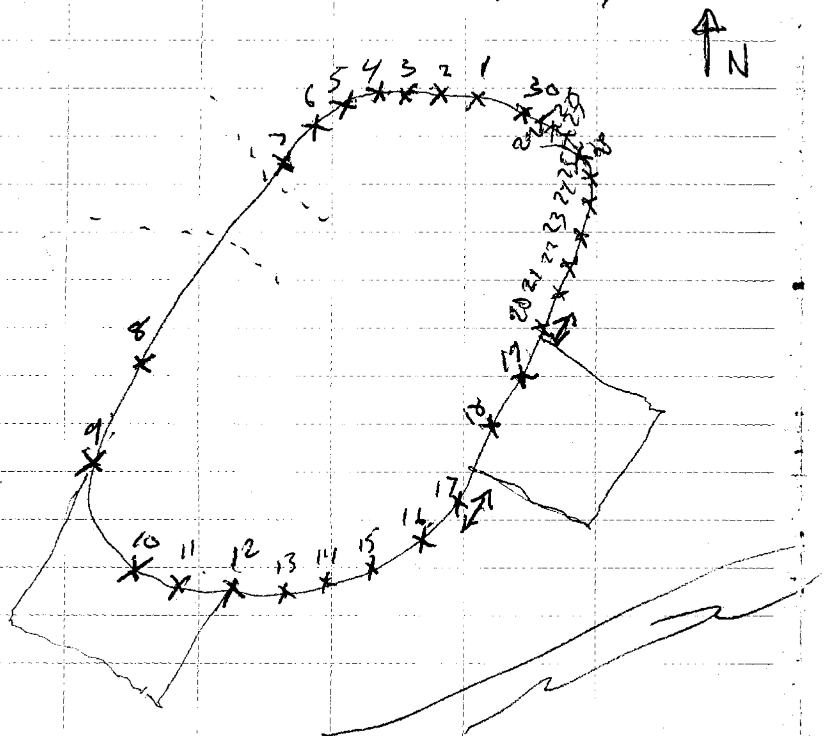
SEVEN COMPOSITE SAMPLES WERE
TAKEN MOC BW50 - MOC BW56

A1 / Estimated DEPTH OF A1 EXCAVATION
WITH JEBS EXCAVATOR BOOM.



8/14/11

- SAMPLED 24 BULK WASTE BAGS MOC57E – MOC60G
- FOUR COMPOSITE SAMPLES WERE TAKEN MOC BW57 – MOC BW60
- ONE DUPLICATE SAMPLE MOCBW005 / MOC BW58
- Jed Excavated 10' Buffer AROUND FIELD SAMPLES 10, 18, 19.



~~8/15/11~~ 8/14/11

~~SAMPLED 24 BULK WASTE BAGS~~
~~MOC57E – MOC60G.~~

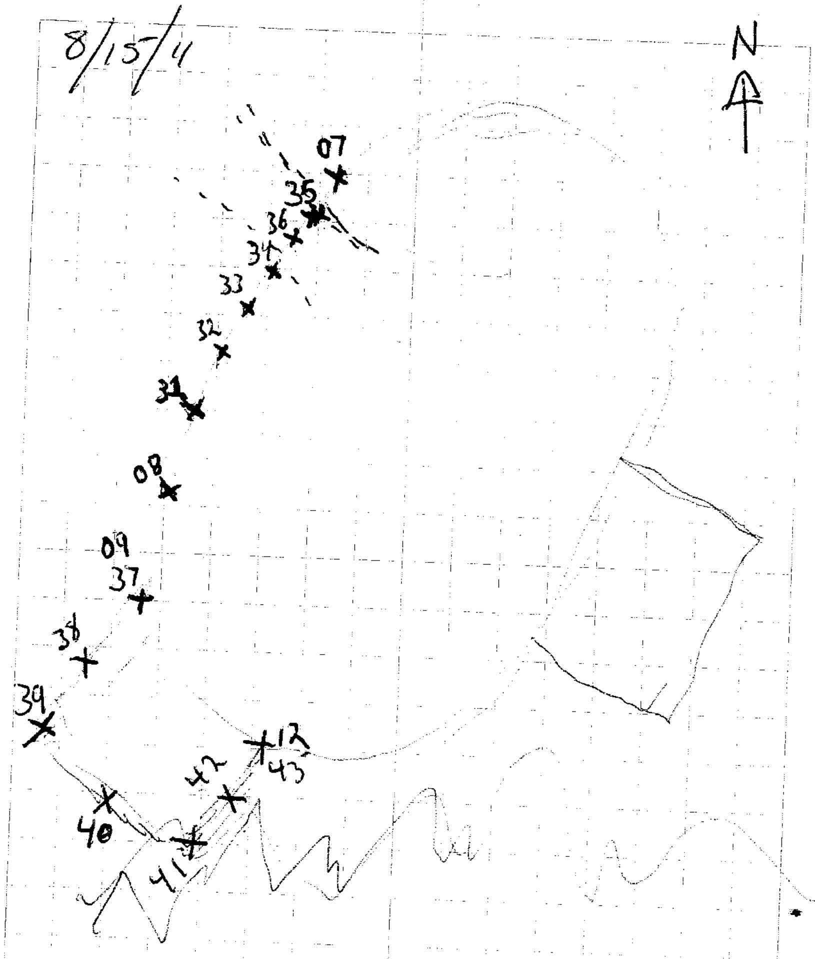
~~FOUR COMPOSITE SAMPLES WERE TAKEN~~
~~MOCBW5~~

8/15/11 SAMPLED 12 BULK BAGS
MOC61A – MOC62E

COMPOSITE SAMPLED ONE ~~[illegible]~~ SAMPLE
MOC BW 61

TOOK FIELD SCREENING
SAMPLES AROUND A1 PERIMETER
31 – 43.

8/15/11



Russell James
Bristol Environmental

Northeast Cape 2011
HTRW ~~Remedial~~ Actions

"Rite in the Rain"®
ALL-WEATHER
UNIVERSAL
No. 371

Job # 34110008

Book 1 of 3

7/13/2011 — 8/4/2011

USACE Contract # W911KB-06-D-0007
FUDS # F10AK096903

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Northeast Cape HTRW Remedial Actions - 2011

Name Russell James
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Phone (907) 563-0013

Project Northeast Cape 2011
Job # 34110008
W911KB-06-D-0007
F10AK096903
St. Lawrence Island, AK

CONTENTS

 7/13/2011 Wednesday R. James BERS
NE Cape 34110008 Rain/Wind

- In Nome a.m.
- Arrive Bering Air ~1100 hrs
- Fly to NE Cape ~1245 hrs
  - Personnel: R. James, E. Barnhill, L. Kleppin, M. Hannah, S. Hummel, R. Black on first Plane w/freight.
  - 2nd Plane arrives ~1530 hrs w/Amy and Michael Snodgrass
- 2 planes today
  - ① King Air + 8 personnel
  - ② Navajo + 2 personnel
- Set up CQCSM and Environmental office - Tables and Printer
- Tour site w/Kleppin and Barnhill
- Briefly discuss Survey plan w/Jamie from Eco-Land

(8)
[signature] 7/13/2011

Scale: 1 square=______

7/14/2011 Thursday NE Cape 34110008

Mostly Cloudy, R James 42°F, SW 10 mph

0700 Safety Meeting
- Introductions to personnel
- Site Orientation by C. Croley
  - Red side x side for Eugene, Surveyors can use Suzuki
  - Site sign-in, Safety Vests and glasses
  - HAZ MAT - POL, PCB Soils, Arsenic
- Power = Generator - No backup yet due to transport error
- Restrooms + Water - Water will be sampled when next plane on way
- Bears, Foxes - Rumored that some Polar Bears were on Island
  - Bees + Allergies
- Fuel Trucks
- Amy, Medic gives rundown of Medical facility
- Environmental Crew - organizing Conex
- Using VPN to copy Work Plan and Figures from ANC network
- Hook up Chuck's 2nd Monitor

Scale: 1 square=______

★ - Received an email from Teresa Lee (USACE) regarding groundwater sampling in the MOC.
- She said to use the submersible pump whenever feasible. If not possible, then use the peristaltic pump.

- Kleppin is reading water levels on MOC wells
  1. 26MW1
  2. MW88-10*
  3. MW88-1
  4. MW88-4
  5. MW88-5
  6. MW10-1
  7. 17MW1
  8. 22MW2
  9. 20MW1
  10. ~~RI~~

Weather @ 14:30 hrs
- 45°F, Rain, Winds SW 10-15 mph
  Wind Chill = 38°F
- Road repairs being performed near camp where the Road crosses the Sugi river
- Photos taken @ MOC of surveyors and of Kleppin★ recording water levels

- Begin work on DQCR 017 for 7/13.
- Get templates from C. Croley to continue
- Kleppin says that MW88-10 is too obstructed to get the water level meter into. She couldn't take it any deeper than 6.49' bgs.

