NORTHEAST CAPE HTRW REMEDIAL ACTIONS

SITE 28 TECHNICAL MEMORANDUM REVISION 1

Northeast Cape, Saint Lawrence Island, Alaska

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ACRONYMS AND ABBREVIATIONS

′	minutes
°	degrees
AC&WS	Aircraft Control and Warning Station
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
AST	aboveground storage tank
bgs	below ground surface
Bristol	Bristol Environmental Remediation Services, LLC
COCs	contaminants of concern
DL	detection limit
DRO	diesel range organics
GRO	gasoline range organics
LOD	limit of detection
LOQ	limit of quantitation
mg/kg	milligrams per kilogram
MOC	Main Operations Complex
MS/MSD	matrix spike/matrix spike duplicate
NE Cape	Northeast Cape
NOM	natural organic matter
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
POL	petroleum, oil or lubricants
RI	remedial investigation
RRO	residual range organics
Suqi	Suqitughneq
SW	U.S. Environmental Protection Agency Solid Waste Test Method
TOC	total organic carbon
USACE	US Army Corps of Engineers
USAF	U.S. Air Force
UVOST	UltraViolet Optical Screening Tool
WACS	White Alice Communications System

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1.0 INTRODUCTION

This Technical Memorandum presents the results of characterization activities performed in August 2011 at Site 28 of the Northeast Cape (NE Cape), on Saint Lawrence Island, Alaska. Bristol Environmental Remediation Services, LLC (Bristol), performed the work for the US Army Corps of Engineers (USACE), Alaska District, under Contract No. W911KB-06-D-0007, Task Order 0007.

1.1 SITE HISTORY

Saint Lawrence Island is located in the Bering Sea, near the territorial waters of Russia, approximately 135 air miles southwest of Nome, Alaska, at 63 degrees (°) 20 minutes (′) north latitude and 168° 59′ west longitude (Figure 1). The project site, which originally encompassed 4,800 acres located near NE Cape, falls between Kitnagak Bay to the northeast, Kangighsak Point to the northwest, and the Kinipaghulghat Mountains to the south (Figure 2). A U.S. Air Force (USAF) Aircraft Control and Warning Station (AC&WS) was constructed at the site during 1950 and 1951, and was activated in 1952. In 1954, the USAF constructed a White Alice Communications System (WACS) station, composed of four large parabolic antennas and a building housing the electronic equipment. The facility functioned as a surveillance station, providing radar coverage for the Alaskan Air Command and, later, for the North American Air Defense Command. It was part of an Alaska-wide early warning system constructed to reduce potential vulnerability to bomber attacks across the polar region.

The AC&WS and WACS operations were terminated in 1969 and 1972, respectively. The majority of the military personnel were removed from the NE Cape site by the end of 1969. The NE Cape buildings, and the majority of furnishings and equipment, were abandoned in place because of the high cost of off-island transport. In 2000, the White Alice Station was reclassified as a formerly used defense sites (FUDS) eligible property, and the USACE included the area in the ongoing cleanup program for NE Cape.

1.2 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 returned to the island to construct a landfill cap, remove petroleum, oil or lubricants (POL)-containing drums, and perform a chemical oxidation study. In 2010, Bristol constructed a landfill cap over the Site 9 Housing and Operations Landfill; conducted an UltraViolet Optical Screening Tool (UVOST) investigation to delineate the extent of diesel range organics (DRO) contamination in soil at the Main Operations Complex (MOC) and removed POL- and polychlorinated biphenyl- (PCB-) contaminated soil.

2.0 SITE 28 DESCRIPTION AND BACKGROUND

Site 28 drainage basin is located north of the MOC and drains north into the Suqitughneq (Suqi) River, as shown in Figure 3. This site contains variable surface features consisting of wetlands, rolling tundra, ponds, and flowing streams. The most significant sources of surface water are overland flow (runoff) from the MOC and from the ground in the form of seeps immediately north of the MOC gravel pad and periodically throughout the drainage basin. Two distinct sub-drainages containing feeder streams originating as seeps drain into the main stream approximately one-quarter of the way down the drainage. Surface water runoff, usually during and immediately following occasional rainfall events, can contribute significant amounts of water to the basin. The general area contains subsurface, discontinuous permafrost, which significantly impacts the appearance of surface topography.

Three distinct drainages originate from the upgradient MOC gravel pad and contribute flow to Site 28 (Figure 4). The eastern drainage flows from the area adjacent to Sites 10 and 11, a vegetated area north of the former fuel tanks; the middle drainage originates from an area where a culvert was removed during 2010 remedial actions that previously directed flow from Site 27; and the western drainage is located downgradient of Site 13. The western drainage originated from a manhole and small, concrete supporting structure just north of the perimeter access road, which emptied into an artificially created swale. The manhole likely served as the drain leading from Building 110 (Heat and Electrical Power Building) at the MOC. In 2010, the concrete manhole structure was cleaned and removed. A 12-inch corrugated metal pipe, which attached to the manhole and continued upgradient toward the MOC, was cut and 63 feet of the pipe was removed. The open end of the pipe was then filled with bentonite and welded shut. In the middle drainage, another 12-inch corrugated metal pipe, measuring 32 feet in length, was completely removed.

Site 28 has been impacted by historical MOC bulk fuel releases in addition to releases from other sources. Soil staining has been observed near the head of the eastern drainage and at the former aboveground storage tank (AST) locations at Site 11. Sediments in the upper portion of the Site 28 Drainage Basin have been described as stained and will produce sheen when disturbed. Sampling activities occurred at the drainage basin between 1994 and 2001. Based on data available before 2011, the primary contaminants of concern (COCs) in soil and sediments are chromium, lead, zinc, PCBs, polynuclear aromatic hydrocarbons (PAHs), DRO, and residual range organics (RRO). The highest concentrations of contaminants are located proximal to the edge of the MOC gravel pad.

Surface water samples were collected from the drainage basin in 1994, 1996, and 2001. According to the Decision Document (USACE, 2009), concentrations of DRO, total recoverable petroleum hydrocarbons, PCBs, and lead, were elevated in 1994. Surface water samples collected in 2001 were analyzed for DRO, RRO, and PCBs. The samples were not analyzed for lead. DRO was detected at concentrations ranging from 0.39 to 2.3 milligrams per liter. PCBs and RRO were not detected. Data indicated that the most heavily contaminated surface waters of the drainage basin were found at the head of the western and middle drainages, located at the terminus of the former culverts.

3.0 2011 SITE 28 CHARACTERIZATION ACTIVITIES

3.1 SAMPLE LOCATION SELECTION

Sediment and soil sampling was conducted along transects and at discrete locations between the upper end of Site 28 and its confluence with the Suqi River to delineate the extent and magnitude of contamination at the site. The transect locations and discrete sample points were chosen to confirm the sample results from 1994, 1996, and 2001, as well as to gather additional information to fill data gaps within Site 28. Figure 4 shows the historical 2001 transect locations and the 2011 transect and sample locations.

3.1.1 Transects

Transect locations were proposed in the NE Cape work plan (Bristol, 2011) and confirmed or modified in the field by the USACE Quality Assurance Representative and the Bristol Contractor Quality Control System Manager. Transects generally encompassed an area between two banks of the drainage, which was defined by an approximate 2-foot increase in slope. The spacing and number of sample locations along each transect varied; sample locations were selected by the Field Team Lead based upon site conditions such as length of the transect and where contamination was likely to accumulate (e.g. ponded areas). Figure 4 shows transect and sample locations. Originally, a total of 70 sample locations were planned, having seven locations along a transect at three different depths (0.5 feet below ground surface [bgs], 1.0 foot bgs, and 1.5 feet bgs), for a total of 210 samples. This general procedure was followed wherever possible, though some variability occurred due to site conditions, for example:

A thick vegetative mat was present throughout much of the site. At many locations, the first depth where a true soil sample could be collected was deeper than 0.5 feet bgs. After the first sample was collected at a particular location, subsequent samples were collected at 0.5-foot intervals until three depth intervals were collected, or refusal was reached.

Shorter transects may have fewer samples than longer ones, with sample locations being more densely populated in stream channels and standing water.

Refusal from rocks or permafrost occurred at some sample locations. At these locations, only one or two depth intervals could be collected.

3.1.2 Discrete Samples

The maximum number of samples to be collected at Site 28 was 210. Following sampling of the initially selected transects, 32 surplus samples remained. It was decided that these remaining samples would be collected at other discrete locations within the drainage that met the following conditions:

1. Discrete samples were collocated with historical samples that contained elevated contaminant concentrations, particularly PCBs.
2. Samples were in low-lying depositional areas where contaminants most likely accumulated.

Samples were collected from 12 discrete locations within the Site 28 drainage basin.

Like the transect samples, discrete samples were attempted to be collected at three different depths (0.5 feet bgs, 1.0 foot bgs, and 1.5 feet bgs) at each sample location. Due to the vegetative mat at some discrete sample locations, the first depth where a true soil sample could be collected was greater than 0.5 feet bgs. After the first sample was collected at a particular location, subsequent samples were collected at 0.5-foot intervals until three depth intervals were collected, or refusal from either rocks or permafrost.

3.2 MATRIX DETERMINATION – SOIL VERSUS SEDIMENT

The Site 28 drainage basin is a wetland made up of swales, pooled water, flowing water, and relatively dry areas. Because of the variety of site features, the samples collected could be either a sediment matrix or a soil matrix. The distinction of whether a sample is soil or sediment is important because the project cleanup levels for COCs vary based on the type of sample; for example, sediment samples have a DRO/RRO cleanup level of 3,500 milligrams per kilogram (mg/kg), whereas DRO/RRO soil samples have a cleanup level of 9,200 mg/kg. As a result, characterization of the sample's physical properties can have a significant impact on future removal actions.

Initially, sediment was defined as material that appeared to have been transported and deposited by water, and all other material was considered soil. Samples collected during the field effort were defined as soil or sediment based on observations made at the time of collection, and the matrix was noted on field forms. After the field effort, the definition of a sediment or soil matrix was modified through discussions with USACE. All bank samples collected along the basin slope located topographically higher than the stream, ponds, and wetlands were considered to be a soil matrix. In wetlands, ponds, or active stream channels, material collected from 0–0.5 foot bgs was considered to be a sediment matrix; samples collected greater than 0.5 foot bgs or below vegetative mat were considered to be a soil matrix. The matrix originally noted on the field forms is now obsolete due to the modified definition.

Soil boring logs (Appendix C) were developed for each borehole location using the information recorded on the field forms. Matrix designations on the field forms were purposely not included in the electronic boring logs due to the modified definition of sediment. The modified definition of sediment, along with information contained in the field forms and electronic boring logs, were used to assign a matrix designation to each sample collected at Site 28 (see Tables 1–4). Figures 5, 6, 15, 16, 17, and 18 were developed based on the tables.

3.3 SAMPLING PROCEDURES

Site 28 samples were collected using a 4-inch diameter hand auger with a T-handle. Sample depths were measured by marking the auger handle at the ground surface at its sample collection depth. The distance between this reference mark and the sample contained within the auger barrel is equal to the depth bgs. Samples were collected from within the auger barrel, but not from any area within the barrel where the possibility for slough could cross-contaminate samples (e.g., the uppermost exposed soil in the auger barrel). The sampling method, combined with the prevalent silts and clays, resulted in strong auger borehole structural integrity, as well as a high-integrity sample collection protocol. Sample material was removed from the auger and placed into a stainless steel bowl, and then placed into appropriate containers provided by the laboratory. Samples for volatile analyses were collected first by transferring approximately 20-25 grams of material into a tared 4-ounce container. Methanol preservative (provided by the laboratory) was immediately poured over the soil sample, and the container was sealed tightly. The remaining analyses were collected after the volatile samples. All samples were placed into a chilled sample cooler and then transferred to the sample refrigerator until shipment to the laboratory. New disposable nitrile gloves were used for each sample, and the auger and bowl were decontaminated between each sample. Decontamination procedures consisted of an Alconox® wash followed by a double rinse of tap water and deionized water. Brushes were used during the initial wash to aid in the removal of solid particles. Sample locations were marked with laths and surveyed by ECO-LAND, LLC. The samples were shipped via Bering Air to Nome, and then from Nome to TestAmerica Laboratories, Inc., in Tacoma, Washington, under chain-of-custody procedures. Field activities are shown in a photograph log included in Appendix A. Sample information and field observations were recorded on field forms included in Appendix B. Boring logs are provided in Appendix C.

Samples were analyzed for petroleum hydrocarbons (benzene, toluene, ethylbenzene, and total xylenes [BTEX]; gasoline-range organics [GRO]; DRO/RRO; and PAHs), PCBs, and the Resource Conservation and Recovery Act (RCRA) 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) plus nickel and vanadium. Analyses also included silica gel cleanup of DRO/RRO extracts and total organic carbon (TOC) for a biogenic interference evaluation following the Alaska Department of Environmental Conservation (ADEC) Technical Memorandum 06-001 (ADEC, 2006). Duplicate samples were collected at a rate of one per 10 samples or 10 percent, and matrix spike/matrix spike duplicate (MS/MSD) analyses samples were collected at a rate of one for every 20 primary samples or 5 percent. Analytical results are discussed in Section 4.0.

3.4 BACKGROUND SAMPLES

Background samples were collected from a nearby drainage to evaluate biogenic interference or naturally occurring organic material. The background drainage was located approximately 1 mile east of Site 28 and was outside of the impact areas from the former military installations at NE Cape (Figure 3). The selected background drainage had similar topography and vegetation to Site 28, and the soil and sediment material were similar to Site 28 in character. Background samples were collected using the same procedures as the

Site 28 samples; the samples were collected at three different depths from four sample locations, for a total of 12 primary samples.

Background samples were analyzed for DRO/RRO and DRO/RRO with silica gel cleanup, and TOC. Duplicate samples were collected at a rate of one per 10 samples or 10 percent, and MS/MSD analyses samples were collected at the rate of one for every 20 primary samples or 5 percent. Analytical results are discussed in Section 4.0.

3.5 TOPOGRAPHIC SURVEY

A topographic survey of Site 28 was performed by licensed professional surveyors at ECO-LAND, LLC. The survey (1.0-foot primary and 0.5-foot secondary contours) encompassed the entire Site 28 drainage basin, approximately 29 acres, and centered west-east on the western, middle, and eastern drainages. The present-day edges of water, including standing water within vegetated areas as well as open water, were recorded during the survey and are noted in Figure 4. The raw topographic survey information is provided in the supplemental data files to this report.

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4.0 SITE CHARACTERIZATION RESULTS

Analytical results were compared to site-specific cleanup levels specified in the decision document (USACE, 2009). If a cleanup level was not specified in the decision document for a particular analyte, soil results were compared to Title 18 Alaska Administrative Code, Chapter 75, Tables B1 and B2 *Migration to Groundwater* (ADEC, 2008); and sediment results were compared to NOAA SQuiRT threshold effects level (TEL) and probable effects level (PEL) screening values (Buchman, 2008). Some analytes did not have sediment cleanup levels listed in either the 2009 Decision Document or the NOAA SQuiRT tables.

Many of the samples submitted to the laboratory had high moisture content due to the saturated conditions in Site 28, which affected the analytical reporting limits. Laboratory-stated detection limit (DL), limit of detection (LOD), and limit of quantitation (LOQ) values are based on analyzing and reporting samples with no moisture present. High moisture content in a sample elevates the DL, LOD, and LOQ proportionately when the sample's dry weight is calculated. Some samples collected had up to 89 percent moisture, which elevates non-detect reporting limits approximately 9 times greater than a sample with no moisture present. When target analytes such as DRO, PCBs, and PAHs were present in high concentrations, dilutions were necessary to bring analytes within calibration range. The dilutions resulted in some target analytes being reported non-detect above site-specific cleanup levels. Additionally, some samples analyzed using U.S. Environmental Protection Agency Solid Waste Test Method (SW) SW8270SIM [selective ion monitoring] and SW8082 were submitted with insufficient sample mass, which resulted in an elevated LOD. If an analyte was not detected but the LOD was greater than the cleanup level, the analyte was considered not to have met project quality objectives. Samples with positive results exceeded cleanup levels for one or more analytes in 102 of the 210 primary Site 28 samples. The 210 primary samples included 22 sediment samples.

The Site 28 analytical results for sediment are presented in tables 1 and 2; soil results are presented in tables 3 and 4. Table 1 contains all sediment results, and Table 2 contains sediment results exceeding cleanup levels. Table 3 contains all soil results, and Table 4 contains soil results exceeding cleanup levels. The Site 28 laboratory Level IV data reports are provided electronically along with electronic data deliverables. Figure 5 shows sample locations that exceed cleanup levels for any analyte. Analytical results are discussed in more detail in the following sections.

4.1 HISTORICAL SAMPLE LOCATIONS AND CURRENT ANALYTICAL SAMPLE RESULTS

The transect locations and discrete sample points were chosen to confirm the sample results from 1994, 1996, and 2001 and to assess the current COC concentrations. Discrete samples were collected at six locations that historically contained elevated PCB concentrations. A brief review of data collected in 2001 shows that concentrations of DRO and RRO throughout the drainage basin are similar to the concentration detected in 2011. The following table presents a comparison of historical PCB and DRO results with the sample results from the 2011 investigation.

Sample ID	Sample Depth (feet bgs)	Aroclor-1254 Concentration (mg/kg)	Aroclor-1260 Concentration (mg/kg)	DRO Concentration (mg/kg)
94NE28SW/SD110	Unknown	5.16	1.35	11,500
11NC28SS049-1_5	1.5	ND (0.024)	ND (0.024)	32,000
94NE28BH10-2	Unknown	2.17	ND	104,000
11NC28SS068-1	1	0.029 J	ND (0.034)	29,000
96NE28SW/SD101	Unknown	ND	1.4	19,000
11NC28SS027-0_75*	0.75	ND (0.066)	ND (0.066)	4,400
11NC28SS028-0_5*	0.5	0.230 Q	0.500 Q	59,000
01NE28SD119	0.5	0.34	0.39	36,000
11NC28SS075-1_5**	1.5	ND (0.074)	ND (0.074)	930
01NE28SD155	0.5	1.7	0.7	88,000
11NC28SS066-0_75	0.75	2	1	97,000
01NE28SD156	1.5	0.52	0.23	85,000
11NC28SS066-1_25	1.25	0.79	0.42	46,000
01NE28SD167	0.5	ND	5.43	17,000
11NC28SS067-0_5	0.5	0.14	0.22	1,800

Sample ID	Sample Depth (feet bgs)	Aroclor-1254 Concentration (mg/kg)	Aroclor-1260 Concentration (mg/kg)	DRO Concentration (mg/kg)
01NE28SD168	1.5	ND	0.68	8,200
11NC28SS067-1_5	1.5	ND (0.120)	1.8	16,000

Notes:

The first sample in each group (shaded in gray) is the historical sample; the subsequent sample(s) shown in white are the corresponding 2011 samples.

*Samples 11NC28SS027-0_75 and 11NC28SS028-0_5 are both located approximately 25 feet from historical sample 96NE28SW/SD101.

**Sample 11NC28SS075-1_5 is located approximately 100 feet from historical sample 01NE28SD119.

bgs = below ground surface
J = result is an estimate
mg/kg = milligrams per kilogram
ND = non-detect
Q = one or more laboratory quality control criteria was outside of limits

4.2 Fuel Constituents Analytical Results

The fuel-related analytes that most frequently exceeded cleanup levels include DRO, RRO, 1-Methylnaphthalene, 2-Methylnaphthalene, and naphthalene. The most prevalent COC at Site 28 is DRO, with almost half of the samples collected in 2011 exceeding DRO cleanup levels. Thirty-nine of the 210 primary samples collected exceeded cleanup criteria for GRO, and eight samples exceeded cleanup levels for ethylbenzene, toluene and/or total xylenes. Benzene did not exceed site-specific cleanup levels in any of the samples. Results for 67 primary samples exceeded cleanup levels for PAHs. Nine samples had non-detect results for PAHs, with the reported LOD exceeding cleanup levels.

The most concentrated areas of fuel contamination are located in the southern portion of Site 28 near the MOC, particularly in the western and middle drainages. The fuel contamination extends from the southern edge of Site 28 along low-lying areas and drainage channels in a northwestern direction, and a northerly direction along the drainage channel. Figure 6 shows the sample locations that exceed cleanup levels for fuel constituents (GRO, DRO, RRO, toluene, ethylbenzene, xylenes, and PAHs).

4.2.1 Biogenic Components

Site 28 is a low-lying area with some standing water and a drainage that empties into the Suqi River. The site contains lush vegetation with a thick organic mat and discontinuous permafrost underlying the site. Because of the short summer season and saturated conditions, vegetative organic matter does not break down and decompose readily, which leads to deposition of natural organic matter (NOM). A portion of this NOM is extracted when soil samples are analyzed for DRO/RRO and PAHs. PAH sample concentrations are not affected by NOM, but the instrument capability is affected as non-target interference, which in some cases necessitates the dilution of sample extracts. When samples are analyzed for DRO and RRO, there is no way to directly distinguish between natural and petrogenic DRO and RRO. The inability to distinguish between natural and petrogenic compounds is termed “biogenic interference.” Silica gel treatment of sample extracts removes medium and high polarity compounds from both natural and petrogenic sources. Unweathered fuel mainly comprises non-polar compounds (i.e., straight chain hydrocarbons), so the silica gel treatment does not remove the fuel component from the extract. A review of DRO/RRO sample chromatograms with fuel present at various sample locations shows that straight chain hydrocarbons are present in the chromatograms and are likely attributed to diesel fuel in the diesel range.

Site 28 samples were also analyzed for TOC in accordance with ADEC requirements when evaluating samples for biogenic interference (ADEC Technical Memorandum 06-001). The TOC results varied with a range from 8,700 to 450,000 mg/kg, with an average of 112,000 mg/kg. The TOC analysis also does not distinguish between NOM and POL, and there is no extraction or cleanup method to separate natural and POL components for TOC analysis. The sample with the lowest TOC result did not show any POL in the chromatogram. The sample with the highest TOC result, Sample 11NC28SS063-0.75 (located in Transect 11), had a distinct fuel pattern and a DRO result of 58,000 mg/kg (Figure 7). The DRO result for Sample 11NC28SS063-0.75 did not decrease with silica gel cleanup; the result actually increased by 8 percent with silica gel cleanup. This increase is possibly due to a greater instrument response when polar compounds are removed, or due to instrument calibration variability within method control limits.

4.2.2 DRO/RRO Sample Results with Silica Gel Cleanup

The current ADEC approach for the use of silica gel-treated DRO and RRO sample results is to allow silica gel-treated results to demonstrate that site cleanup goals have been met when no discernable fuel pattern is present in chromatograms, and biogenics are present in the sample chromatograms. Per Technical Memorandum 06-001 (ADEC, 2006), in order to use silica gel-treated sample data, a single soil sample is extracted once and an aliquot of the extract is analyzed for DRO and RRO by Alaska Test Methods AK102 and AK103 without any further alteration or treatment. A second aliquot of the same extract is passed through an activated silica gel column, and the extract is analyzed with the same analytical methods as the untreated samples. Additionally, the same soil is analyzed for TOC content as part of the requirements stated in Technical Memorandum 06-001. For future confirmation sampling at this site, a qualified person within the ADEC will review sample results and chromatograms to determine whether the sample results adequately demonstrate that site cleanup goals have been met either with untreated results or silica gel-treated results. In order to use the silica gel-treated results, the presence of biogenics must be clearly demonstrated in the silica gel-treated and untreated results and sample chromatograms.

The main POL contaminant identified at Site 28 is DRO and is likely arctic diesel or #1 diesel, though no arctic or #1 diesel standards were analyzed concurrently with Site 28 samples for comparison.

4.2.2.1 Eastern Drainage

Transect 1, located in the eastern drainage, showed concentrations of DRO exceeding site-specific cleanup levels in all sampled depths at sample location 11NC28SS001 (0.5, 1 foot, and 2 feet bgs), and at sample location 11NC28SS002 at 2 feet bgs. Samples collected at 2.5 and 3 feet bgs at sample location 11NC28SS002 had DRO concentrations below site-specific cleanup levels (5800 mg/kg and 5100 mg/kg, respectively), though they exceeded cleanup levels for 1-Methylnaphthalene and 2-Methylnapthalene. PAHs 1-Methylnaphthalene and 2-Methylnaphthalene are hydrophobic and tend to adsorb onto soil and fine mineral particles.

In samples 11NC28SS001-0.5, 11NC28SS001-1, and 11NC28SS002-2, DRO concentrations were reduced less than 20 percent with silica gel cleanup, but the RRO concentrations were reduced by 50 percent or more with silica gel.

Figure 8 shows a chromatogram of sample 11NCSS28007-1.5 (located in Transect 2) with fuel present below cleanup levels, as well as biogenics in the residual range. Figure 9 is a chromatogram of sample 11NC28SS005-1 with no silica gel, showing a typical biogenic pattern and no distinguishable POL present.

4.2.2.2 Western and Middle Drainages

The western drainage, located adjacent to and north of the former manhole and culvert, contained significant DRO concentrations that ranged from 2,800 to 150,000 mg/kg without silica gel cleanup and RRO concentrations that ranged from 1,500 to 21,000 mg/kg without silica gel cleanup. Silica gel treatment did not reduce the DRO concentrations in the majority of samples, but reduced the RRO concentrations in samples that exhibited both POL and NOM characteristics in the sample chromatograms. This suggests that the NOM signature occurs mostly in the residual range on chromatograms.

The middle drainage is separated from the western drainage by a topographically high area. A 32-foot culvert, believed to allow storm water and snow melt to pass under the perimeter road, was removed in 2010. The western and middle drainages were characterized by discrete samples collected at historical locations that showed COC exceedances and also by samples collected along Transect 4 as shown in Figures 4 and 18. The middle drainage contained more sediment than the western drainage, but both had sample results for DRO at similar concentrations along Transect 4. Silica gel treatment of DRO/RRO samples collected in the middle and western drainages did not reduce DRO concentrations but did reduce RRO concentrations to varying degrees.

The majority of sample chromatograms with DRO above cleanup levels display the typical fuel "hump" in the light diesel range (Figure 7). Several chromatograms also showed a hump in the residual range with motor oil-like characteristics, which is likely attributed to POL as shown below:

Sample 11NC28SSSS017-2, collected in the middle drainage on Transect 4, shows both diesel and motor oil-like patterns in the chromatograms (Figure 10). DRO concentrations were above cleanup levels with a result of 23,000 mg/kg in the untreated sample and a result of 20,000 mg/kg in the silica gel-treated sample. Silica gel cleanup only reduced the RRO result for 11NC28SSSS017-2 by 15 percent, from 3,200 to 2,700 mg/kg.

Sample 11NC28SS071-1, collected downgradient from Transect 4, exhibits both fuel and motor oil patterns in the chromatograms (Figure 11). Sample results for DRO and RRO exceeded cleanup levels with and without silica gel treatment: 26,000 mg/kg DRO and 14,000 mg/kg RRO without silica gel treatment, and 31,000 mg/kg DRO and 13,000 mg/kg RRO with silica gel treatment.

4.2.2.3 Main Channel

Transect 11 was located in the flowing water of the main channel area, approximately halfway between the MOC and the confluence with the Suqi River. The sample matrix was a combination of soil and sediment. Sample results showed DRO concentrations exceeding cleanup levels in 5 of the 6 sample locations, with several PAHs exceeding cleanup levels at the same locations that also have DRO present above cleanup levels. RRO exceeded the cleanup level at a single location, 11NC28SS062, at a depth of 0.75 feet bgs. Chromatographic interpretation of Transect 11 samples indicate that POL as DRO is present with little biogenic contribution.

4.2.3 Background Organic Analysis

Twelve primary background samples were collected as part of the site characterization to determine the magnitude of biogenic contribution to DRO and RRO results. The background sample location was selected in an area that had a minimal likelihood of POL contamination present, and had similar topography and hydrology as Site 28. The background location was approximately 1 mile east of Site 28 (Figure 3); sample locations are shown in Figure 12.

Background samples were analyzed for DRO and RRO by AK102 and AK103 with and without silica gel cleanup, and TOC. Based on chromatographic interpretation (Figures 13 and 14, sample 11NC28SS079-3 with and without silica gel treatment) and observations by field personnel, there was no evidence of any petrogenic sources in the background samples. The samples contained varying concentrations of NOM in the diesel and residual ranges. None of the background samples exceeded site-specific cleanup levels for DRO. Background DRO concentrations ranged from 74 to 2,400 mg/kg without silica gel treatment, and 50 to 1,500 mg/kg with silica gel treatment. The silica gel reduced the average DRO concentrations by approximately 45 percent. The untreated RRO sample results ranged from

670 to 24,000 mg/kg, and from 420 to 7,700 mg/kg with silica gel treatment. More than half of the background samples exceeded site cleanup levels for RRO before silica gel treatment, but they were all below soil cleanup levels following silica gel treatment. Silica gel treatment reduced the average RRO concentrations by more than 72 percent. Background sample analytical results are presented in Table 1.

4.2.4 Evaluation of Biogenic Components

Site 28 is highly organic with POL analytes present above site-specific cleanup levels. Samples that did not show fuel-like patterns in chromatograms, such as the background samples, had the average DRO concentrations reduced by approximately 45 percent with the silica gel cleanup, and the RRO concentrations reduced by more than 70 percent with silica gel cleanup. However, most of the Site 28 samples did not show any appreciable reduction of DRO concentrations with silica gel treatment and, in some instances, the DRO concentration slightly increased following silica gel treatment.

Still, due to the presence of NOM, any additional samples collected at Site 28 should be silica gel treated to minimize biogenic interference. The value of analyzing samples for TOC appears to be minimal, other than meeting ADEC requirements to demonstrate that biogenics are present.

4.3 PCB Analytical Results

PCBs exceeded cleanup levels in 11 of the primary Site 28 samples. PCBs were not detected above cleanup levels in samples collected from Transects 2, 4, 7, 8, 9, 10, and 11. Eleven primary samples exceeded cleanup levels for Aroclor-1254, Aroclor-1260, or the sum of Aroclor-1254 and Aroclor-1260. The samples that exceeded PCB cleanup levels were located in Transects 1, 3, 5, and 6, as well as three of the 12 discrete sample locations. With the exception of discrete sample 11NC28SS073, the samples with PCBs exceeding the cleanup level were located near the MOC, within approximately 600–700 feet of the pad.

Table 1 shows complete analytical results, and Figure 15 highlights sample locations that exceed the PCB cleanup level.

4.4 METALS ANALYTICAL RESULTS

Arsenic and chromium were the primary metals detected above cleanup levels at Site 28. Chromium was detected above the cleanup level in 22 samples, and arsenic was detected above the cleanup level in 14 samples. Selenium was also detected above the cleanup level in four samples. Discrete Sample 11NC28SS066-0_75, located near the former manhole at the western drainage and collected at historical hotspot sample location 01NE28SD155, exceeded the cleanup levels for cadmium and lead, as well as arsenic and chromium. The samples that exceeded one or more of the metals cleanup levels are scattered throughout the entire Site 28 drainage basin, and not confined to one particular area. Table 1 shows complete analytical results, and Figure 16 highlights sample locations that exceed the cleanup level of one or more metals.

4.5 DATA VERIFICATION

Sample results submitted for the Site 28 Technical Memorandum were reviewed by Bristol personnel for completeness and accuracy. Data verification of all samples submitted for certified laboratory analysis was performed by a third-party review by AECOM, as described in the NE Cape 2011 Quality Assurance Project Plan (QAPP). The Chemical Data Verification Report and the ADEC checklists are provided in Appendix D.

4.6 NATURE AND EXTENT OF CONTAMINATION

The point sources of contamination that have impacted Site 28 appear to originate from several locations of the MOC, including the former ASTs near the eastern drainage, and from two former culverts that terminated in the western and middle drainages.

Contaminants exceeding ADEC and site-specific cleanup levels at the site include DRO, RRO, toluene, ethylbenzene, total xylenes, PAHs, PCBs, arsenic, cadmium, chromium, lead, and selenium. Based on the total number of exceedances, DRO is the COC that is most frequently observed.

The estimated volumes of contamination at Site 28 are based on an evaluation of the 2011 sample locations and depths, and the 2010 UVOST area near the MOC pad.

Figure 17 shows potential sediment removal areas, along with removal depths and estimated areas and volumes. The areas delineated for sediment removal are confined to the drainage area, with standing and flowing water where sediment may be present. Removal areas bordered in black show sediment that is known to be contaminated based on the 2011 investigation results. Removal areas bordered in pink were not investigated during 2011, but are areas where contaminated sediment may potentially be present. Bristol recommends further investigation to better define and map areas where sediment is present at Site 28, and sampling of those areas to determine whether the sediment is contaminated. Remediation decisions will need to take into consideration whether aggressive sediment removal would cause more harm than good.

Figure 18 shows three areas of potential soil removal, along with removal depths and estimated areas and volumes for each zone.

The Zone 1 soil removal estimate incorporates the area from the 2010 UVOST investigation above the DRO cleanup level in Site 28 but does not take into account the depths of potential contamination interpreted from the 2010 UVOST results. The depth used to calculate the volume of soil to be removed from Zone 1 is based only on the 2011 transect results. The estimated soil removal area for Zone 1 is 119,801 square feet, with a recommended removal depth of 3 feet. The estimated soil removal volume for Zone 1 is 13,311 cubic yards.

The area delineated for the Zone 2 soil removal estimate was based on the contamination being confined to the drainage area with 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. The estimated soil removal area for Zone 2 is 47,391 square feet, with a recommended removal depth of 4 feet. The estimated soil removal volume for Zone 2 is 7,021 cubic yards.

There are no estimated removal volumes for Zone 3 because there are only a few analytes above cleanup levels, and those analytes were only slightly above the cleanup level. Arsenic was detected in sample 11NC28SS076 at the cleanup value of 11 mg/kg, and chromium was detected in samples 11NC28SS075 and 11NC28SS076 at 26 mg/kg and 30 mg/kg respectively, just above the cleanup value of 25 mg/kg. The chromium results are for total chromium and did not distinguish between trivalent and hexavalent chromium. Hexavalent chromium, which is more toxic than trivalent chromium, is generally associated with industrial manufacturing and is unlikely to occur at a non-industrial setting such as NE Cape. Chromium is not considered a COC at NE Cape.

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5.0 RECOMMENDATIONS

The cleanup of Site 28 will require processing and handling of large volumes of water to recover the contaminated sediment and soil. Bristol estimates that the process water volumes will be in excess of 50,000 gallons per day. Dewatering of the entire site is not a realistic option. In 2001, Bristol performed processing and treatment of water and sludge from sewage lagoons contaminated with PCB on Amchitka Island. The project was similar to Site 28 as it required processing and handling of large volumes of water (approximately 18,000 gallons per day) to recover the sediments and particulates contaminated with PCBs. A similar process will likely be required at Site 28. Sediment, soil, and organic matter will need to be dewatered and possibly heated to reduce the moisture content to levels acceptable to the disposal facility. Possible solutions include the use of settling tanks, a filter press or decanter centrifuge, and a thermal processor to reduce moisture content. The procedure would also require sampling, filtration, and treatment of the process water prior to discharge. The dewatering facility could be located at the MOC. Many of the locations within Site 28 are too wet to allow heavy equipment access; therefore, a proposed road that parallels Site 28 is shown in Figures 17 and 18, which would allow heavy equipment access to areas in the downstream contaminated sections near the Suqi River. Crane pads, silt fencing, and coir logs would also be required. The proposed heavy equipment includes the use of a vacuum truck, suction dredge, or similar piece of equipment to recover the contaminated sediments.