 Friday 7/15/2011 NE Cape ATRW RA 34110008
R. James, BERS, 40°F, Mostly Cloudy, Mist

- 0700 Safety Meeting
  - More people arriving today so be aware of where they are out in the field. Keep track of ~~the~~ each other.
  - Share vehicles and make use of Radios
  - Keep bug spray handy
- ADEC wants to see a sample of Rock
- Check the drainages near site 21 and send a figure to Molly
- 0815 hrs - travel to site 21 and GPS some of the easily identifiable streams
- Email Figure to Welker and Coley showing the drainage directions @ site 21 - 0915 hrs
- Bering Air arrives @1440 hrs
  - Beechcraft
  - Jack Willis, Jeb Adkins, Mike Gallegos, Jerry Jundt, Michell Toolie, Mylen Kingeekuk, Dan Rhode, Charles Kava

Scale: 1 square=______

- Personnel and gear were unloaded by 15:00 and Bering Air departed.
- Photos were taken of the stabilization efforts at sites 9 and 7
- Borrow pit Rock samples were collected to be analyzed for consideration as Rip-Rap for stabilization efforts.
- Chuck conducts site orientation with newly arrived personnel
- Prep phase meeting for Soil Excavations was begun - Paperwork only - Meeting will be held when the QAR arrives tomorrow
- Shifts ended @ 17:00
- MW 10-1 sampled by Kleppin @ 16:30

[signature] 7/15/2011

Scale: 1 square=______

 Saturday 7/16/2011 NE Cape 34110008

R. James, partly Cloudy, 47°F, Wind SW 13mph

c700 Safety Meeting:

- MSDS sheets in Rec Room
- Orientation - Subcontractor information: Global, Fairweather, Eco-Land
- Vehicle Usage → Share Rides
- Rock truck training later today
- Side x side usage
- Timesheets & Medical Forms
- Watch for debris where driving
- Hard Hats
- Keep lookout for Nails on pad

Today's objectives: Finish fuel containment, weigh the Pad 98 PCB bags, begin excavation of tank footprints

- Continue on Prep Phase paperwork
- 10:00 weather: 50°F, SW winds, partly Cloudy
- 11:30 - Kleppin is sampling 26MW1
- Discuss upcoming plan w/Chuck
- Security Aviation arrive @ 12:30
- Preparatory Phase Meeting conducted @ 15:00 regarding the soil Removal DFW and

the Site 8 MWA and MOC GW monitoring

- J. Caner, L. Kleppin, E. Bardell, R. James, M. Thompson, and C. Croley attended

- 16:54 - Loading bulk bags from tank footprints
- PCB bags are being hauled to the beach from Pad 98
- MW 27MW1 being sampled by Kleppin @ 17:45
- Work is being done to improve the runway w/grader and roller
- Weather @ 18:15 ⇒ Rain, 45°F SW Wind 10mph
- Work on Prep Phase paperwork for Site 28 sampling and PCB bulk bags at Pad 98

Shift ends @ 19:30 hrs

[signature] 7/16/2011

 Sunday 7/17/2011 NE Cape 34110008

R. James, 43°F, Wind W 5 mph

- 0700 safety: Calm winds, bugs are out, Spray is in the safety Connex
  - Keep trash contained, esp. coffee cups
- 0705 Environmental Meeting -
- Prep phase Meeting held @ 07:15 for Site 28 and Pad 98 bulk bags
- Objective: Find stockpile areas for sites 13 and 31; Find background sampling areas for Site 28 and site 21
- 5 bags filled yesterday @ the Moc tank footprints
- Kleppin sampled 20MW1 and moved to 17MW1 - was Sampling 17MW1 around 11:45
- Walk the background sampling areas w/ J Cramer
  - 2 potential areas were found and will be discussed w/USACE office personnel
- Lyndsey Sampled 4 MWs today ⇒ 17MW1, 20MW1, 88-5, and 88-4

Scale: 1 square=________

Weather @ 19:30 ⇒ 44°F, Mist
- 37 total bags have been filled to date

R. James 7/17/2011

Scale: 1 square=________

R. James, Partly Sunny, 41°F

0700 Safety

- Communication
- Excavator safety - stay out of swing radius
- Rain/Weather - Keep focused
- Share vehicles, Carpool
- Flag the site 21 background area
- 17MW1, 20MW1, 88-5, 88-4 were sampled yesterday
  88-5 had a duplicate sample taken

Today's objectives: ① Markers on Runway ② Excavate Tank footprints ③ Topo Survey site 28 ④ Mobile lab samples for POL to be analyzed ⑤ Label + Package GW samples

- Kleppin is labelling ~~and~~ the sample jars
- Continue excavating the tank footprints - 9 Mobile lab samples are collected from the Eastern and middle footprint each

- Collect pre-stockpile samples near site 31 for the lined stockpile area - 5 foot grids
- Kleppin sampled MOC well's
  ① 88-1
  ② 88-10
- Tar area was excavated and stockpiled - May potentially contain 200 yds³ - This is much more than anticipated
  - J. Craner informed personnel at the Anchorage USACE office
- Bering Air arrives ~16:00 hrs, is unloaded and leaves @ 16:30
- Kleppin begins helping the site 13 pre-stockpile sampling w/ Barnhill
- Rebar is being Removed from the POL stockpile area on the west side of the MOC

R. James 7/19/2011

 Tuesday 7/19/2011 NE Cape 34110005

R. James, Cloudy, Light Rain, 42°F, 15mph SW Wind

0700 safety: Work transitions today
- Environmental Meeting w/ Knuck and Maze
- continue w/ 5 ft grids at the pre-stockpile area (PCBs)

Objectives: Sample Site 13 stockpile area; Begin work on MOC POL stockpile area; Field lab analyze POL samples;

- E. Barnhill and R. James collect PCB pre-stockpile samples
- 12:50 ~ 90 samples collected

· Kleppin is packaging the water samples.

- QAR instructed me to continue the sampling protocol for the PCB pre-sampling stockpile area. Also requested that we keep the USACE informed of the transect locations @ site 28. Also, said that the Arsenic background sample should be collected without the aid of an excavator if possible. The USACE wants to ensure that the Red sediment layer, similar to that found last year, is found and sampled.

- Bering Air arrives ~10:00, unloaded and departs @ 16:30
- Kleppin begins helping collect pre-stockpile samples @ Site 13
- Rebar is being removed from the POL stockpile area
- E-mail DQCR 020 to M. Welker
- Work on DQCR 022

[signature] 07/20/2011

Scale: 1 square=______

Scale: 1 square=______

 Wednesday 7/20/2011, NE Cape 34110008

R. James, Partly Cloudy, ~~49°F, 5mph E Wind~~ RJ 35°F, 3mph W Wind

0700 Safety - Liner safety

- Environmental Meeting
  - Find 30'x50' stockpile area uphill from site 31 and sample for pre-stockpile background.
  - Marty should have POL sample results ~1300 hrs this afternoon.
- Travel to site 28 BG area w/ Barnhill and Kleppin. Dig 4 test holes in search of the "Red" layer. Did not encounter it at 18".
- Barnhill begins pre-stockpile sampling @ site 31 in an area ~30'x50'
- Kleppin directs digging operations @ the MOC POL dig plume J1A
- Barnhill completes PCB site 31 stockpile pre-stokpile samples @ 15:15 hrs

Scale: 1 square=_______

- J1A overburden is stockpiled @ the POL stockpile area
- J1A plume is being excavated @ 1530 hrs.
- Clean overburden from site 13 is being excavated and stockpiled

7/21/2011

Scale: 1 square=_______

 Thursday 7/21/2011 NE Gate 34110008

R. James, Cloudy, 49°F, 8mph E Wind

0700 Safety

— Slips, trips, falls - Rough Terrain

— 3 point Mount/Dismount

- Talk w/Jeremy about the site 28 Background sampling/Area

- a new core sampler is being rented and will be shipped out here

- Work continues @ the JIA plume

- Overburden @ Site 31 is removed and stockpiled

- Site 21 background area is determined.

- Craner, James, and Kleffin walk site 21 and the background area. Subsurface and veg is compared. An area is found and will be sampled for As concentrations. Photos are taken of subsurface in Site 21 and background area.

- Bulk bags ended w/MOC-8E

R. James 7/21/11

Scale: 1 square=

R. James 7/21/11

Scale: 1 square=

 Friday 7/22/2011 NE Cape 3411000 8

R James, Cloudy, 47°F, Partly Cloudy → Mostly Cloudy

0700 Safety:

- Doug earns safety Award. Will be implemented each Friday
- Sample Results are received from Marty regarding the JIA sidewall samples. Sample MOC JIA 02 exceeded cleanup levels with a result of DRO = 27,199 mg/kg MOC JIA 03 DRO = 7,407 was above 80% of the 9,200 mg/kg cleanup level.
- Printed an MOC Area map for Croley
- Received DQCR 024 comments from C Croley and forwarded it to Craner
- Begin DQCR 025 @ 08:15
- Barnhill is monitoring the JIA excavation and Kleppin is collecting the Site 21 background samples this morning
- Bagging ended w/ MOC-14D
  41 Bags total
- Sidewall samples collected from JIA excavation

R James
7/23/2011

Saturday 7/23/2011 NE Cape 3411000 8

R James, Rain/Mist

0700 Safety

- Dust + Water = Slippery
- Extension Cord Safety - No Cracks
- Generator Safety - Ground; GFCI

Objectives: Bag in Morning; Transition later; Possible boat today; Survey for another stockpile area;

- landing Craft loaded ~0800hrs
  - 23 flats - Sam Taklak -
  - Background Generator and Global Tents unloaded
- Excavation continues @ MOC
- Begin cleanout of sites 13 and 31

- 2 bags filled @ Site 31

R James
7/24/2011

 Sunday 7/24/2011 NE Cape 54110008

R. James, Fog, Mist, 46°F Calm Winds

0700 Safety Meeting:

- Camp courtesy - Share the phones. Please don't have ppl calling after 10pm or before 6am.

- Environmental Meeting:

- Continue cleanout of Site 31

- Field lab will have JIA sidewall results this afternoon

- Following site 31, the operations will return to JIA plume

- Kleppin will begin site 8 MNA until equipment moves to JIA

- Barnhill will be working Site 31

- ~~Begin work on DACR 027~~

- Talk to Jamie Allan of Eco-land and request a locate on the locations to be field screened @ Site 13

- Kleppin is taking Field Screening sidewall samples from JIA

Scale: 1 square=________

~~0730 1920~~ [redacted]

[redacted]

[illegible] 7/25/2011

Scale: 1 square=________

 Monday 7/25/2011 NE Cape 34110008

R James, Mist/Fog, 43°F, 100% humidity

0700 Safety

· Excavation Safety - 4 ft is Bristol's Max depth before sloping

· Heavy Fog

· Radio Communication - use Radios

· Tyvek - No Smoking/Eating in Tyvek

· Return tools when finished

Environmental Meeting

· Chuck asks Eco-Land to survey the water elevation @ JIA

- Begin DQCR 028

- Populate bulk bag spreadsheet

- QAR expressed concern over the # of bags excavated from Site 31 - 16 bags were filled from the excavation. Proposes characterizing some of the Site 31 bags.

- Water elevations: 66.3' in JIA
62.6' in pond ~~to~~ North of JIA excavation

Wind @ 0850hrs 5 mph from East

- Talk to Chuck about QAR's concerns
- He explains that the USACE was concerned about Cross Contamination.
- The soil was excavated to prevent Cross contamination
-

- Molly wants a Figure of the Arsenic background samples and a write up on how they were chosen

- Bering Air Navajo arrives @ 1730 hrs w/Emily and cases of H_2O

- Site 31 Field Screening Sample locations are Marked w/pinflags

R James 7/25/2011

 Tuesday 7/26/2011 NE Cape 2011 34110008

R. James, Foggy, 45°F

0700 Safety
- Hand signals/Spotting Equipment
- Maze demonstrated Hand Signals

0705 Environmental Meeting
- ~~29~~ 35 bags filled @ the MOC yesterday. 32 bags were filled.
- Chuck asks Jeremy about the Tar and requests a response on how to proceed with it.
- POL soils from JIA are being excavated
- Site 31 Field Screening samples are being collected 75 samples collected and submitted to field lab
- Site 13 excavation begins ~1730 hrs
- Work on Initial/Follow-up phases for all DFW's

[signature] 7/27/11

Scale: 1 square=______

[signature] 7/27/11

Scale: 1 square=______

R. James, Foggy, 41°F, Calm Winds

0700 Safety

- Camp Courtesy / Respect - Close ~~quarters~~ quarters
- Chuck will be gone for a few days

Science Crew Meeting

- Sample Results for Test Pit are pending (JIA)
- Barnhill requests duck ponds for boot wash @ the PCB sites
- Travel sites w/C. Croley
- Check flats @ beach and Figure the next 23 flats to load onto Barge w/Randy Block and Chuck Croley
- Beechcraft arrived ~1515 hrs w/freight. C. Croley departed the site.
- Excavation continues @ JIA and Site 13
- End @ 2100 hrs

(13)

R. James 7/27/11

Scale: 1 square=________

R. James, Partly Cloudy, Fog, Strong SW Winds

0700 Safety

- Watch for Locals, especially near fish camp
- Dehydration - drink plenty of water

Environmental Meeting

- JIA sidewall sample results received. 3 locations were above cleanup and will be excavated further.
- Will continue @ JIA excavation and Site 13 this morning. Site 31 will follow site 13.
- QAR Jeremy Craner informs me that the Tar is ok to bag. USACE will pay for disposal costs.
- Winds increasing throughout the day. Avg 20 mph in camp w/faster winds @ MOC @ 1300 hrs.

End shift @ 1800

R. James 7/29/2011

Scale: 1 square=________

 Friday 7/29/2011 NE Cape 2011 34110008

R James, 45°F, SW Winds 15-30 mph

0700 Safety

- Wind & Rain
- Equipment Windows

- Strong Winds and Rain today Avg 20-23 mph with gusts to 35 mph.
- Call Kurt Winkler @ Global
  - Groceries will arrive in Nome today. He'll send the Air Waybill.
  - Plans to send out the camp crew Wed/Thur to set up the tents for Nalemp. He will let us know when they return from Umnak.
- Speak to Maureen w/Northland who informs me that the landing craft is on a weather hold and so it may be delayed. More details tomorrow
- Some JIA results were received from field lab. Field Screening samples continue return above cleanup levels.
- Beech 1900 is scheduled for tomorrow @ 1400 hrs

Scale: ~~1 square~~=________

R. James

- Excavation @ PCB sites moves from Site 13 to Site 31.
- Field Screening Samples are collected from Site 13
- Continued strong winds w/gusts to 35-40 mph. Avg Winds ~ 20 mph.
- 3 loads were taken from the borrow pit used for Road Repair today.
- End of Shift @ 1730 hrs.

R James 7/30/2011

Scale: 1 square=________

 Saturday 7/30/2011 NE Cape 2011 34110008

R. James, Foggy, Calm Winds from North

0700 Safety

- Relay "Close Call" ~~Met~~ 23 email from Clark Roberts
- Safety Award - Allen Dennis
- Spotters - One designated Spotter

⇒ Will Continue excavations @ JIA and Site 31 this morning

- Field lab will have PCB results around 9 am this morning. Results will be from the Floor of Site 13.
- Receive call from M. Welker regarding flights and schedules.
- Work on DQCR 033
- Marty delivers Mobile Lab results on samples collected from Site 13. 5 samples are at levels that dictate additional excavation
- Site 31 is completed for day and that crew moves to the Tar Area.
- No airplane today - weather is good, but the pilots don't have available hours.
- Prep Manifests for tomorrow.

End Shift @ 1930 hrs

Scale: 1 square=______

R. James 7/31/11

Sunday 7/31/2011 NE Cape 34110008

R. James, Light Rain, 45°F

0700 Safety

- Speed Limit - Slow down
- PPE - Make it a habit
- Control Tempers whether its w/people or the task @ hand

- Continue excavation @ MOC JIA and Tar Bagging. - The tar is being double-bagged and it's working out fine.
- Populate Field lab spreadsheet and update the bag weights.
- Begin work on DQCR 034
- Northland's loader is having problems. Called the Sam Taalak and Nunanek to get any tips on getting it started. They had little advice.
- Gave weather updates to Bering Air
  - Weather looks good for flying
  - They will leave ~1030 hrs
- Bering Air arrived @ 1045 with Jenny Willis and freight
- Barge arrives and 25 flats are loaded onto the Sam Taalak

Scale: 1 square=______

Tar and JIA continue to be excavated.
- Timesheets are filled out and copies Made
End of Shift @ 1930

[signature] 8/1/11

Monday 8/1/2011, Clouds, Rain

0700 Safety
- Housekeeping. Slips + Falls
- Safe Lifting Techniques
- Cross Contamination

- Send in Timesheets. EMail to C Croley and M Welker
- EMail DQCR 034
- Randy goes to beach to ID the flats that are staged for the next Landing Craft.
- Begin Work on DQCR 035
- Request postponement of Security flight tomorrow until a part for 958 is in. Part should be in between 8-9am.
- Bering Air flight arrives ~1400 hrs w/ Josh Arms
- Josh signs in and given site orientation.
- Complete DQCR for 7/31/11
- 1700 hrs - Walk Site 28 w/ BAR Craner and staked out 10 transects. These will be shown to A Snewman for further

Cont...

- Review
- Tar was completely removed today.
- Water truck was utilized for dust control in the afternoon
- The sample grid was laid out for field screening @ Site 13.
- Excavations continued @ site 13

Scale: 1 square=______

R. James, Partly Cloudy

0700 Safety

- Hurry up can Hurt
- Call Bering Air to arrange flight for this afternoon
- Receive calls from Chuck and Molly
- Try to track supplies from NAC and Ak Air. Still looking for filters and brake parts.
- Security flight arrive ~1320
- Bering air arrives ~1330
  - Groceries and parts are unloaded
- Tyler Ellingwoe, Phillip Roberson, Cole Cerutti, Bashien, and Aaron Sherman arrive on Security and are given site orientation by C. Croley.
- Discuss the previous week w/ Croley
- Drive the site w/ Maze and Chuck
- Sheen on water @ MOC dig
- Site 13 sampling grid established

Scale: 1 square=______

 Wednesday 8/3/2011 NE Cape 34110008

R. James, Rain, Strong Winds 28mph South

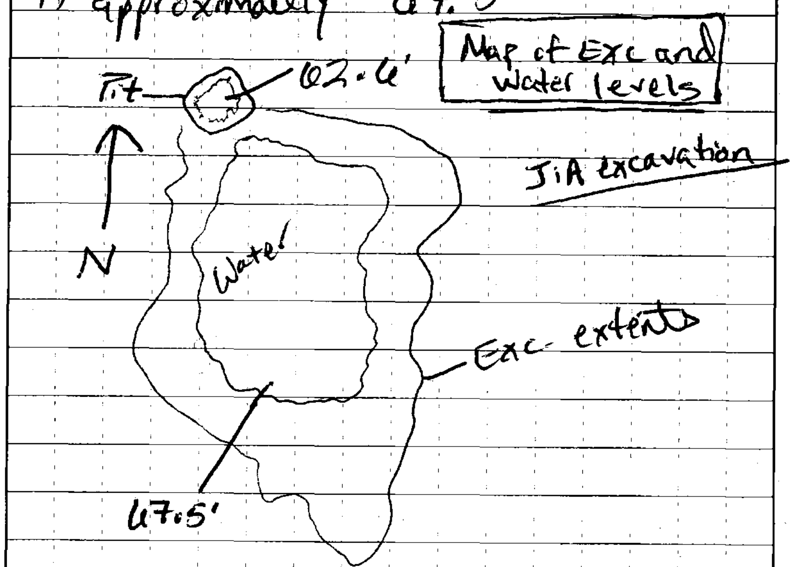
0700 Safety
- Weather - strong winds
- Corporate safety email
- New people in camp - Sutori

Environmental Meeting

Chuck asks Aaron about proving the water depth in the excavation without putting a person in it. Will a mark on the bucket work?

- Chuck wants the surveyors to survey the western edge of the excavation and the confirmation sample locations.
- Will begin cleaning the concrete pad @ site 13. The concrete pile will be moved to the pad to the north.
- Avg winds = 28 mph
- Winds decreasing in afternoon
- Water level @ JIA = 02.6' in test pit
- Stockpile @ Site 13 = 232 yd³
  Site 31 = 235 yd³
- Water level in the large excavation

is approximately - 67.5'



- Borrow Material is being hauled to Moc to construct the ramp and Material is being stockpiled across Moc road from Site 13
- JIA Allen is extending a road into the excavation so he can reach deeper into the center of the pit to remove material down 2' below water. A 2' mark is on his bucket to indicate depth.