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6.0 REFERENCES

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TABLES

Table 1
Site 28 Sediment Analytical Results
(all results in mg/kg)

Analyte	Analysis Method	Sediment Cleanup Level	NOAA SQuiRT TEL	NOAA SQuiRT PEL	11NC28SS011-0_5	11NC28SS012-0_5	11NC28SS013-0_5	11NC28SS018-0_5	11NC28SS019-0_5	11NC28SS020-0_5	11NC28SS021-0_5	11NC28SS026-0_5	11NC28SS028-0_5	11NC28SS029-0_5
Sample Depth (feet bgs)					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Matrix					Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Location ID					28-3-2-0.5	28-3-3-0.5	28-3-4-0.5	28-4-2-0.5	28-4-3-0.5	28-4-4-0.5	28-4-5-0.5	28-5-2-0.5	28-5-4-0.5	28-5-5-0.5
Lab ID					580-28053-23	580-28053-27	580-28053-31	580-28112-5	580-28112-8	580-28112-11	580-28112-13	580-28112-28	580-28112-35	580-28112-38
Date Collected					8/14/11	8/14/11	8/14/11	8/15/11	8/15/11	8/15/11	8/15/11	8/16/11	8/16/11	8/16/11
					Transect 3	Transect 3	Transect 3	Transect 4	Transect 4	Transect 4	Transect 4	Transect 5	Transect 5	Transect 5
Percent Moisture (%)	EPA Moisture	--	--	--	41	56	63	55	33	42	53	47	37	53
DRO	AK102	**3500**[1]	--	--	8100	4600	2000	100000	70000	80000	92000	36000	57000	58000
DRO with Silica Gel	AK102	**3500**[1]	--	--	6600	3600	1400	90000	75000	81000	96000	38000	59000	62000
RRO	AK103	**3500**[1]	--	--	5600	5100	6300	6800	6700	11000	12000	19000	21000	17000
RRO with Silica Gel	AK103	**3500**[1]	--	--	3600	1200	2000	2900	5200	7700	8400	18000	20000	18000
Total Organic Carbon	EPA 9060-Quad	--	--	--	68000	160000	180000	150000	40000	96000	87000	63000	52000	89000
GRO	AK101	--	--	--	9.7 B	12 B	4.3 J B	460	280	280	470	260	240	60
Benzene	EPA 8260B	--	--	--	0.011 J	0.012 J	0.042 J	0.88	0.029 QH	0.42	0.11	ND (0.023)	ND (0.016)	0.064
Ethylbenzene	EPA 8260B	--	--	--	0.015 J	ND (0.071)	ND (0.083)	8.1	0.078 QH	2.5	0.091 J	0.077 J	0.029 J	0.84
Total Xylenes	EPA 8260B	--	--	--	0.12 J	0.084 J	0.98	69	1.36 QH	21.3	7.9	1.65	3.4	6.4
Toluene	EPA 8260B	--	--	--	ND (0.039)	ND (0.071)	0.17	0.9	ND (0.043)	0.13	0.042 J	0.04 J	0.019 J	0.1
PCB-1016	EPA 8082A	**0.7**[1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL
PCB-1221	EPA 8082A	**0.7**[1]	--	--	ND (0.032)	ND (0.052)	ND (0.096)	ND (0.044) QL	ND (0.028) QL	ND (0.034) QL	ND (0.041) QL	ND (0.140) QL	ND (0.120) QL	ND (0.170) QL
PCB-1232	EPA 8082A	**0.7**[1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL
PCB-1242	EPA 8082A	**0.7**[1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL
PCB-1248	EPA 8082A	**0.7**[1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL
PCB-1254	EPA 8082A	**0.7**[1]	--	--	0.11	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	0.310 QL	0.230 QL	0.530 J QL
PCB-1260	EPA 8082A	**0.7**[1]	--	--	0.085	0.008 J	ND (0.048)	ND (0.022) QL	0.26 QL	0.067 QL	0.054 J QL	0.650 QL	0.500 QL	0.970 QL
PCBs-Total	EPA 8082A	**0.7**[1]			0.195	0.008 J	ND (0.096)	ND (0.044) QL	0.26 QL	0.067 QL	0.054 J QL	0.96 QL	0.73 QL	1.5 J QL
Arsenic	EPA 6020	**93**[1]	--	--	3.2	3.7	4.9	3.8	4.8	6.5	8.7	7.4	6.2	6.9
Barium	EPA 6020	--	--	--	68	98	120	100	78	110	160	90	91	110
Cadmium	EPA 6020	--	**596**	**3530**	0.43	0.30 J	0.32 J	0.3	0.74	0.53	1	1.1	1.2 QN	1.2 QN
Chromium	EPA 6020	**270**[1]	--	--	15	16	19	14	20	24	35	28 ML	25	27
Lead	EPA 6020	**530**[1]	--	--	30	19	14	17	72	50	79	78 MH	81	140
Nickel	EPA 6020	--	**18000**	**36000**	9.2	11	12	9.2	14	17	24	18 QN	16	17
Selenium	EPA 6020	--	--	--	0.58 J	0.92 J	1.2 J	1.5	0.64 J	1.1	1.6	1	0.85	1.1 J
Silver	EPA 6020	--	--	--	0.089 J	0.097 J	0.11 J	0.086 J	0.10 J	0.12 J	0.23 J	0.25 J	0.18 J	0.22 J
Vanadium	EPA 6020	--	--	--	22	26	31	25	29	35	51	35	30	33
Mercury	EPA 7471A	--	**174**	**486**	0.078	0.073	0.09	0.071	0.072	0.14	0.13	0.13	0.22	0.3
1-Methylnaphthalene	EPA 8270 SIM	--	--	--	0.21 J	7.6	0.24 J	390	ND (1.5)	94	26	1.8	78	150
2-Methylnaphthalene	EPA 8270 SIM	**0.6**[1]	--	--	0.34	13	0.38	740	ND (1.5)	84	19	2.1	95	270
Acenaphthene	EPA 8270 SIM	**0.5**[1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	11 J	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	5.7	5.4
Acenaphthylene	EPA 8270 SIM	--	**0.00587**	**0.128**	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Anthracene	EPA 8270 SIM	--	**0.0469**	**0.245**	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Benzo[a]anthracene	EPA 8270 SIM	--	**0.0317**	**0.385**	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Benzo[a]pyrene	EPA 8270 SIM	--	**0.0319**	**0.782**	0.041 J	ND (0.19)	0.055 J	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Benzo[b]fluoranthene	EPA 8270 SIM	--	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Benzo[g,h,i]perylene	EPA 8270 SIM	**1.7**[1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Benzo[k]fluoranthene	EPA 8270 SIM	--	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Chrysene	EPA 8270 SIM	--	**0.0571**	**0.862**	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	0.35 J	ND (1.5)	ND (2.1)
Dibenz(a,h)anthracene	EPA 8270 SIM	--	**0.00622**	**0.135**	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Fluoranthene	EPA 8270 SIM	**2.0**[1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	0.61 J	ND (1.7)	ND (1.1)	ND (0.46)	0.62 J	ND (2.1)
Fluorene	EPA 8270 SIM	**0.8**[1]	--	--	ND (0.13)	0.78	ND (0.18)	24	3.3	13	5.4	0.71 J	9.2	11
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	**3.2**[1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)
Naphthalene	EPA 8270 SIM	**1.7**[1]	--	--	0.12 J	2.9	0.19 J	340	ND (1.5)	32	ND (1.1)	ND (0.46)	26	100
Phenanthrene	EPA 8270 SIM	**4.8**[1]	--	--	ND (0.13)	0.75	ND (0.18)	15 J	ND (1.5)	6.6	2.7	ND (0.46)	4.3	5.2
Pyrene	EPA 8270 SIM	--	**0.053**	**0.875**	0.14 J	ND (0.19)	0.094 J	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	0.39 J	0.7 J	ND (2.1)
Sum LPAHs		**7.8**[1]	--	--	0.67	25.03	0.81	1520	3.3	229.6	53.1	4.61	218.2	541.6
Sum HPAHs		**9.6**[1]	--	--	0.181	0	0.149	0	0.61	0	0	0.39	1.32	0

Analyte	11NC28SS034-0_5	11NC28SS035-0_5	11NC28SS036-0_5	11NC28SS054-0_5	11NC28SS058-0_5	11NC28SS059-0_5	11NC28SS060-0_5	11NC28SS061-0_25	11NC28SS062-0_25	11NC28SS063-0_25	11NC28SS064-0_25	11NC28SS064-0_5	11NC28SS067-0_5
Sample Depth (feet bgs)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.25	0.25	0.25	0.25	0.25	0.5
Matrix	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Location ID	28-6-3-0.5	28-6-4-0.5	28-6-5-0.5	28-9-3-0.5	28-10-2-0.5	28-10-3-0.5	28-11-1-0.5	28-11-2-0.25	28-11-3-0.25	28-11-4-0.25	28-11-5-0.25	28-11-5-0.25	28-DIS-02-0.5
Lab ID	580-28112-54	580-28112-57	580-28112-60	580-28198-54	580-28198-66	580-28198-70	580-28198-73	580-28198-77	580-28198-80	580-28198-82	580-28198-85	580-28198-86	580-28198-96
Date Collected	8/16/11	8/16/11	8/16/11	8/18/11	8/18/11	8/18/11	8/19/11	8/19/11	8/19/11	8/19/11	8/19/11	8/19/11	8/19/11
	Transect 6	Transect 6	Transect 6	Transect 9	Transect 10	Transect 10	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Discrete
Percent Moisture (%)	51	58	74	66	62	53	32	62	59	68	68	66	19
DRO	410	57000	7200	26000	540	210	20000	6300	4800	5300	4000 QN	8100 QN	1700
DRO with Silica Gel	150	59000	6800	34000	390	83	22000	7000	5300	5900	4500 QN	8800 QN	1800
RRO	3000	33000 QL	9900	8800	2000	1500	1600	670	710	830	620	970	2500
RRO with Silica Gel	730	29000	5700	8300	440	440	820	280 MH	520	510	370	520	2500
Total Organic Carbon	160000	160000	150000	150000	54000	43000	14000	27000	27000	50000	48000	41000	14000
GRO	ND (2.4)	9.4 J	6.6 J	40	ND (2.2)	2.4 J B	510	54 J ML	15 B	12 B	7.8 QN B	14 QN B	21 B
Benzene	ND (0.022) QL	ND (0.024) QL	ND (0.041) QL	ND (0.19) QL	ND (0.12)	ND (0.10)	ND (0.073)	ND (0.13)	ND (0.12)	ND (0.14)	ND (0.16)	ND (0.15)	ND (0.063)
Ethylbenzene	ND (0.065) QL	0.067 J QL	ND (0.12) QL	0.17 J QL	ND (0.12)	ND (0.10)	0.080 J QH	ND (0.13)	ND (0.12)	ND (0.14)	ND (0.16)	ND (0.15)	ND (0.063)
Total Xylenes	ND (0.13) QL	1.18 QL	0.172 J QL B	1.13 J QL	ND (0.35)	ND (0.31)	ND (0.123)	ND (0.39)	ND (0.36)	ND (0.41)	ND (0.48)	ND (0.44)	ND (0.193)
Toluene	ND (0.065) QL	ND (0.073) QL	ND (0.12) QL	ND (0.22) QL	ND (0.14)	ND (0.13)	ND (0.087)	ND (0.16)	ND (0.14)	ND (0.16)	ND (0.19)	ND (0.18)	ND (0.076)
PCB-1016	ND (0.019)	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.026)	ND (0.02)	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)	ND (0.011) QL
PCB-1221	ND (0.039)	ND (0.190) QL	ND (0.075)	ND (0.056) QL	ND (0.052)	ND (0.041)	ND (0.027)	ND (0.049)	ND (0.047)	ND (0.06)	ND (0.061)	ND (0.056)	ND (0.023) QL
PCB-1232	ND (0.019)	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.026)	ND (0.02)	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)	ND (0.011) QL
PCB-1242	ND (0.019)	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.026)	ND (0.02)	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)	ND (0.011) QL
PCB-1248	ND (0.019)	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.026)	ND (0.02)	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)	ND (0.011) QL
PCB-1254	ND (0.019)	0.45 QL	0.29 MN	ND (0.028) QL	ND (0.026)	ND (0.02)	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)	0.14 QL
PCB-1260	ND (0.019)	0.49 QL	0.26 MN	0.05 J QL	ND (0.026)	ND (0.02)	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)	0.22 QL
PCBs-Total	ND (0.039)	0.94 QL	0.55	0.05 J QL	ND (0.052)	ND (0.041)	ND (0.027)	ND (0.049)	ND (0.047)	ND (0.06)	ND (0.061)	ND (0.056)	0.36 QL
Arsenic	4.5	8.5	6.9	8.3	7.5	7.6	3.3	80	73	77	72	67	5
Barium	100	150	110	110	100	98	47	140	130	110	120	120	36
Cadmium	0.23 J	2.3	0.59 J	0.36	0.32 J	0.26 J	0.090 J	0.12 J	0.099 J	0.11 J QN	0.12 J QN	0.076 J QN	0.23 QN
Chromium	16	32	20	14	19	17	11	8.1	6.5	6.9	7.6	9.2	11
Lead	9.3	260	21	15	13	10	7.2	4.2	3.8	5.3 QN	6.1 QN	6 QN	22 QN
Nickel	10	22	15	9.4	13	12	5.9	3.5	2.9	3.1	3.7	4.4	10
Selenium	1.4	1.8	1.4 J	1.4	1.4 J	1.2	0.50 J	0.81 J	0.64 J	ND (1.2)	ND (1.2)	0.63 J	0.37 J
Silver	0.080 J	0.29 J	0.15 J	0.09 J	0.080 J	0.063 J	0.034 J	ND (0.047)	ND (0.046)	ND (0.059)	ND (0.061)	0.034 J	0.031 J
Vanadium	28	44	31	25	32	29	19	15	13	14	16	18	20
Mercury	0.090	0.33	0.12	0.088	0.045	0.035	0.019 J	ND (0.021)	ND (0.016)	ND (0.025)	ND (0.025)	0.025 J	0.016
1-Methylnaphthalene	0.032 J	57	0.75 J	9.7	0.0033 J	ND (0.025)	3	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
2-Methylnaphthalene	0.04 J B	86	0.86 J	13	0.004 J	ND (0.025)	3	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Acenaphthene	ND (0.051)	ND (2.4)	ND (0.48)	1.6	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Acenaphthylene	ND (0.051)	ND (2.4)	ND (0.48)	0.19 J	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Anthracene	ND (0.051)	ND (2.4)	ND (0.48)	1.5	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Benzo[a]anthracene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Benzo[a]pyrene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Benzo[b]fluoranthene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Benzo[g,h,i]perylene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Benzo[k]fluoranthene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.42)
Chrysene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Dibenz(a,h)anthracene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Fluoranthene	ND (0.051)	1.2 J	ND (0.48)	0.33 J	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Fluorene	0.0097 J	9.1	0.2 J	2.3	ND (0.031)	ND (0.025)	0.78 J	0.11 J	ND (0.11)	0.06 J	ND (0.072)	ND (0.18)	ND (0.042)
Indeno[1,2,3-cd]pyrene	ND (0.051)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Naphthalene	0.044 J B	27	0.44 J	3.8	0.0045 J	ND (0.025)	2.1	0.18 J	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Phenanthrene	ND (0.051)	5.4	ND (0.48)	1.4	ND (0.031)	ND (0.025)	0.35 J	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	ND (0.042)
Pyrene	ND (0.051)	1.2 J	ND (0.48)	0.32 J	ND (0.031)	ND (0.025)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)	0.024 J
Sum LPAHs	0.126	184.5	2.25	33.49	0.0118	0	9.23	0.29	0	0.06	0	0	0
Sum HPAHs	0	2.4	0	0.65	0	0	0	0	0	0	0	0	0.024

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
NOAA SQuiRT sediment cleanup values (2008) only shown for analytes that have no established site-specific cleanup criteria
-- = No value specified
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
HPAHs = high molecular weight ponynuclear aromatic hydrocarbons
J = result is an estimated value between the detection limit and the limit of quantitation
LPAHs = low molecular weight ponynuclear aromatic hydrocarbons
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
ND = not detected, limit of detection (LOD) shown in parentheses
NOAA = National Oceanic and Atmospheric Administration
PCBs = polychlorinated biphenyls
PEL = probable effects level
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring
TEL = threshold effects level

Table 1 - Site 28
Sediment Analytical Results

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Table 2
Site 28 Sediment Analytical Results Exceeding Cleanup Levels
(all results in mg/kg)

Sample ID					11NC28SS011-0_5	11NC28SS012-0_5	11NC28SS013-0_5	11NC28SS018-0_5	11NC28SS019-0_5	11NC28SS020-0_5	11NC28SS021-0_5	11NC28SS026-0_5	11NC28SS028-0_5	11NC28SS029-0_5	11NC28SS035-0_5	11NC28SS036-0_5	11NC28SS054-0_5	11NC28SS060-0_5	11NC28SS061-0_25	11NC28SS062-0_25	11NC28SS063-0_25	11NC28SS064-0_25	11NC28SS064-0_5
Sample Depth (feet bgs)					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.25	0.25	0.25	0.25	0.25
Matrix					Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
Location ID					28-3-2-0.5	28-3-3-0.5	28-3-4-0.5	28-4-2-0.5	28-4-3-0.5	28-4-4-0.5	28-4-5-0.5	28-5-2-0.5	28-5-4-0.5	28-5-5-0.5	28-6-4-0.5	28-6-5-0.5	28-9-3-0.5	28-11-1-0.5	28-11-2-0.25	28-11-3-0.25	28-11-4-0.25	28-11-5-0.25	28-11-5-0.25
Lab ID					580-28053-23	580-28053-27	580-28053-31	580-28112-5	580-28112-8	580-28112-11	580-28112-13	580-28112-28	580-28112-35	580-28112-38	580-28112-57	580-28112-60	580-28198-54	580-28198-73	580-28198-77	580-28198-80	580-28198-82	580-28198-85	580-28198-86
Date Collected					8/14/11	8/14/11	8/14/11	8/15/11	8/15/11	8/15/11	8/15/11	8/16/11	8/16/11	8/16/11	8/16/11	8/16/11	8/18/11	8/19/11	8/19/11	8/19/11	8/19/11	8/19/11	8/19/11
Analyte	Analysis Method	Sediment Cleanup Level	NOAA SQuiRT TEL	NOAA SQuiRT PEL	Transect 3	Transect 3	Transect 3	Transect 4	Transect 4	Transect 4	Transect 4	Transect 5	Transect 5	Transect 5	Transect 6	Transect 6	Transect 9	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11
Percent Moisture (%)	EPA Moisture	--	--	--	41	56	63	55	33	42	53	47	37	53	58	74	66	32	62	59	68	68	66
DRO	AK102	3500 [1]	--	--	8100	4600	2000	100000	70000	80000	92000	36000	57000	58000	57000	7200	26000	20000	6300	4800	5300	4000 QN	8100 QN
DRO with Silica Gel	AK102	3500 [1]	--	--	6600	3600	1400	90000	75000	81000	96000	38000	59000	62000	59000	6800	34000	22000	7000	5300	5900	4500 QN	8800 QN
RRO	AK103	3500 [1]	--	--	5600	5100	6300	6800	6700	11000	12000	19000	21000	17000	33000 QL	9900	8800	1600	670	710	830	620	970
RRO with Silica Gel	AK103	3500 [1]	--	--	3600	1200	2000	2900	5200	7700	8400	18000	20000	18000	29000	5700	8300	820	280 MH	520	510	370	520
Total Organic Carbon	EPA 9060-Quad	--	--	--	68000	160000	180000	150000	40000	96000	87000	63000	52000	89000	160000	150000	150000	14000	27000	27000	50000	48000	41000
GRO	AK101	--	--	--	9.7 B	12 B	4.3 J B	460	280	280	470	260	240	60	9.4 J	6.6 J	40	510	54 J ML	15 B	12 B	7.8 QN B	14 QN B
Benzene	EPA 8260B	--	--	--	0.011 J	0.012 J	0.042 J	0.88	0.029 QH	0.42	0.11	ND (0.023)	ND (0.016)	0.064	ND (0.024) QL	ND (0.041) QL	ND (0.19) QL	ND (0.073)	ND (0.13)	ND (0.12)	ND (0.14)	ND (0.16)	ND (0.15)
Ethylbenzene	EPA 8260B	--	--	--	0.015 J	ND (0.071)	ND (0.083)	8.1	0.078 QH	2.5	0.091 J	0.077 J	0.029 J	0.84	0.067 J QL	ND (0.12) QL	0.17 J QL	0.08 J QH	ND (0.13)	ND (0.12)	ND (0.14)	ND (0.16)	ND (0.150)
Total Xylenes	EPA 8260B	--	--	--	0.12 J	0.084 J	0.98	69	1.36 QH	21.3	7.9	1.65	3.4	6.4	1.18 QL	0.172 J QL B	1.13 J QL	ND (0.123)	ND (0.39)	ND (0.36)	ND (0.41)	ND (0.48)	ND (0.44)
Toluene	EPA 8260B	--	--	--	ND (0.039)	ND (0.071)	0.17	0.9	ND (0.043)	0.13	0.042 J	0.04 J	0.019 J	0.1	ND (0.073) QL	ND (0.12) QL	ND (0.22) QL	ND (0.087)	ND (0.16)	ND (0.14)	ND (0.16)	ND (0.19)	ND (0.18)
PCB-1016	EPA 8082A	0.7 [1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)
PCB-1221	EPA 8082A	0.7 [1]	--	--	ND (0.032)	ND (0.052)	ND (0.096)	ND (0.044) QL	ND (0.028) QL	ND (0.034) QL	ND (0.041) QL	ND (0.140) QL	ND (0.120) QL	ND (0.170) QL	ND (0.190) QL	ND (0.075)	ND (0.056) QL	ND (0.027)	ND (0.049)	ND (0.047)	ND (0.06)	ND (0.061)	ND (0.056)
PCB-1232	EPA 8082A	0.7 [1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)
PCB-1242	EPA 8082A	0.7 [1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)
PCB-1248	EPA 8082A	0.7 [1]	--	--	ND (0.016)	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	ND (0.071) QL	ND (0.061) QL	ND (0.083) QL	ND (0.093) QL	ND (0.037)	ND (0.028) QL	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)
PCB-1254	EPA 8082A	0.7 [1]	--	--	0.11	ND (0.026)	ND (0.048)	ND (0.022) QL	ND (0.014) QL	ND (0.017) QL	ND (0.020) QL	0.310 QL	0.230 QL	0.530 J QL	0.45 QL	0.29 MN	ND (0.028) QL	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)
PCB-1260	EPA 8082A	0.7 [1]	--	--	0.085	0.008 J	ND (0.048)	ND (0.022) QL	0.26 QL	0.067 QL	0.054 J QL	0.650 QL	0.500 QL	0.970 QL	0.49 QL	0.26 MN	0.05 J QL	ND (0.013)	ND (0.024)	ND (0.023)	ND (0.03)	ND (0.031)	ND (0.028)
PCBs-Total	EPA 8082A	0.7 [1]			0.195	0.008 J	ND (0.096)	ND (0.044) QL	0.26 QL	0.067 QL	0.054 J QL	0.96 QL	0.73 QL	1.5 J QL	0.94 QL	0.55	0.05 J QL	ND (0.027)	ND (0.049)	ND (0.047)	ND (0.06)	ND (0.061)	ND (0.056)
Arsenic	EPA 6020	93 [1]	--	--	3.2	3.7	4.9	3.8	4.8	6.5	8.7	7.4	6.2	6.9	8.5	6.9	8.3	3.3	80	73	77	72	67
Barium	EPA 6020	--	--	--	68	98	120	100	78	110	160	90	91	110	150	110	110	47	140	130	110	120	120
Cadmium	EPA 6020	--	596	3530	0.43	0.30 J	0.32 J	0.3	0.74	0.53	1	1.1	1.2 QN	1.2 QN	2.3	0.59 J	0.36	0.090 J	0.12 J	0.099 J	0.11 J QN	0.12 J QN	0.076 J QN
Chromium	EPA 6020	270 [1]	--	--	15	16	19	14	20	24	35	28 ML	25	27	32	20	14	11	8.1	6.5	6.9	7.6	9.2
Lead	EPA 6020	530 [1]	--	--	30	19	14	17	72	50	79	78 MH	81	140	260	21	15	7.2	4.2	3.8	5.3 QN	6.1 QN	6 QN
Nickel	EPA 6020	--	18000	36000	9.2	11	12	9.2	14	17	24	18 QN	16	17	22	15	9.4	5.9	3.5	2.9	3.1	3.7	4.4
Selenium	EPA 6020	--	--	--	0.58 J	0.92 J	1.2 J	1.5	0.64 J	1.1	1.6	1	0.85	1.1 J	1.8	1.4 J	1.4	0.50 J	0.81 J	0.64 J	ND (1.2)	ND (1.2)	0.63 J
Silver	EPA 6020	--	--	--	0.089 J	0.097 J	0.11 J	0.086 J	0.10 J	0.12 J	0.23 J	0.25 J	0.18 J	0.22 J	0.29 J	0.15 J	0.09 J	0.034 J	ND (0.047)	ND (0.046)	ND (0.059)	ND (0.061)	0.034 J
Vanadium	EPA 6020	--	--	--	22	26	31	25	29	35	51	35	30	33	44	31	25	19	15	13	14	16	18
Mercury	EPA 7471A	--	174	486	0.078	0.073	0.09	0.071	0.072	0.14	0.13	0.13	0.22	0.30	0.33	0.12	0.088	0.019 J	ND (0.021)	ND (0.016)	ND (0.025)	ND (0.025)	0.025 J
1-Methylnaphthalene	EPA 8270 SIM	--	--	--	0.21 J	7.6	0.24 J	390	ND (1.5)	94	26	1.8	78	150	57	0.75 J	9.7	3	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
2-Methylnaphthalene	EPA 8270 SIM	0.6 [1]	--	--	0.34	13	0.38	740	ND (1.5)	84	19	2.1	95	270	86	0.86 J	13	3	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Acenaphthene	EPA 8270 SIM	0.5 [1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	11 J	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	5.7	5.4	ND (2.4)	ND (0.48)	1.6	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Acenaphthylene	EPA 8270 SIM	--	0.00587	0.128	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	0.19 J	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Anthracene	EPA 8270 SIM	--	0.0469	0.245	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	1.5	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Benzo[a]anthracene	EPA 8270 SIM	--	0.0317	0.385	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Benzo[a]pyrene	EPA 8270 SIM	--	0.0319	0.782	0.041 J	ND (0.19)	0.055 J	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Benzo[b]fluoranthene	EPA 8270 SIM	--	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Benzo[g,h,i]perylene	EPA 8270 SIM	1.7 [1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Benzo[k]fluoranthene	EPA 8270 SIM	--	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Chrysene	EPA 8270 SIM	--	0.0571	0.862	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	0.35 J	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Dibenz(a,h)anthracene	EPA 8270 SIM	--	0.0062	0.135	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Fluoranthene	EPA 8270 SIM	2.0 [1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	0.61 J	ND (1.7)	ND (1.1)	ND (0.46)	0.62 J	ND (2.1)	1.2 J	ND (0.48)	0.33 J	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Fluorene	EPA 8270 SIM	0.8 [1]	--	--	ND (0.13)	0.78	ND (0.18)	24	3.3	13	5.4	0.71 J	9.2	11	9.1	0.2 J	2.3	0.78 J	0.11 J	ND (0.11)	0.06 J	ND (0.072)	ND (0.18)
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	3.2 [1]	--	--	ND (0.13)	ND (0.19)	ND (0.18)	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	ND (0.46)	ND (1.5)	ND (2.1)	ND (2.4)	ND (0.48)	ND (0.33)	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Naphthalene	EPA 8270 SIM	1.7 [1]	--	--	0.12 J	2.9	0.19 J	340	ND (1.5)	32	ND (1.1)	ND (0.46)	26	100	27	0.44 J	3.8	2.1	0.18	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Phenanthrene	EPA 8270 SIM	4.8 [1]	--	--	ND (0.13)	0.75	ND (0.18)	15 J	ND (1.5)	6.6	2.7	ND (0.46)	4.3	5.2	5.4	ND (0.48)	1.4	0.35 J	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Pyrene	EPA 8270 SIM	--	0.053	0.875	0.14 J	ND (0.19)	0.094 J	ND (8.9)	ND (1.5)	ND (1.7)	ND (1.1)	0.39 J	0.7 J	ND (2.1)	1.2 J	ND (0.48)	0.32 J	ND (0.68)	ND (0.31)	ND (0.11)	ND (0.19)	ND (0.072)	ND (0.18)
Sum LPAHs		7.8 [1]	--	--	0.67	25.03	0.81	1520	3.3	229.6	53.1	4.61	218.2	541.6	184.5	2.25	33.49	9.23	0.29	0	0.06	0	0
Sum HPAHs		9.6 [1]	--	--	0.181	0	0.149	0	0.61	0	0	0.39	1.32	0	2.4	0	0.65	0	0	0	0	0	0

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
NOAA SQuiRT sediment cleanup values (2008) only shown for analytes that have no established site-specific cleanup criteria
-- = No value specified
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
HPAHs = high molecular weight ponynuclear aromatic hydrocarbons
J = result is an estimated value between the detection limit and the limit of quantitation
LPAHs = low molecular weight ponynuclear aromatic hydrocarbons
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
ND = not detected, limit of detection (LOD) shown in parentheses
NOAA = National Oceanic and Atmospheric Administration
PCBs = polychlorinated biphenyls
PEL = probable effects level
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring
TEL = threshold effects level

Table 3
Site 28 Soil Analytical Results
(all results in mg/kg)

Analyte	Analysis Method	Sample ID	11NC28SS001-0_5	11NC28SS001-1	11NC28SS002-2	11NC28SS002-2_5	11NC28SS002-3	11NC28SS003-2_5	11NC28SS003-3	11NC28SS003-3_5	11NC28SS004-2_5	11NC28SS005-0_5	11NC28SS005-1	11NC28SS006-0_5	11NC28SS006-1	11NC28SS006-2	11NC28SS007-1_5	11NC28SS008-0_5	11NC28SS008-1	11NC28SS009-0_5	11NC28SS009-1	11NC28SS010-0_5	11NC28SS010-1	11NC28SS010-1_5	11NC28SS011-1	11NC28SS011-2	11NC28SS011-1_5	11NC28SS012-1
		Sample Depth (feet bgs)	0.5	1	2	2.5	3	2.5	3	3.5	2.5	0.5	1	0.5	1	1	1.5	0.5	1	0.5	1	0.5	1	1.5	1	1	1.5	1
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-1-1-0.5	28-1-1-1	28-1-2-2	28-1-2-2.5	28-1-2-3	28-1-3-2.5	28-1-3-3	28-1-3-3.5	28-1-4-2.5	28-1-5-0.5	28-1-5-1	28-2-1-0.5	28-2-1-1	28-2-1-1	28-2-2-1.5	28-2-3-0.5	28-2-3-1	28-2-4-0.5	28-2-4-1	28-3-1-0.5	28-3-1-1	28-3-1-1.5	28-3-2-1	28-3-2-1	28-3-2-1.5	28-3-3-1
		Lab ID	580-28053-1	580-28053-2	580-28053-3	580-28053-4	580-28053-5	580-28053-6	580-28053-7	580-28053-8	580-28053-9	580-28053-10	580-28053-11	580-28053-12	580-28053-13	580-28053-14	580-28053-15	580-28053-16	580-28053-17	580-28053-18	580-28053-19	580-28053-20	580-28053-21	580-28053-22	580-28053-24	580-28053-25	580-28053-26	580-28053-28
		Date Collected	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011
		Soil Cleanup Level	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 2	Transect 2	Transect 2	Transect 2	Transect 2	Transect 2	Transect 2	Transect 2	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3
Percent Moisture (%)	EPA Moisture	--	73	74	63	46	30	28	36	17	46	70	67	56	64	70	60	69	70	70	47	18	28	21	48	53	55	50
DRO	AK102	9200 [1]	56000	57000	11000	5800	1500	460	1800	210	170	110	360	67000	39000	57000	7700	13000	15000	2800	290	540	64	1300	11000 QN	30000 QN	75000	5600
DRO with Silica Gel	AK102	9200 [1]	48000	44000	12000	5100	3.6 J	270	1400	60	47	46 J	110	60000	34000	47000	6900	13000	13000	2300	200	440	7.2 J	1100	10000 QN	23000 QN	60000	4700
RRO	AK103	9200 [1]	2600	2700	3000	2300	1300	1800	2600	1500	1900	1100	4000	4000 QH	3200	3700	4400	2500	4800 MH	4000	560	2500	630	730	4700	5300	5300	3000
RRO with Silica Gel	AK103	9200 [1]	1300	730	550	380	ND (44)	220	520	310	360	190	560	990	730	770	760	1100	1700	950	75 J	1800	170	200	2400	1800	1500	1000
Total Organic Carbon	EPA 9060-Quad	--	130000	130000	140000	130000	87000	44000	40000	26000	120000	340000	180000	290000	180000	240000	230000	310000	310000	310000	55000	19000	30000	18000	110000	110000	170000	150000
GRO	AK101	300 [2]	9.2 J B	120	110 J ML	140	56	9.6	19	1.8 J B	ND (1.8)	ND (3.3)	ND (3.0)	51	18 QN B	52 QN	60	ND (4.4)	ND (4.8) ML	ND (4.7)	ND (2.6)	ND (1.4)	ND (1.6)	34	90	110	240	40
Benzene	EPA 8260B	2.0 [1]	ND (0.071)	ND (0.021)	0.18	0.19	0.1	0.017	0.017 J	0.023	ND (0.016)	ND (0.030)	ND (0.027)	ND (0.011)	ND (0.029)	ND (0.041)	ND (0.031)	ND (0.040)	ND (0.044)	ND (0.043)	ND (0.024)	ND (0.013)	ND (0.015)	ND (0.013)	0.093	0.12	0.28	0.056
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.210)	ND (0.064)	2.1	1.6	0.8	0.042 J	0.043 J	0.081	ND (0.048)	ND (0.089)	ND (0.081)	ND (0.032)	ND (0.088)	ND (0.120)	0.078 J	ND (0.120)	ND (0.130)	ND (0.130)	ND (0.071)	ND (0.039)	ND (0.044)	ND (0.039)	0.35	0.5	3.2	0.059 J
Total Xylenes	EPA 8260B	63 [2]	ND (0.410)	ND (0.128)	12.5	8.5	4.4	0.28	0.29	0.41	ND (0.096)	ND (0.178)	ND (0.162)	ND (0.064)	ND (0.176)	ND (0.240)	0.43	ND (0.240)	ND (0.260)	ND (0.260)	ND (0.142)	ND (0.078)	ND (0.088)	0.015 J	4.2	6.3	35	0.61
Toluene	EPA 8260B	6.5 [2]	ND (0.210)	ND (0.064)	ND (0.071)	ND (0.047)	ND (0.037)	ND (0.032)	ND (0.038)	ND (0.021)	ND (0.048)	ND (0.089)	ND (0.081)	ND (0.032)	ND (0.088)	ND (0.120)	ND (0.093)	ND (0.120)	ND (0.130)	ND (0.130)	ND (0.071)	ND (0.039)	ND (0.044)	ND (0.039)	ND (0.060)	ND (0.068)	0.052 J	ND (0.060)
PCB-1016	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.016) QL	ND (0.017) QL	ND (0.014)	ND (0.025) QL	ND (0.056)	ND (0.039)	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.054)	ND (0.027)	ND (0.012) QL	ND (0.014)	ND (0.012)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)
PCB-1221	EPA 8082A	1 [1]	ND (0.100)	ND (0.099)	ND (0.056) QL	ND (0.890)	ND (0.038) QL	ND (0.032) QL	ND (0.034) QL	ND (0.028)	ND (0.050) QL	ND (0.110)	ND (0.078)	ND (0.058)	ND (0.083) QL	ND (0.130)	ND (0.099) QL	ND (0.140)	ND (0.120)	ND (0.110)	ND (0.055)	ND (0.024) QL	ND (0.028)	ND (0.025)	ND (0.048)	ND (0.057)	ND (0.055)	ND (0.054)
PCB-1232	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.016) QL	ND (0.017) QL	ND (0.014)	ND (0.025) QL	ND (0.056)	ND (0.039)	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.054)	ND (0.027)	ND (0.012) QL	ND (0.014)	ND (0.012)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)
PCB-1242	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.016) QL	ND (0.017) QL	ND (0.014)	ND (0.025) QL	ND (0.056)	ND (0.039)	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.054)	ND (0.027)	ND (0.012) QL	ND (0.014)	ND (0.012)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)
PCB-1248	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.016) QL	ND (0.017) QL	ND (0.014)	ND (0.025) QL	ND (0.056)	ND (0.039)	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.054)	ND (0.027)	ND (0.012) QL	ND (0.014)	ND (0.012)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)
PCB-1254	EPA 8082A	1 [1]	0.81	0.150 J	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.016) QL	ND (0.017) QL	ND (0.014)	ND (0.025) QL	ND (0.056)	ND (0.039)	0.15	0.046 J QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	0.059 J	ND (0.027)	0.21 QL	ND (0.014)	ND (0.012)	0.041 J	0.027 J	ND (0.027)	ND (0.027)
PCB-1260	EPA 8082A	1 [1]	0.32	ND (0.050)	0.053 J QL	3.4	0.15 QL	ND (0.016) QL	ND (0.017) QL	ND (0.014)	ND (0.025) QL	ND (0.056)	ND (0.039)	0.082 J	0.027 J QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	0.042 J	ND (0.027)	0.15 QL	ND (0.014)	ND (0.012)	0.032 J	0.018 J	ND (0.027)	0.0093 J
PCBs-Total	EPA 8082A	1 [1]	1.13	0.15 J	0.053 J QL	3.4	0.15 QL	ND (0.032) QL	ND (0.034) QL	ND (0.028)	ND (0.050) QL	ND (0.110)	ND (0.078)	0.232 J	0.073 J QL	ND (0.130)	ND (0.099) QL	ND (0.140)	ND (0.120)	0.11 J	ND (0.055)	0.36 QL	ND (0.028)	ND (0.025)	0.073 J	0.045 J	ND (0.055)	0.0093 J
Arsenic	EPA 6020	11 [1]	1.7	0.93 J	6	3.8	3.4	4.2	5.9	5.5	5	3.7	4.2	1.9	1.5 QN	3.4 QN	3.6	2.3	4.5 J	2.3	1.3	3.6	5.2	5	3.4	3.6	3	4.3
Barium	EPA 6020	1100 [2]	61	58	74	70	67	76	82	82	94	52	87	57	77	96	48	60	92 J	67	47	52	88	92	87	110	93	110
Cadmium	EPA 6020	5 [2]	0.8	0.88	0.78	0.44	0.28	0.36	0.36	0.35	0.35	0.16 J	0.71	0.48	0.36 J	0.56 J	0.36 J	0.22 J	0.41 J	0.33 J	0.055 J	0.34	0.15	0.14 J	0.37	0.35 J	0.16 J	0.33
Chromium	EPA 6020	25 [2]	10 ML	8.8 ML	13 ML	14 ML	18 ML	15 ML	18 ML	20 ML	11 ML	7.4 ML	13 ML	10 ML	14 ML	22 ML	6.6 ML	10 ML	24 ML	12 ML	7.3 ML	16 ML	21	19	81 QN	23 QN	17	19
Lead	EPA 6020	400 [2]	21	15	17	21	27	18	22	26	14	10	14	18	19	31	8.1	14	51 J	22	5.9	43	19	16	25	27	12	17
Nickel	EPA 6020	86 [2]	8.1	7.5	11	9.2	8.8	9.8	12	13	7.7	5.6	9.9	7.4	7.3 QN	14 QN	7.2	6.5	14 J	6.8	3	11	14	12	13	13	8.4	13
Selenium	EPA 6020	3.4 [2]	1.1 J	1.3 J	1.9	1.4	1	1.1	1.1	0.89	1.2	1.8 J	1.9	2.3	3.2	3	1.7	2.0 J	1.2 J	2.3	1.2	0.37 J	0.64	0.59 J	0.74 J	1.0 J	1.3	0.96 J
Silver	EPA 6020	11.2 [2]	0.15 J	0.17 J	0.16 J	0.16 J	0.17 J	0.13 J	0.15 J	0.17	0.14 J	0.16 J	0.16 J	0.15 J	0.25 J	0.27 J	0.14 J	0.11 J	0.17 J	0.15 J	0.20 J	0.11 J	0.11 J	0.10 J	0.082 J	0.11 J	0.11 J	0.11 J
Vanadium	EPA 6020	3400 [2]	12	13	29	28	28	27	33	35	27	27	29	16	17 QN	29 QN	23	21	38 J	18	16	21	32	31	23	30	29	29
Mercury	EPA 7471A	1.4 [2]	0.081	ND (0.030)	0.082	0.043	0.046	0.044	0.046	0.056	0.047	0.085	0.066	0.072	0.096	0.11	0.046	0.034 J	0.041 J	0.091	0.069	0.11	0.061	0.044	0.083	0.11	0.088	0.093
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	0.23 J	3	32	15	3.7	0.21	0.89	0.0038 J QH	ND (0.031)	0.0026 J QH	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	8.3	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.0046 J	ND (0.013)	0.096	11	10	220	7000
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	ND (1.4)	ND (1.4)	57 J	25	6.4	0.37	1.6	0.0064 J QH	ND (0.031)	0.0047 J QH	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	10	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.0059 J	ND (0.013)	0.12	20	18	400	12
Acenaphthene	EPA 8270 SIM	180 [2]	ND (1.4)	ND (1.4)	0.99	0.48	0.12	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.0093 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.0021 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Anthracene	EPA 8270 SIM	3000 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.025 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.043 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.039 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.07	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.027 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.018 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Chrysene	EPA 8270 SIM	360 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.069	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	ND (0.029)	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.087	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Fluorene	EPA 8270 SIM	220 [2]	ND (1.4)	3	1.7	0.95	0.24	0.0066 J	0.055 J	0.0029 J	0.0096 J	0.0063 J	0.019 J	ND (1.3)	ND (1.1)	ND (1.8)	1.2 J	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.013 J	0.0026 J	0.021 J	0.75	0.68	11	0.56
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.031 J	ND (0.013)	ND (0.025)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)
Naphthalene	EPA 8270 SIM	120 [1]	0.57 J	ND (1.4)	24	6.5	2.6	0.29	0.75	0.014 QH	ND (0.031)	0.0024 J QH	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	4.5	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.004 J	ND (0.013)	ND (0.025)	5.7	5.5	140	2.8
Phenanthrene	EPA 8270 SIM	3000 [2]	ND (1.4)	1.9 J	1.5	0.73	0.16	ND (0.019)	0.03 J	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	0.56 J	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.1	ND (0.013)	ND (0.025)	0.77	0.75	9.6	0.77
Pyrene	EPA 8270 SIM	1000 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (0.019)	ND (0.044)	ND (0.0037)	ND (0.031)	ND (0.017)	ND (0.1)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.15)	ND (0.072)	0.092	ND (0.013)	ND (0.025)	0.13 J	ND (0.28)	ND (2.6)	ND (0.15)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

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Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

		Sample ID	11NC28SS012-1_5	11NC28SS012-2	11NC28SS013-1	11NC28SS013-1_5	11NC28SS014-1	11NC28SS014-1_5	11NC28SS014-2	11NC28SS015-1_5	11NC28SS015-2	11NC28SS016-0_5	11NC28SS016-1	11NC28SS017-0_5	11NC28SS017-2	11NC28SS017-1	11NC28SS017-1_5	11NC28SS018-1	11NC28SS018-1_5	11NC28SS019-1	11NC28SS019-1_5	11NC28SS020-1	11NC28SS021-1	11NC28SS021-1_5	11NC28SS022-1	11NC28SS022-1_5	11NC28SS022-2
		Sample Depth (feet bgs)	1.5	1.5	1	1.5	1	1.5	2	1.5	2	0.5	1	0.5	0.5	1	1.5	1	1.5	1	1.5	1	1	1.5	1	1.5	2
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-3-3-1.5	28-3-3-1.5	28-3-4-1	28-3-4-1.5	28-3-5-1	28-3-5-1.5	28-3-5-2	28-3-6-1.5	28-3-6-2	28-3-7-0.5	28-3-7-1	28-4-1-0.5	28-4-1-0.5	28-4-1-1	28-4-1-1.5	28-4-2-1	28-4-2-1.5	28-4-3-1	28-4-3-1.5	28-4-4-1	28-4-5-1	28-4-5-1.5	28-4-6-1	28-4-6-1.5	28-4-6-2
		Lab ID	580-28053-29	580-28053-30	580-28053-32	580-28053-33	580-28053-34	580-28053-35	580-28053-36	580-28053-37	580-28053-38	580-28053-39	580-28053-40	580-28112-1	580-28112-2	580-28112-3	580-28112-4	580-28112-6	580-28112-7	580-28112-9	580-28112-10	580-28112-12	580-28112-14	580-28112-15	580-28112-16	580-28112-17	580-28112-18
		Date Collected	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011
Analyte	**Analysis Method**	**Soil Cleanup Level**	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4
Percent Moisture (%)	EPA Moisture	--	57	60	58	60	70	61	64	83	79	73	73	23	19	56	45	52	52	40	53	53	54	57	50	51	52
DRO	AK102	9200 [1]	3600	4400	460	2700	990	520	1400 J ML	12000	9900	2400	9800	30000	23000	99000	37000 J	110000	47000	70000	89000	110000	63000	150000	29000	28000	49000
DRO with Silica Gel	AK102	9200 [1]	2400	3300	160	2100	310	130	740 J ML	8800	6800	1700	8800	30000	20000	93000	38000 J	120000	49000	70000	89000	110000	69000	160000	30000	28000	48000
RRO	AK103	9200 [1]	4000	3000	3600	4800	8300	5000	7000	7600	9000	3500	6200	3000	3200	7000 QH	4200	5800	5500	4000	5500	14000 QH	10000	7200	5500	6100	7700 QH
RRO with Silica Gel	AK103	9200 [1]	800	640	740	1100	1500	950	1600	1600	2200	1000	1000	2700	2700	2700	1200	2200	2600	1600	1600	7700	4100	3900	1800	2200	2500
Total Organic Carbon	EPA 9060-Quad	--	180000	180000	180000	180000	270000	180000	180000	370000	380000	210000	410000	18000	18000	170000	110000	190000	110000	130000	180000	160000 J	150000	160000	120000	120000	140000
GRO	AK101	300 [2]	37	47	8.0 J B	19	3.3 J B	4.8 J B	9.5 J B	63	48	16 J B	280	370	320	900	310 J ML	550	550	390	450	330	240	420	400	160	350
Benzene	EPA 8260B	2.0 [1]	0.073	0.096	0.075	0.083	0.034 J	0.043	0.039 J	ND (0.067)	ND (0.060)	ND (0.048)	ND (0.022)	0.02 J QH	ND (0.014)	0.34	0.160 J ML	1.3	0.67	0.83	1.2	0.9	0.35	0.82	0.3	0.3	0.49
Ethylbenzene	EPA 8260B	6.9 [2]	0.13	0.16	0.18	0.13	0.058 J	0.31	1.0	0.44	0.28	ND (0.140)	ND (0.066)	0.22 QH	0.13 QH	10	4.4 J ML	9.8	6.9	6.2	8.3	6.2	2.9	8.6	1.6	2.8	6.3
Total Xylenes	EPA 8260B	63 [2]	1.05	1.28	1.42	1.08	0.390 J	0.63	1.8 J	0.64	0.42	ND (0.280)	ND (0.132)	1.66 QH	1.090 QH	80	28.3 J	88	52	59	76	29	24.7	70	21.1	22.4	45
Toluene	EPA 8260B	6.5 [2]	ND (0.072)	ND (0.076)	ND (0.064)	ND (0.061)	ND (0.100)	ND (0.078)	ND (0.085)	ND (0.200)	ND (0.180)	ND (0.140)	ND (0.066)	ND (0.039)	ND (0.041)	0.097 J	0.037 J ML	0.68	0.27	0.12	0.14	0.4	0.39	1	0.030 J	0.028 J	0.060 J
PCB-1016	EPA 8082A	1 [1]	ND (0.032)	ND (0.031)	ND (0.049)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.027)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL	ND (0.020) QL	ND (0.021) QL	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)
PCB-1221	EPA 8082A	1 [1]	ND (0.064)	ND (0.062)	ND (0.098)	ND (0.067)	ND (0.065)	ND (0.062)	ND (0.054)	ND (0.110)	ND (0.110)	ND (0.110)	ND (0.140)	ND (0.026) QL	ND (0.023) QL	ND (0.042) QL	ND (0.036)	ND (0.040) QL	ND (0.043) QL	ND (0.033) QL	ND (0.041) QL	ND (0.040) QL	ND (0.041) QL	ND (0.045) QL	ND (0.038) QL	ND (0.041)	ND (0.042)
PCB-1232	EPA 8082A	1 [1]	ND (0.032)	ND (0.031)	ND (0.049)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.027)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL ML	ND (0.020) QL	ND (0.021) QL	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)
PCB-1242	EPA 8082A	1 [1]	ND (0.032)	ND (0.031)	ND (0.049)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.027)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL ML	ND (0.020) QL	ND (0.021) QL	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)
PCB-1248	EPA 8082A	1 [1]	ND (0.032)	ND (0.031)	ND (0.049)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.027)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL	ND (0.020) QL	ND (0.021) QL	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)
PCB-1254	EPA 8082A	1 [1]	ND (0.032)	0.049 J	ND (0.049)	ND (0.033)	ND (0.033)	ND (0.031)	0.026 J	0.062 J	ND (0.056)	0.88	ND (0.069)	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL	ND (0.020) QL	ND (0.021) QL	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)
PCB-1260	EPA 8082A	1 [1]	ND (0.032)	ND (0.031)	ND (0.049)	ND (0.033)	ND (0.033)	ND (0.031)	ND (0.027)	0.032 J	ND (0.056)	0.34	ND (0.069)	0.0084 J QL	0.016 J QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	0.0065 J QL	ND (0.017) QL	ND (0.021) QL ML	ND (0.020) QL	ND (0.021) QL	ND (0.023) QL	ND (0.019) QL	0.012 J	ND (0.021)
PCBs-Total	EPA 8082A	1 [1]	ND (0.064)	ND (0.062)	ND (0.098)	ND (0.067)	ND (0.065)	ND (0.062)	ND (0.054)	0.094 J	ND (0.110)	1.22	ND (0.140)	0.0084 J QL	0.016 J QL	ND (0.042) QL	ND (0.036)	ND (0.040) QL	0.0065 J QL	ND (0.033) QL	ND (0.041) QL ML	ND (0.040) QL	ND (0.041) QL	ND (0.045) QL	ND (0.038) QL	0.012 J	ND (0.042)
Arsenic	EPA 6020	11 [1]	4.5	4.7	5.5	4.6	3.4	2.3	3.1	5.7	3.3	5.1	5.4	4.7	4.6	5	2.8 J	2.5	3.1	2.7	2.3	3.7	6.2	4.2	5.8	6.7	4.4
Barium	EPA 6020	1100 [2]	130	140	150	140	120	120	120	98	63	110	150	65	54	120	80 J	86	110	80	69	99	150	89	120	140	140
Cadmium	EPA 6020	5 [2]	0.33 J	0.32 J	0.39 J	0.4	0.63	0.61	0.57	0.34 J	0.33 J	0.36 J	0.49	0.36	0.42	0.34 J	0.15 J	0.24 J	0.34 J	0.22 J	0.17 J	0.28 J	0.4	0.44	0.33 J	0.43	0.37
Chromium	EPA 6020	25 [2]	20	21	23	20	15	14	15	11	6.5	19	20	15	18	18	11	11	20	12	8.3	15	24	12	20	26	22 ML
Lead	EPA 6020	400 [2]	14	13	14	13	10	9.7	11	14	8.3	18	15	36	47	14	9.4	12	19	12	9.4	16	17	15	17	24	14 MH
Nickel	EPA 6020	86 [2]	13	13	15	13	11	9.9	11	5.7	4.6	10	11	11	11	11	5.9	7	11	7.4	4.8	9.7	14	9.2	13	17	14 QN
Selenium	EPA 6020	3.4 [2]	1.5	1.5	1.3 J	1.3	1.9	1.9	1.7	1.2 J	1.3 J	1.3 J	2.5	0.57 J	0.50 J	1.6	1.1 J	1.7	1.4	1.1	1.8	1.6	1.6	1.8	1.4	1.6	1.7
Silver	EPA 6020	11.2 [2]	0.13 J	0.12 J	0.14 J	0.12 J	0.14 J	0.12 J	0.12 J	0.12 J	0.069 J	0.12 J	0.14 J	0.079 J	0.074 J	0.087 J	0.058 J	0.086 J	0.097 J	0.064 J	0.077 J	0.094 J	0.11 J	0.10 J	0.10 J	0.12 J	0.10 J
Vanadium	EPA 6020	3400 [2]	35	35	37	34	30	28	28	21	16	27	38	22	21	30	19	23	29	20	22	27	38	26	32	39	35
Mercury	EPA 7471A	1.4 [2]	0.093	0.095	0.1	0.097	0.083	0.073	0.065	0.12	0.064	0.18	0.12	0.044	0.054	0.076	0.052	0.056	0.066	0.050	0.056	0.068	0.091	0.068	0.083	0.089	0.094
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	4.4	4.2	0.030 J QH	6.1	0.39	0.068 QH	0.330 J	4.7	7.6	ND (0.12)	ND (0.45)	8.3 QN	3.5 QN	300	110	380	140 J	240	330	390	96	400	54	78	170
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	7.9	7.5	0.047 J QH	11	0.56	0.067 QH	0.430 J	2.5	8.9	ND (0.12)	ND (0.45)	6.6 QN	2.9 QN	540	190	710	260 J	450	630	720	130	740	92	150	330
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	0.74	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	8.7 J	3.1 J	10 J	4.4 J	6.2 J	8.7 J	11 J	ND (1.6)	13 J	1.6 J	2.0 J	4.8 J
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	0.12 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	0.13 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	0.14 J	0.16 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Fluorene	EPA 8270 SIM	220 [2]	0.39	0.39	ND (0.043)	0.4	0.062	ND (0.033)	0.081 J	2.5	3.2	ND (0.12)	ND (0.45)	1.4 QN	0.720 QN	18	5.7	23	9.5 J	14 J	18 J	24	7.8	25	3.4 J	4.6 J	11
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)
Naphthalene	EPA 8270 SIM	120 [1]	2.7	2.3	0.380 QH	4.5	0.71	0.085 QH	0.430 J	3.9	4.3	ND (0.12)	ND (0.45)	ND (0.32)	ND (0.31)	200	66	340	120 J	210	310	310	32	300	34	72	180
Phenanthrene	EPA 8270 SIM	3000 [2]	0.29 J	0.36	ND (0.043)	0.240 J	ND (0.13)	ND (0.033)	0.031 J	0.28 J	0.17 J	ND (0.12)	ND (0.45)	1	ND (0.31)	9.3 J	3.5 J	15 J	6.3 J	8.1 J	10 J	12 J	4.3	16 J	0.99 J	1.3 J	3.8 J
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.16)	ND (0.15)	ND (0.043)	ND (0.16)	ND (0.13)	ND (0.033)	ND (0.035)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)	0.27 J	0.37 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3 - Site 28
Soil Analytical Results

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS023-1	11NC28SS023-2_5	11NC28SS023-1_5	11NC28SS023-2	11NC28SS024-1	11NC28SS024-1_5	11NC28SS025-0_5	11NC28SS025-1	11NC28SS025-1_5	11NC28SS026-1	11NC28SS026-1_5	11NC28SS026-2	11NC28SS027-0_75	11NC28SS027-1_25	11NC28SS027-1_75	11NC28SS028-1	11NC28SS028-1_5	11NC28SS029-1	11NC28SS029-1_5	11NC28SS030-1	11NC28SS030-1_5	11NC28SS030-2	11NC28SS030-2_5	11NC28SS031-0_5	11NC28SS031-1	11NC28SS031-1_5
Sample Depth (feet bgs)			1	1	1.5	2	1	1.5	0.5	1	1.5	1	1.5	1.5	0.75	1.25	1.75	1	1.5	1	1.5	1	1.5	2	2	0.5	1	1.5
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-4-7-1	28-4-7-1	28-4-7-1.5	28-4-7-2	28-4-8-1	28-4-8-1.5	28-5-1-0.5	28-5-1-1	28-5-1-1.5	28-5-2-1	28-5-2-1.5	28-5-2-1.5	28-5-3-0.75	28-5-3-1.25	28-5-3-1.75	28-5-4-1	28-5-4-1.5	28-5-5-1	28-5-5-1.5	28-5-6-1	28-5-6-1.5	28-5-6-2	28-5-6-2	28-5-7-0.5	28-5-7-1	28-5-7-1.5
Lab ID			580-28112-19	580-28112-20	580-28112-21	580-28112-22	580-28112-23	580-28112-24	580-28112-25	580-28112-26	580-28112-27	580-28112-29	580-28112-30	580-28112-31	580-28112-32	580-28112-33	580-28112-34	580-28112-36	580-28112-37	580-28112-39	580-28112-40	580-28112-41	580-28112-42	580-28112-43	580-28112-44	580-28112-45	580-28112-46	580-28112-47
Date Collected			8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011
			Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5
Percent Moisture (%)	EPA Moisture	--	59	57	59	60	26	29	26	29	54	30	50	50	40	56	58	30	56	38	30	35	56	35	56	56	55	56
DRO	AK102	9200 [1]	55000	50000	43000	13000	2800	4200	53000	57000	110000	55000	110000	110000	4300	2000 ML	960	24000	11000	38000	2700	29000	70000	38000	56000	740	540	520
DRO with Silica Gel	AK102	9200 [1]	58000	53000	48000	13000	3100	4200	54000	56000	110000	58000	21000	24000	4400	1900 ML	790	25000	14000	40000	2800	30000	72000	35000	57000	370	150	150
RRO	AK103	9200 [1]	7400	6200 QH	7000 QH	5500 QH	3000	1900 QH	9600	5100	13000	11000	7300 QH	7600 QH	2900	3700 MH	3000	8400	4800	9000	1500	2400	5000	4100 QH	5300	4200 QH	4400 QH	3900 QH
RRO with Silica Gel	AK103	9200 [1]	3000	2600	3600	1500	2400	500	10000	4800	10000	11000	3700	4300	1800	1500	1100	8000	2800	7700	880	1700	2200	1500	2100	1200	1200	1100
Total Organic Carbon	EPA 9060-Quad	--	160000	170000	160000	190000	53000	60000	48000	53000	170000	72000	170000	150000	39000	140000	160000	41000	150000	62000	39000	53000	140000	130000	160000	170000	160000	160000
GRO	AK101	300 [2]	190	170	350	260	13	130	92	710	520	490	180	120	28	4.2 J	5.4 J	220	120	160	63	440	510	160 QN	300 QN	12	1.0 J	ND (2.5)
Benzene	EPA 8260B	2.0 [1]	0.14	0.12	0.34	0.22	ND (0.013)	0.045	ND (0.014)	0.49 QH	1.2	0.053 QH	0.12	0.11	ND (0.015)	0.011 J	0.011 J	0.013 J	0.057	0.020 J	0.0076 J	0.38 QH	0.57	0.38 QN	0.65 QN	ND (0.028)	ND (0.022)	ND (0.023) ML
Ethylbenzene	EPA 8260B	6.9 [2]	0.86 QN	1.5 QN	6.5	4.3	ND (0.038)	0.35	ND (0.041)	3.2 QH	9.3	0.32 QH	1.5	1.3	ND (0.046)	ND (0.070)	ND (0.070)	0.19	1.9	0.68	0.12	5 QH	6.2	3.8 QN	6.4 QN	0.072 J	ND (0.065)	ND (0.068) ML
Total Xylenes	EPA 8260B	63 [2]	2.36 QN	5.090 QN	41	29.5	0.046 J B	2.9	0.016 J	30 QH	66	7.5 QH	12.3	10.3	0.053 J B	0.067 J B	0.099 J B	4.4	12.8	5.2	1.35	33.1 QH	38	23.5 QN	42 QN	0.275 J B	0.037 J B	ND (0.136) ML
Toluene	EPA 8260B	6.5 [2]	ND (0.079)	ND (0.072)	0.037 J	0.027 J	ND (0.038)	ND (0.043)	ND (0.041)	0.27 QH	0.21	0.028 J QH	ND (0.066)	ND (0.063)	ND (0.046)	ND (0.070)	ND (0.070)	ND (0.042)	ND (0.068)	0.030 J	ND (0.043)	0.29 QH	0.094 J	0.051 J	0.11	ND (0.083)	ND (0.065)	ND (0.068) ML
PCB-1016	EPA 8082A	1 [1]	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL	ND (0.075) QL	ND (0.076) QL	ND (0.066) QL	ND (0.085) QL ML	ND (0.094) QL	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)	ND (0.022)	ND (0.022) QL	ND (0.036) QL	ND (0.021) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.047) QL	ND (0.043) QL	ND (0.047) QL	ND (0.049) QL	ND (0.026)	ND (0.025)	ND (0.026) QL	ND (0.028) QL	ND (0.042) QL	ND (0.110) QL	ND (0.150) QL	ND (0.150) QL	ND (0.130) QL	ND (0.170) QL ML	ND (0.190) QL	ND (0.110) QL	ND (0.180) QL	ND (0.130) QL	ND (0.100) QL	ND (0.029)	ND (0.043)	ND (0.030)	ND (0.045)	ND (0.043) QL	ND (0.072) QL	ND (0.041) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL	ND (0.075) QL	ND (0.076) QL	ND (0.066) QL	ND (0.085) QL ML	ND (0.094) QL	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)	ND (0.022)	ND (0.022) QL	ND (0.036) QL	ND (0.021) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL	ND (0.075) QL	ND (0.076) QL	ND (0.066) QL	ND (0.085) QL ML	ND (0.094) QL	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)	ND (0.022)	ND (0.022) QL	ND (0.036) QL	ND (0.021) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL	ND (0.075) QL	ND (0.076) QL	ND (0.066) QL	ND (0.085) QL ML	ND (0.094) QL	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)	ND (0.022)	ND (0.022) QL	ND (0.036) QL	ND (0.021) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	0.190 QL	ND (0.075) QL	ND (0.076) QL	ND (0.066) QL	ND (0.085) QL ML	ND (0.094) QL	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	0.031 J MN	0.057 J MN	0.032 J MN	ND (0.022)	0.035 J QL	ND (0.036) QL	ND (0.021) QL
PCB-1260	EPA 8082A	1 [1]	0.013 J QL	0.027 J QL	ND (0.024) QL	ND (0.025) QL	0.025 J	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	0.400 QL	ND (0.075) QL	ND (0.076) QL	ND (0.066) QL	ND (0.085) QL ML	ND (0.094) QL	0.024 J QL	ND (0.089) QL	0.140 J QL	0.038 J QL	0.035 J MN	0.068 J MH	0.036 J MN	0.026 J MN	ND (0.022) QL	ND (0.036) QL	ND (0.021) QL
PCBs-Total	EPA 8082A	1 [1]	0.013 J QL	0.027 J QL	ND (0.047) QL	ND (0.049) QL	0.025 J	ND (0.025)	ND (0.026) QL	ND (0.028) QL	ND (0.042) QL	0.59 QL	ND (0.150) QL	ND (0.150) QL	ND (0.130) QL	ND (0.170) QL ML	ND (0.190) QL	0.024 J QL	ND (0.180) QL	0.140 J QL	0.038 J QL	0.066 J MN	0.125 J MH	0.068 J MN	0.026 J MN	0.035 J QL	ND (0.072) QL	ND (0.041) QL
Arsenic	EPA 6020	11 [1]	6.2	5.6	5.2	4.8	2.9	3.4	5	4.6	4.1	3.8	4.1	4.4	4.5	4.8	5.7	4.8	4.6	8.9	6	9	5.1	3.7	5.3	5.1	5.3	6.8
Barium	EPA 6020	1100 [2]	140	150	150	130	73	97	91	99	120	81	110	100	96	130	120	85	120	150	110	140	130	96	140	120	120	170
Cadmium	EPA 6020	5 [2]	0.68	0.56	0.36 J	0.34 J	0.36	0.38	0.27	0.52	0.31 J	0.77	0.28 J	0.37	0.36	0.35 J	0.31 J	0.55 QN	0.35 J QN	0.68 QN	0.34 QN	0.62 QN	0.38 QN	0.3 QN	0.34 J QN	0.17 J QN	0.23 J QN	0.4 QN
Chromium	EPA 6020	25 [2]	22 ML	23 ML	23 ML	19 ML	18 ML	21 ML	19 ML	22 ML	18 ML	20 ML	17 ML	17 ML	20 ML	31 ML	19 ML	19	19	36	28	34	22	16	21	19	19	25
Lead	EPA 6020	400 [2]	16 MH	17 MH	15 MH	11 MH	24 MH	19 MH	23 MH	53 MH	13 MH	59 MH	15 MH	19 MH	23 MH	17 MH	14 MH	39	14	68	29	51	18	14	14	11	11	13
Nickel	EPA 6020	86 [2]	17 QN	16 QN	15 QN	12 QN	12 QN	16 QN	13 QN	15 QN	11 QN	13 QN	10 QN	10 QN	16 QN	18 QN	11 QN	14	12	26	21	26	15	10	14	12	12	16
Selenium	EPA 6020	3.4 [2]	1.9	1.8	1.8	2	0.83	1.1	0.87	0.94	1.7	0.67	1.7	1.5	0.99	1.6	2	0.90 J	1.6	1.9	1.2	1.7	1.5	1.1	1.7	1.7	1.7	1.9
Silver	EPA 6020	11.2 [2]	0.12 J	0.14 J	0.12 J	0.11 J	0.083 J	0.11 J	0.088 J	0.12 J	0.099 J	0.17 J	0.10 J	0.10 J	0.11 J	0.11 J	0.11 J	0.11 J	0.094 J	0.23 J	0.14 J	0.21	0.10 J	0.075 J	0.10 J	0.084 J	0.095 J	0.11 J
Vanadium	EPA 6020	3400 [2]	36	37	38	34	23	30	29	33	32	26	32	30	29	36	34	29	31	50	36	50	32	25	34	31	32	39
Mercury	EPA 7471A	1.4 [2]	0.096	0.090	0.10	0.10	0.053	0.046	0.052	0.19	0.087	0.15	0.11	0.095	0.049	0.11	0.11	0.097	0.10	0.13	0.047	0.14	0.096	0.072	0.10	0.13	0.10	0.11 J
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	68	56	120	62	ND (0.17)	8.3	1.3	130	120	31	30	29	1.2	0.42 J	0.14	32	47	97	7	54	230	78	120	0.33	0.025 J B	0.010 J B
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	87	71	230	84	0.022 J	12	0.78	74	130	42	50	50	1.1	0.41 J	0.13	39	83	160	8.8	110	430	140	220	0.56	0.044 J B	0.018 J B
Acenaphthene	EPA 8270 SIM	180 [2]	ND (1.2)	4.4	3.5	1.7	ND (0.17)	0.29 J	ND (0.34)	4.7	3.8	3.2	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	2.0 J	3.8	0.23	ND (0.77)	12	5.1	8.2	ND (0.028)	ND (0.027)	0.0028 J
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	0.037 J	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Anthracene	EPA 8270 SIM	3000 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Chrysene	EPA 8270 SIM	360 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	0.29 J	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	0.13 J	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Fluorene	EPA 8270 SIM	220 [2]	9	6.2	8	3.8	ND (0.17)	0.58	ND (0.34)	6.9	7.9	5	2.7	2.7	0.34 J	0.095 J	0.048 J	3.3	3.3	9.7	0.52	4.8	16	6.8	11	0.035 J	0.0091 J	0.011 J
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)
Naphthalene	EPA 8270 SIM	120 [1]	32	24	120	64	ND (0.17)	6	ND (0.34)	15	88	14	22	22	ND (0.21)	0.17 J	0.057 J	12	42	68	4.3	47	120	49	77	0.19	0.014 J B	0.0064 J B
Phenanthrene	EPA 8270 SIM	3000 [2]	3.6	2.4	3.3	1.3	ND (0.17)	0.24 J	ND (0.34)	3.1	4.3	2.2	0.93 J	0.95 J	0.19 J	ND (0.11)	ND (0.059)	1.5	1.0 J	4.2	0.24	2.5	11	5.1	7.3	0.026 J	ND (0.027)	ND (0.028)
Pyrene	EPA 8270 SIM	1000 [2]	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.17)	0.26 J	ND (0.7)	ND (1.1)	0.37 J	ND (0.49)	ND (0.5)	ND (0.21)	ND (0.11)	ND (0.059)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)	ND (2.3)	ND (0.028)	ND (0.027)	ND (0.028)

Color Codes:
- Positive Result Exceeds Cleanup Level
- Non-Detect Result Exceeds Cleanup Level
- Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3 - Site 28
Soil Analytical Results

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS032-0_5	11NC28SS032-1	11NC28SS032-1_5	11NC28SS033-0_5	11NC28SS033-1	11NC28SS033-1_5	11NC28SS034-1	11NC28SS034-1_5	11NC28SS035-1
Sample Depth (feet bgs)			0.5	1	1.5	0.5	1	1.5	1	1.5	1
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-6-1-0.5	28-6-1-1	28-6-1-1.5	28-6-2-0.5	28-6-2-1	28-6-2-1.5	28-6-3-1	28-6-3-1.5	28-6-4-1
Lab ID			580-28112-48	580-28112-49	580-28112-50	580-28112-51	580-28112-52	580-28112-53	580-28112-55	580-28112-56	580-28112-58
Date Collected			8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011
			Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6
Percent Moisture (%)	EPA Moisture	--	67	33	27	24	28	28	37	34	46
DRO	AK102	9200 [1]	1300	500	390	100	250	460	290	450	84000
DRO with Silica Gel	AK102	9200 [1]	330	110	85	49	58	97	71	110	87000
RRO	AK103	9200 [1]	10000 QH	3100 QH	2400	440	1600	3200	2400	3000 QH	21000
RRO with Silica Gel	AK103	9200 [1]	2400	790	630	120	360	820	580	790	22000
Total Organic Carbon	EPA 9060-Quad	--	270000	68000 MH	64000	10000	27000	75000	94000	67000	130000
GRO	AK101	300 [2]	ND (2.0)	ND (1.6)	ND (1.5)	ND (1.5)	ND (1.3)	1.5 J	ND (1.8)	ND (1.7)	120
Benzene	EPA 8260B	2.0 [1]	ND (0.018)	ND (0.015)	ND (0.014)	ND (0.013)	ND (0.012) QL	ND (0.012) QL	ND (0.016) QL	ND (0.015) QL	0.037
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.055)	ND (0.044)	ND (0.041)	ND (0.040)	ND (0.035) QL	ND (0.035) QL	ND (0.049) QL	ND (0.046) QL	1.1
Total Xylenes	EPA 8260B	63 [2]	ND (0.110)	ND (0.088)	ND (0.082)	ND (0.080)	ND (0.070) QL	ND (0.070) QL	ND (0.098) QL	ND (0.092) QL	14.4
Toluene	EPA 8260B	6.5 [2]	ND (0.055)	ND (0.044)	ND (0.041)	ND (0.040)	ND (0.035) QL	ND (0.035) QL	ND (0.049) QL	ND (0.046) QL	0.024 J
PCB-1016	EPA 8082A	1 [1]	ND (0.042)	ND (0.014)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.016)	ND (0.014)	ND (0.018) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.084)	ND (0.027)	ND (0.026)	ND (0.025)	ND (0.026)	ND (0.026)	ND (0.031)	ND (0.028)	ND (0.036) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.042)	ND (0.014)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.016)	ND (0.014)	ND (0.018) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.042)	ND (0.014)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.016)	ND (0.014)	ND (0.018) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.042)	ND (0.014)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.016)	ND (0.014)	ND (0.018) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.042)	ND (0.014)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.016)	ND (0.014)	ND (0.018) QL
PCB-1260	EPA 8082A	1 [1]	ND (0.042)	ND (0.014)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.016)	ND (0.014)	0.068 J QL
PCBs-Total	EPA 8082A	1 [1]	ND (0.084)	ND (0.027)	ND (0.026)	ND (0.025)	ND (0.026)	ND (0.026)	ND (0.031)	ND (0.028)	0.068 J QL
Arsenic	EPA 6020	11 [1]	0.95	8.3	12	1.5	2.5	5.1	4.2	4.1	6.6
Barium	EPA 6020	1100 [2]	72	160	150	53	69	140	90	100	130
Cadmium	EPA 6020	5 [2]	0.23 J QN	0.3 QN	0.29 QN	0.079 J QN	0.11 J	0.21	0.18 J	0.13 J	1.2
Chromium	EPA 6020	25 [2]	4	22	22	8.9	9.8	21	15	18	28
Lead	EPA 6020	400 [2]	1.9	11	11	4.7	5.3	10	8.2	9.2	73
Nickel	EPA 6020	86 [2]	6	16	15	8.4	8.2	15	8.4	8.6	20
Selenium	EPA 6020	3.4 [2]	1.6	1.2	1.1	0.24 J	0.43 J	0.92	1.0 J	0.83	1.4
Silver	EPA 6020	11.2 [2]	0.055 J	0.090 J	0.077 J	0.036 J	0.042 J	0.091 J	0.060 J	0.067 J	0.18 J
Vanadium	EPA 6020	3400 [2]	7.2	40	37	12	14	34	26	30	38
Mercury	EPA 7471A	1.4 [2]	0.18	0.078	0.075	0.020 J	0.039	0.065	0.060	0.070	0.36
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	0.010 J B	0.0020 J B	0.0022 J B	0.0042 J QH B	0.100 QH	0.013 J B	0.0051 J B	0.011 J B	200
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	0.017 J B	0.0030 J B	0.0036 J B	0.0089 QH B	0.220 QH B	0.026 J B	0.0073 J B	0.015 J B	360
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	8.6 J
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Fluorene	EPA 8270 SIM	220 [2]	0.035 J	0.0090 J	0.0073 J	0.0021 J	0.0058 J	0.0086 J	ND (0.019)	ND (0.019)	9.7 J
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)
Naphthalene	EPA 8270 SIM	120 [1]	0.010 J B	ND (0.018)	ND (0.017)	ND (0.0032)	0.043 QH B	0.012 J B	ND (0.019)	0.011 J B	91
Phenanthrene	EPA 8270 SIM	3000 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	4.7 J
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.076)	ND (0.018)	ND (0.017)	ND (0.0032)	ND (0.0035)	ND (0.017)	ND (0.019)	ND (0.019)	ND (7.3)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS035-1_5	11NC28SS036-1	11NC28SS036-2	11NC28SS036-1_5	11NC28SS037-2	11NC28SS037-2_5	11NC28SS037-3	11NC28SS038-1_75
Sample Depth (feet bgs)			1.5	1	1	1.5	2	2.5	3	1.75
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-6-4-1.5	28-6-5-1	28-6-5-1	28-6-5-1.5	28-6-6-2	28-6-6-2.5	28-6-6-3	28-6-7-1.75
Lab ID			580-28112-59	580-28112-61	580-28112-62	580-28112-63	580-28198-1	580-28198-2	580-28198-3	580-28198-4
Date Collected			8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011
			Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6
Percent Moisture (%)	EPA Moisture	--	44	62	64	62	46	55	54	66
DRO	AK102	9200 [1]	8800	3100	2600	3400	330	420	300	5100
DRO with Silica Gel	AK102	9200 [1]	8500	2700	2200	1700	73	77	80	3500
RRO	AK103	9200 [1]	4500 QH	8300 QH	7900 QH	12000 QH	4300 QH	4800 QH	3300	8300 QH
RRO with Silica Gel	AK103	9200 [1]	1500	2400	2100	1900	530	570	560	990
Total Organic Carbon	EPA 9060-Quad	--	88000	130000	140000	240000	120000	100000	93000	140000
GRO	AK101	300 [2]	120	13 QN	27 QN	26	4.4 B	5.9 B	3.6 J B	2.0 J B
Benzene	EPA 8260B	2.0 [1]	0.045	ND (0.027)	ND (0.028)	ND (0.028)	ND (0.089) QL	ND (0.110)	ND (0.110) QL	ND (0.150) QL
Ethylbenzene	EPA 8260B	6.9 [2]	1	0.065 J	0.092 J	0.14	ND (0.089) QL	ND (0.110)	ND (0.110) QL	ND (0.150) QL
Total Xylenes	EPA 8260B	63 [2]	11.1	0.44 B	0.6	0.95	ND (0.269) QL	ND (0.330) QL	ND (0.320) QL	ND (0.440) QL
Toluene	EPA 8260B	6.5 [2]	ND (0.053)	ND (0.082)	ND (0.085)	ND (0.084)	1.1 QL	0.43 J QL B	0.52 J QL B	ND (0.180) QL
PCB-1016	EPA 8082A	1 [1]	ND (0.017)	ND (0.026)	ND (0.055)	ND (0.080)	ND (0.018)	ND (0.020)	ND (0.020)	ND (0.040)
PCB-1221	EPA 8082A	1 [1]	ND (0.033)	ND (0.052)	ND (0.110)	ND (0.160)	ND (0.036)	ND (0.041)	ND (0.040)	ND (0.079)
PCB-1232	EPA 8082A	1 [1]	ND (0.017)	ND (0.026)	ND (0.055)	ND (0.080)	ND (0.018)	ND (0.020)	ND (0.020)	ND (0.040)
PCB-1242	EPA 8082A	1 [1]	ND (0.017)	ND (0.026)	ND (0.055)	ND (0.080)	ND (0.018)	ND (0.020)	ND (0.020)	ND (0.040)
PCB-1248	EPA 8082A	1 [1]	ND (0.017)	ND (0.026)	ND (0.055)	ND (0.080)	ND (0.018)	ND (0.020)	ND (0.020)	ND (0.040)
PCB-1254	EPA 8082A	1 [1]	ND (0.017)	ND (0.026)	ND (0.055)	ND (0.080)	ND (0.018)	ND (0.020)	ND (0.020)	ND (0.040)
PCB-1260	EPA 8082A	1 [1]	ND (0.017)	ND (0.026)	ND (0.055)	ND (0.080)	ND (0.018)	ND (0.020)	ND (0.020)	ND (0.040)
PCBs-Total	EPA 8082A	1 [1]	ND (0.033)	ND (0.052)	ND (0.110)	ND (0.160)	ND (0.036)	ND (0.041)	ND (0.040)	ND (0.079)
Arsenic	EPA 6020	11 [1]	3.2	4	3.9	3.1	4.3	3.7	7.2	3
Barium	EPA 6020	1100 [2]	110	130	120	140	100	89	140	110
Cadmium	EPA 6020	5 [2]	0.23 J	0.5	0.49	0.52	0.69	0.32 J	0.66	0.29 J
Chromium	EPA 6020	25 [2]	18	19	19	16	22	16	23	18
Lead	EPA 6020	400 [2]	11	15	13	13	17	12	15	9.9
Nickel	EPA 6020	86 [2]	12	13	13	15	14	11	17	9.7
Selenium	EPA 6020	3.4 [2]	0.90 J	1.2 J	1.3	1.6	1.3	1.2 J	1.3 J	1.3 J
Silver	EPA 6020	11.2 [2]	0.07 J	0.099 J	0.094 J	0.11 J	0.16 J B	0.12 J B	0.17 J B	0.11 J B
Vanadium	EPA 6020	3400 [2]	26	30	29	24	33	30	42	30
Mercury	EPA 7471A	1.4 [2]	0.057	0.083	0.087	0.079	0.060	0.050	0.078	0.074
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	26	2.1	2.2	1.6 J	0.0025 J	0.0027 J QH	0.0027 J QH	9.6
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	50	3.9	4.2	3.3 J	0.0029 J	0.0029 J QH	ND (0.021)	9.4
Acenaphthene	EPA 8270 SIM	180 [2]	0.71 J	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Fluorene	EPA 8270 SIM	220 [2]	0.59 J	0.17 J	0.2 J	0.19 J	ND (0.017)	ND (0.021)	ND (0.021)	0.77
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)
Naphthalene	EPA 8270 SIM	120 [1]	19	1.9	2	2.1 J	ND (0.017)	ND (0.021)	ND (0.021)	1.2
Phenanthrene	EPA 8270 SIM	3000 [2]	0.21 J	0.1 J	0.12 J	0.11 J	ND (0.017)	ND (0.021)	ND (0.021)	0.32 J
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.45)	ND (0.13)	ND (0.14)	ND (0.13)	ND (0.017)	ND (0.021)	ND (0.021)	ND (0.24)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS038-2_25	11NC28SS038-2_75	11NC28SS039-1	11NC28SS039-1_5	11NC28SS039-2	11NC28SS040-0_5	11NC28SS040-1	11NC28SS040-1_5	11NC28SS041-1
Sample Depth (feet bgs)			2.25	2.75	1	1.5	1.5	0.5	1	1.5	1
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-6-7-2.25	28-6-7-2.75	28-6-8-1	28-6-8-1.5	28-6-8-1.5	28-7-1-0.5	28-7-1-1	28-7-1-1.5	28-7-2-1
Lab ID			580-28198-5	580-28198-6	580-28198-7	580-28198-8	580-28198-9	580-28198-10	580-28198-11	580-28198-12	580-28198-13
Date Collected			8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011
			Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 7	Transect 7	Transect 7	Transect 7
Percent Moisture (%)	EPA Moisture	--	66	58	60	67	80	22	48	62	77
DRO	AK102	9200 [1]	3100	970	410	980	1300	440	510	310	27000
DRO with Silica Gel	AK102	9200 [1]	2300	390	97	310	440	81	120	110	21000
RRO	AK103	9200 [1]	9200 QH	7400 QH	5100	12000	16000 QH	2800	5000 QH	3600 QH	17000
RRO with Silica Gel	AK103	9200 [1]	1500	1200	530	2000	2400	560 QH	990	980	7400
Total Organic Carbon	EPA 9060-Quad	--	180000	260000	220000	230000	270000	30000	140000	190000	350000
GRO	AK101	300 [2]	3.3 J B	2.9 J B	ND (2.5)	ND (3.1)	ND (5.6)	0.90 J B	ND (1.6)	ND (2.8)	6.8 J B
Benzene	EPA 8260B	2.0 [1]	ND (0.150)	ND (0.120)	ND (0.150)	ND (0.180) QL	ND (0.310) QL	ND (0.063) QL	ND (0.098) QL	ND (0.170) QL	ND (0.270) QL
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.150)	ND (0.120)	ND (0.150)	ND (0.180) QL	ND (0.310) QL	ND (0.063) QL	ND (0.098) QL	ND (0.170) QL	ND (0.270) QL
Total Xylenes	EPA 8260B	63 [2]	ND (0.440) QL	ND (0.350) QL	ND (0.450) QL	ND (0.550) QL	ND (0.930) QL	ND (0.193) QL	ND (0.298) QL	ND (0.510) QL	ND (0.810) QL
Toluene	EPA 8260B	6.5 [2]	ND (0.180)	0.12 J QL MH B	ND (0.180) QL	0.160 J QL B	ND (0.370)	ND (0.076) QL	ND (0.120) QL	0.130 J QL B	ND (0.320) QL
PCB-1016	EPA 8082A	1 [1]	ND (0.066)	ND (0.022)	ND (0.022)	ND (0.030)	ND (0.055)	ND (0.012) QL	ND (0.018) QL	ND (0.025)	ND (0.042) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.130)	ND (0.044)	ND (0.045)	ND (0.060)	ND (0.110)	ND (0.025) QL	ND (0.037) QL	ND (0.050)	ND (0.084) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.066)	ND (0.022)	ND (0.022)	ND (0.030)	ND (0.055)	ND (0.012) QL	ND (0.018) QL	ND (0.025)	ND (0.042) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.066)	ND (0.022)	ND (0.022)	ND (0.030)	ND (0.055)	ND (0.012) QL	ND (0.018) QL	ND (0.025)	ND (0.042) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.066)	ND (0.022)	ND (0.022)	ND (0.030)	ND (0.055)	ND (0.012) QL	ND (0.018) QL	ND (0.025)	ND (0.042) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.066)	ND (0.022)	ND (0.022)	ND (0.030)	ND (0.055)	ND (0.012) QL	ND (0.018) QL	ND (0.025)	0.23 QL
PCB-1260	EPA 8082A	1 [1]	ND (0.066)	ND (0.022)	ND (0.022)	ND (0.030)	ND (0.055)	ND (0.012) QL	ND (0.018) QL	ND (0.025)	0.23 QL
PCBs-Total	EPA 8082A	1 [1]	ND (0.130)	ND (0.044)	ND (0.045)	ND (0.060)	ND (0.110)	ND (0.025) QL	ND (0.037) QL	ND (0.050)	0.46 QL
Arsenic	EPA 6020	11 [1]	3.6	6	2.3	4.4	6.4	2.6	6.5	33	16
Barium	EPA 6020	1100 [2]	150	150	74	130	190	120	130	140	120
Cadmium	EPA 6020	5 [2]	0.40 J	0.67	0.16 J	0.50 J	0.71 J	0.15 J	1.8	4.3	0.57 J
Chromium	EPA 6020	25 [2]	25	25	9.5	24	39	25	15	44	18
Lead	EPA 6020	400 [2]	14	19	7.7	13	21	12	11	38	31
Nickel	EPA 6020	86 [2]	14	17	4.9	11	16	12	16	44	16
Selenium	EPA 6020	3.4 [2]	1.7 J	1.9	1.1 J	2	3.2	0.75	1.9	6.5	1.7 J
Silver	EPA 6020	11.2 [2]	0.13 J B	0.24 J B	0.067 J B	0.14 J B	0.24 J B	0.10 J B	0.16 J B	0.36 J B	0.19 J B
Vanadium	EPA 6020	3400 [2]	39	42	18	40	61	35	45	120	39
Mercury	EPA 7471A	1.4 [2]	0.10	0.076	0.047	0.090	0.13	0.064	0.066	0.13	0.13
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	4.8	0.69 J	0.062 QH	0.080 QH	0.120 QH	ND (0.012)	ND (0.018)	0.0016 J	0.57 J
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	5.1	0.91 J	0.093 QH	0.120 QH	0.190 QH	ND (0.012)	ND (0.018)	0.0021 J	0.47 J
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Fluorene	EPA 8270 SIM	220 [2]	0.29 J	0.045 J	0.011 J	0.023 J	0.033 J	0.0041 J	ND (0.018)	ND (0.0062)	ND (0.41)
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Naphthalene	EPA 8270 SIM	120 [1]	1	0.59 J	0.03 J QH	0.063 QH	0.099 QH	ND (0.012)	ND (0.018)	0.0016 J	0.48 J
Phenanthrene	EPA 8270 SIM	3000 [2]	0.13 J	0.017 J	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.17)	ND (0.03)	ND (0.024)	ND (0.029)	ND (0.049)	ND (0.012)	ND (0.018)	ND (0.0062)	ND (0.41)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3 - Site 28
Soil Analytical Results