- Soil is being brushed off the concrete pad @ Site 13.
- Field screening samples collected from Site 13 earlier today
- Field Screen Site 31 samples 134-165 and submit to Field Lab
- Bering Air arrived w/Global Svcs crew and a refrigerator repair person

Bill James 8/4/11

F. James, Rain, North Winds 5-10mph

0700 Safety
- Slips & Falls. Rain & dust make slippery conditions
- Heavy Lifting Safety

Environmental Meeting
- Site 13 results may be in this afternoon around lunch
- JIA will ~~be~~ have the floor continue to be excavated
- Drum below site 31 may be removed
- Work on DQCR 038
- POL excavation will move to a new location where we can begin removing some overburden
- Winds increased significantly throughout the day to ~ 30mph
- Strong North winds and Rain
- Lower and Middle decision units are being sampled for Methane
 - 16 locations are sampled

8/5/11

 Friday 8/5/2011 NE Cape 34110008
R. James, Partly Cloudy, Calm Winds

0700 Safety
- Good Communication
- More people are on the way to Camp. They will have 4-wheelers. Keep an eye out for them and visitors

Environmental Meeting
- Results from site 13, samples 17-56 were received from Marty
- C Croley mentions sending away some large items that we may not need on ~~ST~~ the next barge.
- Drain Lines/Impoundment will be put down today
- Chuck Mentions pressure washing the concrete prior to wipe tests.
- Aaron proposes we spot wash the sample spot for the wipe tests
- Locate the wipe locations
- Find a new stockpile location @ Site 31 and begin the sample grid.

- Figure out the area of the concrete pad @ site 13 - 16 total sample locations will be wiped and tested for PCBs
- Begin work on DRCR 039
- Site 8 Water and sediment sampling
- Sediment Samples ⇒ 3 composites. 1 composite from each DU

① 11NC085S001 @ 1720 hrs (MS/D) analyzing for DRO/RRO, PAHs, TOC
② 11NC085S002 @ 1800
· Duplicate : 11NC085S004 (1900)
③ 11NC085S003 @ 1845

R James
9/6/2011
(125)

 Saturday 8/4/20XX VE Cape 34110008

R. James, Cloudy, Calm Wind

0700 Safety

- Staying Calm while working. Don't get worked up in the equipment

Environmental Meeting

- Objective: (1) See if the JIA soils are able to be bagged.

(2) NALEMP equipment will be assembled.

(3) Mark out the PCB wipe samples. Figure out the # needed for the concrete pile

(4) Provide the Site 31 BW sample results to Aaron, Molly, Ron Broyles

- Landing Craft was loaded this morning. 25 flats were loaded

- Concrete measurements @ MOC site 13 - 1 average Piece

25" x 25" (x 2)

12" x 25" (x 2) (x 2)

→ 2' x 2' (x 2) 8 ft^2

1' x 2' (x 4) 8 ft^2

- The decision is made to take 10 samples from the concrete pile

- The wipe sample locations at Site 13 are marked for cleaning

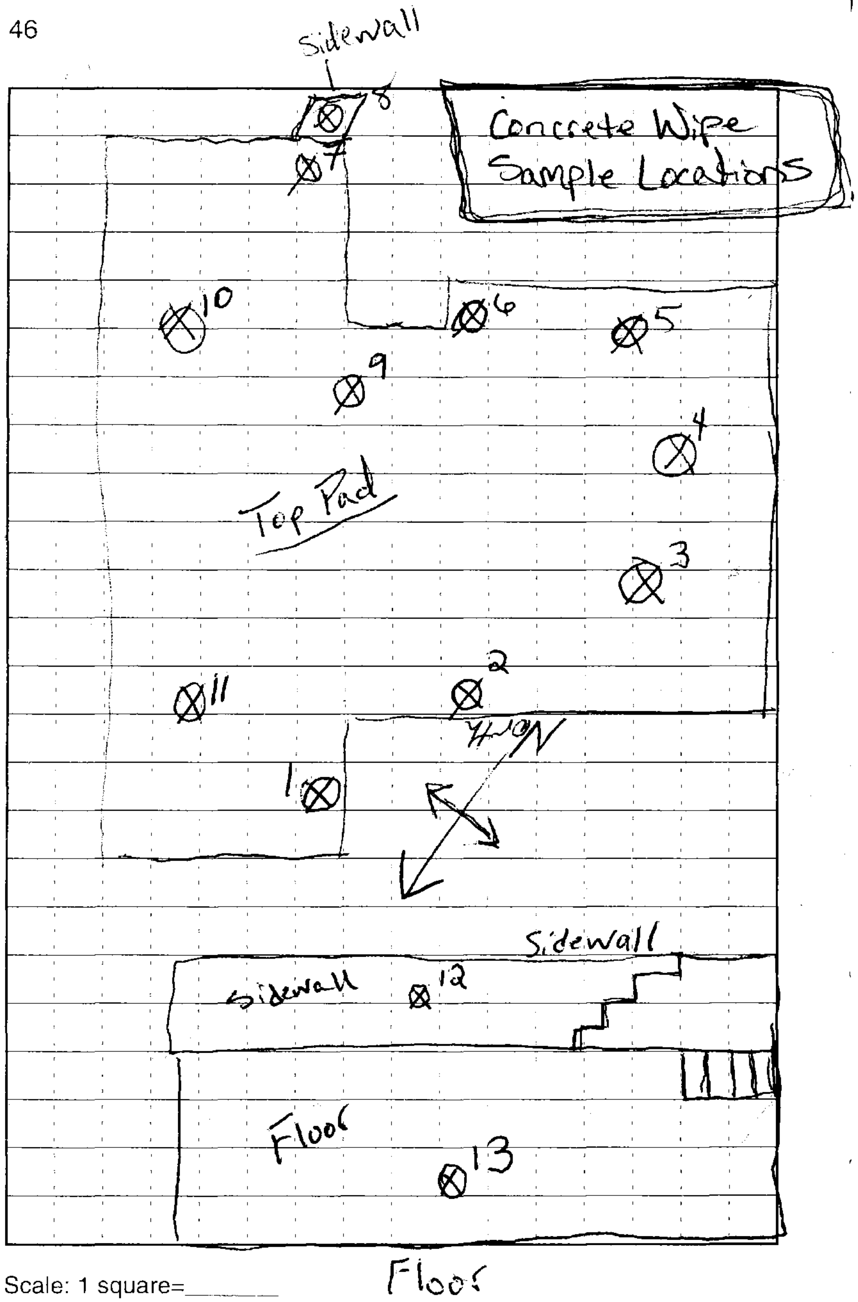
- A1 excavation has buried debris @ ~10 foot depth. Visible on the south side of the excavation. There is an 8" pipe exposed about 3' bgs on South side also.

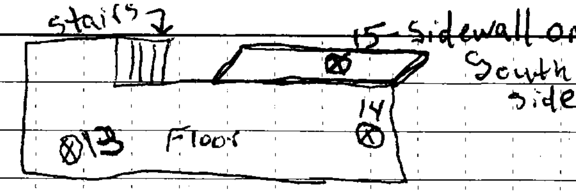
- Concrete wipe samples @ 1615 hrs 26 total samples collected

- Submitted to Field Lab @ 1900

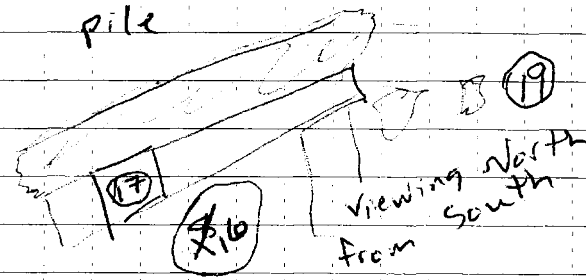
- X2 PCB samples collected for a new stockpile area

Concrete Wipe Sample Locations

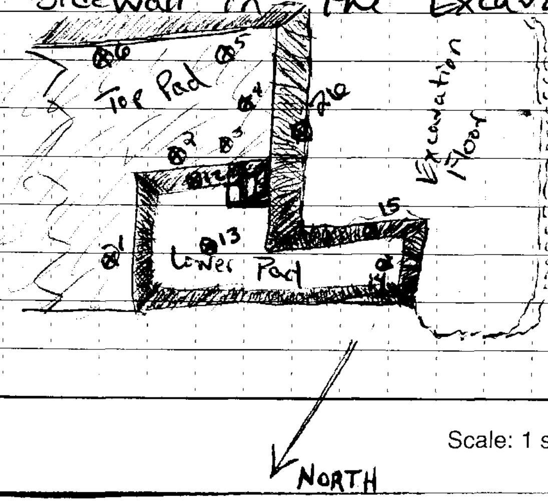




W16 - Begin Rubble Pile on South side
17 = South side of large slab in pile



16-25 are from the pile
W26 is taken from the concrete Sidewall in the Excavation



Notes:

Equipment List/Notes

Deere 370C Exc

Deere 450C Exc

Cat D400E Rock truck

Water truck

GMC2500 extended (152)

- Background Samples for DRO/RRO in MOC?
  - QAPP WS#10

Notes

- Concrete Wipes → site 31
  - Concrete Stockpiles
  - Sample Underneath?

- POL Liquid below Site 31

- Email Molly about the site 9 re-sampling

Ask the Mess Hall to add for Jamie and Daniel

Scale: 1 square=_______

Russell James

BERS

"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 351

Northeast Cape HTRW 2011

Job# 34110008

Book 2 of 3

8/7/2011 — 9/10/2011

USACE Contract #W911KB-06-D-0007

FUDS # F10AK096903

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

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Project Northeast Cape HTRW 2011
Job # 34110008
W911KB-06-D-0007
F10AK096903
St. Lawrence Island, AK

CONTENTS

PAGE	REFERENCE	DATE

2 Sunday 8-7-2011 Northeast Cape

Job# 34110008, R. James, Cloudy

0700 Safety

- Working in close quarters. Watch each other's backs.

- Safe lifting techniques w/liners

Objectives: ① Screen Plant ② New stockpile location for Pol Soils ③ Move bagging operation to Pad 98 w/screen Plant.