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

		Sample ID	11NC28SS041-1_33	11NC28SS042-1	11NC28SS042-1_5	11NC28SS042-2_5	11NC28SS042-2	11NC28SS043-1_5	11NC28SS043-2	11NC28SS043-2_5	11NC28SS044-2	11NC28SS044-2_5	11NC28SS044-3	11NC28SS045-1	11NC28SS045-1_5	11NC28SS046-0_75	11NC28SS046-1_25	11NC28SS046-1_75	11NC28SS047-2	11NC28SS047-2_5	11NC28SS047-3	11NC28SS048-1	11NC28SS048-1_5	11NC28SS048-2	11NC28SS048-2_5	11NC28SS049-1_5	11NC28SS049-2	11NC28SS049-3 DU
		Sample Depth (feet bgs)	1.33	1	1.5	1.5	2	1.5	2	2.5	2	2.5	3	1	1.5	0.75	1.25	1.75	2	2.5	3	1	1.5	2	2	1.5	2	2
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-7-2-1.33	28-7-3-1	28-7-3-1.5	28-7-3-1.5	28-7-3-2	28-7-4-1.5	28-7-4-2	28-7-4-2.5	28-7-5-2	28-7-5-2.5	28-7-5-3	28-7-6-1	28-7-6-1.5	28-8-1-0.75	28-8-1-1.25	28-8-1-1.75	28-8-2-2	28-8-2-2.25	28-8-2-3	28-8-3-1	28-8-3-1.5	28-8-3-2	28-8-3-2	28-8-4-1.5	28-8-4-2	28-8-4-2
		Lab ID	580-28198-14	580-28198-15	580-28198-16	580-28198-17	580-28198-18	580-28198-19	580-28198-20	580-28198-21	580-28198-22	580-28198-23	580-28198-24	580-28198-25	580-28198-26	580-28198-27	580-28198-28	580-28198-29	580-28198-30	580-28198-31	580-28198-32	580-28198-33	580-28198-34	580-28198-35	580-28198-36	580-28198-37	580-28198-38	580-28198-39
		Date Collected	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011
Analyte	Analysis Method	Soil Cleanup Level	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8
Percent Moisture (%)	EPA Moisture	--	64	88	30	32	31	81	76	70	84	72	89	51	63	41	36	30	66	41	55	66	47	27	28	61	60	59
DRO	AK102	9200 [1]	30000	1300	390	300	360	95000	84000	30000	96000	31000	59000 J	390	380	380	300	230	6200	4200	990	4300	1900	410	330	27000	4200	5500
DRO with Silica Gel	AK102	9200 [1]	23000	1100	360 QN	160 QN	310	96000	70000	40000	110000	34000	54000 J	110	79	96	57	46	6600	4200	620	4500	1900	310	190	32000	4900	6200
RRO	AK103	9200 [1]	9500 QH	3700	360	290	390	10000	7000	4500	9700	5700	10000	4200	4200	2500	2100	1900	380	370	3700	680	1600	1300	1300	3900	2300	2200
RRO with Silica Gel	AK103	9200 [1]	4600	1500	71 QN	41 QN	78	2300 J	1400	960	3000	1100	1800	500	410	330	300	330	100	72	800	270	310	330	330	1300	740	610
Total Organic Carbon	EPA 9060-Quad	--	120000	140000	9800	8700	14000	450000	300000	210000	240000	230000	65000	130000	150000	57000	34000	68000	260000	130000	150000	46000	57000	29000	27000	150000	140000	130000
GRO	AK101	300 [2]	51	63	35	30	13 B	260	290	220	1600	440	2800 J	4.4 ML B	2.5 J B	2.3 J B	3.2 B	1.0 J B	1600	2300	150	14 B	5.7 B	8.9 QN B	32 QN	840	95 QN	170 QN
Benzene	EPA 8260B	2.0 [1]	ND (0.170) QL	ND (0.510)	ND (0.300) QL	ND (0.070) QL	ND (0.058) QL	ND (0.034)	ND (0.0240)	ND (0.200)	ND (0.380) QL	ND (0.190) QL	ND (0.430) QL	ND (0.100) QL	ND (0.160)	ND (0.087) QL	ND (0.083) QL	ND (0.063) QL	ND (0.180) QL	ND (0.410)	ND (0.120)	ND (0.160) QL	ND (0.086)	ND (0.058)	ND (0.066)	ND (0.150)	ND (0.120)	ND (0.140)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.170) QL	ND (0.510)	ND (0.300) QL	ND (0.070) QL	ND (0.058) QL	0.980 J QL	1.0 J QL	1.3 QL	5.0 QL	1.7 QL	7.6 J QL	ND (0.100) QL	ND (0.160) QL	ND (0.087) QL	ND (0.083) QL	ND (0.063) QL	12 QL	2.9 QL	0.81 QL	ND (0.160) QL	ND (0.086)	ND (0.058)	ND (0.066)	0.410 J	ND (0.120)	ND (0.140)
Total Xylenes	EPA 8260B	63 [2]	ND (0.520) QL	ND (1.510) QL	ND (0.910) QL	ND (0.210) QL	ND (0.178) QL	8.8 QL	9.8 QN	10.3 QN	44 QL	12.4 QL	55 J ML	ND (0.310) QL	ND (0.470) QL	ND (0.257) QL	ND (0.253) QL	ND (0.193) QL	83 QL	26.3 QL	4.5 QL	ND (0.480) QL	0.310 J	ND (0.178) QL	0.130 J	4.7	0.930 J	1.23
Toluene	EPA 8260B	6.5 [2]	ND (0.210) QL	0.490 J QL B	ND (0.360) QL	0.054 J QL B	0.050 J QL B	ND (0.400)	ND (0.290)	ND (0.240)	0.390 J QL B	0.220 J QL B	0.970 J QL B	0.120 J QL B	0.120 J QL B	0.082 J QL B	ND (0.100) QL	ND (0.076) QL	0.84 J QL B	0.180 J QL B	0.180 J QL B	0.240 J QL B	ND (0.100)	ND (0.069)	ND (0.079)	ND (0.180)	ND (0.150)	ND (0.170)
PCB-1016	EPA 8082A	1 [1]	ND (0.025) QL	ND (0.081)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.020) QL	ND (0.026) QL	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.028)	ND (0.016)	ND (0.021)	ND (0.027)	ND (0.018)	ND (0.013)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)
PCB-1221	EPA 8082A	1 [1]	ND (0.051) QL	ND (0.160)	ND (0.027)	ND (0.027)	ND (0.028)	ND (0.099)	ND (0.078)	ND (0.066) QL	ND (0.120) QL	ND (0.066) QL	ND (0.170) ML	ND (0.040) QL	ND (0.053) QL	ND (0.032)	ND (0.030)	ND (0.027)	ND (0.055)	ND (0.033)	ND (0.041)	ND (0.055)	ND (0.037)	ND (0.027)	ND (0.027)	ND (0.049)	ND (0.049)	ND (0.047)
PCB-1232	EPA 8082A	1 [1]	ND (0.025) QL	ND (0.081)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.020) QL	ND (0.026) QL	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.028)	ND (0.016)	ND (0.021)	ND (0.027)	ND (0.018)	ND (0.013)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)
PCB-1242	EPA 8082A	1 [1]	ND (0.025) QL	ND (0.081)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.020) QL	ND (0.026) QL	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.028)	ND (0.016)	ND (0.021)	ND (0.027)	ND (0.018)	ND (0.013)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)
PCB-1248	EPA 8082A	1 [1]	ND (0.025) QL	ND (0.081)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.020) QL	ND (0.026) QL	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.028)	ND (0.016)	ND (0.021)	ND (0.027)	ND (0.018)	ND (0.013)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)
PCB-1254	EPA 8082A	1 [1]	0.089 QL	ND (0.081)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.020) QL	ND (0.026) QL	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.028)	ND (0.016)	ND (0.021)	ND (0.027)	ND (0.018)	ND (0.013)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)
PCB-1260	EPA 8082A	1 [1]	0.069 J QL	0.027 J MN	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.020) QL	ND (0.026) QL	ND (0.016)	ND (0.015)	ND (0.014)	ND (0.028)	ND (0.016)	ND (0.021)	ND (0.027)	ND (0.018)	ND (0.013)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)
PCBs-Total	EPA 8082A	1 [1]	0.158 J QL	0.027 J MN	ND (0.027)	ND (0.027)	ND (0.028)	ND (0.099)	ND (0.078)	ND (0.066)	ND (0.120) QL	ND (0.066) QL	ND (0.170) ML	ND (0.040) QL	ND (0.053) QL	ND (0.032)	ND (0.030)	ND (0.027)	ND (0.055)	ND (0.033)	ND (0.041)	ND (0.055)	ND (0.037)	ND (0.027)	ND (0.027)	ND (0.049)	ND (0.049)	ND (0.047)
Arsenic	EPA 6020	11 [1]	5.1	69	1.8	1.5	1.7	3.4	2.9	3.3	9.5	4.2	16	3.7	4.5	3.6	3.7	3.2	3.5	4.4	4.2	64	8.9	2.6	2.7	2.2	3	2.3
Barium	EPA 6020	1100 [2]	66	210	42	41	48	97	74	77	130	70	340	94	81	130	130	80	120	130	110	120	120	120	140	100	110	100
Cadmium	EPA 6020	5 [2]	0.19 J	0.69 J	0.059 J	0.063 J	0.11 J	0.28 J	0.27 J	0.33 J	0.78 J	0.50 J	1.2 J	0.47	0.56	0.22 J	0.19 J	0.16 J	0.21 J	0.27	0.34	0.12 J	0.21 J	0.17 J	0.20 J	0.15 J	0.23 J	0.21 J
Chromium	EPA 6020	25 [2]	8.7	15	10	9.4	9.4	9.5	9.7	10	17	8.1	56	13	12	18	17	11	13	17	15	6.8	15	23	25	14	14	13
Lead	EPA 6020	400 [2]	8	25	5.5	5.3	6	7.4	7.6	10	18	7.5	49	12	10	9.3	8.8	6.3	7.4	11	12	4.6	9.1	9.9	10	9.4	9.3	8.7
Nickel	EPA 6020	86 [2]	5.2	15	6.3	6	5.9	6.3	4.6	5	11	5.3	38	7.7	7.9	11	12	8	9.1	10	11	3.5	10	15	15	8.9	9.5	8.8
Selenium	EPA 6020	3.4 [2]	0.90 J	1.8 J	ND (0.49)	ND (0.50)	0.34 J	2.9	2.5	2.7	4.1	2.4	5.1	1.7	2.2	1.2	1	0.87	1.6	1.5	2	0.88 J	1.0 J	0.46 J	0.48 J	0.96 J	1.3 J	1.1 J
Silver	EPA 6020	11.2 [2]	0.084 J B	0.34 J B	0.042 J B	0.038 J B	0.022 J	0.12 J	0.086 J	0.078 J	0.19 J	0.11 J	0.34 J	0.10 J	0.11 J	0.074 J	0.069 J	0.051 J	0.060 J	0.098 J	0.14 J	ND (0.058)	0.070 J	0.094 J	0.10 J	0.085 J	0.093 J	0.087 J
Vanadium	EPA 6020	3400 [2]	17	35	15	14	11	16	15	26	46	30	110	25	27	28	29	19	25	29	25	15	29	36	39	26	31	28
Mercury	EPA 7471A	1.4 [2]	0.073	0.16	0.014 J	0.019 J	0.010 J QN	0.16 QN	0.098 QN	0.075 QN	0.12 QN	0.067 QN	0.14 QN	0.060 QN	0.057 QN	0.064 QN	0.057 QN	0.043 QN	0.069	0.069	0.084 QN	0.027 J QN	0.051	0.048 QN	0.056 QN	0.058	0.067	0.10
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	1.6	0.100 J	0.44	0.48	0.67	100	190	120	270	110	240 J	0.0076 J B	0.020 J	0.81	0.42	0.037	140	9.1	1.4	4.2	2.4	1	0.8	25	6.9	7.5
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	1.4	0.055 J	0.77	0.86	1.2	140	320	160	350	210	450 J	0.012 J B	0.038 J	1.6	0.71	0.072	180	18	1.6	7.5	4	1.5	1.3	42	12	13
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.51)	ND (0.079)	0.022 J	0.022 J	0.020 J	ND (2.6)	ND (5.9)	4.4	7.8	2.8	6.8 J	ND (0.023)	ND (0.033)	0.017 J	ND (0.018)	ND (0.017)	2.8 J	0.38 J	ND (0.11)	ND (0.13)	ND (0.088)	0.041	0.033	ND (0.64)	ND (0.29)	0.32 J
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Fluorene	EPA 8270 SIM	220 [2]	0.96 J	0.059 J	0.03 J	0.032 J	0.024 J	11	16	12	18	6.6	15.000 J	0.019 J	0.023 J	0.035 J	0.018 J	0.009 J	3.3	0.46 J	0.079 J	0.24 J	0.120 J	0.064	0.053	2.1	0.61	0.67
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)
Naphthalene	EPA 8270 SIM	120 [1]	1.5	0.120 J	0.32	0.37	0.5	36	81	42	160	110	210 J	0.016 J B	0.018 J B	0.22	0.31	0.015 J B	92	7	0.4	1.8	1.3	0.44	0.36	11	3.3	3.8
Phenanthrene	EPA 8270 SIM	3000 [2]	0.88 J	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	7.2	9.1 J	6.5	8.1	2.7	6.4	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	1.0 J	0.17 J	ND (0.11)	ND (0.13)	ND (0.088)	0.02 J	0.016 J	0.87 J	0.24 J	0.26 J
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.51)	ND (0.079)	ND (0.016)	ND (0.017)	ND (0.017)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (0.023)	ND (0.033)	ND (0.02)	ND (0.018)	ND (0.017)	ND (1.4)	ND (0.39)	ND (0.11)	ND (0.13)	ND (0.088)	ND (0.016)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to a matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3 - Site 28
Soil Analytical Results

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

		Sample ID	11NC28SS049-2_5	11NC28SS050-0_7	11NC28SS050-1_2	11NC28SS050-1_7	11NC28SS051-0_5	11NC28SS051-1	11NC28SS051-1_5	11NC28SS052-0_5	11NC28SS052-1	11NC28SS052-1_5	11NC28SS053-1	11NC28SS053-1_5	11NC28SS053-2_5	11NC28SS053-2	11NC28SS054-1	11NC28SS054-1_5	11NC28SS055-1_5	11NC28SS055-2	11NC28SS055-2_5	11NC28SS056-0_7	11NC28SS056-1_2	11NC28SS056-1_7	11NC28SS057-1_5	11NC28SS057-2	11NC28SS057-2_5
		Sample Depth (feet bgs)	2.5	0.75	1.25	1.75	0.5	1	1.5	0.5	1	1.5	1	1.5	1.5	2	1	1.5	1.5	2	2.5	0.75	1.25	1.75	1.5	2	2.5
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-8-4-2.5	28-8-5-0.75	28-8-5-1.25	28-8-5-1.75	28-8-6-0.5	28-8-6-1	28-8-6-1.5	28-9-1-0.5	28-9-1-1	28-9-1-1.5	28-9-2-1	28-9-2-1.5	28-9-2-1.5	28-9-2-2	28-9-3-1	28-9-3-1.5	28-9-4-1.5	28-9-4-2	28-9-4-2.5	28-9-5-0.75	28-9-5-1.25	28-9-5-1.75	28-10-1-1.5	28-10-1-2	28-10-1-2.5
		Lab ID	580-28198-40	580-28198-41	580-28198-42	580-28198-43	580-28198-44	580-28198-45	580-28198-46	580-28198-47	580-28198-48	580-28198-49	580-28198-50	580-28198-51	580-28198-52	580-28198-53	580-28198-55	580-28198-56	580-28198-57	580-28198-58	580-28198-59	580-28198-60	580-28198-61	580-28198-62	580-28198-63	580-28198-64	580-28198-65
		Date Collected	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011
Analyte	Analysis Method	Soil Cleanup Level	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 9	Transect 10	Transect 10	Transect 10
Percent Moisture (%)	EPA Moisture	--	57	65	28	50	20	19	19	66	52	57	79	62	61	54	56	30	46	32	37	33	37	28	64	41	15
DRO	AK102	9200 [1]	1900	1300	2700	600	74	67	67	470	340	360	7500	1400	1000	1300 ML	1400	370	650	220	210	230	260	150	530	270	28
DRO with Silica Gel	AK102	9200 [1]	2000	1100	3000	510	23	30	23 B	200	100	110	8300	1300	990	1100	1500	220	330	96	98	67	83	52	370	230	18
RRO	AK103	9200 [1]	2000	2000	720	1800	340	320	390	3500	2900	3500	4500	2800	2300	3000 ML	2300	2200	5300 ML	2100	1600	2300	2500	1300	2000	870	150
RRO with Silica Gel	AK103	9200 [1]	400	400	170	420	110	150	110 B	680	600	600	1600	600	530	740 MH	810	650	1900	700	330	570	660	300	820	350	44
Total Organic Carbon	EPA 9060-Quad	--	86000	120000	26000	110000	12000	11000	15000	200000	150000	180000	180000	150000	140000	110000	120000	57000	94000	68000	72000	110000	100000	55000	59000	30000	20000
GRO	AK101	300 [2]	110	7.5 B	17 B	4.8 B	1.6 B	1.9 B	2.2 B	1.9 J B	1.6 J B	1.5 J B	91	95 QN	27 QN B	33 J ML	26 B	6.8 B	5.3 B	3.9 B	6.8 B	3.4 B	4.6 B	2.9 B	2.3 J B	3.9 B	2.8 B
Benzene	EPA 8260B	2.0 [1]	ND (0.130)	ND (0.150)	ND (0.060)	ND (0.094)	ND (0.050)	ND (0.060)	ND (0.059)	ND (0.190)	ND (0.110)	ND (0.120) QL	ND (0.300) QL	ND (0.120) QL	ND (0.140) QL	ND (0.098) QL	ND (0.140)	ND (0.077)	ND (0.087)	ND (0.063)	ND (0.099)	ND (0.034)	ND (0.080) QL	ND (0.063) QL	ND (0.110) QL	ND (0.080)	ND (0.058)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.130)	ND (0.150)	ND (0.060)	ND (0.094)	ND (0.050)	ND (0.060)	ND (0.059)	ND (0.190)	ND (0.110)	ND (0.120) QL	ND (0.300) QL	ND (0.120) QL	ND (0.140) QL	ND (0.098) QL	ND (0.140)	0.054 J	ND (0.087)	ND (0.063)	ND (0.099)	ND (0.034)	ND (0.080) QL	ND (0.063) QL	ND (0.110) QL	ND (0.080)	ND (0.058)
Total Xylenes	EPA 8260B	63 [2]	0.550 J	ND (0.450)	ND (0.180)	ND (0.284)	ND (0.149)	ND (0.180)	ND (0.179)	ND (0.570)	ND (0.330)	ND (0.360) QL	ND (0.900) QL	0.500 J QL	0.380 J QL	0.230 J QL	0.740 J	ND (0.127)	ND (0.257)	ND (0.193)	ND (0.299)	ND (0.102)	ND (0.240) QL	ND (0.193) QL	ND (0.330) QL	ND (0.240)	ND (0.178)
Toluene	EPA 8260B	6.5 [2]	ND (0.160)	ND (0.180)	ND (0.072)	ND (0.110)	ND (0.060)	ND (0.071)	ND (0.071)	ND (0.230)	ND (0.130)	ND (0.150) QL	0.240 J QL	ND (0.150) QL	ND (0.170) QL	ND (0.120) QL	ND (0.170)	ND (0.093)	ND (0.100)	ND (0.076)	ND (0.120)	ND (0.041)	ND (0.096) QL	ND (0.075) QL	ND (0.130) QL	ND (0.096)	ND (0.069)
PCB-1016	EPA 8082A	1 [1]	ND (0.022)	ND (0.028)	ND (0.013)	ND (0.019)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.029)	ND (0.020)	ND (0.022)	ND (0.047)	ND (0.024)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.014)	ND (0.017)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.025)	ND (0.016)	ND (0.011)
PCB-1221	EPA 8082A	1 [1]	ND (0.043)	ND (0.056)	ND (0.026)	ND (0.039)	ND (0.024)	ND (0.024)	ND (0.023)	ND (0.058)	ND (0.040)	ND (0.045)	ND (0.094)	ND (0.049)	ND (0.048)	ND (0.041)	ND (0.044)	ND (0.027)	ND (0.034)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.031)	ND (0.027)	ND (0.051)	ND (0.032)	ND (0.023)
PCB-1232	EPA 8082A	1 [1]	ND (0.022)	ND (0.028)	ND (0.013)	ND (0.019)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.029)	ND (0.020)	ND (0.022)	ND (0.047)	ND (0.024)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.014)	ND (0.017)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.025)	ND (0.016)	ND (0.011)
PCB-1242	EPA 8082A	1 [1]	ND (0.022)	ND (0.028)	ND (0.013)	ND (0.019)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.029)	ND (0.020)	ND (0.022)	ND (0.047)	ND (0.024)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.014)	ND (0.017)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.025)	ND (0.016)	ND (0.011)
PCB-1248	EPA 8082A	1 [1]	ND (0.022)	ND (0.028)	ND (0.013)	ND (0.019)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.029)	ND (0.020)	ND (0.022)	ND (0.047)	ND (0.024)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.014)	ND (0.017)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.025)	ND (0.016)	ND (0.011)
PCB-1254	EPA 8082A	1 [1]	ND (0.022)	ND (0.028)	ND (0.013)	ND (0.019)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.029)	ND (0.020)	ND (0.022)	ND (0.047)	ND (0.024)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.014)	ND (0.017)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.013)	ND (0.025)	ND (0.016)	ND (0.011)
PCB-1260	EPA 8082A	1 [1]	ND (0.022)	ND (0.028)	ND (0.013)	ND (0.019)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.029)	ND (0.020)	ND (0.022)	ND (0.047)	ND (0.024)	ND (0.024)	ND (0.021)	ND (0.022)	ND (0.014)	ND (0.017)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.016)	ND (0.013)	0.27	ND (0.016)	ND (0.011)
PCBs-Total	EPA 8082A	1 [1]	ND (0.043)	ND (0.056)	ND (0.026)	ND (0.039)	ND (0.024)	ND (0.024)	ND (0.023)	ND (0.058)	ND (0.040)	ND (0.045)	ND (0.094)	ND (0.049)	ND (0.048)	ND (0.041)	ND (0.044)	ND (0.027)	ND (0.034)	ND (0.028)	ND (0.029)	ND (0.028)	ND (0.031)	ND (0.027)	0.27	ND (0.032)	ND (0.023)
Arsenic	EPA 6020	11 [1]	2.8	3.1	2.5	3.9	5.2	4.5	4.1	2.7	2.5	4.2	15	3.2	3.4	3.8	7.2	2.2	2.3	2.1	3.2	3	3.7	3.8	9.2	6.6	9
Barium	EPA 6020	1100 [2]	94	100	65	110	150	130	120	110	110	110	140	120	110	100	100	130	170	130	110	170	140	170	82	65	62
Cadmium	EPA 6020	5 [2]	0.20 J	0.21 J	0.10 J	0.36	0.2	0.19	0.17	0.12 J	0.20 J	0.31 J	0.31 J	0.23 J	0.23 J	0.24 J	0.21 J	0.27	0.53	0.26	0.33	0.29	0.34	0.32	0.20 J	0.21 J	0.25
Chromium	EPA 6020	25 [2]	9.5	15	12	14	26	23	20	16	13	13	14	13	12	11	12	17	22	18	18	21	18	22	12	16	22
Lead	EPA 6020	400 [2]	6.7	11	6.9	8.6	12	11	10	9.8	7.8	8.8	11	8.6	8.2	7	9.7	10	10	9.5	14	10	8.7	10	12	15	17
Nickel	EPA 6020	86 [2]	6.8	11	9.1	12	19	16	15	8.7	8.5	10	9.5	7.8	7.4	6.8	7.4	10	13	11	11	12	12	17	8.7	13	20
Selenium	EPA 6020	3.4 [2]	0.94 J	1.3	0.50 J	1.1	0.52	0.54 J	0.54	1.4 J	1.5	1.8	1.7 J	1.6	1.6	1.3	1.3 J	1.1	1.3	1.1	1.1	1.2	1.5	1.1	1.1 J	1.1	0.96
Silver	EPA 6020	11.2 [2]	0.073 J	0.098 J	0.053 J	0.094 J	0.13	0.12 J	0.097 J	0.093 J	0.061 J	0.080 J	0.088 J	0.074 J	0.072 J	0.066 J	0.074 J	0.081 J	0.086 J	0.065 J	0.095 J	0.080 J	0.083 J	0.097 J	0.070 J	0.081 J	0.093 J
Vanadium	EPA 6020	3400 [2]	25	31	25	30	41	37	34	28	26	30	28	28	25	23	20	26	32	26	29	30	31	34	21	25	36
Mercury	EPA 7471A	1.4 [2]	0.049	0.069	0.032	0.058	0.054	0.057	0.045	0.092	0.055	0.067	0.094	0.067	0.066	0.053	0.068	0.055	0.075	0.051	0.049	0.074	0.061	0.065	0.049	0.033	0.025
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	1.2	0.056 J	ND (0.17)	0.016 J	0.00086 J	ND (0.0029)	0.00058 J	ND (0.036)	0.0049 J	0.0030 J	1.9 J	0.85 J	1.9	0.46	0.85	0.029	0.013	0.00052 J	ND (0.18)	ND (0.17)	ND (0.019)	0.0027 J	0.0046 J	ND (0.08)	0.002 J
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	2	0.077 J	ND (0.17)	0.015 J	0.0012 J	ND (0.0029)	0.00087 J	0.0047 J	0.0068 J	ND (0.029)	2.6	1.0 J	2.4	0.620 J	1.1	0.04	0.015	0.0015 J	ND (0.18)	ND (0.17)	0.0030 J	0.0023 J	0.0064 J	ND (0.08)	0.002 J
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	0.35 J	0.13 J	0.11 J	0.046 J	0.082 J	0.0044 J	0.0045 J	0.0012 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	0.00021 J	ND (0.0029)	0.00024 J	ND (0.036)	ND (0.026)	0.0032 J	0.089 J	0.072 J	0.016 J	0.0058 J	0.0087 J	0.00029 J	0.0013 J	0.00039 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	0.00098 J	ND (0.0029)	0.0014 J	ND (0.036)	ND (0.026)	ND (0.029)	0.38 J	ND (0.65)	0.092 J	0.017 J	0.042 J	0.0073	0.0056 J	0.0033 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	0.0012 J	ND (0.0046)	0.0012 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	0.00097 J	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	ND (0.0033)	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	ND (0.0033)	0.0038 J	0.0022 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	ND (0.0033)	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	ND (0.0033)	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	0.016 J	ND (1.1)	ND (0.65)	ND (0.13)	0.016 J	ND (0.054)	0.0052 J	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	0.0016 J	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	0.027 J	ND (0.08)	ND (0.014)
Fluorene	EPA 8270 SIM	220 [2]	0.15 J	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	0.00067	0.011 J	0.011 J	0.017 J	0.54 J	0.21 J	0.2 J	0.082	0.13	0.0076	0.0011 J	0.0071	ND (0.18)	ND (0.17)	0.0089 J	0.0048 J	0.0099 J	ND (0.08)	ND (0.014)
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.003)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	ND (0.0033)	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	ND (0.033)	ND (0.08)	ND (0.014)
Naphthalene	EPA 8270 SIM	120 [1]	0.6	0.041 J	ND (0.17)	ND (0.048)	0.0008 J	ND (0.0029)	0.00053 J	ND (0.036)	ND (0.026)	ND (0.029)	0.76 J	0.55 J	1.5	0.35	0.62	0.013	0.0055 J	0.0011 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	0.0065 J	ND (0.08)	ND (0.014)
Phenanthrene	EPA 8270 SIM	3000 [2]	0.071 J	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	0.079 J	0.042 J	0.062 J	0.0061 J	0.0046 J	0.0028 J	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	0.026 J	ND (0.08)	ND (0.014)
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.11)	ND (0.13)	ND (0.17)	ND (0.048)	ND (0.0031)	ND (0.0029)	ND (0.0030)	ND (0.036)	ND (0.026)	ND (0.029)	ND (1.1)	ND (0.65)	ND (0.13)	ND (0.026)	ND (0.054)	0.0015 J	ND (0.0046)	ND (0.0034)	ND (0.18)	ND (0.17)	ND (0.019)	ND (0.016)	0.021 J	ND (0.08)	ND (0.014)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

Sample ID			11NC28SS058-1	11NC28SS058-2	11NC28SS058-1_5	11NC28SS059-1	11NC28SS059-1_5	11NC28SS060-1	11NC28SS060-2	11NC28SS060-1_5	11NC28SS061-1_5	11NC28SS061-2	11NC28SS062-0_75	11NC28SS063-0_75	11NC28SS063-1_75
Sample Depth (feet bgs)			1	1	1.5	1	1.5	1	1	1.5	1.5	2	0.75	0.75	1.75
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-10-2-1	28-10-2-1	28-10-2-1.5	28-10-3-1	28-10-3-1.5	28-11-1-1	28-11-1-1	28-11-1-1.5	28-11-2-0.5	28-11-2-2	28-11-3-0.75	28-11-4-0.75	28-11-4-1.75
Lab ID			580-28198-67	580-28198-68	580-28198-69	580-28198-71	580-28198-72	580-28198-74	580-28198-75	580-28198-76	580-28198-78	580-28198-79	580-28198-81	580-28198-83	580-28198-84
Date Collected			8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011
Analyte	Analysis Method	Soil Cleanup Level	Transect 10	Transect 10	Transect 10	Transect 10	Transect 10	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11
Percent Moisture (%)	EPA Moisture	--	51	51	33	59	54	31	30	47	73	33	65	89	53
DRO	AK102	9200 [1]	7200	4500	200	370	460	32000	23000	5400	18000	500	110000	58000	22000
DRO with Silica Gel	AK102	9200 [1]	7900 QN	4600 QN	130	260	360	35000	26000	5300	18000	390	120000	63000	22000
RRO	AK103	9200 [1]	2500	2100	870	1500	1300	2500	1800	5100	5400	1700	22000	8700	3300
RRO with Silica Gel	AK103	9200 [1]	1400	1000	220	450	410	1400	1100	1400	2000	690	19000	2500	1100
Total Organic Carbon	EPA 9060-Quad	--	41000	43000	42000	60000	41000	29000	27000	130000	110000	34000	120000	450000	120000
GRO	AK101	300 [2]	12 QN B	6.4 QN B	2.3 J B	2.3 J B	1.9 J B	320	410	230	550	38	310	160	690
Benzene	EPA 8260B	2.0 [1]	ND (0.120)	ND (0.120) QL	ND (0.074)	ND (0.120)	ND (0.120) QL	ND (0.077)	ND (0.073)	ND (0.093)	ND (0.180)	ND (0.078)	ND (0.180)	ND (0.590)	ND (0.100)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.120)	ND (0.120) QL	ND (0.074)	ND (0.120)	ND (0.120) QL	0.085 J QH	0.120 J QH	ND (0.093)	3 QH	0.070 J	ND (0.180)	ND (0.590)	0.210 J QH
Total Xylenes	EPA 8260B	63 [2]	ND (0.360)	ND (0.350) QL	ND (0.224)	ND (0.350)	ND (0.370) QL	ND (0.127)	ND (0.123)	0.160 J QH	10.3 QH	0.68	ND (0.540)	ND (1.790)	3.9 QH
Toluene	EPA 8260B	6.5 [2]	ND (0.150)	ND (0.140) QL	ND (0.089)	ND (0.140)	ND (0.150) QL	ND (0.093)	ND (0.087)	ND (0.110)	ND (0.220)	ND (0.093)	ND (0.210)	ND (0.710)	ND (0.120)
PCB-1016	EPA 8082A	1 [1]	ND (0.020)	ND (19)	ND (0.014)	ND (0.023)	ND (0.020)	ND (0.014) QL	ND (0.014)	ND (0.019)	ND (0.036)	ND (0.014)	ND (0.027) QL	ND (0.086)	ND (0.020)
PCB-1221	EPA 8082A	1 [1]	ND (0.040)	ND (0.037)	ND (0.029)	ND (0.046)	ND (0.041)	ND (0.027) QL	ND (0.027)	ND (0.037)	ND (0.072)	ND (0.029)	ND (0.054) QL	ND (0.170)	ND (0.040)
PCB-1232	EPA 8082A	1 [1]	ND (0.020)	ND (0.019)	ND (0.014)	ND (0.023)	ND (0.020)	ND (0.014) QL	ND (0.014)	ND (0.019)	ND (0.036)	ND (0.014)	ND (0.027) QL	ND (0.086)	ND (0.020)
PCB-1242	EPA 8082A	1 [1]	ND (0.020)	ND (0.019)	ND (0.014)	ND (0.023)	ND (0.020)	ND (0.014) QL	ND (0.014)	ND (0.019)	ND (0.036)	ND (0.014)	ND (0.027) QL	ND (0.086)	ND (0.020)
PCB-1248	EPA 8082A	1 [1]	ND (0.020)	ND (0.019)	ND (0.014)	ND (0.023)	ND (0.020)	ND (0.014) QL	ND (0.014)	ND (0.019)	ND (0.036)	ND (0.014)	ND (0.027) QL	ND (0.086)	ND (0.020)
PCB-1254	EPA 8082A	1 [1]	ND (0.020)	ND (0.019)	ND (0.014)	ND (0.023)	ND (0.020)	ND (0.014) QL	ND (0.014)	ND (0.019)	0.14 MN	ND (0.014)	0.14 QL	ND (0.086)	ND (0.020)
PCB-1260	EPA 8082A	1 [1]	ND (0.020)	ND (0.019)	ND (0.014)	ND (0.023)	ND (0.020)	ND (0.014) QL	ND (0.014)	ND (0.019)	0.053 J MN	ND (0.014)	0.11 QL	ND (0.086)	ND (0.020)
PCBs-Total	EPA 8082A	1 [1]	ND (0.040)	ND (0.037)	ND (0.029)	ND (0.046)	ND (0.041)	ND (0.014) QL	ND (0.014)	ND (0.019)	0.193 J MN	ND (0.014)	0.25 QL	ND (0.086)	ND (0.020)
Arsenic	EPA 6020	11 [1]	5.3	5	6.4	6.1	5.3	3.9	3.5	0.19	22	4.7	9.2	33	12
Barium	EPA 6020	1100 [2]	83	74	91	69	74	61	51	8.7	150	100	84	100	89
Cadmium	EPA 6020	5 [2]	0.25 J	0.23 J	0.29	0.22 J	0.27 J	0.13 J	0.11 J	0.018 J	0.29 J	0.14 J	0.41 J	0.24 J QN	0.26 J QN
Chromium	EPA 6020	25 [2]	16	14	23	13	14	14	12	1.4	25	23	13	5.9	12
Lead	EPA 6020	400 [2]	15	13	14	12	14	8.3	7.4	1.0	14	11	22	9.4 QN	8.3 QN
Nickel	EPA 6020	86 [2]	11	10	17	8.5	9.5	7.7	6.3	0.57	14	13	8.7	6.9	6
Selenium	EPA 6020	3.4 [2]	1.3	1.1 J	1	1.1 J	1.3	0.60 J	0.60 J	0.16	1.6 J	0.85 J	1.4 J	ND (3.6)	0.89 J
Silver	EPA 6020	11.2 [2]	0.077 J	0.070 J	0.096 J	0.057 J	0.064 J	0.044 J	0.034 J	0.0063 J	0.11 J	0.066 J	0.11 J	ND (0.18)	0.065 J
Vanadium	EPA 6020	3400 [2]	28	26	37	22	23	23	20	1.1	51	42	23	25	21
Mercury	EPA 7471A	1.4 [2]	0.052	0.043	0.033	0.062	0.036	0.033	0.023	0.063	0.089	0.044	0.073	ND (0.077)	0.030 J
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	0.17 J	0.11 J	0.027 J	ND (0.029)	0.0055 J	5.8	4.9	0.31 J	14	0.25	ND (2.7)	4.1	41
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	0.16 J	0.11 J	0.018 J	ND (0.029)	0.0049 J	6.3	5.4	0.16 J	15	0.27	ND (2.7)	4.7	79
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	1.8	ND (0.072)	ND (2.7)	ND (1.2)	2.2
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Fluorene	EPA 8270 SIM	220 [2]	0.049 J	ND (0.25)	0.0072 J	ND (0.029)	ND (0.027)	1.0 J	1.0 J	0.14 J	1.8	0.027 J	ND (2.7)	0.49 J	1.9 J
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)
Naphthalene	EPA 8270 SIM	120 [1]	0.05 J	0.045 J	0.017 J	ND (0.029)	0.0046 J	2.8	2.7	0.22 J	11	0.31	ND (2.7)	ND (1.2)	18
Phenanthrene	EPA 8270 SIM	3000 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	0.52 J	0.51 J	ND (0.23)	1.5	ND (0.072)	ND (2.7)	ND (1.2)	0.78 J
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.26)	ND (0.25)	ND (0.034)	ND (0.029)	ND (0.027)	ND (0.7)	ND (0.66)	ND (0.23)	ND (0.45)	ND (0.072)	ND (2.7)	ND (1.2)	ND (0.98)

Sample ID			11NC28SS064-1_75	11NC28SS064-2_25	11NC28SS064-2_5	11NC28SS065-2	11NC28SS065-2_5	11NC28SS065-3	11NC28SS066-0_75	11NC28SS066-1_25	11NC28SS066-2	11NC28SS067-1	11NC28SS067-1_5	11NC28SS068-1	11NC28SS069-1_5
Sample Depth (feet bgs)			1.75	2.25	2.25	2	2.5	3	0.75	1.25	1.25	1	1.5	1	1.5
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-11-5-1.75	28-11-5-2.25	28-11-5-2.25	28-11-6-2	28-11-6-2.5	28-11-6-3	28-DIS-01-0.75	28-DIS-01-1.25	28-DIS-01-1.25	28-DIS-02-1	28-DIS-02-1.5	28-DIS-03-1	28-DIS-04-1.5
Lab ID			580-28198-87	580-28198-88	580-28198-89	580-28198-90	580-28198-91	580-28198-92	580-28198-93	580-28198-94	580-28198-95	580-28198-97	580-28198-98	580-28198-99	580-28198-100
Date Collected			8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/20/2011
Analyte	Analysis Method	Soil Cleanup Level	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Percent Moisture (%)	EPA Moisture	--	85	49	45	67	51	44	53	41	35	22	17	71	46
DRO	AK102	9200 [1]	23000	2500 QN	4800 QN	4600	1000	550 MH	94000	42000 QN	24000 QN	6700	13000	280000	21000
DRO with Silica Gel	AK102	9200 [1]	25000	2400 QN	4900 QN	4800	900	450 MH	97000	46000 QN	24000 QN	7100	16000	290000	26000
RRO	AK103	9200 [1]	6500	3900	3800	3300	2700	1800 MH	14000	7100	4900	10000	8000 QL	3800 J	3500
RRO with Silica Gel	AK103	9200 [1]	4300	1200	1300	1500	950	540 MH	12000	5900 QN	3300 QN	10000 QL	9000	2200	740
Total Organic Carbon	EPA 9060-Quad	--	130000	93000	130000	110000	74000	62000	100000	58000	53000	35000	17000	220000	57000 QL
GRO	AK101	300 [2]	69	43 QN	76 QN	56	40	24 J ML B	490	720	1100	33	77	1300	650
Benzene	EPA 8260B	2.0 [1]	ND (0.430)	ND (0.100)	ND (0.089)	ND (0.150)	ND (0.100)	ND (0.088)	ND (0.140)	ND (0.084)	ND (0.079) QL	ND (0.067) QL	ND (0.060)	ND (0.110)	0.150 J QH
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.430)	0.140 J	0.120 J	0.280 J	0.220 J	0.190 J	ND (0.140)	0.130 J	0.150 J QL	ND (0.067) QL	ND (0.060)	ND (0.110)	4.2 QH
Total Xylenes	EPA 8260B	63 [2]	ND (1.290)	0.630 J	0.710 J	2.14	1.84	1.17	ND (0.410)	1.77	1.740 QL	ND (0.197) QL	ND (0.180)	ND (0.330)	31 QH
Toluene	EPA 8260B	6.5 [2]	ND (0.520)	ND (0.120)	ND (0.110)	ND (0.180)	ND (0.120)	ND (0.110)	ND (0.160)	0.280 J	0.300 J QL	ND (0.080) QL	ND (0.071)	0.190 J	ND (0.190)
PCB-1016	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)	ND (0.034) QL	ND (0.017) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.120)	ND (0.037)	ND (0.034)	ND (0.059)	ND (0.041)	ND (0.033) QL	ND (0.400)	ND (0.160)	ND (0.120) QL	ND (0.240)	ND (0.230)	ND (0.069) QL	ND (0.034) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)	ND (0.034) QL	ND (0.017) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)	ND (0.034) QL	ND (0.017) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)	ND (0.034) QL	ND (0.017) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	2 MN	0.790 MN	0.600 QL	ND (0.120)	ND (0.120)	0.029 J QL	ND (0.017) QL
PCB-1260	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	1 MN	0.420 MN	0.320 QL	1.5 MN	1.8 MN	ND (0.034) QL	ND (0.017) QL
PCBs-Total	EPA 8082A	1 [1]	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.029)	ND (0.020)	ND (0.016) QL	3 MN	1.21 MN	0.92 QL	1.5 MN	1.8 MN	ND (0.069) QL	ND (0.034) QL
Arsenic	EPA 6020	11 [1]	27	4.6	4.3	7.2	4.5	3.7	23	8	5.9	4.7	4.3	8.6	3.5
Barium	EPA 6020	1100 [2]	120	130	140	79	140	120	480	270 QN	92 QN	39	51	130	110
Cadmium	EPA 6020	5 [2]	0.32 J QN	0.21 J QN	0.22 J QN	0.14 J QN	0.26 J QN	0.23 J QN	5.9 QN	1.8 QN	0.78 QN	0.41 QN	0.66 QN	1.3	0.33
Chromium	EPA 6020	25 [2]	19	20	22	10	23	20	74	24	19	15	24	11	14
Lead	EPA 6020	400 [2]	19 QN	10 QN	10 QN	8.2 QN	10 QN	9.3 QN	790 QN	280 QN	130 QN	48 QN	87 QN	29	16
Nickel	EPA 6020	86 [2]	13	14	15	7.1	15	14	18	13	11	12	12	12	8
Selenium	EPA 6020	3.4 [2]	1.1 J	1.1 J	1.1 J	0.95 J	1.2 J	1.0 J	1.1 J	0.84 J	0.90 J	0.42 J	0.42 J	5.6	1.5
Silver	EPA 6020	11.2 [2]	0.096 J	0.080 J	0.080 J	0.059 J	0.088 J	0.079 J	1.3	0.23 J	0.11 J	0.062 J	0.13 J	0.32 J	0.12 J
Vanadium	EPA 6020	3400 [2]	39	35	38	23	41	33	27	24	24	20	22	17	30
Mercury	EPA 7471A	1.4 [2]	0.061 J	0.068	0.071	0.040 J	0.053	0.033	0.64	0.84	0.57	0.039	0.065	0.054	0.046
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	0.99	3.9	5.1	1.4	0.85	3.0 J	3.8 J	15	11	ND (0.88)	ND (0.42)	30	42
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	1.5	6.4	9	2.3	1.6	4.6 J	ND (2.1)	15 QN	7.1 QN	ND (0.88)	ND (0.42)	26	77
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.16)	0.19 J	0.22 J	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	0.83 J	0.21 J	0.22 J	0.31 J	0.14 J	ND (1.7)	ND (1.7)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	0.98 J	ND (0.58)	ND (0.54)	0.78 J	0.22 J	ND (1.7)	ND (1.7)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Fluoranthene	EPA 8270 SIM	1400 [2]	0.33	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	0.22 J	0.39 J	ND (0.42)	ND (1.7)	ND (1.7)
Fluorene	EPA 8270 SIM	220 [2]	0.15 J	0.23 J	0.28 J	0.12 J	0.06 J	0.053 J	1.9 J	1.6	1.6	0.25 J	ND (0.42)	7.3	2.7 J
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.16)	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)	ND (1.7)	ND (1.7)
Naphthalene	EPA 8270 SIM	120 [1]	ND (0.16)	1.2	1.9	0.64	0.58	3.000 J	ND (2.1)	6.5 QN	3.6 QN	ND (0.88)	ND (0.42)	ND (1.7)	28
Phenanthrene	EPA 8270 SIM	3000 [2]	0.27 J	0.074 J	ND (0.17)	0.045 J	ND (0.051)	ND (0.100)	ND (2.1)	0.93 J	0.94 J	ND (0.88)	ND (0.42)	4.5	1.8 J
Pyrene	EPA 8270 SIM	1000 [2]	0.20 J	ND (0.12)	ND (0.17)	ND (0.072)	ND (0.051)	ND (0.100)	ND (2.1)	ND (0.58)	0.26 J	0.78 J	0.3 J	ND (1.7)	ND (1.7)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

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Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

		Sample ID	11NC28SS069-2	11NC28SS069-2_5	11NC28SS070-0_7	11NC28SS070-1_2	11NC28SS070-1_7	11NC28SS071-1	11NC28SS071-2_5	11NC28SS071-1_5	11NC28SS071-2	11NC28SS072-1_2	11NC28SS072-1_7	11NC28SS072-2_2	11NC28SS072-2_5	11NC28SS073-1_5	11NC28SS073-2	11NC28SS073-2_5	11NC28SS074-1	11NC28SS074-1_5	11NC28SS074-2	11NC28SS075-1_5	11NC28SS075-2	11NC28SS075-2_5	11NC28SS076-1_5	11NC28SS076-2	11NC28SS076-2_5	11NC28SS077-1_5
		Sample Depth (feet bgs)	2	2	0.75	1.25	1.75	1	1	1.5	2	1.25	1.75	2.25	2.25	1.5	2	2.5	1	1.5	2	1.5	2	2.5	1.5	2	2.5	1.5
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-DIS-04-2	28-DIS-04-2	28-DIS-05-0.75	28-DIS-05-1.25	28-DIS-05-1.75	28-DIS-06-1	28-DIS-06-1	28-DIS-06-1.5	28-DIS-06-2	28-DIS-07-1.25	28-DIS-07-1.75	28-DIS-07-2.25	28-DIS-07-2.25	28-DIS-08-1.5	28-DIS-08-2	28-DIS-08-2.5	28-DIS-09-1	28-DIS-09-1.5	28-DIS-09-2	28-DIS-10-1.5	28-DIS-10-2	28-DIS-10-2.5	28-DIS-11-1.5	28-DIS-11-2	28-DIS-11-2.5	28-DIS-12-1.5
		Lab ID	580-28198-101	580-28198-102	580-28198-103	580-28198-104	580-28198-105	580-28198-106	580-28198-107	580-28198-108	580-28198-109	580-28198-110	580-28198-111	580-28198-112	580-28198-113	580-28198-114	580-28198-115	580-28198-116	580-28198-117	580-28198-118	580-28198-119	580-28198-120	580-28198-121	580-28198-122	580-28198-123	580-28198-124	580-28198-125	580-28198-126
		Date Collected	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011
Analyte	Analysis Method	Soil Cleanup Level	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Percent Moisture (%)	EPA Moisture	--	57	42	72	65	64	58	61	62	60	80	76	43	41	64	74	67	58	62	67	87	47	44	51	33	27	61
DRO	AK102	9200 [1]	23000	17000	2300	840	820	26000	28000	34000	1400 MN	6200	7500	36000	27000	8000	9400	2700	450	870	8300	930	360	300 J	570	310	230	2000
DRO with Silica Gel	AK102	9200 [1]	28000	20000	1900	380	630	31000	35000	42000	1600 ML	7000	8800	44000	34000	9300	10000	2800	370	780	8000	440	210	230	310	150	91	2300
RRO	AK103	9200 [1]	3400	2400	7700	5400	4200	14000	13000	5300	3500 ML	6000	4500	4000	3500	3800	6200	4300	1700	2500	4200	5400	1600	1600 J MH	3200	2000	1600	2600
RRO with Silica Gel	AK103	9200 [1]	1200	750	3700	1200	1600	13000	12000	2300	1200	1200	1100	1300	930	2400	3300	1400	510	740	1100	1200	420	560 J MH	680	480	380	1200
Total Organic Carbon	EPA 9060-Quad	--	49000 QL	53000 QL	270000 QL	170000 QL	160000 QL	95000 QL	34000 QL	110000 QL	170000 QL	310000 QL	230000	150000 QL	110000	140000	150000	170000	120000	94000	130000	240000	49000	57000	73000	39000	51000	120000
GRO	AK101	300 [2]	3500 QN	770 QN	13 B	7.1 B	5.4 J B	200	220	670	12 B	150	640	770	990	14 B	43	33	6.7 B	7.7 B	7.7 B	18 B	2.4 J B	1.6 J B	5.6 B	3.9 B	2.4 B	28 B
Benzene	EPA 8260B	2.0 [1]	ND (0.190)	ND (0.530) QL	ND (0.210) QL	ND (0.320) QL	ND (0.170)	ND (0.150) QL	ND (0.160)	ND (0.160) QL	ND (0.150)	ND (0.340) QL	ND (0.250) QL	ND (0.089)	ND (0.099)	ND (0.160)	ND (0.260)	ND (0.180) QL	ND (0.140) QL	ND (0.160)	ND (0.170) QL	ND (0.360)	R	ND (0.067)	ND (0.100) QL	ND (0.076) QL	ND (0.067) QL	ND (0.130) QL
Ethylbenzene	EPA 8260B	6.9 [2]	3.9	2.6 QL	0.180 J QL	0.220 J QL	0.170 J QN	1.0 QL	ND (0.160)	2.6 QL	0.610 J	0.97 J QL	3.0 QL	4.5	6.6	ND (0.160)	ND (0.260)	ND (0.180) QL	ND (0.140) QL	ND (0.160)	ND (0.170) QL	ND (0.360)	R	ND (0.067)	ND (0.100) QL	ND (0.076) QL	ND (0.067) QL	ND (0.130) QL
Total Xylenes	EPA 8260B	63 [2]	31	18.8 QL	ND (0.640) QL	0.490 J QL	0.520 J QH	0.87 QL	0.94	23.5 QL	0.730 J	8.7 QL	23.1 QL	30	43	0.800 J	0.390 J	0.220 J QL	0.140 J QL	0.120 J QH	ND (0.520) QL	ND (1.090)	R	ND (0.197)	ND (0.310) QL	ND (0.226) QL	ND (0.197) QL	0.770 J QL
Toluene	EPA 8260B	6.5 [2]	ND (0.230)	ND (0.640) QL	ND (0.260) QL	0.150 J QL	0.220 J QN	ND (0.180) QL	ND (0.190)	ND (0.190) QL	ND (0.180)	ND (0.410) QL	ND (0.300) QL	ND (0.110)	ND (0.120)	ND (0.190)	ND (0.310)	ND (0.210) QL	ND (0.170) QL	ND (0.190)	ND (0.210) QL	ND (0.440)	R	ND (0.081)	ND (0.120) QL	ND (0.091) QL	ND (0.081) QL	ND (0.160) QL
PCB-1016	EPA 8082A	1 [1]	ND (0.022) QL	ND (0.016) QL	ND (0.035) QL	ND (0.027) QL	ND (0.027)	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.025) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL	ND (0.150)	ND (0.024)	ND (0.025)	ND (0.028)	ND (0.074)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.014)	ND (0.013)	ND (0.024)
PCB-1221	EPA 8082A	1 [1]	ND (0.043) QL	ND (0.032) QL	ND (0.070) QL	ND (0.053) QL	ND (0.053)	ND (0.044) QL	ND (0.049) QL	ND (0.052) QL	ND (0.050) QL	ND (0.099) QL	ND (0.081) QL	ND (0.032)	ND (0.033) QL	ND (0.055) QL	ND (0.072) QL	ND (0.300)	ND (0.047)	ND (0.050)	ND (0.055)	ND (0.150)	ND (0.036)	ND (0.033)	ND (0.041)	ND (0.028)	ND (0.027)	ND (0.049)
PCB-1232	EPA 8082A	1 [1]	ND (0.022) QL	ND (0.016) QL	ND (0.035) QL	ND (0.027) QL	ND (0.027)	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.025) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL	ND (0.150)	ND (0.024)	ND (0.025)	ND (0.028)	ND (0.074)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.014)	ND (0.013)	ND (0.024)
PCB-1242	EPA 8082A	1 [1]	ND (0.022) QL	ND (0.016) QL	ND (0.035) QL	ND (0.027) QL	ND (0.027)	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.025) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL	ND (0.150)	ND (0.024)	ND (0.025)	ND (0.028)	ND (0.074)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.014)	ND (0.013)	ND (0.024)
PCB-1248	EPA 8082A	1 [1]	ND (0.022) QL	ND (0.016) QL	ND (0.035) QL	ND (0.027) QL	ND (0.027)	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.025) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL	ND (0.150)	ND (0.024)	ND (0.025)	ND (0.028)	ND (0.074)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.014)	ND (0.013)	ND (0.024)
PCB-1254	EPA 8082A	1 [1]	ND (0.022) QL	ND (0.016) QL	ND (0.035) QL	ND (0.027) QL	0.036 J	0.32 QL	0.23 QL	ND (0.026) QL	ND (0.025) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	0.080 J QL	0.052 J QL	1.7 MN	ND (0.024)	ND (0.025)	ND (0.028)	ND (0.074)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.014)	ND (0.013)	ND (0.024)
PCB-1260	EPA 8082A	1 [1]	0.032 J QL	0.016 J QL	0.031 J QL	ND (0.027) QL	0.019 J	0.31 QL	0.24 QL	0.0096 J QL	ND (0.025) QL ML	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	0.056 J QL	0.034 J QL	0.99 MN	ND (0.024)	ND (0.025)	ND (0.028)	ND (0.074)	ND (0.018)	ND (0.017)	ND (0.020)	ND (0.014)	ND (0.013)	ND (0.024)
PCBs-Total	EPA 8082A	1 [1]	0.032 J QL	0.016 J QL	0.031 J QL	ND (0.053) QL	.055 J	0.63 QL	0.47 QL	0.0096 J QL	ND (0.050) QL ML	ND (0.099) QL	ND (0.081) QL	ND (0.032)	ND (0.033) QL	0.136 J QL	0.086 J QL	2.69 MN	ND (0.047)	ND (0.050)	ND (0.055)	ND (0.150)	ND (0.036)	ND (0.033)	ND (0.041)	ND (0.028)	ND (0.027)	ND (0.049)
Arsenic	EPA 6020	11 [1]	3.8	2.7	5.9	3.8	3.4	6.5	7.4	4.5	4.7	11	7.5	3.5	3.3	7.5	13	6.6	4.8	9.7	11	9.5	4.2	4.3	7.9	11	7.4	2.1
Barium	EPA 6020	1100 [2]	100	68	140	130	74	120	140	130	130	160	83	130	130	120	170	170	130	120	160	120	78	150	150	120	100	92
Cadmium	EPA 6020	5 [2]	0.29 J	0.25 J	0.58	0.41 J	0.38	1	1.2	0.41	0.36 J	0.56 J	0.28 J	0.26 J	0.27 J	0.24 J	0.57	0.6	0.26 J	0.16 J	0.41 J	0.29 J	0.21 J	0.39	0.41	0.42	0.24 J	0.15 J
Chromium	EPA 6020	25 [2]	13	9.2	23	19	11	26	29	18	18	24	4.9	15	16	16	18 MH	16 MH	16 MH	15 MH	16 MH	14 MH	14 MH	26 MH	30 MH	28 MH	18 MH	10 MH
Lead	EPA 6020	400 [2]	15	12	31	14	13	71	81	16	12	21	4.5	8.8	9.8	10	14	9.6	9.3	8.8	9.7	9.6	10	16	16	24	12	7.6
Nickel	EPA 6020	86 [2]	7.2	5.7	15	11	7.6	18	21	13	11	14	5.8	9.1	9.8	10	14	14	12	10	13	9.6	11	21	21	18	14	7.3
Selenium	EPA 6020	3.4 [2]	1.4	0.92 J	2.1	2.1	1.0 J	1.5	1.5 J	1.7	1.8	3	1.8 J	1.2	1.2	1.8	1.9	1.9	1.8	1.5	1.7 J	2.2 J	0.79 J	1.1	1.2	1.4	0.92 J	0.92 J
Silver	EPA 6020	11.2 [2]	0.13 J	0.086 J	0.14 J	0.10 J	0.067 J	0.18 J	0.21 J	0.11 J	0.093 J	0.17 J	0.053 J	0.075 J	0.073 J	0.081 J	0.11 J	0.086 J	0.080 J	0.066 J	0.089 J	ND (0.14)	0.064 J	0.11 J	0.13 J	0.13 J	0.085 J	0.049 J
Vanadium	EPA 6020	3400 [2]	27	18	38	32	19	37	39	31	29	52	23	30	31	30	37	32	29	27	31	28	21	37	58	51	32	19
Mercury	EPA 7471A	1.4 [2]	0.060 QN	0.033 QN	0.14	0.087	0.053	0.26	0.30	0.13	0.090	0.16	0.058	0.067	0.063	0.078	0.079	0.073	0.066	0.069	0.062	0.061 J	0.071	0.042	0.061	0.035	0.031	0.021 J
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	57	46	2.4	0.39	0.3	30 QN	51 QN	100	3.1	1.2	26	120 QN	2.4 QN	4.7	4.4	0.77	0.033 J	0.16	0.047 J	0.068 J	0.034 J	0.0055 J	0.027 J	0.0029 J	0.0028 J	1.2
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	95	80	3.6	0.6	0.42	51	85	200	5.8 J	1.7	48	210 QN	2.9 QN	6	6	0.8	0.042 J	0.21	0.061 J	0.088 J	0.053	0.0075 J	0.021 J	0.0024 J	ND (0.017)	1.9
Acenaphthene	EPA 8270 SIM	180 [2]	ND (1.7)	ND (1.2)	ND (0.13)	0.020 J	ND (0.065)	ND (1.1)	ND (1.3)	4.5 J	0.17 J	ND (0.37)	1.7 J	5.8	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Anthracene	EPA 8270 SIM	3000 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	0.037 J	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Chrysene	EPA 8270 SIM	360 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	0.05 J	ND (0.37)	ND (1.0)	ND (2.1)	0.083 J	0.13 J	0.19 J	0.065 J	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	0.047 J
Fluorene	EPA 8270 SIM	220 [2]	3.9	2.8	0.37	0.054 J	0.059 J	3.1	4.9	5.6	0.24 J	ND (0.37)	1.6 J	5.9 QN	0.4 QN	0.72	0.87	0.25 J	ND (0.047)	0.034 J	0.022 J	0.031 J	0.018 J	0.0054 J	0.0078 J	ND (0.017)	ND (0.017)	0.16
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.089)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)	ND (0.14)	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	ND (0.059)
Naphthalene	EPA 8270 SIM	120 [1]	32	29	3.5	0.64	0.43	10 QN	17 QN	85	2.0 J	2.7	28	86 QN	1.3 QN	2.4	1.6	0.18 J	0.029 J	0.12	0.029 J	0.037 J	0.013 J	0.0033 J	0.011 J	0.0025 J	ND (0.017)	0.65
Phenanthrene	EPA 8270 SIM	3000 [2]	2.6 J	1.9 J	ND (0.13)	ND (0.069)	ND (0.065)	1.6 J	2.6	1.6 J	0.13 J	ND (0.37)	0.6 J	2.8 J	0.28	0.48	0.65	0.18 J	ND (0.047)	0.037 J	0.025 J	ND (0.075)	0.013 J	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	0.13
Pyrene	EPA 8270 SIM	1000 [2]	ND (1.7)	ND (1.2)	ND (0.13)	ND (0.069)	ND (0.065)	ND (1.1)	ND (1.3)	ND (2.4)	0.047 J	ND (0.37)	ND (1.0)	ND (2.1)	0.083 J	0.13 J	0.19 J	0.065 J	ND (0.047)	ND (0.062)	ND (0.058)	ND (0.075)	ND (0.023)	ND (0.021)	ND (0.025)	ND (0.017)	ND (0.017)	0.040 J

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3 - Site 28
Soil Analytical Results

Bristol
ENVIRONMENTAL
REMEDIATION SERVICES, LLC

Table 3
Site 28 Soil Analytical Results (continued)
(all results in mg/kg)

		Sample ID	11NC28SS077-2	11NC28SS077-2_5	11NC28SS078-1.5	11NC28SS078-2	11NC28SS078-2.5	11NC28SS078-3	11NC28SS079-2.5	11NC28SS079-3	11NC28SS079-3.5	11NC28SS080-2.75	11NC28SS080-3.25	11NC28SS080-3.75	11NC28SS081-1.25	11NC28SS081-1.75	11NC28SS081-2.25	11NC28SS081-2.5		
		Sample Depth (feet bgs)	2	2.5	1.5	2	2.5	2.5	2.5	3	3.5	2.75	3.25	3.75	1.25	1.75	2.25	2.25		
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
		Location ID	28-DIS-12-2	28-DIS-12-2.5	28-BG-1-1.5	28-BG-1-2	28-BG-1-2.5	28-BG-1-2.5	28-BG-2-2.5	28-BG-2-3	28-BG-2-3.5	28-BG-3-2.75	28-BG-3-3.25	28-BG-3-3.75	28-BG-4-1.25	28-BG-4-1.75	28-BG-4-2.25	28-BG-4-2.25		
		Lab ID	580-28198-127	580-28198-128	580-28198-129	580-28198-130	580-28198-131	580-28198-132	580-28198-133	580-28198-134	580-28198-135	580-28198-136	580-28198-137	580-28198-138	580-28198-139	580-28198-140	580-28198-141	580-28198-142		
		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	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011		
Analyte	**Analysis Method**	**Soil Cleanup Level**	Discrete	Discrete	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	**Background Average**	**Background Range**
Percent Moisture (%)	EPA Moisture	**--**	60	60	77	78	28	22	75	75	79	80	80	79	82	75	78	79		
DRO	AK102	**9200** [1]	2000	2800	1100	1400	74	110	1300	2400	2400	710	580	500	1600	720	1100	1000	1071	74-2400
DRO with Silica Gel	AK102	**9200** [1]	2500	3400	700	680	50 B	63 B	630	1500	1500	270	230	210	970	300	680	540	684	50-1500
RRO	AK103	**9200** [1]	2600	3100	12000	15000	670 QN	1200 QN	14000	24000	23000	8400	5900	6000 J ML	15000 QH	7400 QH	11000 QH	11000 QH	12725	670-24000
RRO with Silica Gel	AK103	**9200** [1]	1600	2100	4700	4400	420	640	4500	7700	7100	2800	2200	1700	3200	1100	2800	2700	3283	420-7700
Total Organic Carbon	EPA 9060-Quad	**--**	92000	85000	460000 QL	480000 QL	24000 QL	34000 QL	410000 QL	410000 QL	360000 QL	440000 QL	450000 QL	410000 J QL	360000 QL	260000 QL	350000 QL	360000 QL	395833	24000-480000
GRO	AK101	**300** [2]	21 B	15 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzene	EPA 8260B	**2.0** [1]	ND (0.120) QL	ND (0.130) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Ethylbenzene	EPA 8260B	**6.9** [2]	ND (0.120) QL	ND (0.130) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Total Xylenes	EPA 8260B	**63** [2]	0.800 J QL	0.420 J QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Toluene	EPA 8260B	**6.5** [2]	ND (0.150) QL	ND (0.150) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1016	EPA 8082A	**1** [1]	ND (0.023) QL	ND (0.023) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1221	EPA 8082A	**1** [1]	ND (0.049) QL	ND (0.047) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1232	EPA 8082A	**1** [1]	ND (0.023) QL	ND (0.023) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1242	EPA 8082A	**1** [1]	ND (0.023) QL	ND (0.023) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1248	EPA 8082A	**1** [1]	ND (0.023) QL	ND (0.023) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1254	EPA 8082A	**1** [1]	ND (0.023) QL	ND (0.023) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1260	EPA 8082A	**1** [1]	0.0097 J QL	ND (0.023) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCBs-Total	EPA 8082A	**1** [1]	0.0097 J QL	ND (0.047) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Arsenic	EPA 6020	**11** [1]	2.8	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Barium	EPA 6020	**1100** [2]	95	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Cadmium	EPA 6020	**5** [2]	0.16 J	0.21 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium	EPA 6020	**25** [2]	10 MH	11 MH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Lead	EPA 6020	**400** [2]	7.5	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Nickel	EPA 6020	**86** [2]	7.8	7.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Selenium	EPA 6020	**3.4** [2]	0.82 J	0.86 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Silver	EPA 6020	**11.2** [2]	0.059 J	0.055 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Vanadium	EPA 6020	**3400** [2]	21	21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Mercury	EPA 7471A	**1.4** [2]	0.030 J	0.035	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
1-Methylnaphthalene	EPA 8270 SIM	**6.2** [2]	0.72	0.54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
2-Methylnaphthalene	EPA 8270 SIM	**6.1** [2]	1.1	0.86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Acenaphthene	EPA 8270 SIM	**180** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Acenaphthylene	EPA 8270 SIM	**180** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Anthracene	EPA 8270 SIM	**3000** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[a]anthracene	EPA 8270 SIM	**3.6** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[a]pyrene	EPA 8270 SIM	**2.1** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[b]fluoranthene	EPA 8270 SIM	**12** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[g,h,i]perylene	EPA 8270 SIM	**38700** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[k]fluoranthene	EPA 8270 SIM	**120** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chrysene	EPA 8270 SIM	**360** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Dibenz(a,h)anthracene	EPA 8270 SIM	**4** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Fluoranthene	EPA 8270 SIM	**1400** [2]	0.040 J	0.039 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Fluorene	EPA 8270 SIM	**220** [2]	0.12	0.088 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	**41** [2]	ND (0.061)	ND (0.06)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Naphthalene	EPA 8270 SIM	**120** [1]	0.37	0.32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Phenanthrene	EPA 8270 SIM	**3000** [2]	0.094 J	0.076 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Pyrene	EPA 8270 SIM	**1000** [2]	0.037 J	0.039 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
R = data rejected due to exceedingly low surrogate recovery
RRO = residual range organics
SIM = selective ion monitoring

Table 3 - Site 28
Soil Analytical Results

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 4
Site 28 Soil Analytical Results Exceeding Cleanup Levels
(all results in mg/kg)

		Sample ID	11NC28SS001-0_5	11NC28SS001-1	11NC28SS002-2	11NC28SS002-2_5	11NC28SS002-3	11NC28SS006-0_5	11NC28SS006-1	11NC28SS006-2	11NC28SS007-1_5	11NC28SS008-0_5	11NC28SS008-1	11NC28SS011-1	11NC28SS011-2	11NC28SS011-1_5	11NC28SS012-1	11NC28SS012-1_5	11NC28SS012-2	11NC28SS013-1_5	11NC28SS015-1_5	11NC28SS015-2	11NC28SS016-0_5	11NC28SS016-1
		Sample Depth (feet bgs)	0.5	1	2	2.5	3	0.5	1	1	1.5	0.5	1	1	1	1.5	1	1.5	1.5	1.5	1.5	2	0.5	1
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-1-1-0.5	28-1-1-1	28-1-2-2	28-1-2-2.5	28-1-2-3	28-2-1-0.5	28-2-1-1	28-2-1-1	28-2-2-1.5	28-2-3-0.5	28-2-3-1	28-3-2-1	28-3-2-1	28-3-2-1.5	28-3-3-1	28-3-3-1.5	28-3-3-1.5	28-3-4-1.5	28-3-6-1.5	28-3-6-2	28-3-7-0.5	28-3-7-1
		Lab ID	580-28053-1	580-28053-2	580-28053-3	580-28053-4	580-28053-5	580-28053-12	580-28053-13	580-28053-14	580-28053-15	580-28053-16	580-28053-17	580-28053-24	580-28053-25	580-28053-26	580-28053-28	580-28053-29	580-28053-30	580-28053-33	580-28053-37	580-28053-38	580-28053-39	580-28053-40
		Date Collected	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/13/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011	8/14/2011
Analyte	**Analysis Method**	**Soil Cleanup Level**	Transect 1	Transect 1	Transect 1	Transect 1	Transect 1	Transect 2	Transect 2	Transect 2	Transect 2	Transect 2	Transect 2	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3	Transect 3
Percent Moisture (%)	EPA Moisture	--	73	74	63	46	30	56	64	70	60	69	70	48	53	55	50	57	60	60	83	79	73	73
DRO	AK102	9200 [1]	56000	57000	11000	5800	1500	67000	39000	57000	7700	13000	15000	11000 QN	30000 QN	75000	5600	3600	4400	2700	12000	9900	2400	9800
DRO with Silica Gel	AK102	9200 [1]	45000	44000	12000	5100	3.6 J	60000	34000	47000	6900	13000	13000	10000 QN	23000 QN	60000	4700	2400	3300	2100	8800	6800	1700	8800
RRO	AK103	9200 [1]	2600	2700	3000	2300	1300	4000 QH	3200	3700	4400	2500	4800 MH	4700	5300	5300	3000	4000	3000	4800	7600	9000	3500	6200
RRO with Silica Gel	AK103	9200 [1]	1300	730	550	380	ND (44)	990	730	770	760	1100	1700	2400	1800	1500	1000	800	640	1100	1600	2200	1000	1000
Total Organic Carbon	EPA 9060-Quad	--	130000	130000	140000	130000	87000	290000	180000	240000	230000	310000	310000	110000	110000	170000	150000	180000	180000	180000	370000	380000	210000	410000
GRO	AK101	300 [2]	9.2 J B	120	110 J ML	140	56	51	18 QN B	52 QN	60	ND (4.4)	ND (4.8) ML	90	110	240	40	37	47	19	63	48	16 J B	280
Benzene	EPA 8260B	2.0 [1]	ND (0.071)	ND (0.021)	0.18	0.19	0.1	ND (0.011)	ND (0.029)	ND (0.041)	ND (0.031)	ND (0.040)	ND (0.044)	0.093	0.12	0.28	0.056	0.073	0.096	0.083	ND (0.067)	ND (0.060)	ND (0.048)	ND (0.022)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.210)	ND (0.064)	2.1	1.6	0.8	ND (0.032)	ND (0.088)	ND (0.120)	0.078 J	ND (0.120)	ND (0.130)	0.35	0.5	3.2	0.059 J	0.13	0.16	0.13	0.44	0.28	ND (0.140)	ND (0.066)
Total Xylenes	EPA 8260B	63 [2]	ND (0.410)	ND (0.128)	12.5	8.5	4.4	ND (0.064)	ND (0.176)	ND (0.240)	0.43	ND (0.240)	ND (0.260)	4.2	6.3	35	0.61	1.05	1.28	1.08	0.64	0.42	ND (0.280)	ND (0.132)
Toluene	EPA 8260B	6.5 [2]	ND (0.210)	ND (0.064)	ND (0.071)	ND (0.047)	ND (0.037)	ND (0.032)	ND (0.088)	ND (0.120)	ND (0.093)	ND (0.120)	ND (0.130)	ND (0.060)	ND (0.068)	0.052 J	ND (0.060)	ND (0.072)	ND (0.076)	ND (0.061)	ND (0.200)	ND (0.180)	ND (0.140)	ND (0.066)
PCB-1016	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)	ND (0.032)	ND (0.031)	ND (0.033)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)
PCB-1221	EPA 8082A	1 [1]	ND (0.100)	ND (0.099)	ND (0.056) QL	ND (0.890)	ND (0.038) QL	ND (0.058)	ND (0.083) QL	ND (0.130)	ND (0.099) QL	ND (0.140)	ND (0.120)	ND (0.048)	ND (0.057)	ND (0.055)	ND (0.054)	ND (0.064)	ND (0.062)	ND (0.067)	ND (0.110)	ND (0.110)	ND (0.110)	ND (0.140)
PCB-1232	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)	ND (0.032)	ND (0.031)	ND (0.033)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)
PCB-1242	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)	ND (0.032)	ND (0.031)	ND (0.033)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)
PCB-1248	EPA 8082A	1 [1]	ND (0.052)	ND (0.050)	ND (0.028) QL	ND (0.440)	ND (0.019) QL	ND (0.029)	ND (0.041) QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	ND (0.024)	ND (0.029)	ND (0.027)	ND (0.027)	ND (0.032)	ND (0.031)	ND (0.033)	ND (0.057)	ND (0.056)	ND (0.055)	ND (0.069)
PCB-1254	EPA 8082A	1 [1]	0.81	0.150 J	ND (0.028) QL	ND (0.440)	ND (0.019) QL	0.15	0.046 J QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	0.041 J	0.027 J	ND (0.027)	ND (0.027)	ND (0.032)	0.049 J	ND (0.033)	0.062 J	ND (0.056)	0.88	ND (0.069)
PCB-1260	EPA 8082A	1 [1]	0.32	ND (0.050)	0.053 J QL	3.4	0.15 QL	0.082 J	0.027 J QL	ND (0.064)	ND (0.049) QL	ND (0.068)	ND (0.061)	0.032 J	0.018 J	ND (0.027)	0.0093 J	ND (0.032)	ND (0.031)	ND (0.033)	0.032 J	ND (0.056)	0.34	ND (0.069)
PCBs-Total	EPA 8082A	1 [1]	1.13	0.15 J	0.053 J QL	3.4	0.15 QL	0.232 J	0.073 J QL	ND (0.130)	ND (0.099) QL	ND (0.140)	ND (0.120)	0.073 J	0.045 J	ND (0.055)	0.0093 J	ND (0.064)	ND (0.062)	ND (0.067)	0.094 J	ND (0.110)	1.22	ND (0.140)
Arsenic	EPA 6020	11 [1]	1.7	0.93 J	6	3.8	3.4	1.9	1.5 QN	3.4 QN	3.6	2.3	4.5	3.4	3.6	3	4.3	4.5	4.7	4.6	5.7	3.3	5.1	5.4
Barium	EPA 6020	1100 [2]	61	58	74	70	67	57	77	96	48	60	92 J	87	110	93	110	130	140	140	98	63	110	150
Cadmium	EPA 6020	5 [2]	0.8	0.88	0.78	0.44	0.28	0.48	0.36 J	0.56 J	0.36 J	0.22 J	0.41 J	0.37	0.35 J	0.16 J	0.33	0.33 J	0.32 J	0.4	0.34 J	0.33 J	0.36 J	0.49
Chromium	EPA 6020	25 [2]	10 ML	8.8 ML	13 ML	14 ML	18 ML	10 ML	14 ML	22 ML	6.6 ML	10 ML	24 ML	81 QN	23 QN	17	19	20	21	20	11	6.5	19	20
Lead	EPA 6020	400 [2]	21	15	17	21	27	18	19	31	8.1	14	51 J	25	27	12	17	14	13	13	14	8.3	18	15
Nickel	EPA 6020	86 [2]	8.1	7.5	11	9.2	8.8	7.4	7.3 QN	14 QN	7.2	6.5	14 J	13	13	8.4	13	13	13	13	5.7	4.6	10	11
Selenium	EPA 6020	3.4 [2]	1.1 J	1.3 J	1.9	1.4	1	2.3	3.2	3	1.7	2.0 J	1.2 J	0.74 J	1.0 J	1.3	0.96 J	1.5	1.5	1.3	1.2 J	1.3 J	1.3 J	2.5
Silver	EPA 6020	11.2 [2]	0.15 J	0.17 J	0.16 J	0.16 J	0.17 J	0.15 J	0.25 J	0.27 J	0.14 J	0.11 J	0.17 J	0.082 J	0.11 J	0.11 J	0.11 J	0.13 J	0.12 J	0.12 J	0.12 J	0.069 J	0.12 J	0.14 J
Vanadium	EPA 6020	3400 [2]	12	13	29	28	28	16	17 QN	29 QN	23	21	38 J	23	30	29	29	35	35	34	21	16	27	38
Mercury	EPA 7471A	1.4 [2]	0.081	ND (0.03)	0.082	0.043	0.046	0.072	0.096	0.11	0.046	0.034 J	0.041 J	0.083	0.11	0.088	0.093	0.093	0.095	0.097	0.12	0.064	0.18	0.12
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	0.23 J	3	32	15	3.7	ND (1.3)	ND (1.1)	ND (1.8)	8.3	ND (0.82)	ND (0.33)	11	10	220	7	4.4	4.2	6.1	4.7	7.6	ND (0.12)	ND (0.45)
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	ND (1.4)	ND (1.4)	57 J	25	6.4	ND (1.3)	ND (1.1)	ND (1.8)	10	ND (0.82)	ND (0.33)	20	18	400	12	7.9	7.5	11	2.5	8.9	ND (0.12)	ND (0.45)
Acenaphthene	EPA 8270 SIM	180 [2]	ND (1.4)	ND (1.4)	0.99	0.48	0.12	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	0.74	ND (0.12)	ND (0.45)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Anthracene	EPA 8270 SIM	3000 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Chrysene	EPA 8270 SIM	360 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Fluorene	EPA 8270 SIM	220 [2]	ND (1.4)	3	1.7	0.95	0.24	ND (1.3)	ND (1.1)	ND (1.8)	1.2 J	ND (0.82)	ND (0.33)	0.75	0.68	1.1	0.56	0.39	0.39	0.4	2.5	3.2	ND (0.12)	ND (0.45)
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	ND (0.23)	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.45)
Naphthalene	EPA 8270 SIM	120 [1]	0.57 J	ND (1.4)	24	6.5	2.6	ND (1.3)	ND (1.1)	ND (1.8)	4.5	ND (0.82)	ND (0.33)	5.7	5.5	140	2.8	2.7	2.3	4.5	3.9	4.3	ND (0.12)	ND (0.45)
Phenanthrene	EPA 8270 SIM	3000 [2]	ND (1.4)	1.9 J	1.5	0.73	0.16	ND (1.3)	ND (1.1)	ND (1.8)	0.56 J	ND (0.82)	ND (0.33)	0.77	0.75	9.6	0.77	0.29 J	0.36	0.24 J	0.28 J	0.17 J	ND (0.12)	ND (0.45)
Pyrene	EPA 8270 SIM	1000 [2]	ND (1.4)	ND (1.4)	ND (0.15)	ND (0.11)	ND (0.027)	ND (1.3)	ND (1.1)	ND (1.8)	ND (0.7)	ND (0.82)	ND (0.33)	0.13 J	ND (0.28)	ND (2.6)	ND (0.15)	ND (0.16)	ND (0.15)	ND (0.16)	ND (0.29)	ND (0.32)	ND (0.12)	ND (0.450)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring

Table 4 - Site 28 Soil Analytical Results Exceeding Cleanup Criteria

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 4
Site 28 Soil Analytical Results Exceeding Cleanup Levels (continued)
(all results in mg/kg)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS017-0_5	11NC28SS017-2	11NC28SS017-1	11NC28SS017-1_5	11NC28SS018-1	11NC28SS018-1_5	11NC28SS019-1	11NC28SS019-1_5	11NC28SS020-1	11NC28SS021-1
		Sample Depth (feet bgs)	0.5	0.5	1	1.5	1	1.5	1	1.5	1	1
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-4-1-0.5	28-4-1-0.5	28-4-1-1	28-4-1-1.5	28-4-2-1	28-4-2-1.5	28-4-3-1	28-4-3-1.5	28-4-4-1	28-4-5-1
		Lab ID	580-28112-1	580-28112-2	580-28112-3	580-28112-4	580-28112-6	580-28112-7	580-28112-9	580-28112-10	580-28112-12	580-28112-14
		Date Collected	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011
			Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4
Percent Moisture (%)	EPA Moisture	--	23	19	56	45	52	52	40	53	53	54
DRO	AK102	9200 [1]	30000	23000	99000	37000 J	110000	47000	70000	89000	110000	63000
DRO with Silica Gel	AK102	9200 [1]	30000	20000	93000	38000 J	120000	49000	70000	89000	110000	69000
RRO	AK103	9200 [1]	3000	3200	7000 QH	4200	5800	5500	4000	5500	14000 QH	10000
RRO with Silica Gel	AK103	9200 [1]	2700	2700	2700	1200	2200	2600	1600	1600	7700	4100
Total Organic Carbon	EPA 9060-Quad	--	18000	18000	170000	110000	190000	110000	130000	180000	160000 J	150000
GRO	AK101	300 [2]	370	320	900	310 J ML	550	550	390	450	330	240
Benzene	EPA 8260B	2.0 [1]	0.02 J QH	ND (0.014)	0.34	0.160 J ML	1.3	0.67	0.83	1.2	0.9	0.35
Ethylbenzene	EPA 8260B	6.9 [2]	0.22 QH	0.13 QH	10	4.4 J ML	9.8	6.9	6.2	8.3	6.2	2.9
Total Xylenes	EPA 8260B	63 [2]	1.66 QH	1.09 QH	80	28.3 J	88	52	59	76	29	24.7
Toluene	EPA 8260B	6.5 [2]	ND (0.039)	ND (0.041)	0.097 J	0.037 J ML	0.68	0.27	0.12	0.14	0.4	0.39
PCB-1016	EPA 8082A	1 [1]	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL	ND (0.020) QL	ND (0.021) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.026) QL	ND (0.023) QL	ND (0.042) QL	ND (0.036)	ND (0.040) QL	ND (0.043) QL	ND (0.033) QL	ND (0.041) QL	ND (0.040) QL	ND (0.041) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL ML	ND (0.020) QL	ND (0.021) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL ML	ND (0.020) QL	ND (0.021) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL	ND (0.020) QL	ND (0.021) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.013) QL	ND (0.012) QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	ND (0.021) QL	ND (0.017) QL	ND (0.021) QL	ND (0.020) QL	ND (0.021) QL
PCB-1260	EPA 8082A	1 [1]	0.0084 J QL	0.016 J QL	ND (0.021) QL	ND (0.018)	ND (0.020) QL	0.0065 J QL	ND (0.017) QL	ND (0.021) QL ML	ND (0.020) QL	ND (0.021) QL
PCBs-Total	EPA 8082A	1 [1]	0.0084 J QL	0.016 J QL	ND (0.042) QL	ND (0.036)	ND (0.040) QL	0.0065 J QL	ND (0.033) QL	ND (0.041) QL ML	ND (0.040) QL	ND (0.041) QL
Arsenic	EPA 6020	11 [1]	4.7	4.6	5	2.8 J	2.5	3.1	2.7	2.3	3.7	6.2
Barium	EPA 6020	1100 [2]	65	54	120	80 J	86	110	80	69	99	150
Cadmium	EPA 6020	5 [2]	0.36	0.42	0.34 J	0.15 J	0.24 J	0.34 J	0.22 J	0.17 J	0.28 J	0.4
Chromium	EPA 6020	25 [2]	15	18	18	11	11	20	12	8.3	15	24
Lead	EPA 6020	400 [2]	36	47	14	9.4 J	12	19	12	9.4	16	17
Nickel	EPA 6020	86 [2]	11	11	11	5.9	7	11	7.4	4.8	9.7	14
Selenium	EPA 6020	3.4 [2]	0.57 J	0.50 J	1.6	1.1 J	1.7	1.4	1.1	1.8	1.6	1.6
Silver	EPA 6020	11.2 [2]	0.079 J	0.074 J	0.087 J	0.058 J	0.086 J	0.097 J	0.064 J	0.077 J	0.094 J	0.11 J
Vanadium	EPA 6020	3400 [2]	22	21	30	19	23	29	20	22	27	38
Mercury	EPA 7471A	1.4 [2]	0.044	0.054	0.076	0.052	0.056	0.066	0.050	0.056	0.068	0.091
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	8.3 QN	3.5 QN	300	110	380	140 J	240	330	390	96
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	6.6 QN	2.9 QN	540	190	710	260 J	450	630	720	130
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.32)	ND (0.31)	8.7 J	3.1 J	10 J	4.4 J	6.2 J	8.7 J	11 J	ND (1.6)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.32)	0.12 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.32)	0.13 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Fluoranthene	EPA 8270 SIM	1400 [2]	0.14 J	0.16 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Fluorene	EPA 8270 SIM	220 [2]	1.4 QN	0.72 QN	18	5.7	23	9.5 J	14 J	18 J	24	7.8
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.32)	ND (0.31)	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)
Naphthalene	EPA 8270 SIM	120 [1]	ND (0.32)	ND (0.31)	200	66	340	120 J	210	310	310	32
Phenanthrene	EPA 8270 SIM	3000 [2]	1	ND (0.31)	9.3 J	3.5 J	15 J	6.3 J	8.1 J	10 J	12 J	4.3
Pyrene	EPA 8270 SIM	1000 [2]	0.27 J	0.37 J	ND (9.0)	ND (1.8)	ND (8.2)	ND (3.1)	ND (8.4)	ND (10)	ND (10)	ND (1.6)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS021-1_5	11NC28SS022-1	11NC28SS022-1_5	11NC28SS022-2	11NC28SS023-1	11NC28SS023-2_5	11NC28SS023-1_5	11NC28SS023-2	11NC28SS024-1_5	11NC28SS025-0_5	11NC28SS025-1	11NC28SS025-1_5	11NC28SS026-1
		Sample Depth (feet bgs)	1.5	1	1.5	2	1	1	1.5	2	1.5	0.5	1	1.5	1
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-4-5-1.5	28-4-6-1	28-4-6-1.5	28-4-6-2	28-4-7-1	28-4-7-1	28-4-7-1.5	28-4-7-2	28-4-8-1.5	28-5-1-0.5	28-5-1-1	28-5-1-1.5	28-5-2-1
		Lab ID	580-28112-15	580-28112-16	580-28112-17	580-28112-18	580-28112-19	580-28112-20	580-28112-21	580-28112-22	580-28112-24	580-28112-25	580-28112-26	580-28112-27	580-28112-29
		Date Collected	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/16/2011
			Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 4	Transect 5	Transect 5	Transect 5	Transect 5
Percent Moisture (%)	EPA Moisture	--	57	50	51	52	59	57	59	60	29	26	29	54	30
DRO	AK102	9200 [1]	150000	29000	28000	49000	55000	50000	43000	13000	4200	53000	57000	110000	55000
DRO with Silica Gel	AK102	9200 [1]	160000	30000	28000	48000	58000	53000	48000	13000	4200	54000	56000	110000	58000
RRO	AK103	9200 [1]	7200	5500	6100	7700 QH	7400	6200 QH	7000 QH	5500 QH	1900 QH	9600	5100	13000	11000
RRO with Silica Gel	AK103	9200 [1]	3900	1800	2200	2500	3000	2600	3600	1500	500	10000	4800	10000	11000
Total Organic Carbon	EPA 9060-Quad	--	160000	120000	120000	140000	160000	170000	160000	190000	60000	48000	53000	170000	72000
GRO	AK101	300 [2]	420	400	160	350	190	170	350	260	130	92	710	520	490
Benzene	EPA 8260B	2.0 [1]	0.82	0.3	0.3	0.49	0.14	0.12	0.34	0.22	0.045	ND (0.014)	0.49 QH	1.2	0.053 QH
Ethylbenzene	EPA 8260B	6.9 [2]	8.6	1.6	2.8	6.3	0.86 QN	1.5 QN	6.5	4.3	0.35	ND (0.041)	3.2 QH	9.3	0.32 QH
Total Xylenes	EPA 8260B	63 [2]	70	21.1	22.4	45	2.36 QN	5.090 QN	41	29.5	2.9	0.016 J	30 QH	66	7.5 QH
Toluene	EPA 8260B	6.5 [2]	1	0.030 J	0.028 J	0.060 J	ND (0.079)	ND (0.072)	0.037 J	0.027 J	ND (0.043)	ND (0.041)	0.27 QH	0.21	0.028 J QH
PCB-1016	EPA 8082A	1 [1]	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.045) QL	ND (0.038) QL	ND (0.041)	ND (0.042)	ND (0.047) QL	ND (0.043) QL	ND (0.047) QL	ND (0.049) QL	ND (0.025)	ND (0.026) QL	ND (0.028) QL	ND (0.042) QL	ND (0.110) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	ND (0.054) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.023) QL	ND (0.019) QL	ND (0.020)	ND (0.021)	ND (0.024) QL	ND (0.021) QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	0.190 QL
PCB-1260	EPA 8082A	1 [1]	ND (0.023) QL	ND (0.019) QL	0.012 J	ND (0.021)	0.013 J QL	0.027 J QL	ND (0.024) QL	ND (0.025) QL	ND (0.013)	ND (0.013) QL	ND (0.014) QL	ND (0.021) QL	0.400 QL
PCBs-Total	EPA 8082A	1 [1]	ND (0.045) QL	ND (0.038) QL	0.012 J	ND (0.042)	0.013 J QL	0.027 J QL	ND (0.047) QL	ND (0.049) QL	ND (0.025)	ND (0.026) QL	ND (0.028) QL	ND (0.042) QL	0.59 QL
Arsenic	EPA 6020	11 [1]	4.2	5.8	6.7	4.4	6.2	5.6	5.2	4.8	3.4	5	4.6	4.1	3.8
Barium	EPA 6020	1100 [2]	89	120	140	140	140	150	150	130	97	91	99	120	81
Cadmium	EPA 6020	5 [2]	0.44	0.33 J	0.43	0.37	0.68	0.56	0.36 J	0.34 J	0.38	0.27	0.52	0.31 J	0.77
Chromium	EPA 6020	25 [2]	12	20	26	22 ML	22 ML	23 ML	23 ML	19 ML	21 ML	19 ML	22 ML	18 ML	20 ML
Lead	EPA 6020	400 [2]	15	17	24	14 MH	16 MH	17 MH	15 MH	11 MH	19 MH	23 MH	53 MH	13 MH	59 MH
Nickel	EPA 6020	86 [2]	9.2	13	17	14 QN	17 QN	16 QN	15 QN	12 QN	16 QN	13 QN	15 QN	11 QN	13 QN
Selenium	EPA 6020	3.4 [2]	1.8	1.4	1.6	1.7	1.9	1.8	1.8	2	1.1	0.87	0.94	1.7	0.67
Silver	EPA 6020	11.2 [2]	0.10 J	0.10 J	0.12 J	0.10 J	0.12 J	0.14 J	0.12 J	0.11 J	0.11 J	0.088 J	0.12 J	0.099 J	0.17 J
Vanadium	EPA 6020	3400 [2]	26	32	39	35	36	37	38	34	30	29	33	32	26
Mercury	EPA 7471A	1.4 [2]	0.068	0.083	0.089	0.094	0.096	0.090	0.10	0.10	0.046	0.052	0.19	0.087	0.15
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	400	54	78	170	68	56	120	62	8.3	1.3	130	120	31
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	740	92	150	330	87	71	230	84	12	0.78	74	130	42
Acenaphthene	EPA 8270 SIM	180 [2]	13 J	1.6 J	2.0 J	4.8 J	ND (1.2)	4.4	3.5	1.7	0.29 J	ND (0.34)	4.7	3.8	3.2
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Anthracene	EPA 8270 SIM	3000 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Chrysene	EPA 8270 SIM	360 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	0.29 J
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	0.13 J	ND (0.7)	ND (1.1)	ND (0.68)
Fluorene	EPA 8270 SIM	220 [2]	25	3.4 J	4.6 J	11	9	6.2	8	3.8	0.58	ND (0.34)	6.9	7.9	5
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	ND (0.34)	ND (0.7)	ND (1.1)	ND (0.68)
Naphthalene	EPA 8270 SIM	120 [1]	300	34	72	160	32	24	120	64	6	ND (0.34)	15	88	14
Phenanthrene	EPA 8270 SIM	3000 [2]	16 J	0.99 J	1.3 J	3.8 J	3.6	2.4	3.3	1.3	0.24 J	ND (0.34)	3.1	4.3	2.2
Pyrene	EPA 8270 SIM	1000 [2]	ND (12)	ND (2.0)	ND (2.5)	ND (3.1)	ND (1.2)	ND (0.86)	ND (0.61)	ND (0.63)	ND (0.17)	0.26 J	ND (0.7)	ND (1.1)	0.37 J

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring

Table 4 - Site 28 Soil Analytical Results Exceeding Cleanup Criteria

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 4
Site 28 Soil Analytical Results Exceeding Cleanup Levels (continued)
(all results in mg/kg)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS026-1_5	11NC28SS026-2	11NC28SS027-1_25	11NC28SS028-1	11NC28SS028-1_5	11NC28SS029-1	11NC28SS029-1_5	11NC28SS030-1	11NC28SS030-1_5	11NC28SS030-2
Sample Depth (feet bgs)			1.5	1.5	1.25	1	1.5	1	1.5	1	1.5	2
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-5-2-1.5	28-5-2-1.5	28-5-3-1.25	28-5-4-1	28-5-4-1.5	28-5-5-1	28-5-5-1.5	28-5-6-1	28-5-6-1.5	28-5-6-2
Lab ID			580-28112-30	580-28112-31	580-28112-33	580-28112-36	580-28112-37	580-28112-39	580-28112-40	580-28112-41	580-28112-42	580-28112-43
Date Collected			8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011
			Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5	Transect 5
Percent Moisture (%)	EPA Moisture	--	50	50	56	30	56	38	30	35	56	35
DRO	AK102	9200 [1]	110000	110000	2000 ML	24000	11000	38000	2700	29000	70000	38000
DRO with Silica Gel	AK102	9200 [1]	21000	24000	1900 ML	25000	14000	40000	2800	30000	72000	35000
RRO	AK103	9200 [1]	7300 QH	7600 QH	3700 MH	8400	4800	9000	1500	2400	5000	4100 QH
RRO with Silica Gel	AK103	9200 [1]	3700	4300	1500	8000	2800	7700	880	1700	2200	1500
Total Organic Carbon	EPA 9060-Quad	--	170000	150000	140000	41000	150000	62000	39000	53000	140000	130000
GRO	AK101	300 [2]	180	120	4.2 J	220	120	160	63	440	510	160 QN
Benzene	EPA 8260B	2.0 [1]	0.12	0.11	0.011 J	0.013 J	0.057	0.020 J	0.0076 J	0.38 QH	0.57	0.38 QN
Ethylbenzene	EPA 8260B	6.9 [2]	1.5	1.3	ND (0.070)	0.19	1.9	0.68	0.12	5 QH	6.2	3.8 QN
Total Xylenes	EPA 8260B	63 [2]	12.3	10.3	0.067 J B	4.4	12.8	5.2	1.35	33.1 QH	38	23.5 QN
Toluene	EPA 8260B	6.5 [2]	ND (0.066)	ND (0.063)	ND (0.070)	ND (0.042)	ND (0.068)	0.030 J	ND (0.043)	0.29 QH	0.094 J	0.051 J
PCB-1016	EPA 8082A	1 [1]	ND (0.075) QL	ND (0.076) QL	ND (0.085) QL ML	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)
PCB-1221	EPA 8082A	1 [1]	ND (0.150) QL	ND (0.150) QL	ND (0.170) QL ML	ND (0.110) QL	ND (0.180) QL	ND (0.130) QL	ND (0.100) QL	ND (0.029)	ND (0.043)	ND (0.030)
PCB-1232	EPA 8082A	1 [1]	ND (0.075) QL	ND (0.076) QL	ND (0.085) QL ML	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)
PCB-1242	EPA 8082A	1 [1]	ND (0.075) QL	ND (0.076) QL	ND (0.085) QL ML	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)
PCB-1248	EPA 8082A	1 [1]	ND (0.075) QL	ND (0.076) QL	ND (0.085) QL ML	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	ND (0.015)	ND (0.021)	ND (0.015)
PCB-1254	EPA 8082A	1 [1]	ND (0.075) QL	ND (0.076) QL	ND (0.085) QL ML	ND (0.053) QL	ND (0.089) QL	ND (0.063) QL	ND (0.052) QL	0.031 J MN	0.057 J MN	0.032 J MN
PCB-1260	EPA 8082A	1 [1]	ND (0.075) QL	ND (0.076) QL	ND (0.085) QL ML	0.024 J QL	ND (0.089) QL	0.140 J QL	0.038 J QL	0.035 J MN	0.068 J MH	0.036 J MN
PCBs-Total	EPA 8082A	1 [1]	ND (0.150) QL	ND (0.150) QL	ND (0.170) QL ML	0.024 J QL	ND (0.180) QL	0.140 J QL	0.038 J QL	0.066 J MN	0.125 J MH	0.068 J MN
Arsenic	EPA 6020	11 [1]	4.1	4.4	4.8	4.8	4.6	8.9	6	9	5.1	3.7
Barium	EPA 6020	1100 [2]	110	100	130	85	120	150	110	140	130	96
Cadmium	EPA 6020	5 [2]	0.28 J	0.37	0.35 J	0.55 QN	0.35 J QN	0.68 QN	0.34 QN	0.62 QN	0.38 QN	0.3 QN
Chromium	EPA 6020	25 [2]	17 ML	17 ML	31 ML	19	19	36	28	34	22	16
Lead	EPA 6020	400 [2]	15 MH	19 MH	17 MH	39	14	68	29	51	18	14
Nickel	EPA 6020	86 [2]	10 QN	10 QN	18 QN	14	12	26	21	26	15	10
Selenium	EPA 6020	3.4 [2]	1.7	1.5	1.6	0.90 J	1.6	1.9	1.2	1.7	1.5	1.1
Silver	EPA 6020	11.2 [2]	0.10 J	0.10 J	0.11 J	0.11 J	0.094 J	0.23 J	0.14 J	0.21	0.10 J	0.075 J
Vanadium	EPA 6020	3400 [2]	32	30	36	29	31	50	36	50	32	25
Mercury	EPA 7471A	1.4 [2]	0.11	0.095	0.11	0.097	0.10	0.13	0.047	0.14	0.096	0.072
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	30	29	0.42 J	32	47	97	7	54	230	78
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	50	50	0.41 J	39	83	160	8.8	110	430	140
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	2.0 J	3.8	0.23	ND (0.77)	12	5.1
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Fluorene	EPA 8270 SIM	220 [2]	2.7	2.7	0.095 J	3.3	3.3	9.7	0.52	4.8	16	6.8
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)
Naphthalene	EPA 8270 SIM	120 [1]	22	22	0.17 J	12	42	68	4.3	47	120	49
Phenanthrene	EPA 8270 SIM	3000 [2]	0.93 J	0.95 J	ND (0.11)	1.5	1.0 J	4.2	0.24	2.5	11	5.1
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.49)	ND (0.5)	ND (0.11)	ND (0.69)	ND (1.1)	ND (1.6)	ND (0.072)	ND (0.77)	ND (2.2)	ND (1.5)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS030-2_5	11NC28SS031-1_5	11NC28SS032-0_5	11NC28SS032-1_5	11NC28SS035-1	11NC28SS035-1_5	11NC28SS036-1_5	11NC28SS038-1_75	11NC28SS038-2_25	11NC28SS038-2_75	11NC28SS039-1_5	11NC28SS039-2
Sample Depth (feet bgs)			2	1.5	0.5	1.5	1	1.5	1.5	1.75	2.25	2.75	1.5	1.5
Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Location ID			28-5-6-2	28-5-7-1.5	28-6-1-0.5	28-6-1-1.5	28-6-4-1	28-6-4-1.5	28-6-5-1.5	28-6-7-1.75	28-6-7-2.25	28-6-7-2.75	28-6-8-1.5	28-6-8-1.5
Lab ID			580-28112-44	580-28112-47	580-28112-48	580-28112-50	580-28112-58	580-28112-59	580-28112-63	580-28198-4	580-28198-5	580-28198-6	580-28198-8	580-28198-9
Date Collected			8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011
			Transect 5	Transect 5	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6	Transect 6
Percent Moisture (%)	EPA Moisture	--	56	56	67	27	46	44	62	66	66	58	67	80
DRO	AK102	9200 [1]	56000	520	1300	390	84000	8800	3400	5100	3100	970	980	1300
DRO with Silica Gel	AK102	9200 [1]	57000	150	330	85	87000	8500	1700	3500	2300	390	310	440
RRO	AK103	9200 [1]	5300	3900 QH	10000 QH	2400	21000	4500 QH	12000 QH	8300 QH	9200 QH	7400 QH	12000	16000 QH
RRO with Silica Gel	AK103	9200 [1]	2100	1100	2400	630	22000	1500	1900	990	1500	1200	2000	2400
Total Organic Carbon	EPA 9060-Quad	--	160000	160000	270000	64000	130000	88000	240000	140000	180000	260000	230000	270000
GRO	AK101	300 [2]	300 QN	ND (2.5)	ND (2.0)	ND (1.5)	120	120	26	2.0 J B	3.3 J B	2.9 J B	ND (3.1)	ND (5.6)
Benzene	EPA 8260B	2.0 [1]	0.65 QN	ND (0.023) ML	ND (0.018)	ND (0.014)	0.037	0.045	ND (0.028)	ND (0.150) QL	ND (0.150)	ND (0.120)	ND (0.180) QL	ND (0.310) QL
Ethylbenzene	EPA 8260B	6.9 [2]	6.4 QN	ND (0.068) ML	ND (0.055)	ND (0.041)	1.1	1	0.14	ND (0.150) QL	ND (0.150)	ND (0.120)	ND (0.180) QL	ND (0.310) QL
Total Xylenes	EPA 8260B	63 [2]	42 QN	ND (0.136) ML	ND (0.110)	ND (0.082)	14.4	11.1	0.95	ND (0.440) QL	ND (0.440) QL	ND (0.350) QL	ND (0.550) QL	ND (0.930) QL
Toluene	EPA 8260B	6.5 [2]	0.11	ND (0.068) ML	ND (0.055)	ND (0.041)	0.024 J	ND (0.053)	ND (0.084)	ND (0.180) QL	ND (0.180)	0.12 J QL MH B	0.160 J QL B	ND (0.370)
PCB-1016	EPA 8082A	1 [1]	ND (0.022)	ND (0.021) QL	ND (0.042)	ND (0.013)	ND (0.018) QL	ND (0.017)	ND (0.080)	ND (0.040)	ND (0.066)	ND (0.022)	ND (0.030)	ND (0.055)
PCB-1221	EPA 8082A	1 [1]	ND (0.045)	ND (0.041) QL	ND (0.084)	ND (0.026)	ND (0.036) QL	ND (0.033)	ND (0.160)	ND (0.079)	ND (0.130)	ND (0.044)	ND (0.060)	ND (0.110)
PCB-1232	EPA 8082A	1 [1]	ND (0.022)	ND (0.021) QL	ND (0.042)	ND (0.013)	ND (0.018) QL	ND (0.017)	ND (0.080)	ND (0.040)	ND (0.066)	ND (0.022)	ND (0.030)	ND (0.055)
PCB-1242	EPA 8082A	1 [1]	ND (0.022)	ND (0.021) QL	ND (0.042)	ND (0.013)	ND (0.018) QL	ND (0.017)	ND (0.080)	ND (0.040)	ND (0.066)	ND (0.022)	ND (0.030)	ND (0.055)
PCB-1248	EPA 8082A	1 [1]	ND (0.022)	ND (0.021) QL	ND (0.042)	ND (0.013)	ND (0.018) QL	ND (0.017)	ND (0.080)	ND (0.040)	ND (0.066)	ND (0.022)	ND (0.030)	ND (0.055)
PCB-1254	EPA 8082A	1 [1]	ND (0.022)	ND (0.021) QL	ND (0.042)	ND (0.013)	ND (0.018) QL	ND (0.017)	ND (0.080)	ND (0.040)	ND (0.066)	ND (0.022)	ND (0.030)	ND (0.055)
PCB-1260	EPA 8082A	1 [1]	0.026 J MN	ND (0.021) QL	ND (0.042)	ND (0.013)	0.068 J QL	ND (0.017)	ND (0.080)	ND (0.040)	ND (0.066)	ND (0.022)	ND (0.030)	ND (0.055)
PCBs-Total	EPA 8082A	1 [1]	0.026 J MN	ND (0.041) QL	ND (0.084)	ND (0.026)	0.068 J QL	ND (0.033)	ND (0.160)	ND (0.079)	ND (0.130)	ND (0.044)	ND (0.060)	ND (0.110)
Arsenic	EPA 6020	11 [1]	5.3	6.8	0.95	12	6.6	3.2	3.1	3	3.6	6	4.4	6.4
Barium	EPA 6020	1100 [2]	140	170	72	150	130	110	140	110	150	150	130	190
Cadmium	EPA 6020	5 [2]	0.34 J QN	0.4 QN	0.23 J QN	0.29 QN	1.2	0.23 J	0.52	0.29 J	0.40 J	0.67	0.50 J	0.71 J
Chromium	EPA 6020	25 [2]	21	25	4	22	28	18	16	18	25	25	24	39
Lead	EPA 6020	400 [2]	14	13	1.9	11	73	11	13	9.9	14	19	13	21
Nickel	EPA 6020	86 [2]	14	16	6	15	20	12	15	9.7	14	17	11	16
Selenium	EPA 6020	3.4 [2]	1.7	1.9	1.6	1.1	1.4	0.90 J	1.6	1.3 J	1.7 J	1.9	2	3.2
Silver	EPA 6020	11.2 [2]	0.10 J	0.11 J	0.055 J	0.077 J	0.18 J	0.07 J	0.11 J	0.11 J B	0.13 J B	0.24 J B	0.14 J B	0.24 J B
Vanadium	EPA 6020	3400 [2]	34	39	7.2	37	38	26	24	30	39	42	40	61
Mercury	EPA 7471A	1.4 [2]	0.10	0.11 J	0.18	0.075	0.36	0.057	0.079	0.074	0.10	0.076	0.090	0.13
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	120	0.010 J B	0.010 J B	0.0022 J B	200	26	1.6 J	9.6	4.8	0.69 J	0.080 QH	0.120 QH
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	220	0.018 J B	0.017 J B	0.0036 J B	360	50	3.3 J	9.4	5.1	0.91 J	0.120 QH	0.190 QH
Acenaphthene	EPA 8270 SIM	180 [2]	8.2	0.0028 J	ND (0.076)	ND (0.017)	8.6 J	0.71 J	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Anthracene	EPA 8270 SIM	3000 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Chrysene	EPA 8270 SIM	360 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Fluorene	EPA 8270 SIM	220 [2]	11	0.011 J	0.035 J	0.0073 J	9.7 J	0.59 J	0.19 J	0.77	0.29 J	0.045 J	0.023 J	0.033 J
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)
Naphthalene	EPA 8270 SIM	120 [1]	77	0.0064 J B	0.010 J B	ND (0.017)	91	19	2.1 J	1.2	1	0.59 J	0.063 QH	0.099 QH
Phenanthrene	EPA 8270 SIM	3000 [2]	7.3	ND (0.028)	ND (0.076)	ND (0.017)	4.7 J	0.21 J	0.11 J	0.32 J	0.13 J	0.017 J	ND (0.029)	ND (0.049)
Pyrene	EPA 8270 SIM	1000 [2]	ND (2.3)	ND (0.028)	ND (0.076)	ND (0.017)	ND (7.3)	ND (0.45)	ND (0.13)	ND (0.24)	ND (0.17)	ND (0.03)	ND (0.029)	ND (0.049)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring

Table 4 - Site 28 Soil Analytical Results Exceeding Cleanup Criteria

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 4
Site 28 Soil Analytical Results Exceeding Cleanup Levels (continued)
(all results in mg/kg)

		Sample ID	11NC28SS040-0_5	11NC28SS040-1_5	11NC28SS041-1	11NC28SS041-1_33	11NC28SS042-1	11NC28SS043-1_5	11NC28SS043-2	11NC28SS043-2_5	11NC28SS044-2	11NC28SS044-2_5	11NC28SS044-3	11NC28SS047-2	11NC28SS047-2_5	11NC28SS048-1	11NC28SS048-2_5	11NC28SS049-1_5	11NC28SS049-2	11NC28SS049-3 DU	11NC28SS051-0_5	11NC28SS060-1	11NC28SS060-2	11NC28SS061-1_5	11NC28SS062-0_75
		Sample Depth (feet bgs)	0.5	1.5	1	1.33	1	1.5	2	2.5	2	2.5	3	2	2.5	1	2	1.5	2	2	0.5	1	1	1.5	0.75
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-7-1-0.5	28-7-1-1.5	28-7-2-1	28-7-2-1.33	28-7-3-1	28-7-4-1.5	28-7-4-2	28-7-4-2.5	28-7-5-2	28-7-5-2.5	28-7-5-3	28-8-2-2	28-8-2-2.25	28-8-3-1	28-8-3-2	28-8-4-1.5	28-8-4-2	28-8-4-2	28-8-6-0.5	28-11-1-1	28-11-1-1	28-11-2-0.5	28-11-3-0.75
		Lab ID	580-28198-10	580-28198-12	580-28198-13	580-28198-14	580-28198-15	580-28198-19	580-28198-20	580-28198-21	580-28198-22	580-28198-23	580-28198-24	580-28198-30	580-28198-31	580-28198-33	580-28198-36	580-28198-37	580-28198-38	580-28198-39	580-28198-44	580-28198-74	580-28198-75	580-28198-78	580-28198-81
		Date Collected	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011
Analyte	**Analysis Method**	**Soil Cleanup Level**	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 7	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 8	Transect 11	Transect 11	Transect 11	Transect 11
Percent Moisture (%)	EPA Moisture	--	22	62	77	64	88	81	76	70	84	72	89	66	41	66	28	61	60	59	20	31	30	73	65
DRO	AK102	9200 [1]	440	310	27000	30000	1300	95000	84000	39000	96000	31000	59000 J	6200	4200	4300	330	27000	4200	5500	74	32000	23000	18000	110000
DRO with Silica Gel	AK102	9200 [1]	81	110	21000	23000	1100	96000	70000	40000	110000	34000	64000 J	6600	4200	4500	190	32000	4900	6200	23	35000	26000	18000	120000
RRO	AK103	9200 [1]	2800	3600 QH	17000	9500 QH	3700	10000	7000	4500	9700	5700	10000	380	370	680	1300	3900	2300	2200	340	2500	1800	5400	22000
RRO with Silica Gel	AK103	9200 [1]	560 QH	980	7400	4600	1500	2300 J	1400	960	3000	1100	1800	100	72	270	330	1300	740	610	110	1400	1100	2000	19000
Total Organic Carbon	EPA 9060-Quad	--	30000	190000	350000	120000	140000	450000	300000	210000	240000	230000	65000	260000	130000	46000	27000	150000	140000	130000	12000	29000	27000	110000	120000
GRO	AK101	300 [2]	0.90 J B	ND (2.8)	6.8 J B	51	63	260	290	220	1600	440	2800 J	1600	2300	14 B	32 QN	840	95 QN	170 QN	1.6 B	320	410	550	310
Benzene	EPA 8260B	2.0 [1]	ND (0.063) QL	ND (0.170) QL	ND (0.270) QL	ND (0.170) QL	ND (0.510)	ND (0.034)	ND (0.0240)	ND (0.200)	ND (0.380) QL	ND (0.190) QL	ND (0.430) QL	ND (0.180) QL	ND (0.410)	ND (0.160) QL	ND (0.066)	ND (0.150)	ND (0.120)	ND (0.140)	ND (0.050)	ND (0.077)	ND (0.073)	ND (0.180)	ND (0.180)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.063) QL	ND (0.170) QL	ND (0.270) QL	ND (0.170) QL	ND (0.510)	0.980 J QL	1.0 J QL	1.3 QL	5.0 QL	1.7 QL	7.6 J QL	12 QL	2.9 QL	ND (0.160) QL	ND (0.066)	0.410 J	ND (0.120)	ND (0.140)	ND (0.050)	0.085 J QH	0.120 J QH	3 QH	ND (0.180)
Total Xylenes	EPA 8260B	63 [2]	ND (0.193) QL	ND (0.510) QL	ND (0.810) QL	ND (0.520) QL	ND (1.510) QL	8.8 QL	9.8 QN	10.3 QN	44 QL	12.4 QL	55 J ML	83 QL	26.3 QL	ND (0.480) QL	0.130 J	4.7	0.930 J	1.23	ND (0.149)	ND (0.127)	ND (0.123)	10.3 QH	ND (0.540)
Toluene	EPA 8260B	6.5 [2]	ND (0.076) QL	0.130 J QL B	ND (0.320) QL	ND (0.210) QL	0.490 J QL B	ND (0.400)	ND (0.290)	ND (0.240)	0.390 J QL B	0.220 J QL B	0.970 J QL B	0.84 J QL B	0.180 J QL B	0.240 J QL B	ND (0.079)	ND (0.180)	ND (0.150)	ND (0.170)	ND (0.060)	ND (0.093)	ND (0.087)	ND (0.220)	ND (0.210)
PCB-1016	EPA 8082A	1 [1]	ND (0.012) QL	ND (0.025)	ND (0.042) QL	ND (0.025) QL	ND (0.081)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.028)	ND (0.016)	ND (0.027)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)	ND (0.012)	ND (0.014) QL	ND (0.014)	ND (0.036)	ND (0.027) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.025) QL	ND (0.050)	ND (0.084) QL	ND (0.051) QL	ND (0.160)	ND (0.099)	ND (0.078)	ND (0.066) QL	ND (0.120) QL	ND (0.066) QL	ND (0.170) ML	ND (0.055)	ND (0.033)	ND (0.055)	ND (0.027)	ND (0.049)	ND (0.049)	ND (0.047)	ND (0.024)	ND (0.027) QL	ND (0.027)	ND (0.072)	ND (0.054) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.012) QL	ND (0.025)	ND (0.042) QL	ND (0.025) QL	ND (0.081)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.028)	ND (0.016)	ND (0.027)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)	ND (0.012)	ND (0.014) QL	ND (0.014)	ND (0.036)	ND (0.027) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.012) QL	ND (0.025)	ND (0.042) QL	ND (0.025) QL	ND (0.081)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.028)	ND (0.016)	ND (0.027)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)	ND (0.012)	ND (0.014) QL	ND (0.014)	ND (0.036)	ND (0.027) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.012) QL	ND (0.025)	ND (0.042) QL	ND (0.025) QL	ND (0.081)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.028)	ND (0.016)	ND (0.027)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)	ND (0.012)	ND (0.014) QL	ND (0.014)	ND (0.036)	ND (0.027) QL
PCB-1254	EPA 8082A	1 [1]	ND (0.012) QL	ND (0.025)	0.23 QL	0.089 QL	ND (0.081)	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.028)	ND (0.016)	ND (0.027)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)	ND (0.012)	ND (0.014) QL	ND (0.014)	0.14 MN	0.14 QL
PCB-1260	EPA 8082A	1 [1]	ND (0.012) QL	ND (0.025)	0.23 QL	0.069 J QL	0.027 J MN	ND (0.049)	ND (0.039)	ND (0.033) QL	ND (0.061) QL	ND (0.033) QL	ND (0.083) ML	ND (0.028)	ND (0.016)	ND (0.027)	ND (0.014)	ND (0.024)	ND (0.025)	ND (0.024)	ND (0.012)	ND (0.014) QL	ND (0.014)	0.053 J MN	0.11 QL
PCBs-Total	EPA 8082A	1 [1]	ND (0.025) QL	ND (0.050)	0.46 QL	0.158 J QL	0.027 J MN	ND (0.099)	ND (0.078)	ND (0.066)	ND (0.120) QL	ND (0.066) QL	ND (0.170) ML	ND (0.055)	ND (0.033)	ND (0.055)	ND (0.027)	ND (0.049)	ND (0.049)	ND (0.047)	ND (0.024)	ND (0.014) QL	ND (0.014)	0.193 J MN	0.25 QL
Arsenic	EPA 6020	11 [1]	2.6	33	16	5.1	69	3.4	2.9	3.3	9.5	4.2	16	3.5	4.4	64	2.7	2.2	3	2.3	5.2	3.9	3.5	22	9.2
Barium	EPA 6020	1100 [2]	120	140	120	66	210	97	74	77	130	70	340	120	130	120	140	100	110	100	150	61	51	150	84
Cadmium	EPA 6020	5 [2]	0.15 J	4.3	0.57 J	0.19 J	0.69 J	0.28 J	0.27 J	0.33 J	0.78 J	0.50 J	1.2 J	0.21 J	0.27	0.12 J	0.20 J	0.15 J	0.23 J	0.21 J	0.2	0.13 J	0.11 J	0.29 J	0.41 J
Chromium	EPA 6020	25 [2]	25	44	18	8.7	15	9.5	9.7	10	17	8.1	56	13	17	6.8	25	14	14	13	26	14	12	25	13
Lead	EPA 6020	400 [2]	12	38	31	8	25	7.4	7.6	10	18	7.5	49	7.4	11	4.6	10	9.4	9.3	8.7	12	8.3	7.4	14	22
Nickel	EPA 6020	86 [2]	12	44	16	5.2	15	6.3	4.6	5	11	5.3	38	9.1	10	3.5	15	8.9	9.5	8.8	19	7.7	6.3	14	8.7
Selenium	EPA 6020	3.4 [2]	0.75	6.5	1.7 J	0.90 J	1.8 J	2.9	2.5	2.7	4.1	2.4	5.1	1.6	1.5	0.88 J	0.48 J	0.96 J	1.3 J	1.1 J	0.52	0.60 J	0.60 J	1.6 J	1.4 J
Silver	EPA 6020	11.2 [2]	0.10 J B	0.36 J B	0.19 J B	0.084 J B	0.34 J B	0.12 J	0.086 J	0.078 J	0.19 J	0.11 J	0.34 J	0.060 J	0.098 J	ND (0.058)	0.10 J	0.085 J	0.093 J	0.087 J	0.13	0.044 J	0.034 J	0.11 J	0.11 J
Vanadium	EPA 6020	3400 [2]	35	120	39	17	35	16	15	26	46	30	110	25	29	15	39	26	31	28	41	23	20	51	23
Mercury	EPA 7471A	1.4 [2]	0.064	0.13	0.13	0.073	0.16	0.16 QN	0.098 QN	0.075 QN	0.12 QN	0.067 QN	0.14 QN	0.069	0.069	0.027 J QN	0.056 QN	0.058	0.067	0.10	0.054	0.033	0.023	0.089	0.073
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	ND (0.012)	0.0016 J	0.57 J	1.6	0.100 J	100	190	120	270	110	240 J	140	9.1	4.2	0.8	25	6.9	7.5	0.00086 J	5.8	4.9	14	ND (2.7)
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	ND (0.012)	0.0021 J	0.47 J	1.4	0.055 J	140	320	160	350	210	450 J	160	18	7.5	1.3	42	12	13	0.0012 J	6.3	5.4	15	ND (2.7)
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	4.4	7.8	2.8	6.8 J	2.8 J	0.38 J	ND (0.13)	0.033	ND (0.64)	ND (0.29)	0.32 J	ND (0.0031)	ND (0.7)	ND (0.66)	1.8	ND (2.7)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	0.00021 J	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	0.00098 J	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Chrysene	EPA 8270 SIM	360 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Fluorene	EPA 8270 SIM	220 [2]	0.0041 J	ND (0.0062)	ND (0.41)	0.96 J	0.059 J	11	16	12	18	6.6	15.000 J	3.3	0.46 J	0.24 J	0.053	2.1	0.61	0.67	ND (0.0031)	1.0 J	1.0 J	1.8	ND (2.7)
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)
Naphthalene	EPA 8270 SIM	120 [1]	ND (0.012)	0.0016 J	0.48 J	1.5	0.120 J	36	81	42	160	110	210 J	92	7	1.8	0.36	11	3.3	3.8	0.0008 J	2.8	2.7	11	ND (2.7)
Phenanthrene	EPA 8270 SIM	3000 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	0.88 J	ND (0.079)	7.2	9.1 J	6.5	8.1	2.7	6.4	1.0 J	0.17 J	ND (0.13)	0.016 J	0.87 J	0.24 J	0.26 J	ND (0.0031)	0.52 J	0.51 J	1.5	ND (2.7)
Pyrene	EPA 8270 SIM	1000 [2]	ND (0.012)	ND (0.0062)	ND (0.41)	ND (0.51)	ND (0.079)	ND (2.6)	ND (5.9)	ND (1.6)	ND (2.9)	ND (0.86)	ND (2.1)	ND (1.4)	ND (0.39)	ND (0.13)	ND (0.016)	ND (0.64)	ND (0.29)	ND (0.28)	ND (0.0031)	ND (0.7)	ND (0.66)	ND (0.45)	ND (2.7)