- Wet material from JIA will be taken to Pad 98 and mixed and screened w/soil from the A1 Excavation ④ Liner will be setup @ Pad 98

- POL stockpile is ready to be sampled
  - Get volumes from Jamie

- Begin work on DQCR 041

- Complete Bulk Bag spreadsheet and Field Lab sample Spreadsheet

- COCs are being done for
  - Site 7 methane water
  - Site 8 sediment/soil
  - Tar Waste Characterization
  - MOC JIA Confirmation samples

- Visit the MOC. Pad 98 liner has been laid down. Photo taken

- A Flat was moved to sit next to the screening plant legs.

3

Tar Sampling

① 11NCTARSS011/022 duplicate

② 11NCTARSS010 - Note - ~6" depth
- has tiny bits of tar in soil

~~T~~ RJ

R. James 8/8/2011

 Monday 8-8-2011 NE Cape 34110008

Cloudy, Mist, 43°F R. James

0700 Safety

- Keep looking out for each other. Remind each other of safety.
- Jebb gets safety award for good communications

Environmental Meeting

- More Results from site 13 are received.
- New POL excavation areas will be located by the surveyors so we will know which concrete pads need to be Removed.

0800 - Samples are being packaged for shipment on today's plane

1120 - Bering Air arrives w/ Patrick Braley, Noyuk Peacock, and Cody Allen

- Lyndsey Kleppin departs the site
- Amy Smith departs the site
- 4 coolers were shipped out on the Bering Air flight headed for TestAmerica, Tacoma. Samples included water and Sediment/Soil from site 8, Confirmation from JIA, Tar Area, and NALEMP Waste Characterization of Wood.

- Begin DQCR 042 for Sunday 8/7/11
- QAR requests sample Results for site 31 and 13 bulk bags

End @ 1730

R. James 8/9/11

 Tuesday 8/9/2011 NE Cape 34110008

R James, Fog, Mist, 45oF, ~~3mph N Winds~~ 25

<u>0700 Safety</u> - Concrete breaking → Eye and Hearing protection. Give the excavator plenty of room.

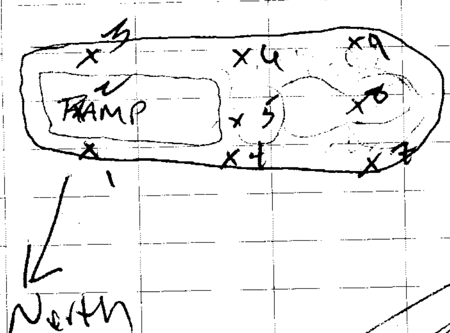
<u>Environmental Meeting</u>

① Continue PCB dig @ site 13

② Break up the Concrete in the POL dig site. ③ A1 sidewall Field Screening samples. Collect w/excavator once one is available after the site 13 excavation.

- Noyuk is collecting A1 Field Screening Samples - ~30
- MOC stockpile samples being collected @ 1330 hrs
  - 10 samples will be taken

<u>Post stockpile Samples</u>



R James

R James 8/10/11

Wednesday 8/10/2011 NE Cape 34110006
R. James, Cool, Cloudy, 45°F, 4mph N winds

0700 Safety Meeting
- Tyvek @ PCB site - No smoking

Environmental Meeting
- Boat will be loaded @ 0800 hrs
- Wipe sample Results will be received this afternoon

- Begin DQCR 044

- Landing Craft was loaded this Morning - 25 flats were loaded onto the Sam Taalak

- 1,051 tons of PCB soils have been Removed as of 8/9/2011

- Site 13 excavation is continuing today.

End @ 1730 hrs (10)

[signature] 8/11/2011

Thursday 8/11/2011 NE Cape 34110001
R James, Rain

0700 Safety
- Rain today, Winds will build throughout the day
- Lots of work in a small area
- NALEMP group is coming today truck 169 will go to them.

Environmental Meeting
- QC looked bad for the concrete wipe samples - May have to re-take the samples.
- Site 13 will continue
- Add a section to the report for NALEMP Progress.
- Screen plant is running and MOC POL dirt is being bagged
~~Rec~~ bags from Site 13 - Followed up Field Screening samples in the Northern excavation = 6 bags Excavated
- Landing Craft ~~MTE~~ ~2300 hrs took 23 flats

[signature]

R. James, Cloudy, Cool, 50°F, SW Winds / 7mph

0700 Safety

- Tight quarters - don't get complacent
- Radios seem to be having problems when they are too close

Environmental Meeting

- Site 31 results received
- NALEMP group and Security flight are scheduled for today
- DQCRs 043, 044, and 045 are emailed to M. Walker.
- Work on DQCR 046
- Security Aviation arrives @ 1140 hrs.
  - Julie Clark, Jeremy Cranes and Lou (Bull Cook for Global) arrive.
  - Michael Snodgrass and Aaron Shewman left the site.
  - Tour sites w/Chuck and Julie
- Bering Air arrive ~1430 hrs w/Native Village of Savoonga Crew and freight.
- Orientation w/J Clark and Site 28 walkthrough.

End 1730 hrs – [signature]

R. James, Cloudy, Cool, Calm Winds

0700 Safety

- Group Participation on bagging safety. Lifting Safety. Watch Footing.
- Concrete Results are received, all are below cleanup levels of ~~100 µg/cm²~~ 100 µg/100cm²
- Marty & Chuck indicate that some of the JIA confirmation samples may be above 9,200 mg/kg DRO so Chuck will leave the sidewalls exposed until the final results are received
- Chuck wants to ensure that the concrete results are added to the DQCRs
- Help Julie find supplies for the sampling event.
- Talk w/Jeremy about the Site 28 sampling. Julie, Jeremy and I have a brief meeting before beginning

[signature] Rill James

 8/13 cont...

- Site 28 Sampling Issues:
  - Sampleable Material (Recoverable) is being reached @ ~ 2 ft. this is acting as the first of 3 depths down to at least 8'. This is occurring in the standing water areas.
  - Sample 001 hit refusal @ ~ 1 ft ⇒ 2 samples were collected
- Imgs 409 + 410 are samples 003 and 002, respectively
- 1530 hrs - Beginning UNC28SS005
- Talk to Aaron about the issues we're having w/the samples @ Site 28 and update him with our current plan of Action.
- Email M. Welker requesting additional DI water ~~and RI~~
- Access VPN on Computer to attempt to copy over some GPS files with Historical Site 28 data
- QAR asks about our discharge permit - He's concerned it may

have expired.

14 Sunday 8/14/2011 NE Cape 34110008

R. James, Cloudy, Rain

0700 safety
- Rain/Wet Weather - stay dry, take breaks, Stay Warm
- 10 hr day today

Environmental Meeting
~15' in A1 Excavation and Water is entering the
~130 bags remain
- Site 28 sampling went well yesterday
  - 1.5 transects
- Enter bag weights into ~~transect~~ spreadsheet. Enter Field lab samples into spreadsheet
- Complete DQCR 048 and email to QAR
- Get C-Croley signature on DQCRs 046 and 047
- 1300 hrs - Filled bag MOC - 59F
- 1630 @ Site 28 - Sampling location 16
- Overburden @ A1 was removed @ 3 locations and stockpiled
- 22 bags were loaded w/POL soil @ Pad 98

[signature] 8/15/11

Monday 8/15/2011 NE Cape 34110008 15

R James, Cloudy, Misty, Cool

0700 safety
Equipment and Vehicle safety

- JIA Field Screening Sample Results received - some locations are above cleanup levels:
  ① 39 ② 40 ③ 41 ④ 42 ⑤ 44 → these have been excavated already based on prelim results
  - ① 61 ② 63 ③ 64 will require additional excavation
- JIA Confirmation results are received ① 17 ② 16 ③ 15 ④ 14 and ⑤ 12 are above 9,200 mg/kg but are on the North wall and will not be excavated.
  - ① 8 and ② 9 are in the SE corner and will require additional excavation
- A1 field Screening results received ① 3 ② 4 ③ 5 ④ 8 and ⑤ 8 @ 5' bgs are above 9,200 mg/kg

[signature]

and will be excavated further.
- AI is currently being excavated @ locations 10, 18, and 19 based on results received yesterday

- 1230 hrs Meet w/ Jeremy and Julie about Site 28 sampling - USACE wants to ensure that the sediment is sampled and that Bristol focuses on sediment preferentially to samples taken from beneath the veg mat.
  - Will forward emails from USACE regarding Site 28 info

- Drum w/ liquid discovered @ the SE corner of JIA excavation
  - drum is primarily liquid w/ some heavy oil < 20 gallons
  - ~ 6 drums are visible

[signature] 8/16/11
(10)

Tuesday 8/16/2011 NE Cape 34110008

R-James, 44°F, Mostly Cloudy, 430, =

0700 Safety
Drum excavation - Rigging Safety

- For liquid options include 1 gal apiece, up to 50 gallons
- MOC water samples have been reported from TA
- Complete DQCR 050
- Estimate volume of PCB remaining soils under the stockpiles
- Walk site 28 w/ Jeremy, Julie, and Matt and Mark/ Discuss PCB transects
- T8 = 6 samples (1 historical hot spot)
T9 = 5 samples
T10 will be removed to free up samples for the transect that will be parallel to stream.
  - 3 discrete locations will be taken @ the confluence w/ Suqi
- Transect is added parallel to

[signature]

the stream, in the stream
between T7 and T8.
- Discuss tomorrow's plans w/Chuck
- Get Signatures on DQCFs
48, 49, and 50.
- 13 bags were filled today,
ended w/MOC - 64F

Fred James 8/16/11

~~#0.5~~ (11)

F James, 44°F, Mostly Cloudy

0700 Safety

Bagging + concrete

PPE - Hearing protection gloves

Pay attention to fuel

Environmental Meeting

- Begin on site 31 today
- Check on sampling the site 31 stockpile -
- Prioritize lab samples - Figure out what is left to run
- Meet w/Marty and get PCB results for site 31 through 165
- Visit POL site east of Site 13 where concrete is being removed. Oil stained concrete and soil are being discovered. The soil and concrete will be bagged when the rebar is pulled from the concrete
- Coolers are packed and ready for shipment.
- QAR instructs BERS to proceed w

Fred James

1430 Russell James off site. Matt Faust taking over CQCSM duties

→1730 Working on field lab sample sheet & installing printer/scanner

1730 Dinner

8/18/11

0700 Safety Meeting Topic: Courtesy & respect for others. Attitude important for safety.

Yesterday: -Eric bagged 16 bags from Area 31 Bulk waste sampling.