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring

Table 4 - Site 28 Soil Analytical Results Exceeding Cleanup Criteria

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 4
Site 28 Soil Analytical Results Exceeding Cleanup Levels (continued)
(all results in mg/kg)

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS063-0_75	11NC28SS063-1_75	11NC28SS064-1_75	11NC28SS064-2_25	11NC28SS064-2_5	11NC28SS066-0_75	11NC28SS066-1_25	11NC28SS066-2	11NC28SS067-1	11NC28SS067-1_5
		Sample Depth (feet bgs)	0.75	1.75	1.75	2.25	2.25	0.75	1.25	1.25	1	1.5
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-11-4-0.75	28-11-4-1.75	28-11-5-1.75	28-11-5-2.25	28-11-5-2.25	28-DIS-01-0.75	28-DIS-01-1.25	28-DIS-01-1.25	28-DIS-02-1	28-DIS-02-1.5
		Lab ID	580-28198-83	580-28198-84	580-28198-87	580-28198-88	580-28198-89	580-28198-93	580-28198-94	580-28198-95	580-28198-97	580-28198-98
		Date Collected	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011
			Transect 11	Transect 11	Transect 11	Transect 11	Transect 11	Discrete	Discrete	Discrete	Discrete	Discrete
Percent Moisture (%)	EPA Moisture	--	89	53	85	49	45	53	41	35	22	17
DRO	AK102	9200 [1]	58000	22000	23000	2500 QN	4800 QN	94000	42000 QN	24000 QN	6700	13000
DRO with Silica Gel	AK102	9200 [1]	63000	22000	25000	2400 QN	4900 QN	97000	46000 QN	24000 QN	7100	16000
RRO	AK103	9200 [1]	8700	3300	6500	3900	3800	14000	7100	4900	10000	8000 QL
RRO with Silica Gel	AK103	9200 [1]	2500	1100	4300	1200	1300	12000	5900 QN	3300 QN	10000 QL	9000
Total Organic Carbon	EPA 9060-Quad	--	450000	120000	130000	93000	130000	100000	58000	53000	35000	17000
GRO	AK101	300 [2]	160	690	69	43 QN	76 QN	490	720	1100	33	77
Benzene	EPA 8260B	2.0 [1]	ND (0.590)	ND (0.100)	ND (0.430)	ND (0.100)	ND (0.089)	ND (0.140)	ND (0.084)	ND (0.079) QL	ND (0.067) QL	ND (0.060)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.590)	0.210 J QH	ND (0.430)	0.140 J	0.120 J	ND (0.140)	0.130 J	0.150 J QL	ND (0.067) QL	ND (0.060)
Total Xylenes	EPA 8260B	63 [2]	ND (1.790)	3.9 QH	ND (1.290)	0.630 J	0.710 J	ND (0.410)	1.77	1.740 QL	ND (0.197) QL	ND (0.180)
Toluene	EPA 8260B	6.5 [2]	ND (0.710)	ND (0.120)	ND (0.520)	ND (0.120)	ND (0.110)	ND (0.160)	0.280 J	0.300 J QL	ND (0.080) QL	ND (0.071)
PCB-1016	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)
PCB-1221	EPA 8082A	1 [1]	ND (0.170)	ND (0.040)	ND (0.120)	ND (0.037)	ND (0.034)	ND (0.400)	ND (0.160)	ND (0.120) QL	ND (0.240)	ND (0.230)
PCB-1232	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)
PCB-1242	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)
PCB-1248	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	ND (0.200)	ND (0.081)	ND (0.058) QL	ND (0.120)	ND (0.120)
PCB-1254	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	2 MN	0.790 MN	0.600 QL	ND (0.120)	ND (0.120)
PCB-1260	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	1 MN	0.420 MN	0.320 QL	1.5 MN	1.8 MN
PCBs-Total	EPA 8082A	1 [1]	ND (0.086)	ND (0.020)	ND (0.062)	ND (0.018)	ND (0.017)	3 MN	1.21 MN	0.92 QL	1.5 MN	1.8 MN
Arsenic	EPA 6020	11 [1]	33	12	27	4.6	4.3	23	8	5.9	4.7	4.3
Barium	EPA 6020	1100 [2]	100	89	120	130	140	480	270 QN	92 QN	39	51
Cadmium	EPA 6020	5 [2]	0.24 J QN	0.26 J QN	0.32 J QN	0.21 J QN	0.22 J QN	5.9 QN	1.8 QN	0.78 QN	0.41 QN	0.66 QN
Chromium	EPA 6020	25 [2]	5.9	12	19	20	22	74	24	19	15	24
Lead	EPA 6020	400 [2]	9.4 QN	8.3 QN	19 QN	10 QN	10 QN	790 QN	280 QN	130 QN	48 QN	87 QN
Nickel	EPA 6020	86 [2]	6.9	6	13	14	15	18	13	11	12	12
Selenium	EPA 6020	3.4 [2]	ND (3.6)	0.89 J	1.1 J	1.1 J	1.1 J	1.1 J	0.84 J	0.90 J	0.42 J	0.42 J
Silver	EPA 6020	11.2 [2]	ND (0.18)	0.065 J	0.096 J	0.080 J	0.080 J	1.3	0.23 J	0.11 J	0.062 J	0.13 J
Vanadium	EPA 6020	3400 [2]	25	21	39	35	38	27	24	24	20	22
Mercury	EPA 7471A	1.4 [2]	ND (0.077)	0.030 J	0.061 J	0.068	0.071	0.64	0.84	0.57	0.039	0.065
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	4.1	41	0.99	3.9	5.1	3.8 J	15	11	ND (0.88)	ND (0.42)
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	4.7	79	1.5	6.4	9	ND (2.1)	15 QN	7.1 QN	ND (0.88)	ND (0.42)
Acenaphthene	EPA 8270 SIM	180 [2]	ND (1.2)	2.2	ND (0.16)	0.19 J	0.22 J	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Anthracene	EPA 8270 SIM	3000 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	0.83 J	0.21 J	0.22 J	0.31 J	0.14 J
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Chrysene	EPA 8270 SIM	360 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	0.98 J	ND (0.58)	ND (0.54)	0.78 J	0.22 J
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (1.2)	ND (0.98)	0.33	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	0.22 J	0.39 J	ND (0.42)
Fluorene	EPA 8270 SIM	220 [2]	0.49 J	1.9 J	0.15 J	0.23 J	0.28 J	1.9 J	1.6	1.6	0.25 J	ND (0.42)
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (1.2)	ND (0.98)	ND (0.16)	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	ND (0.54)	ND (0.88)	ND (0.42)
Naphthalene	EPA 8270 SIM	120 [1]	ND (1.2)	18	ND (0.16)	1.2	1.9	ND (2.1)	6.5 QN	3.6 QN	ND (0.88)	ND (0.42)
Phenanthrene	EPA 8270 SIM	3000 [2]	ND (1.2)	0.78 J	0.27 J	0.074 J	ND (0.17)	ND (2.1)	0.93 J	0.94 J	ND (0.88)	ND (0.42)
Pyrene	EPA 8270 SIM	1000 [2]	ND (1.2)	ND (0.98)	0.20 J	ND (0.12)	ND (0.17)	ND (2.1)	ND (0.58)	0.26 J	0.78 J	0.3 J

Analyte	Analysis Method	Soil Cleanup Level	11NC28SS068-1	11NC28SS069-1_5	11NC28SS069-2	11NC28SS069-2_5	11NC28SS071-1	11NC28SS071-2_5	11NC28SS071-1_5	11NC28SS072-1_25	11NC28SS072-1_75	11NC28SS072-2_25	11NC28SS072-2_5	11NC28SS073-1_5	11NC28SS073-2
		Sample Depth (feet bgs)	1	1.5	2	2	1	1	1.5	1.25	1.75	2.25	2.25	1.5	2
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		Location ID	28-DIS-03-1	28-DIS-04-1.5	28-DIS-04-2	28-DIS-04-2	28-DIS-06-1	28-DIS-06-1	28-DIS-06-1.5	28-DIS-07-1.25	28-DIS-07-1.75	28-DIS-07-2.25	28-DIS-07-2.25	28-DIS-08-1.5	28-DIS-08-2
		Lab ID	580-28198-99	580-28198-100	580-28198-101	580-28198-102	580-28198-106	580-28198-107	580-28198-108	580-28198-110	580-28198-111	580-28198-112	580-28198-113	580-28198-114	580-28198-115
		Date Collected	8/19/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011	8/20/2011
			Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Percent Moisture (%)	EPA Moisture	--	71	46	57	42	58	61	62	80	76	43	41	64	74
DRO	AK102	9200 [1]	280000	21000	23000	17000	26000	28000	34000	6200	7500	36000	27000	8000	9400
DRO with Silica Gel	AK102	9200 [1]	290000	26000	28000	20000	31000	35000	42000	7000	8800	44000	34000	9300	10000
RRO	AK103	9200 [1]	3800 J	3500	3400	2400	14000	13000	5300	6000	4500	4000	3500	3800	6200
RRO with Silica Gel	AK103	9200 [1]	2200	740	1200	750	13000	12000	2300	1200	1100	1300	930	2400	3300
Total Organic Carbon	EPA 9060-Quad	--	220000	57000 QL	49000 QL	53000 QL	95000 QL	34000 QL	110000 QL	310000 QL	230000	150000 QL	110000	140000	150000
GRO	AK101	300 [2]	1300	650	3500 QN	770 QN	200	220	670	150	640	770	990	14 B	43
Benzene	EPA 8260B	2.0 [1]	ND (0.110)	0.150 J QH	ND (0.190)	ND (0.530) QL	ND (0.150) QL	ND (0.160)	ND (0.160) QL	ND (0.340) QL	ND (0.250) QL	ND (0.089)	ND (0.099)	ND (0.160)	ND (0.260)
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.110)	4.2 QH	3.9	2.6 QL	1.0 QL	ND (0.160)	2.6 QL	0.97 J QL	3.0 QL	4.5	6.6	ND (0.160)	ND (0.260)
Total Xylenes	EPA 8260B	63 [2]	ND (0.330)	31 QH	31	18.8 QL	0.87 QL	0.94	23.5 QL	8.7 QL	23.1 QL	30	43	0.800 J	0.390 J
Toluene	EPA 8260B	6.5 [2]	0.190 J	ND (0.190)	ND (0.230)	ND (0.640) QL	ND (0.180) QL	ND (0.190)	ND (0.190) QL	ND (0.410) QL	ND (0.300) QL	ND (0.110)	ND (0.120)	ND (0.190)	ND (0.310)
PCB-1016	EPA 8082A	1 [1]	ND (0.034) QL	ND (0.017) QL	ND (0.022) QL	ND (0.016) QL	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL
PCB-1221	EPA 8082A	1 [1]	ND (0.069) QL	ND (0.034) QL	ND (0.043) QL	ND (0.032) QL	ND (0.044) QL	ND (0.049) QL	ND (0.052) QL	ND (0.099) QL	ND (0.081) QL	ND (0.032)	ND (0.033) QL	ND (0.055) QL	ND (0.072) QL
PCB-1232	EPA 8082A	1 [1]	ND (0.034) QL	ND (0.017) QL	ND (0.022) QL	ND (0.016) QL	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL
PCB-1242	EPA 8082A	1 [1]	ND (0.034) QL	ND (0.017) QL	ND (0.022) QL	ND (0.016) QL	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL
PCB-1248	EPA 8082A	1 [1]	ND (0.034) QL	ND (0.017) QL	ND (0.022) QL	ND (0.016) QL	ND (0.022) QL	ND (0.025) QL	ND (0.026) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	ND (0.028) QL	ND (0.036) QL
PCB-1254	EPA 8082A	1 [1]	0.029 J QL	ND (0.017) QL	ND (0.022) QL	ND (0.016) QL	0.32 QL	0.23 QL	ND (0.026) QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	0.080 J QL	0.052 J QL
PCB-1260	EPA 8082A	1 [1]	ND (0.034) QL	ND (0.017) QL	0.032 J QL	0.016 J QL	0.31 QL	0.24 QL	0.0096 J QL	ND (0.050) QL	ND (0.040) QL	ND (0.016)	ND (0.017) QL	0.056 J QL	0.034 J QL
PCBs-Total	EPA 8082A	1 [1]	ND (0.069) QL	ND (0.034) QL	0.032 J QL	0.016 J QL	0.63 QL	0.47 QL	0.0096 J QL	ND (0.099) QL	ND (0.081) QL	ND (0.032)	ND (0.033) QL	0.136 J QL	0.086 J QL
Arsenic	EPA 6020	11 [1]	8.6	3.5	3.8	2.7	6.5	7.4	4.5	11	7.5	3.5	3.3	7.5	13
Barium	EPA 6020	1100 [2]	130	110	100	68	120	140	130	160	83	130	130	120	170
Cadmium	EPA 6020	5 [2]	1.3	0.33	0.29 J	0.25 J	1	1.2	0.41	0.56 J	0.28 J	0.26 J	0.27 J	0.24 J	0.57
Chromium	EPA 6020	25 [2]	11	14	13	9.2	26	29	18	24	4.9	15	16	16	18 MH
Lead	EPA 6020	400 [2]	29	16	15	12	71	81	16	21	4.5	8.8	9.8	10	14
Nickel	EPA 6020	86 [2]	12	8	7.2	5.7	18	21	13	14	5.8	9.1	9.8	10	14
Selenium	EPA 6020	3.4 [2]	5.6	1.5	1.4	0.92 J	1.5	1.5 J	1.7	3	1.8 J	1.2	1.2	1.8	1.9
Silver	EPA 6020	11.2 [2]	0.32 J	0.12 J	0.13 J	0.086 J	0.18 J	0.21 J	0.11 J	0.17 J	0.053 J	0.075 J	0.073 J	0.081 J	0.11 J
Vanadium	EPA 6020	3400 [2]	17	30	27	18	37	39	31	52	23	30	31	30	37
Mercury	EPA 7471A	1.4 [2]	0.054	0.046	0.060 QN	0.033 QN	0.26	0.30	0.13	0.16	0.058	0.067	0.063	0.078	0.079
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	30	42	57	46	30 QN	51 QN	100	1.2	26	120 QN	2.4 QN	4.7	4.4
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	26	77	95	80	51	85	200	1.7	48	210 QN	2.9 QN	6	6
Acenaphthene	EPA 8270 SIM	180 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	4.5 J	ND (0.37)	1.7 J	5.8	ND (0.12)	ND (0.2)	ND (0.27)
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Anthracene	EPA 8270 SIM	3000 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Chrysene	EPA 8270 SIM	360 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Fluoranthene	EPA 8270 SIM	1400 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	0.083 J	0.13 J	0.19 J
Fluorene	EPA 8270 SIM	220 [2]	7.3	2.7 J	3.9	2.8	3.1	4.9	5.6	ND (0.37)	1.6 J	5.9 QN	0.4 QN	0.72	0.87
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	ND (0.12)	ND (0.2)	ND (0.27)
Naphthalene	EPA 8270 SIM	120 [1]	ND (1.7)	28	32	29	10 QN	17 QN	85	2.7	28	86 QN	1.3 QN	2.4	1.6
Phenanthrene	EPA 8270 SIM	3000 [2]	4.5	1.8 J	2.6 J	1.9 J	1.6 J	2.6	1.6 J	ND (0.37)	0.6 J	2.8 J	0.28	0.48	0.65
Pyrene	EPA 8270 SIM	1000 [2]	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.2)	ND (1.1)	ND (1.3)	ND (2.4)	ND (0.37)	ND (1.0)	ND (2.1)	0.083 J	0.13 J	0.19 J

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring

Table 4 - Site 28 Soil Analytical Results Exceeding Cleanup Criteria

Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

Table 4
Site 28 Soil Analytical Results Exceeding Cleanup Levels (continued)
(all results in mg/kg)

		Sample ID	11NC28SS073-2_5	11NC28SS074-2	11NC28SS075-2_5	11NC28SS076-1_5	11NC28SS076-2	11NC28SS078-1.5	11NC28SS078-2	11NC28SS078-2.5	11NC28SS078-3	11NC28SS079-2.5	11NC28SS079-3	11NC28SS079-3.5	11NC28SS080-2.75	11NC28SS080-3.25	11NC28SS080-3.75	11NC28SS081-1.25	11NC28SS081-1.75	11NC28SS081-2.25	11NC28SS081-2.5	**Background Sample Average**	**Background Sample Range**
		Sample Depth (feet bgs)	2.5	2	2.5	1.5	2	1.5	2	2.5	2.5	2.5	3	3.5	2.75	3.25	3.75	1.25	1.75	2.25	2.25		
		Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
		Location ID	28-DIS-08-2.5	28-DIS-09-2	28-DIS-10-2.5	28-DIS-11-1.5	28-DIS-11-2	28-BG-1-1.5	28-BG-1-2	28-BG-1-2.5	28-BG-1-2.5	28-BG-2-2.5	28-BG-2-3	28-BG-2-3.5	28-BG-3-2.75	28-BG-3-3.25	28-BG-3-3.75	28-BG-4-1.25	28-BG-4-1.75	28-BG-4-2.25	28-BG-4-2.25		
		Lab ID	580-28198-116	580-28198-119	580-28198-122	580-28198-123	580-28198-124	580-28198-129	580-28198-130	580-28198-131	580-28198-132	580-28198-133	580-28198-134	580-28198-135	580-28198-136	580-28198-137	580-28198-138	580-28198-139	580-28198-140	580-28198-141	580-28198-142		
		Date Collected	8/20/2011	8/20/2011	8/20/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011	8/21/2011		
Analyte	**Analysis Method**	**Soil Cleanup Level**	Discrete	Discrete	Discrete	Discrete	Discrete	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background	Background		
Percent Moisture (%)	EPA Moisture	--	67	67	44	51	33	77	78	28	22	75	75	79	80	80	79	82	75	78	79		
DRO	AK102	9200 [1]	2700	8300	300 J	570	310	1100	1400	74	110	1300	2400	2400	710	580	500	1600	720	1100	1000	1071	74-2400
DRO with Silica Gel	AK102	9200 [1]	2800	8000	230	310	150	700	680	50 B	63 B	630	1500	1500	270	230	210	970	300	680	540	684	50-1500
RRO	AK103	9200 [1]	4300	4200	1600 J MH	3200	2000	12000	15000	670 QN	1200 QN	14000	24000	23000	8400	5900	6000 J ML	15000 QH	7400 QH	11000 QH	11000 QH	12725	670-24000
RRO with Silica Gel	AK103	9200 [1]	1400	1100	560 J MH	680	480	4700	4400	420	640	4500	7700	7100	2800	2200	1700	3200	1100	2800	2700	3283	420-7700
Total Organic Carbon	EPA 9060-Quad	--	170000	130000	57000	73000	39000	460000 QL	480000 QL	24000 QL	34000 QL	410000 QL	410000 QL	360000 QL	440000 QL	450000 QL	410000 J QL	360000 QL	260000 QL	350000 QL	360000 QL	395833	24000-480000
GRO	AK101	300 [2]	33	7.7 B	1.6 J B	5.6 B	3.9 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzene	EPA 8260B	2.0 [1]	ND (0.180) QL	ND (0.170) QL	ND (0.067)	ND (0.100) QL	ND (0.076) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Ethylbenzene	EPA 8260B	6.9 [2]	ND (0.180) QL	ND (0.170) QL	ND (0.067)	ND (0.100) QL	ND (0.076) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Total Xylenes	EPA 8260B	63 [2]	0.220 J QL	ND (0.520) QL	ND (0.197)	ND (0.310) QL	ND (0.226) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Toluene	EPA 8260B	6.5 [2]	ND (0.210) QL	ND (0.210) QL	ND (0.081)	ND (0.120) QL	ND (0.091) QL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1016	EPA 8082A	1 [1]	ND (0.150)	ND (0.028)	ND (0.017)	ND (0.020)	ND (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1221	EPA 8082A	1 [1]	ND (0.300)	ND (0.055)	ND (0.033)	ND (0.041)	ND (0.028)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1232	EPA 8082A	1 [1]	ND (0.150)	ND (0.028)	ND (0.017)	ND (0.020)	ND (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1242	EPA 8082A	1 [1]	ND (0.150)	ND (0.028)	ND (0.017)	ND (0.020)	ND (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1248	EPA 8082A	1 [1]	ND (0.150)	ND (0.028)	ND (0.017)	ND (0.020)	ND (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1254	EPA 8082A	1 [1]	1.7 MN	ND (0.028)	ND (0.017)	ND (0.020)	ND (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCB-1260	EPA 8082A	1 [1]	0.99 MN	ND (0.028)	ND (0.017)	ND (0.020)	ND (0.014)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PCBs-Total	EPA 8082A	1 [1]	2.69 MN	ND (0.055)	ND (0.033)	ND (0.041)	ND (0.028)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Arsenic	EPA 6020	11 [1]	6.6	11	4.3	7.9	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Barium	EPA 6020	1100 [2]	170	160	150	150	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Cadmium	EPA 6020	5 [2]	0.6	0.41 J	0.39	0.41	0.42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chromium	EPA 6020	25 [2]	16 MH	16 MH	26 MH	30 MH	28 MH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Lead	EPA 6020	400 [2]	9.6	9.7	16	16	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Nickel	EPA 6020	86 [2]	14	13	21	21	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Selenium	EPA 6020	3.4 [2]	1.9	1.7 J	1.1	1.2	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Silver	EPA 6020	11.2 [2]	0.086 J	0.089 J	0.11 J	0.13 J	0.13 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Vanadium	EPA 6020	3400 [2]	32	31	37	58	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Mercury	EPA 7471A	1.4 [2]	0.073	0.062	0.042	0.061	0.035	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
1-Methylnaphthalene	EPA 8270 SIM	6.2 [2]	0.77	0.047 J	0.0055 J	0.027 J	0.0029 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
2-Methylnaphthalene	EPA 8270 SIM	6.1 [2]	0.8	0.061 J	0.0075 J	0.021 J	0.0024 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Acenaphthene	EPA 8270 SIM	180 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Acenaphthylene	EPA 8270 SIM	180 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Anthracene	EPA 8270 SIM	3000 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[a]anthracene	EPA 8270 SIM	3.6 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[a]pyrene	EPA 8270 SIM	2.1 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[b]fluoranthene	EPA 8270 SIM	12 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[g,h,i]perylene	EPA 8270 SIM	38700 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Benzo[k]fluoranthene	EPA 8270 SIM	120 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Chrysene	EPA 8270 SIM	360 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Dibenz(a,h)anthracene	EPA 8270 SIM	4 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Fluoranthene	EPA 8270 SIM	1400 [2]	0.065 J	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Fluorene	EPA 8270 SIM	220 [2]	0.25 J	0.022 J	0.0054 J	0.0078 J	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Indeno[1,2,3-cd]pyrene	EPA 8270 SIM	41 [2]	ND (0.14)	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Naphthalene	EPA 8270 SIM	120 [1]	0.18 J	0.029 J	0.0033 J	0.011 J	0.0025 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Phenanthrene	EPA 8270 SIM	3000 [2]	0.18 J	0.025 J	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Pyrene	EPA 8270 SIM	1000 [2]	0.065 J	ND (0.058)	ND (0.021)	ND (0.025)	ND (0.017)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

Color Codes:
Positive Result Exceeds Cleanup Level
Non-Detect Result Exceeds Cleanup Level
Duplicate of Previous Sample

Notes:
[1] Site-specific cleanup levels established in 2009 Decision Document
[2] Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater (Revised October 9, 2008)
-- = No value specified
AAC = Alaska Administrative Code
AK = Alaska Test Method
B = analyte was also detected in the method blank or trip blank
bgs = below ground surface
DRO = diesel range organics
EPA = U.S. Environmental Protection Agency
GRO = gasoline range organics
J = result is an estimated value between the detection limit and the limit of quantitation
mg/kg = milligrams per kilogram
MH = result is an estimated value with a high bias due to matrix effects
ML = result is an estimated value with a low bias due to matrix effects
MN = result is an estimated value with an uncertain bias due to matrix effects
NA = not analyzed
ND = not detected, limit of detection (LOD) shown in parentheses
PCBs = polychlorinated biphenyls
QH = result is an estimated value with a high bias due to a quality control failure
QL = result is an estimated value with a low bias due to a quality control failure
QN = result is an estimated value with an uncertain bias due to a quality control failure
RRO = residual range organics
SIM = selective ion monitoring

Table 4 - Site 28 Soil Analytical Results Exceeding Cleanup Criteria

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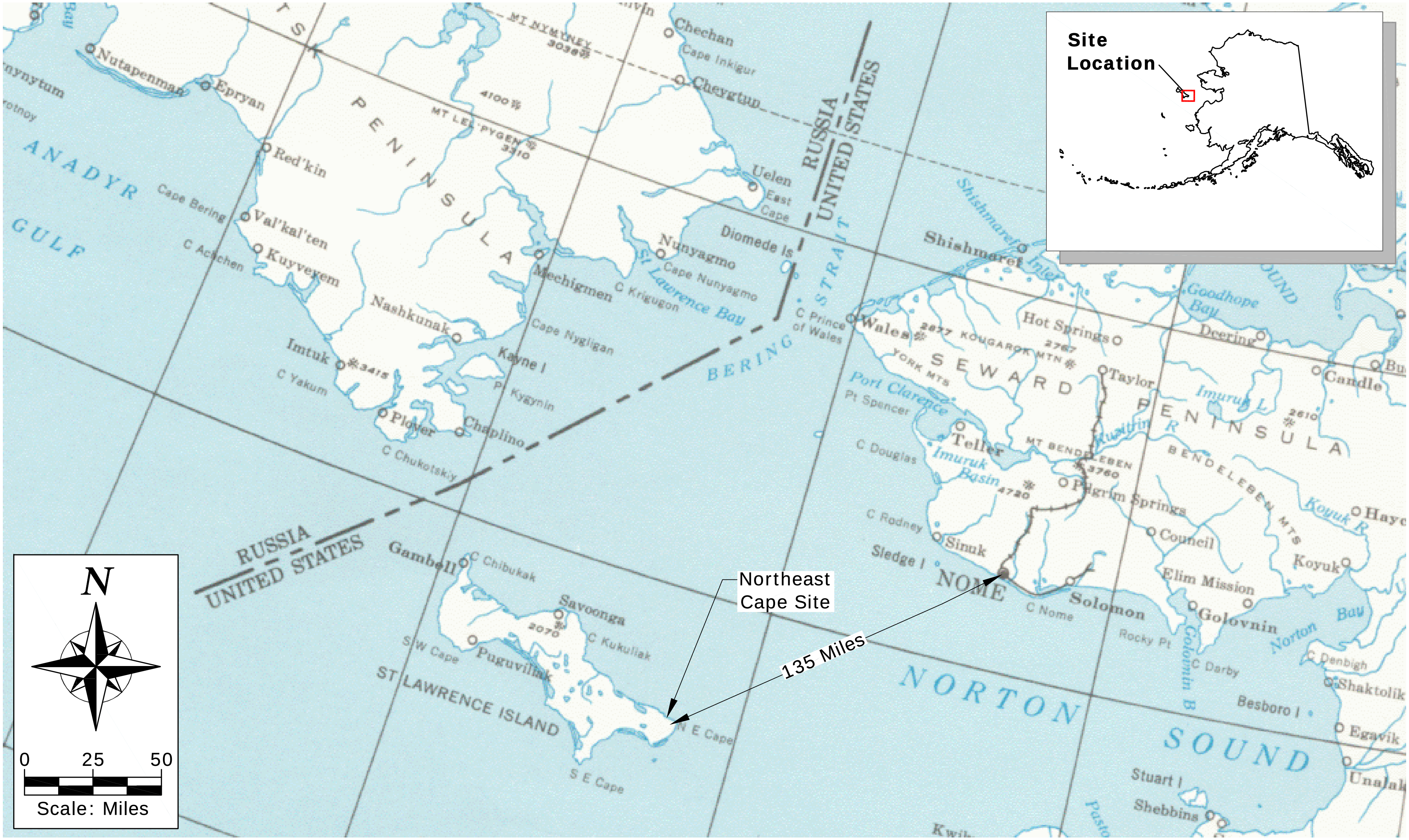
FIGURES

Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG1-OCT11.DWG - Layout: 34110008-FIG1-OCT11
User: MGARCIA Jan 25, 2012 - 2:04pm Xrefs: - Images: NECAPE.JPG



Source: USGS National Atlas Sheet Number 42-43

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

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DATUM: NA		DATE	10/11/11
PROJECTION: NA		DWN.	MTG
PROJECT NO. 34110008		SCALE	SHOWN
		APPRVD.	MW

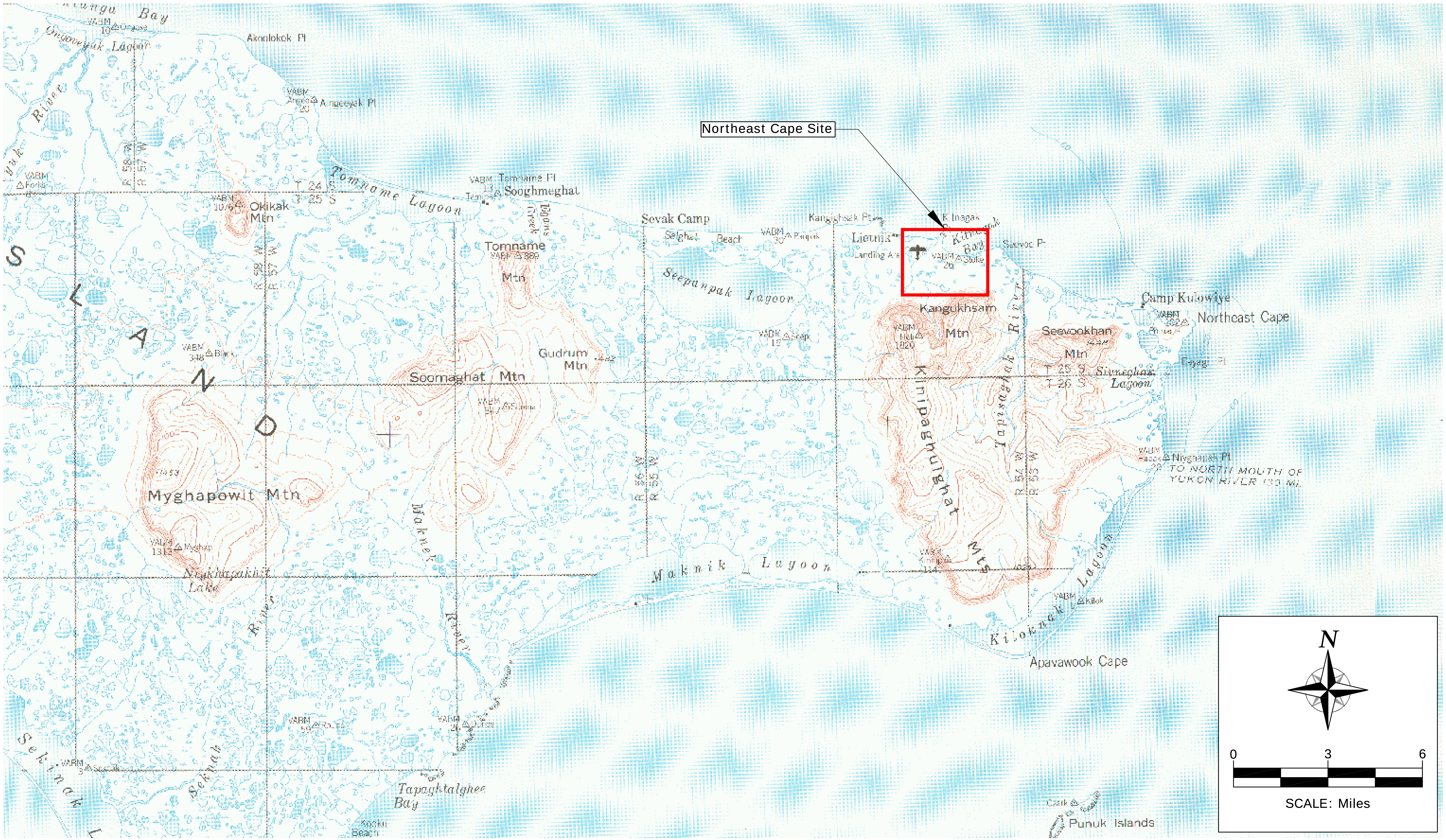
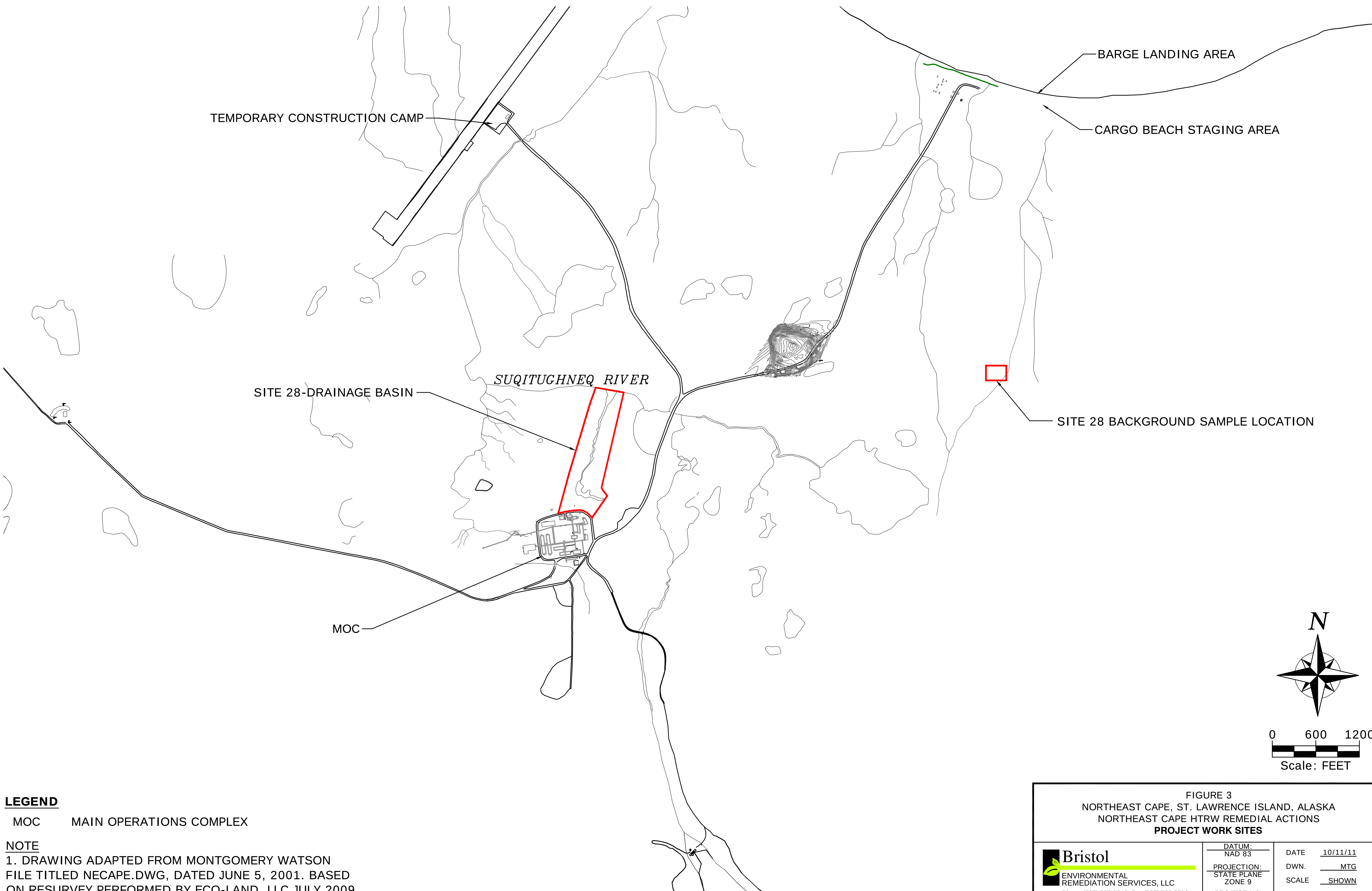


FIGURE 2
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NORTHEAST CAPE HTRW REMEDIAL ACTIONS
LOCATION MAP

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC Phone (907) 563-0013 Fax (907) 563-6713	DATUM: NA	DATE 10/11/11
	PROJECTION: NA	DWN. MTG
	PROJECT NO. 34110008	SCALE SHOWN
		APPRVD. MW

Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG2-OCT11.DWG - Layout: 34110008-FIG2-OCT11
User: MGARCIA Jan 25, 2012 - 2:05pm Xrefs: - Images: NE1.JPG