-Busting up concrete @ POL plumes G1, G2, & H.

-Julie up to 125 samples now, & 15 transects on T08. Yesterday: part of 6&8, all of 7.

0715 Working on DQCR-52 for yesterday.

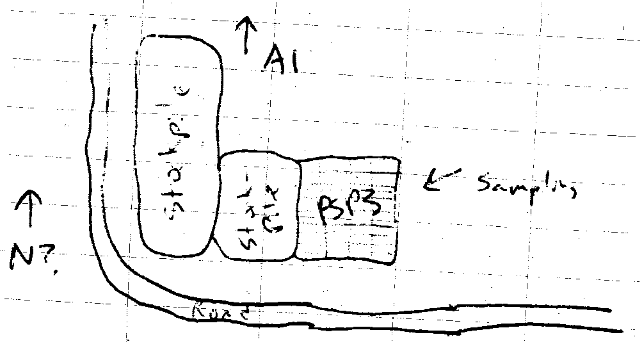
1030 To Area 31 to observe excavation

1145 w/chuck to flag planned new PoL stockpile

1200 Lunch

1230 At area 28 w/Julie. Sampling Transect 9.

1430 At new proposed POL stockpile area w/Eric, pre-sampling



98

1530 Back at camp. Email & finalizing DQCRs 51 & 52.

1730 End of day

8/19/11

0700 Safety Meeting. Topics: Working w/Liner (winds, rough terrain, heavy lifting); Bagging (Noise, heavy equipment in close quarters); Debris Pickup (Proper lifting technique); Chop Saw PPE (hearing, face shield, chaps)

0700-1200 DQCR & NALEMP Duties

1200 Lunch

1500 On MOC site. ~~A1~~ Crew has excavated sidewall hot spot on NW (?) corner of A1 excavation.

1525 On Site 28. Julie, Lyndsey, & Eric ~~sampling~~ MF finishing up Transect 11. Left to do: 3 discrete locations.

1730 End of day

8/20/11

0700 Safety Meeting

0800 To Site 28 w/ QAR & Julie to spot addt discrete locations.

1000 Working on DQCR & other QC docs.

~~1200 Lunch~~ MF 1130-1300 NALEMP

~~1130 to~~ MF

1300 Doing Bulk Waste Bag Sampling

1600 Back at camp

1630-1740 NALEMP

1740 End of Day

8/21/11

0700 Safety Meeting, topics included slips/trips/fall; equipment moving around in new patterns; If you don't know, ask.

0800 Working on DQCR

0942 Headed to Site 28

1030 Headed to site 28 background. Eugene Toolie showing us the way. Side-by-sides from Site 7 to Graveyard hill, then north to the BKG site.

1144 Headed to Fish Camp to check up on NALEMP Crew

1205 Back @ camp w/ NALEMP Crew for Lunch.

1300 Checking out Arsenic Area (21?)

1330 Paperwork

1600 Stop by Pad 98 to check on sampling crew

1630 Headed to Fish Camp

1730 End of Day

8/22/11 Monday

0700 Safety Meeting Topics: rough terrain, proper lifting tech.
0715 NALEMP
0730 Sample management w/Julie
0910 To Fish Camp
1045 Working on DQCR for 8/21
1130 NALEMP
1400 Head to site 13 to observe excavation and sampling
1600 NALEMP
1730 End of day

08/23/11 Tuesday

0700 Safety meeting topics include Focusing on safety even though the operation is about to be scaled down temporarily.
0710 NALEMP
0900 Working on DQCR, etc.
1130 NALEMP
1230 working on paperwork
1300 stopped by site 13 to see how they were doing
1630 NALEMP
1730 End of day

8/24/11 Wednesday

0700 Safety meeting in mess hall

topics: Working in a tight area

Rough terrain

Heavy lifting

Safe travel

0710 NALEMP

~~0800 CQC Paperwork~~ MF

~~1130 NA~~ MF

0900 CQC Paperwork

1130 NALEMP

1255 Sampling @ A1

1530 Back @ camp

1700 NALEMP

8/25/11 Thursday

0700 Safety meeting topics included being safe in inclement weather, staying dry to stay warm.

0710 NALEMP

0800 CQC Paperwork

1130 NALEMP

1200 Lunch

1230 NALEMP

1400 Helping Lyndsey & Eric find mislabled PCB-soil bulk-waste bag 13H-4 → 13H-7

1630 NALEMP

1730 End of Day

8/26/11 Friday

0700 Safety meeting: topics included limited visibility while driving and ATVs not yielding to the loader

0720 NALEMP

0800 Working on Access + laboratory data w/ Marty

1130 NALEMP

1200 Lunch

1230 NALEMP

1400 DQCR

1650 NALEMP

1730 Dinner, end of day

8/27/11 – Misty's NALEMP

8/28/11

0700 Safety meeting topics include: Hearing protection around screen plant. Operations going on w/ short crew, be careful.

0710 NALEMP

0800 CQC Paperwork

1130 NALEMP

1200 Lunch

1230 NALEMP

1300 Observing Eric & Lyndsey collecting surface water VOC samples at site 8. Stopped by to check on perched water in the G/H plume pits.

1600 NALEMP

1730 Dinner, end of day

8/29/11

0700 Safety Meeting
0715 NALEMP
0800 CQC paperwork & cleaning up for Russell to take over
1100 Bering Air arrives w/18 personnel R. James, J. Aaking, M. Thompson, D. Byers, M. Gallegos, G. Mac, D. Rhode, S. Lovelle arrive on-site
- R. Black, C. Calugan, and M. Faust leave the site.
- Backfill material is being screened to separate the fines for Road repair
- Water Impoundment liner is holed by a piece of metal. Water leaked onto MOC, but after it was treated w/the scrubber

End 1730

8/30/2011

R. James,

0700 Safety

Environmental Meeting
- Results received for site 13
  - 13BW-13 thru 16
  - 413-5 thru 7
  - 13-285 thru 297
    - 294, 295, and 296 were above cleanup
- Cargo Beach Road is being repaired near the Y
- Borrow material is being screened and the segregated piles are being stockpiled. These were used to help repair the road
- Repairs are occurring on the Impoundment - A new liner was placed
- Site 31 stockpile results were received - Three locations were above cleanup levels
  - WAL SP-03, 09, and 10

8/31

R. James, Cloudy, Cool

0700 Safety - Electrical Safety - Check plugs & wires

ATV/UTV - Keep it slow in Camp

Environmental Meeting

- Separate the Haz PCB bags
- Discussed water levels in the G/H plume excavation area
- Jeremy stated that USACE is not wanting to dig a trench to drain the G/H plume.
- Eric informed Chuck of the stockpile PCB sample Results @ Site 31
- Bering Air CASA arrives ~~1430~~ RJ 1330 w/ Bulk Bags and Charles Kava
- Another Bering Air CASA arrives ~1600 hrs w/More bags and Michael Toolie
- Excavation resumed at site 31
  - Stockpile Material was removed and new samples were collected for the field lab
- ~2 to 3 bulk bags were filled

Rue James

R. James, Cloudy, Cool, Calm Winds

0700 Safety

- Wear Tyvek @ PCB sites
- Watch Swing Arm on Excavator
- Results received for site 13 318 thru 335 - 8 were above cleanup levels: 321 - 325, 329, 333, and 335
- Will move to site 15 after site 31 is finished today. The stockpile @ site 13 was moved yesterday and the PCB contaminated areas underneath it will be excavated
- Excavation continues @ site 31
- Screening operations and bag loading of PCB soil is underway
- 10 bags filled @ site 31 as of 1300 hrs ⇒ 31-12A
- Nunanek Landing craft is loaded around 1500 hrs
  - 19 flats were loaded

- End 1730

Rue James 9/2/11

 Friday 9/2/2011 NE Cape 34110008

R-James. Light Rain, 45°F

0700 Safety

- De-Con - Change the boot wash
- Don't walk under loads
- No smoking in the bag loading areas

Environmental Meeting

- continue @ site 31 - Reorganize the boot wash Decon area.
- Containment @ Pad 98 was constructed
- Soil from the drain liner will be moved to Pad 98
- More bags are in Nome and will make their way here today
- Weather is clearing in the Morning
- Bering Air and Security Aviation are given the OK for flying weather
- Bering Air arrives @ 1100 hrs w/more bulk bags - 3 pallets of bulk bags and 1 pallet of liners
  - Departs ~ 1145 hrs
- 46°F @ 1530 hrs, Cloudy - Broken
- Security aviation departs @ 1520 hrs (Arrived @ 1200hrs)
- Ron Broyles is taking over as

R. James

QAR for the next 10 days

- Molly Welker, Kurt Winkler, Carey Cossaboom, Tyler Ellingboe, Jeremy Craner leave the site on the Security flight
- Finish Site 31 and Move to 13

Russell James 9/3/2011

 Saturday 9/3/2011 NE Cape 34110008

R James, 45°F, Light Rain

0700 Safety

- Working in the dark - use lights/Flashlights/light tower

Environmental Meeting

- Excavating A1 and J1A today in the Hot Spots
- Field Screening will occur at site 31
- Confirmation sampling will begin at Site 13

- Ron says the Volvo 330 does not have a backup alarm - will check
- 1000 hrs, 45°F, 2mph winds West
- Bags are being loaded @ Site 13
- Material from the liner @ J1A and overexcavated material from A1 is being stockpiled @ Pad 98 (POL)
- 1030 hrs - Eric is laying out the confirmation grid @ Site 13
- Confirmation Sampling @ Site 13 1-72, 97-110 are collected for PCBs

Ru Ja

Sunday 9/4/2011 NE Cape 34110008

R James, Rain, Cool, 45°F

0700 Safety

- Enter/Exit PCB sites thru the boot wash
- Weather will be shifting; strong winds will build from the north

Environmental Meeting

- Eric will begin @ site 31 to Finish Field Screening while Lyndsey works Site 13 bag loading/Confirm sampling this Morning

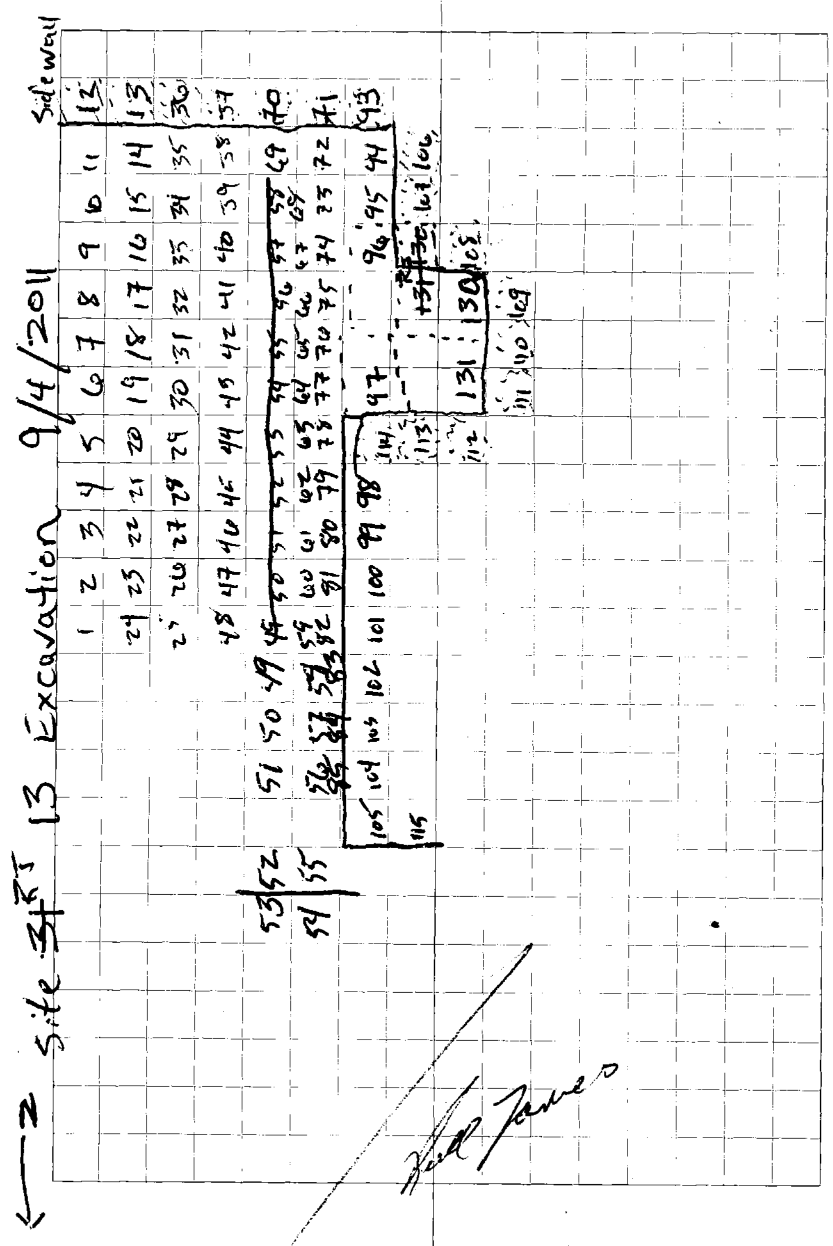
- Site 13 confirmation sampling
  - 131 primary samples collected
  - 14 duplicates
  - 7 MS/Ds

Ru Ja

Site 13 Sample IDs

Field Screen ID	Confirm ID
189	005
183	006
127	010
120	011
224	017
130	039
123	038
124	069
181	030
180	043
179	064
178	077
190	079
148	101

Site 13 Excavation 9/4/2011



42 Monday 9/5/2011 NE Cape 34110008

R. James Cloudy, Cool, N winds

0700 Safety
- Chill Factor
- 3-point Mount/dismount
- Don't overheat in Tyvek

Environmental Meeting
- Sample Packing this morning
- Lyndsey will oversee Site 13 Excavation
- Marty is running stockpile and POL Soils in the lab
- Ron requests a map of the sites
- Eric completes COC for samples
- Discuss COC w/Marty and I double check the COC for accuracy
- Coolers are packed and shipping label filled out => The samples will be shipped to TA Denver
- Site 13 is still being excavated under the stockpile liner @ Site 13.
- Meet w/ Lyndsey and Eric to discuss the current status of the excavations

Ron James

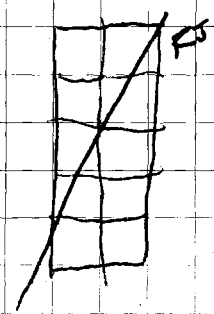
Tuesday 9/6/2011 NE Cape 34110008 43

R. James, Rain, Winds 30-40mph

0700 Safety
- Winds are strong

Environmental Meeting
- Finishing up @ Site 13, then sampling w/Aid of excavator

Site 13 Stockpile Area



27 bags filled @ Pad 98 Today
Ended with MOC85F

Ron James

 Wednesday 9/7/2011 NE Cape 3411008

R. James, Partly/Mostly Cloudy, High N Winds 41°F with 30°F Chill Factor

0700 Safety

- Winds - Be careful when opening lab doors and tent and car doors
- Results are received from field lab - Site 31, JIA, A1
  - One location @ A1 and three spots @ JIA are above cleanup and will be ~~ex~~ excavated.
- Lyndsey marked the areas w/paint @ JIA and A1
  - 7 locations remain @ site 31 that exceeded cleanup levels - these spots will be excavated along w/the hot spots that were under the stockpile/liner "Step-out" surface samples will be collected in 3 directions from the excavated stockpile area to try and delineate the extents of contamination.
- Begin DQCR 072
- Populate bulk bag spreadsheet and Field Lab sample spreadsheet

R. James

- Complete DQCR 072 and email to COR Broyles
- Discuss the dig plan @ site 31 w/Broyles - Broyles wants Bristol to excavate down 18" @ site 31 stockpile area
  - Pass this info on to Barnhill
- Barnhill changed the ice in the sample coolers and re-packed the samples
- Bagging @ site 31 and Pad 98

R. James

 Thursday 9/8/2011 NE Cape 34110008

R James,

0700 Safety

- Winds have calmed down, but still Beware
- Results received from Field Lab for site 13 - 444-448; 336-350
  - 444, 446, 447, and 337 were above cleanup levels
- Site 31 excavation continue from underneath the stockpile location
- POL bagging continued @ Pad 98
- Improvements were made @ Cargo Beach
- The airstrip was graded by Dale.

Ruel James

Friday 9/9/2011 NE Cape 34110009

~~R James, Rain, South Winds~~

0700 Safety

Winds are coming from the opposite direction today. Be Mindful when opening doors

- Will continue @ site 31 today w/More bagging crew to help in the wind
- Chuck Requests a map from Lindsey of the A1 excavation where confirm samples have returned w/clean Results
  - Wants to remove the hot spots @ A1 and put it in pad 98
- Plan to sample the POL overburden stockpile @ the MOC
- Excavating site 31
- Field Screening @ site 31 from the area beneath the stockpile
  ~40 samples collected

R James

48 Saturday 9/10/11 NE Cape 34110008
R. James, 43°F, 14 mph SSW winds

0700 Safety
- Backfill - Do not get close to excavation edge, especially in trucks

- Site 13 Field Screening results received - 13-424 thru 443 and 13-449 thru 468 received - 22 are above cleanup: 424, 426, 428, 429, 431, 436, 437, 442, 443, 449, 451 - 454, 457, 459, 460, 464 - 468. Sample 460 had concentration of 109.04 mg/kg
- Eric in Field Screening @ Site 31
- Bering Air Beechcraft arrives 1230hrs
  - Roger Wall, Suzanne Lovell, Jamie Allen and the NALEMP Crew depart the site - Some other locals departed the site as well
- Bering Air arrives @ 1640 w/ freight
  Cody Allen leaves the site
- Change bag ID MOC-69C @ 19,700 lbs to MOC-69F
- Lyndsey excavated hot spot in A1 and took Field screening samples

R. James 9/11/11

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Job # 34110008
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9/11/2011 - 10/3/2011.

USACE Contract W911KB-06-D-0007
Task Order 0007
FUDS# F10AK096903

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Project NE Cape HTRW 2011

Job # 34110008

W911KB-06-D-0007 Task Order 0007

F10AK096903

St. Lawrence Island, AK

CONTENTS

PAGE	REFERENCE	DATE

Sunday 9/11/2011 NE Cape HTRW 2011

R. James, Light Rain, High SE Winds

0700 Safety

Strong Winds are shifting to the SE

- Results received from Marty:
351-357; 469-478; 459-500

Objective:

- Concrete and Site 13 PCB bagging.
- Stockpile samples are collected @ MOC 8 samples submitted to field lab

R. James

Scale: 1 square=________

Monday 9/12/2011 NE Cape HTRW 2011

3-110008, R. James, ~45°F SE Winds

0700 Safety

- Use spotters when backfilling
- Face shields and hearing protection
- Beware of winds

Environmental Meeting

- A little more digging on site 13 today
- Marty says he'll have PCB results by 9am
- Security Aviation arrives ~1130hrs
- Bering Air arrives - Jamie Allan arrives on-site
- Field Screening samples are collected @ site 13

Ron Broyles leaves the site and Jeremy Cramer arrived.

R. James

Scale: 1 square=________

 Tuesday 9/13/2011 NE Cape 2011
54110008, R. James,

0700 Safety
- Work being done in close area.
Watch for people on ground. Swing Radius
Environmental Meeting
- Results received for site 13
388-407; 408-423; 13BW25-28
392, 397, 404, 412 and 415
are above cleanup levels.
- Plan to survey the Northern
side of the North Excavation
before some concrete is removed
@ site 13.

Bering Air arrives @ 1240 hrs
- Gases are delivered

Scale: 1 square=_______

Wednesday 9/14/2011 NE Cape 54110008
R-James

0700 Safety
- DeCon Area @ PCB sites will have
to be re-established
- Good job backfilling yesterday
Environmental Meeting
- WAL 359 - 395 Results received
from Field lab - 19 samples
were above cleanup levels (Site 31)
— these were from the
stockpile area
- Jeremy asks about the piece of
concrete that was in the
excavation; uncovered after much
of the other concrete was
exposed. He will ask Aaron and Ron
what they recommend.

Scale: 1 square=_______

 Thursday 9/15/2011 NE Cape
34110008, R. James

0700 Safety
- Project Winding down
- Site 31 and A1 field Screening results received - Hot spots remain in both locations
  - 3 Hot locations in A1
  - 5 Hot spots in the site 31 stockpile excavation area

Objective: Continue @ Site 31
· Mark concrete for wipe sampling @ site 13 and 31
· Excavate Hot spots @ A1
· PCB Results from JIA (85-88) and A1 (67-68) were received from field lab
  · JIA 86-88 were above clean up levels
- over-excavating A1 based on Field Screening Results - Also @ JIA
· Bering Air CASA arrives @1630

Friday 9/16/2011 NE Cape 34110008
R. James

0700 Safety
· Excavation Safety - Working off of the concrete faces in site 13 + 31
· Water Discharge

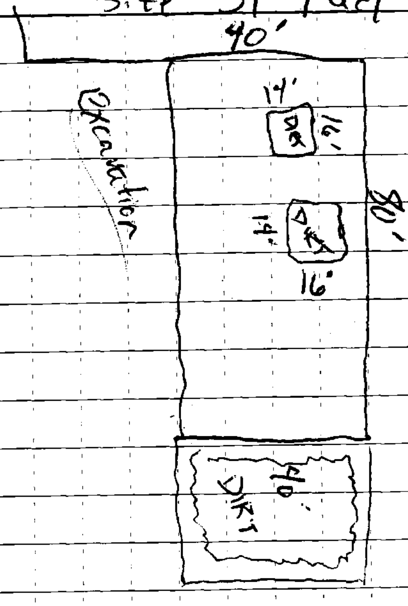
Environmental Meeting
- Results received for A1, site 31 and Site 13
- Find out how many concrete wipe samples are needed and Mark them out.

Bering Air Navajo @1230
Mike G, Mike T, Jebb, Dan, Emily C Leave Site.
- Tour of Sites @ 1300
  JIA - NW corner pending FS
  · Chuck will hang curtain to delineate boundary of backfill/EXC.
· G/H plumes will be backfilled
  Concrete in the Southern excavation @ 13 will be wiped
- Chuck wants to get water

samples @ the Pad 98 sump
Also sample overburden
stock pile near 98

11 wipe samples will be
collected from the top of the
Pad @ Site 31

Site 31 Pad



 Saturday 9/17/2011 NE Cape 34110008

R. James, Fog

0700 Safety

- Bag Crew: Watches out for each other
- Excavation safety - Don't stand close to Edge
- Always face the Eqpt in Work areas

Environmental Meeting

- More sampling @ site 31 for confirmation
- Wipe Sampling @ Site 13

- Assist EB and LK with Confirmation sampling at Site 31 Analyzing for PCBs
  - Collected 11NC31SS03U thru 148
  - Collected wipe sample 13 and submitted to lab
  - Bubble wrap samples @ 2100 hrs

End 2200 hrs

Ron James

Scale: 1 square=_______

Sunday 9/18/2011 NE Cape 34110008

R. James

0700 Safety

- Winds are building
- Slips, trips, falls

Environmental Meeting

Objective: Concrete wipes @ site 13

- Confirmation @ 31 and 13
- Water samples from Sump
- Confirmation samples collected from Site 31 sidewall
- Water samples collected from the collection sump @ Pad 98
- Wipe samples collected @ Site 13 - 9 wipes
- 2 site 31 BW samples were submitted to the Field Lab
- 2 site 13 BW samples were submitted to the Field Lab
- Site 31 Field Screening samples 449 - 484 received; Some hot spots remain.

Ronald James

Scale: 1 square=_______

 Monday 9/19/2011 NE Cape 34110008

R. James,

0700 Safety

How can we improve communications?

- Receive re-run results from the field lab for WAL-449 thru 468

Environmental Meeting

- Discuss surveying of sample locations in the deep locations @ 31
- confirmation sampling @ Site 31
  - Bottles prepped
  - Samples collected
- Bering Air arrives w/Navajo @ 1430 hrs. 5 coolers are loaded for Test America
- The survey crew surveys confirmation sample locations @ Site 31

Scale: 1 square=_______

Tuesday 9/20/2011 NE Cape 34110008

R. James, Partly cloudy, cool

@700 Safety

Walking in the dark -
Be aware of where you are

Environmental Meeting

- Survey Confirmation locs @ A1 and JIA.
- Confirmation sampling @ 31 and 13
- Eco Land surveyed the confirmation locs @ Site 31
- Pin flags were placed @ Site 13 for confirmation samples to be collected
- Sample prep/packaging

Scale: 1 square=_______

 Wednesday 9/21/11 NE Cape 34110008

R James, High North Winds

0700 Safety

- Below freezing Chill Factor
- Backfill - Keep rock trucks away from excavation
- Heavy lifting Techniques

- Results for Site 13 wipes and A1, J1A, and stockpile (POL) received
  - Wipes were clean
- Bering Air arrives ~1450 - 3 coolers are shipped out
- Confirmation sampling @ 13
- Conference call w/ Ron, Carrie, Molly, and Steve

R James

Scale: 1 square=________

Thursday 9/22/2011 NE Cape

3411000008 R James, Light Rain ~45°F

0700 Safety

- Continued North Winds, Freezing chill Factor
- Darkness - Be careful - Know where people on the ground are

Environmental Meeting

Objectives:

- Backfill A1
  - Maybe a boat on Saturday
- Jeremy asks about the POL stockpile areas / Liner - Chuck says he intends to leave them in place until next year
- Eric asks about wash water - Chuck says it will be drummed
- Confirmation sample @ Site 13
  - Assist EB and LK
- Perform punch-out checklists w/ J. Cranes for 5 DFWs
  - Will be attached to DQCR

Scale: 1 square=________

 Friday 9/23/2011 NE Cape 34110008

R-James, 43°F,

0700 safety

- Concrete Demo - PPE includes hearing protection
- Pit lining - Lifting Techniques, slips, trips, falls

Environmental Meeting

- Lining PCB sites - Fill w/minimal amounts of fill and armor w/Bags
- Samples packaged and ready to ship
- Security Aviation arrives ~1330 hrs. Marty, Talia, Jeremy, Jeff, and Matt leave the site
- Bering Air arrives ~1400 following Security's departure
  - Jeff leaves on the Bering Air flight

Scale: 1 square=

Saturday 9/24/2011 NE Cape

34110008, R. James, 40°F

0700 Safety

- Liner work - Tyvek
- Possible boat today

Environmental Meeting

- Dump boot wash and rinsate into drum
- Dispose of Tyvek
- Change spark plugs on Environmental truck
- Photos of Site 13 and 31
  Liner is in place @ 13

Scale: 1 square=

 Sunday 9/25/2011 NE Cape 34110008
K. James, 40°F

0700 Safety
- PPE - Hard Hats on the ground
- Complete DOCR 039 and email to Molly
Work on DOCR 040
- Work on Placards and labels
- Photos of site
- Liner in site 31 and bags being placed around the excavation.

Scale: 1 square=

Monday 9/26/2011 NE Cape 34110008
R James, Light Rain, 40°F Calm Winds

~~0730~~ 0800 Safety
Various breakdown - Lifting Techniques use Machines when able to
- Work on DOCR 041
- Place placards on PCB bags, Ash bags, and Arsenic bags
- Site 13 Excavations are being bordered by bags

Scale: 1 square=

 Tuesday 9/27/2011 NE Cape 3411008
R. James, 38°F

Safety
- Stay Vigilant Don't lose Focus
- DFCR completed
- Photos taken @ Beach / metal pile for NALEMP Project
- Boat expected late tonight, but did not land due to weather/surf.

Russell James

Scale: 1 square=_______

Wednesday 9/28/11 NE Cape 3411008
R. James Partly Cloudy, Cold 37°F

0800 Safety
- 28°F chill Factor, Cleaning, Packing, Washing today. Stay dry
- Wash Rock trucks
- Landing Craft @ 1400
- Offload loader and load bags

Scale: 1 square=_______

 Thursday 9/29/2011 NE Cape
3411000S R. James, Cool ~38°F

Safety
- Bagging - Safe Lifting, Make eye contact w/operators
- Sam Taalak expected around 0200 hrs tonight/tomorrow
- Bagging @ Pad 78 - 45 bags were weighed - 47 were filled
- Landing Craft loaded @ 0200 hrs on the morning of 9/30

R. James

Scale: 1 square=______

Friday 9/30/2011 NE Cape 34110008
R. James, 37°F, Steady N Wind

Safety
Bagging today - proper lifting techniques
- Watch out for each other
- Bags were loaded @ Pad 98
- Stockpiled soil was completely bagged

Scale: 1 square=______

 Saturday 10/1/2011 NE Cape 34110008
R. James, Cool, Snow overnight

Safety
- Snow/ice on Roads
- Pressure washing - be careful of slick surfaces
- DQCR completed
- Snow around camp and work sites
- Photos of work sites

Sunday 10/2/2011 NE Cape 34110008
R. James, Cold, Clear, 37°F/20°F Chill

Safety
- Cold temps, chill factor is down, winds are picking up.
- Will haul borrow material today
- landing craft loaded around 0400 hrs this morning
- Complete DQCR 097

 Monday 10/3/2011 NE Cape 34110008

R. James, Cold, Windy, N winds

~~ZS Envir~~ Safety Meeting

- Boat loading later this afternoon
  - Anticipate soft sand and difficult lifting w/loaders
- Bering Air @ 1730 hrs