LEGEND

MOC MAIN OPERATIONS COMPLEX

NOTE

1. DRAWING ADAPTED FROM MONTGOMERY WATSON FILE TITLED NECAPE.DWG, DATED JUNE 5, 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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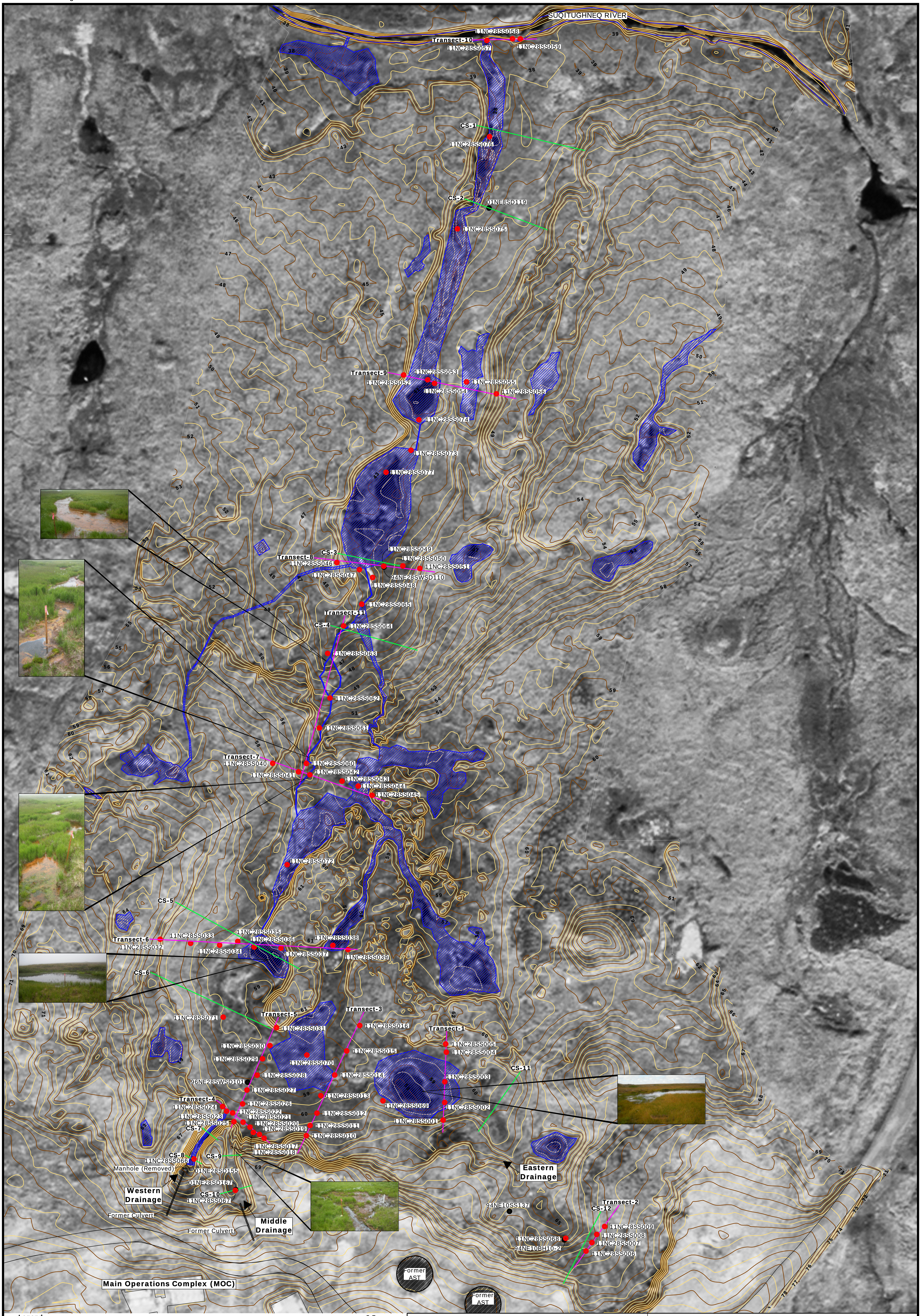
DATUM: NAD 83		DATE	10/11/11
PROJECTION: STATE PLANE ZONE 9		DWN.	MTG
		SCALE	SHOWN
PROJECT NO. 34110008		APPRVD.	MW

Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG3-OCT11.DWG - Layout: 34110008-FIG3-OCT11
User: MGARCIA Jan 25, 2012 - 2:06pm Xrefs: - Images:

User: MGARCIA Feb 28, 2012 - 3:32pm
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG4-OCT11.DWG - Layout: 34110008-FIG4-OCT11
Xrefs: None - Images:



Legend

(red dot)	boring location
(black dot)	historical sample location
(blue line)	surface water
Transect-1	2011 transect location and identification
CS-1	2001 historical transect location and identification
(hatched)	ponded water
	secondary contours
	primary contours
11NC28SS067	sample identification
AST	above ground storage tank

N E S W

0 30 60
Scale: Feet

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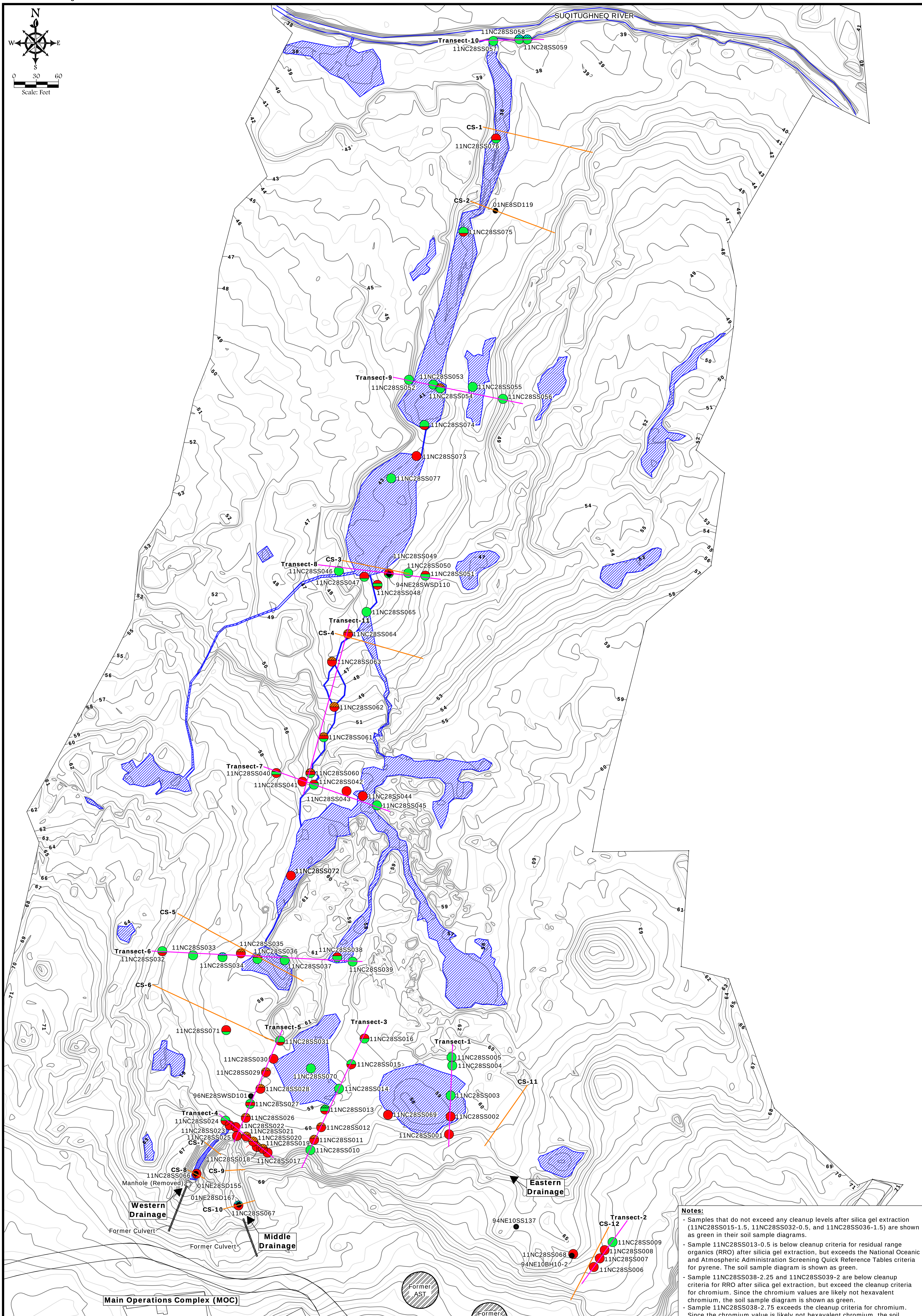
FIGURE 4
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
SITE 28 HISTORICAL AND 2011 TRANSECT AND SAMPLE LOCATIONS

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

User: MGARCIA Feb 28, 2012 - 3:40pm
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG5-OCT11.DWG - Layout: 34110008-FIG5-OCT11
Xrefs: None - Images: None



Notes:

- Samples that do not exceed any cleanup levels after silica gel extraction (11NC28SS015-1.5, 11NC28SS032-0.5, and 11NC28SS036-1.5) are shown as green in their soil sample diagrams.
- Sample 11NC28SS013-0.5 is below cleanup criteria for residual range organics (RRO) after silicia gel extraction, but exceeds the National Oceanic and Atmospheric Administration Screening Quick Reference Tables criteria for pyrene. The soil sample diagram is shown as green.
- Sample 11NC28SS038-2.25 and 11NC28SS039-2 are below cleanup criteria for RRO after silica gel extraction, but exceed the cleanup criteria for chromium. Since the chromium values are likely not hexavalent chromium, the soil sample diagram is shown as green.
- Sample 11NC28SS038-2.75 exceeds the cleanup criteria for chromium. Since the chromium value is likely not hexavalent chromium, the soil sample diagram is shown as green.

Legend

- historical sample location
- surface water
- Transect-1 — 2011 transect location and identification
- CS-1 — 2001 historical transect location and identification
- no soil analytes detected above cleanup levels
- no sediment analytes detected above cleanup levels
- soil exceeding cleanup level of one or more analytes
- sediment exceeding cleanup level of one or more analytes
- sediment non-detect result exceeds cleanup level for one or more analytes
- ponded water
- secondary contours
- primary contours
- 11NC28SS067 — sample identification
- AST — above ground storage tank

Soil Sample Diagram:

- Shallow sample depth
- Middle sample depth
- Deep sample depth

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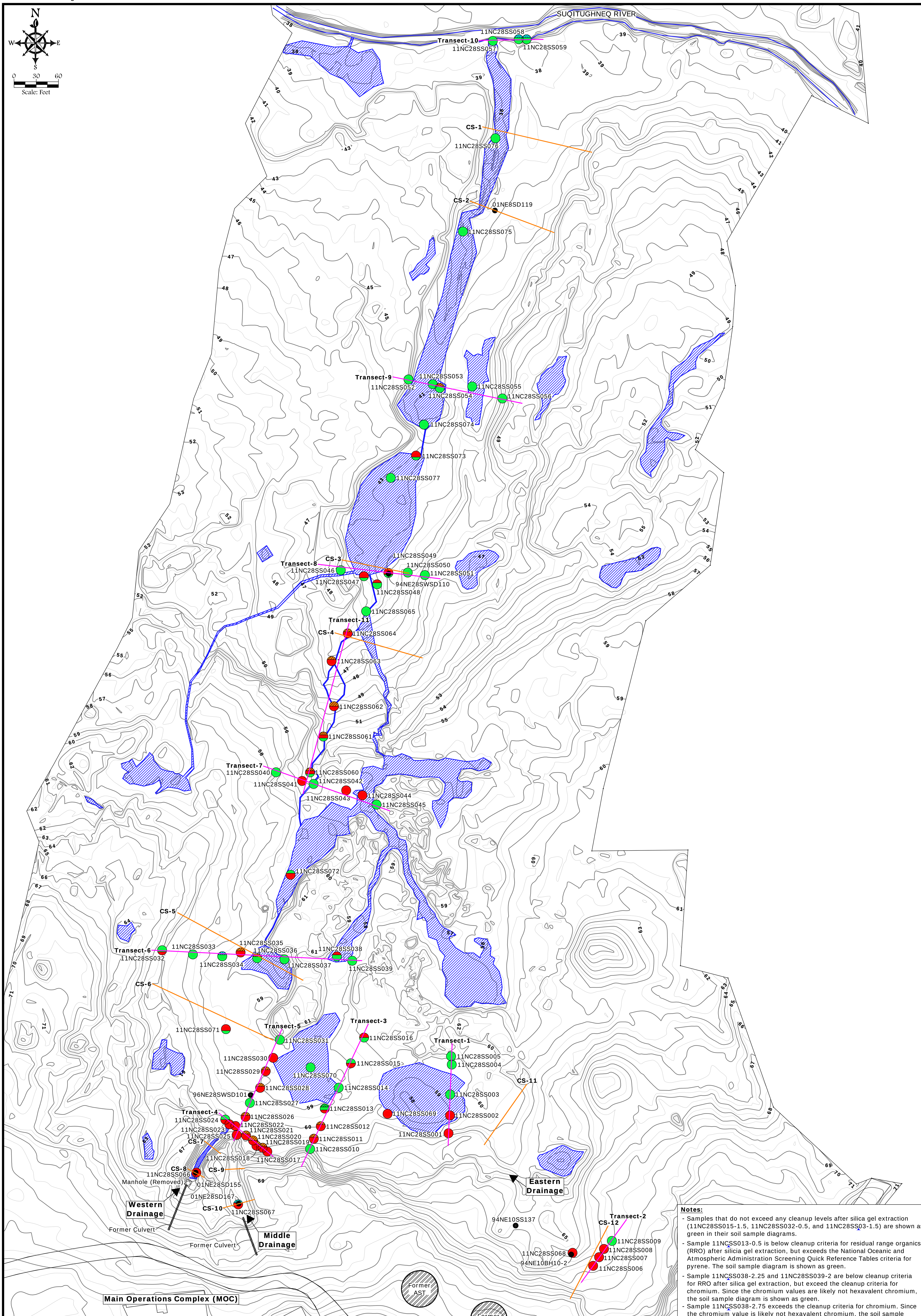
FIGURE 5
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
SITE 28 ANALYTICAL RESULTS EXCEEDING CLEANUP LEVELS

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

User: NPEACOCK Jan 30, 2012 - 11:53am
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG6-OCT11.DWG - Layout: 34110008-FIG6-OCT11
Xrefs: None - Images: None



Notes:

- Samples that do not exceed any cleanup levels after silica gel extraction (11NC28SS015-1.5, 11NC28SS032-0.5, and 11NC28SS03-1.5) are shown as green in their soil sample diagrams.
- Sample 11NCSS013-0.5 is below cleanup criteria for residual range organics (RRO) after silica gel extraction, but exceeds the National Oceanic and Atmospheric Administration Screening Quick Reference Tables criteria for pyrene. The soil sample diagram is shown as green.
- Sample 11NCSS038-2.25 and 11NC28SS039-2 are below cleanup criteria for RRO after silica gel extraction, but exceed the cleanup criteria for chromium. Since the chromium values are likely not hexavalent chromium, the soil sample diagram is shown as green.
- Sample 11NCSS038-2.75 exceeds the cleanup criteria for chromium. Since the chromium value is likely not hexavalent chromium, the soil sample diagram is shown as green.

Legend

- historical sample location
- surface water
- Transect-1 — 2011 transect location and identification
- CS-1 — 2001 historical transect location and identification
- no soil analytes detected above cleanup levels
- no sediment analytes detected above cleanup levels
- soil exceeding cleanup level of one or more analytes
- sediment exceeding cleanup level of one or more analytes
- sediment non-detect result exceeds cleanup level for one or more analytes
- ponded water
- secondary contours
- primary contours
- 11NC28SS067 — sample identification
- AST — above ground storage tank

Soil Sample Diagram:
- Shallow sample depth
- Middle sample depth
- Deep sample depth

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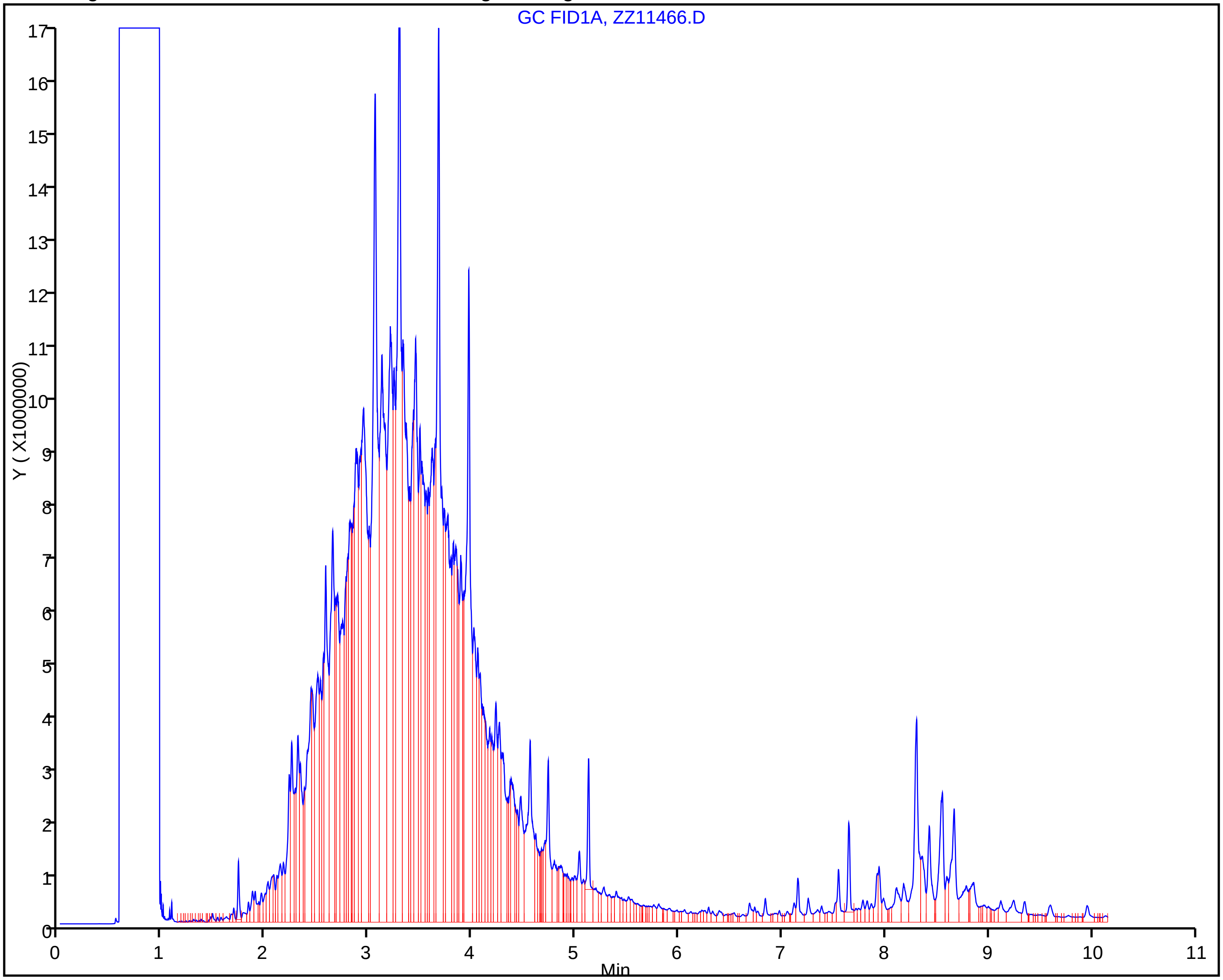
FIGURE 6
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
FUEL CONSTITUENTS EXCEEDING CLEANUP LEVELS

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

Report Date: 12-Sep-2011 09:21:15 Chrom Revision: 1.2 13-Jul-2011 10:43:06
Data File: \\tacsvr5\ChromData\TAC017\20110909-18760.b\ZZ11466.D

Injection Date:	09-Sep-2011 17:00:02	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS063-0.75	Instrument ID:	TAC017
Lims Batch ID:	94964	Lims Sample ID:	11
Operator ID:	eks	Injection Vol:	1.00 ul

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 58,000 mg/kg

RRO 8,700 mg/kg

TOC 450,000 mg/kg

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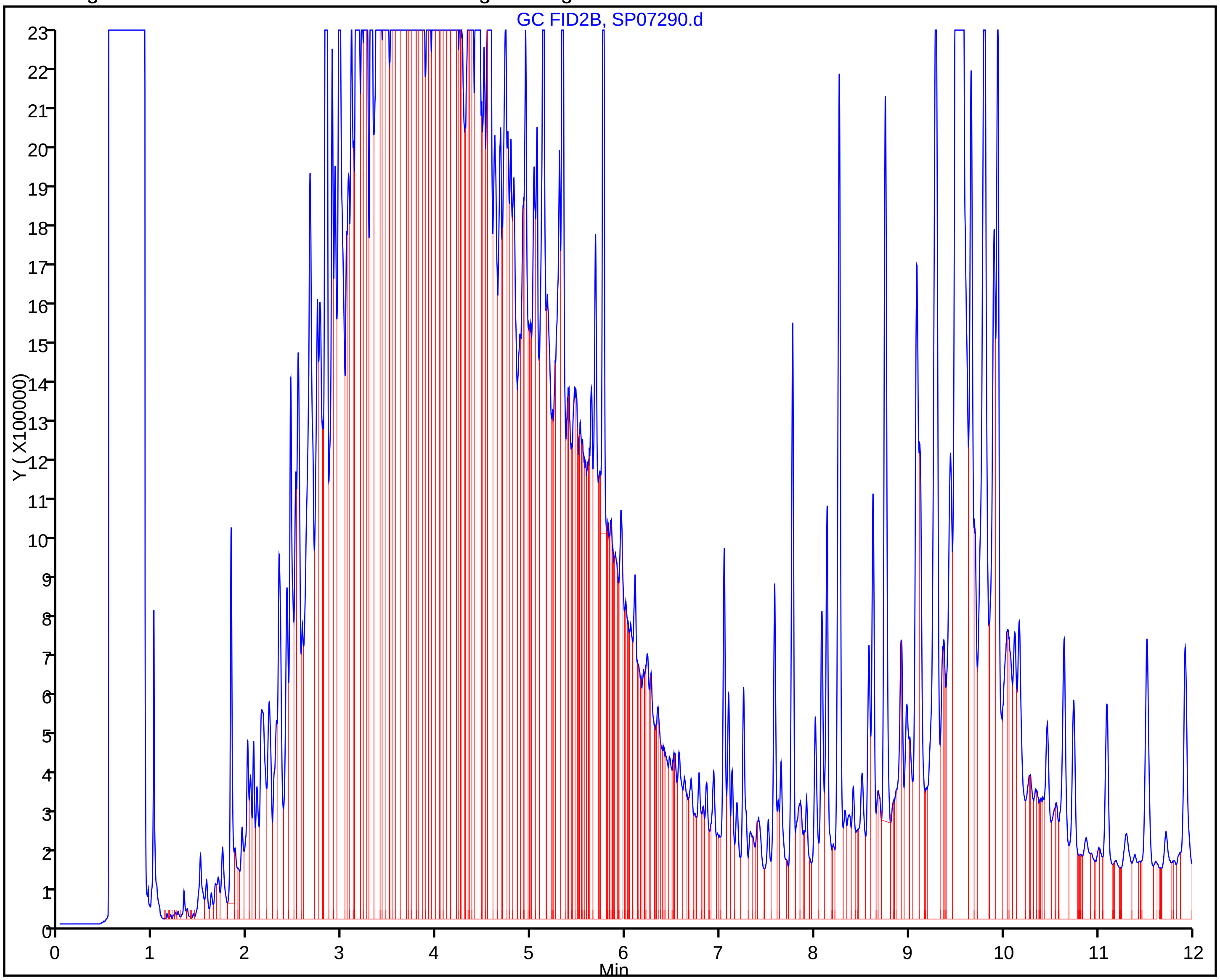
Figure 7
Northeast Cape, St. Lawrence Island, Alaska
NE Cape HTRW Remedial Actions
Sample 11NC28SS063-0.75 - Without Silica Gel

Report Date: 31-Aug-2011 09:35:25 Chrom Revision: 1.2 13-Jul-2011 10:43:06
Data File: \\tacsvr5\ChromData\TAC015\20110830-18480.b\SP07290.d

Injection Date:	31-Aug-2011 00:43:20	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS007-1.5	Instrument ID:	TAC015
Lims Batch ID:	94068	Lims Sample ID:	26
Operator ID:	KKW	Injection Vol:	1.00 ul

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 7,700 mg/kg

RRO 4,400 mg/kg

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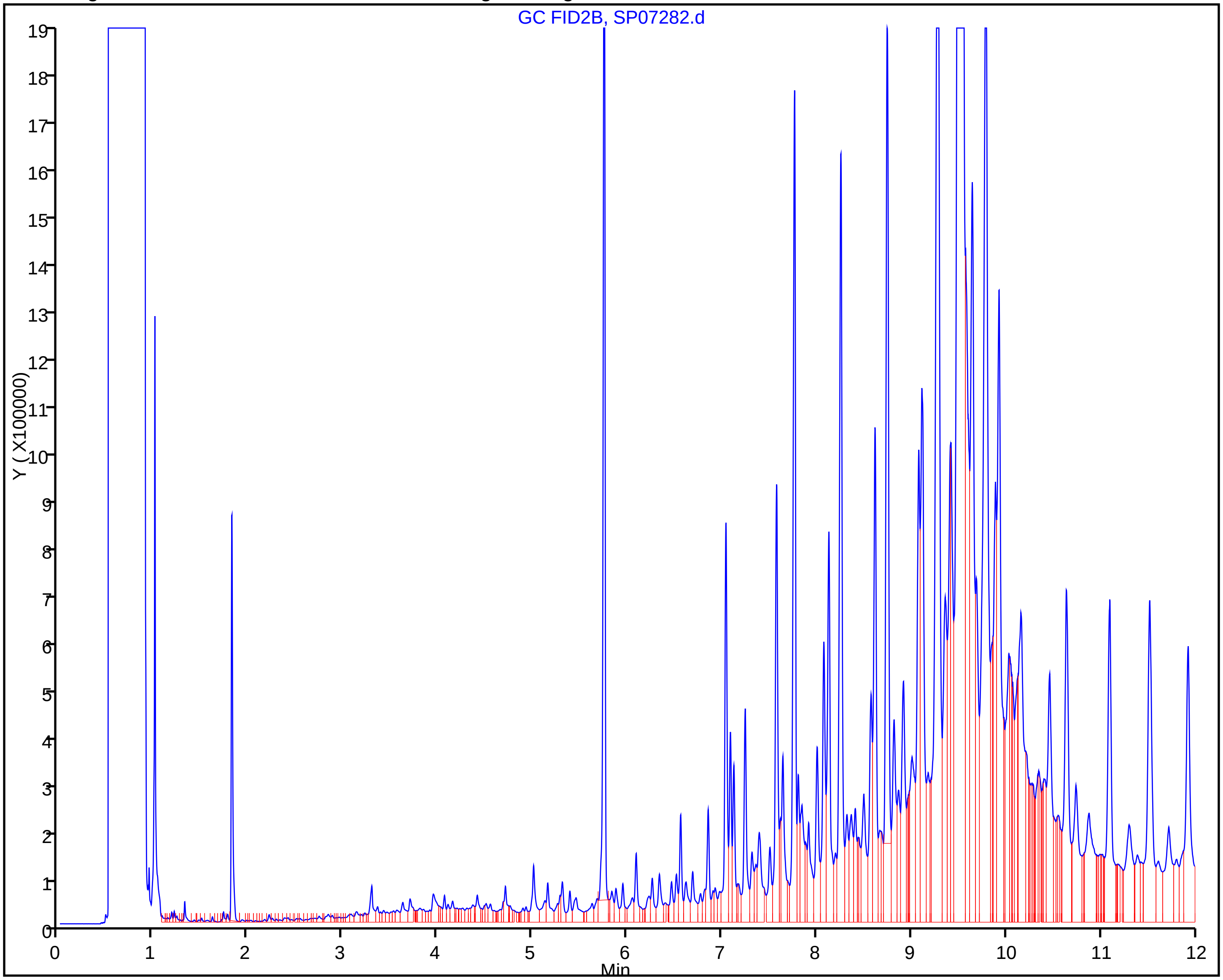
Figure 8
Northeast Cape, St. Lawrence Island, Alaska
NE Cape HTRW Remedial Actions
Sample 11NC28SS007-1.5 - Without Silica Gel

Report Date: 31-Aug-2011 09:24:13 Chrom Revision: 1.2 13-Jul-2011 10:43:06
Data File: \\tacsvr5\ChromData\TAC015\20110830-18480.b\SP07282.d

Injection Date:	30-Aug-2011 23:07:26	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS005-1	Instrument ID:	TAC015
Lims Batch ID:	94068	Lims Sample ID:	22
Operator ID:	KKW	Injection Vol:	1.00 ul

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 360 mg/kg

RRO 4,000 mg/kg

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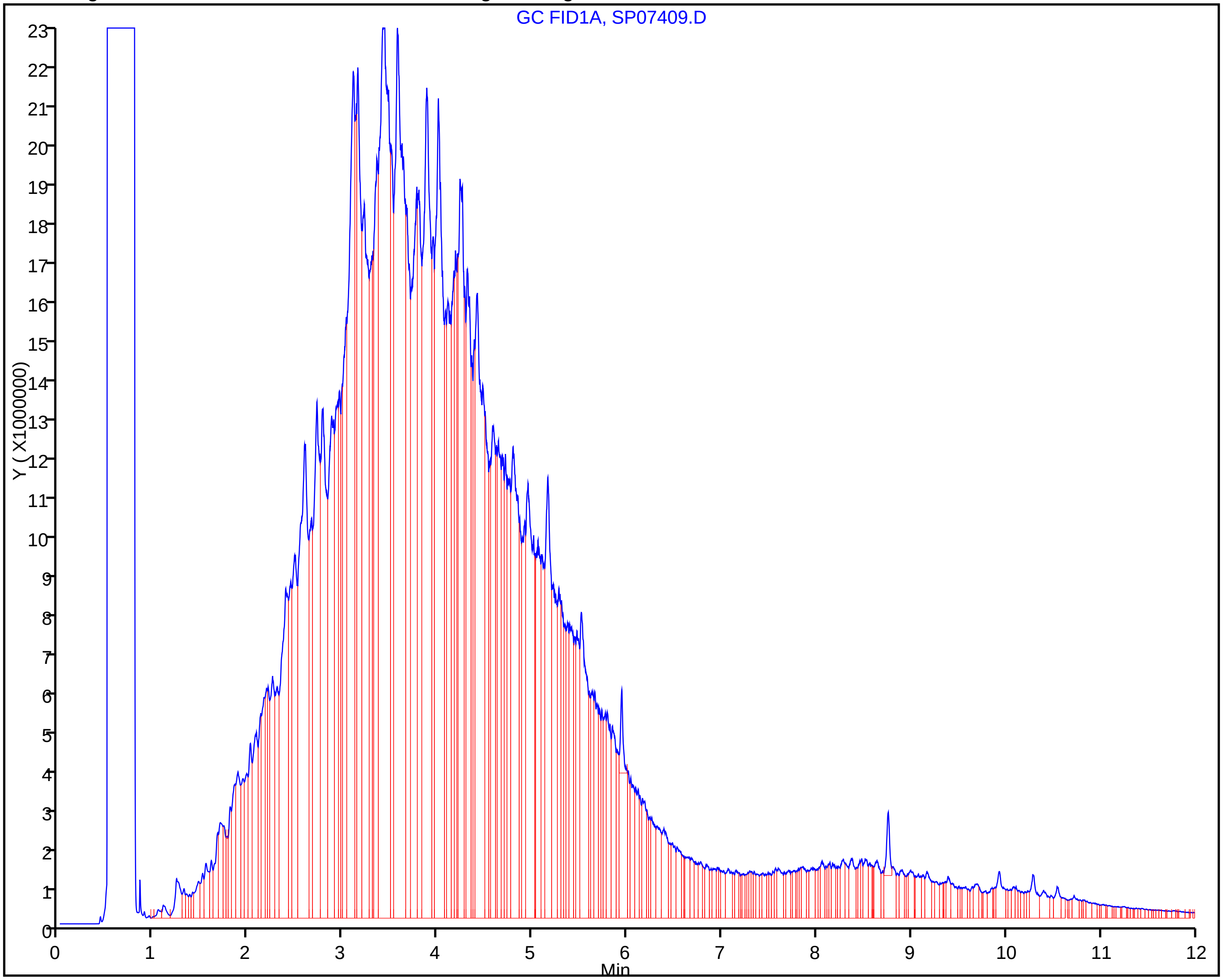
Figure 9
Northeast Cape, St. Lawrence Island, Alaska
NE Cape HTRW Remedial Actions
Sample 11NC28SS005-1 - Without Silica Gel

Report Date: 01-Sep-2011 14:02:25 Chrom Revision: 1.2 13-Jul-2011 10:43:06

Data File:	\\tacsvr5\ChromData\TAC015\20110831-18522.b\SP07409.D		
Injection Date:	01-Sep-2011 02:41:14	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS017-2	Instrument ID:	TAC015
Lims Batch ID:	94186	Lims Sample ID:	38
Operator ID:	KKW	Injection Vol:	1.00 ul

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 23,000 mg/kg

RRO 3,200 mg/kg

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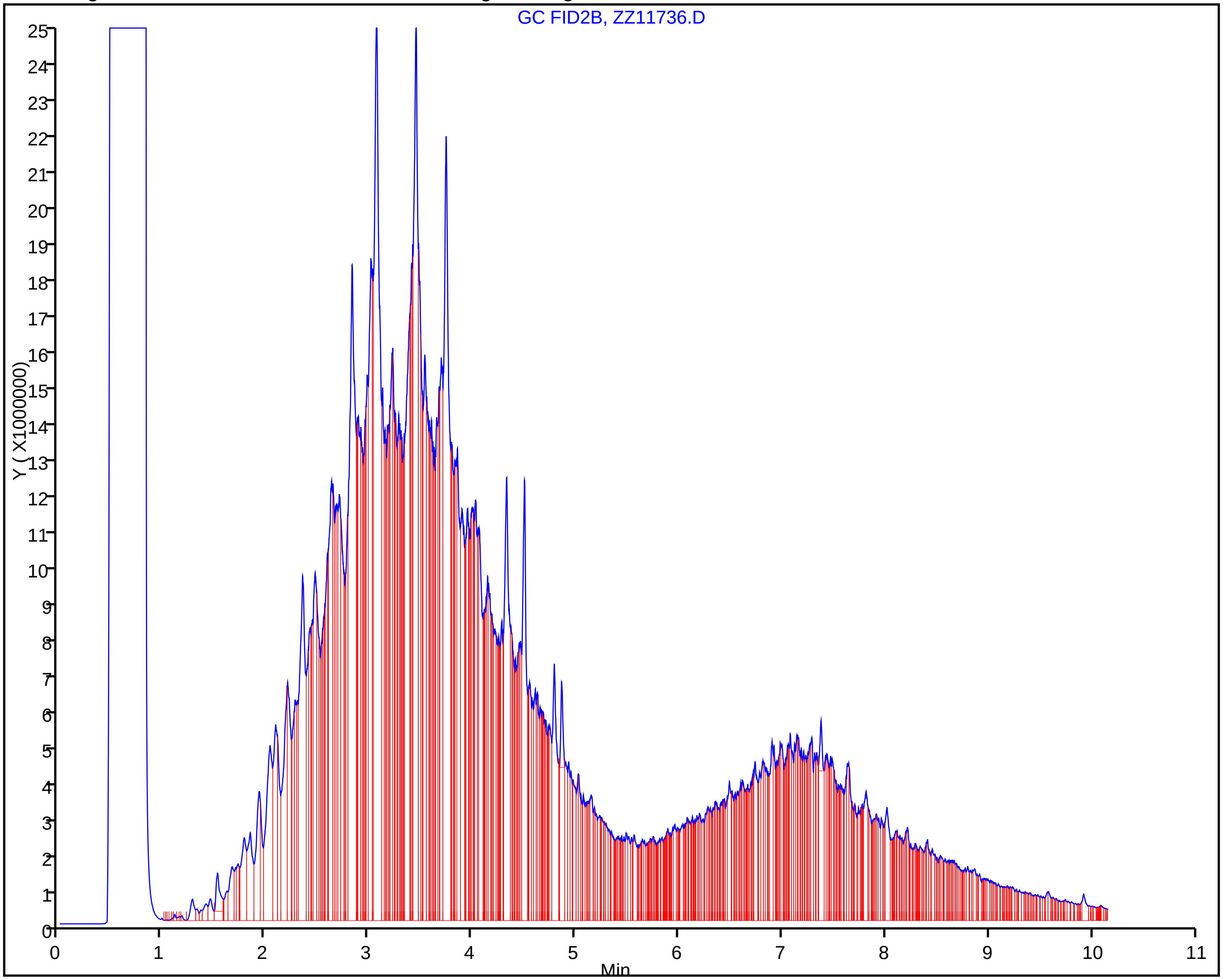
Figure 10
Northeast Cape, St. Lawrence Island, Alaska
NE Cape HTRW Remedial Actions
Sample 11NC28SS017-2 - Without Silica Gel

Report Date: 15-Sep-2011 10:21:50 Chrom Revision: 1.2 13-Jul-2011 10:43:06
Data File: \\tacsvr5\ChromData\TAC017\20110914-18860.b\ZZ11736.D

Injection Date:	14-Sep-2011 22:28:11	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS071-1	Instrument ID:	TAC017
Lims Batch ID:	95330	Lims Sample ID:	24
Operator ID:	KKW	Injection Vol:	1.00 ul

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 26,000 mg/kg

RRO 14,000 mg/kg

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	**Figure 11** Northeast Cape, St. Lawrence Island, Alaska NE Cape HTRW Remedial Actions **Sample 11NC28SS071-1 - Without Silica Gel**

Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG12-OCT11.DWG - Layout: 34110008-FIG12-OCT11
User: NPEACOCK Jan 30, 2012 - 1:04pm Xrefs: - Images: EASTCAPE-STLAWRENCE_ORTHO_MOSAIC_AK83-9F.TIF IMGP3509.JPG

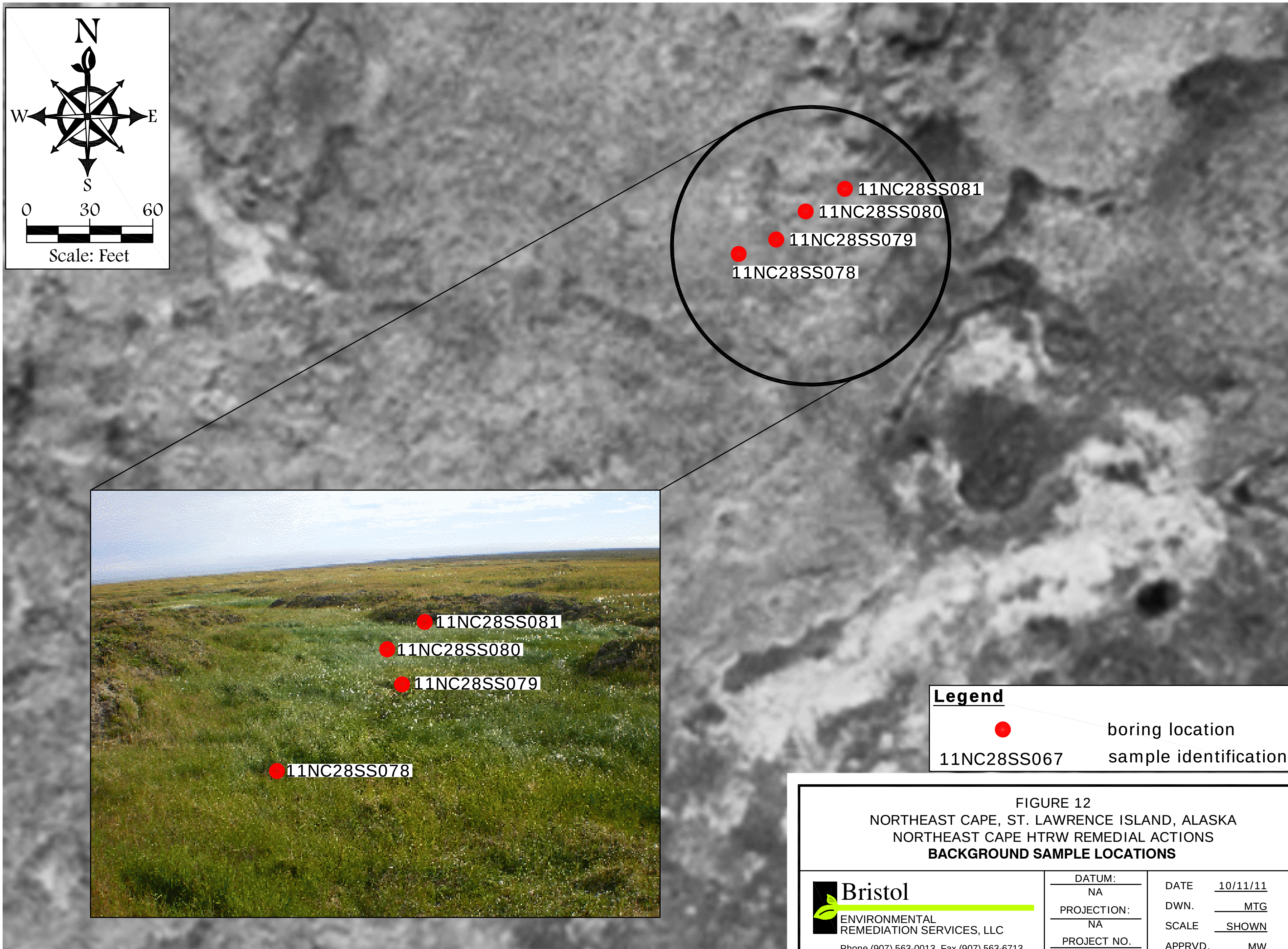


FIGURE 12
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NORTHEAST CAPE HTRW REMEDIAL ACTIONS
BACKGROUND SAMPLE LOCATIONS

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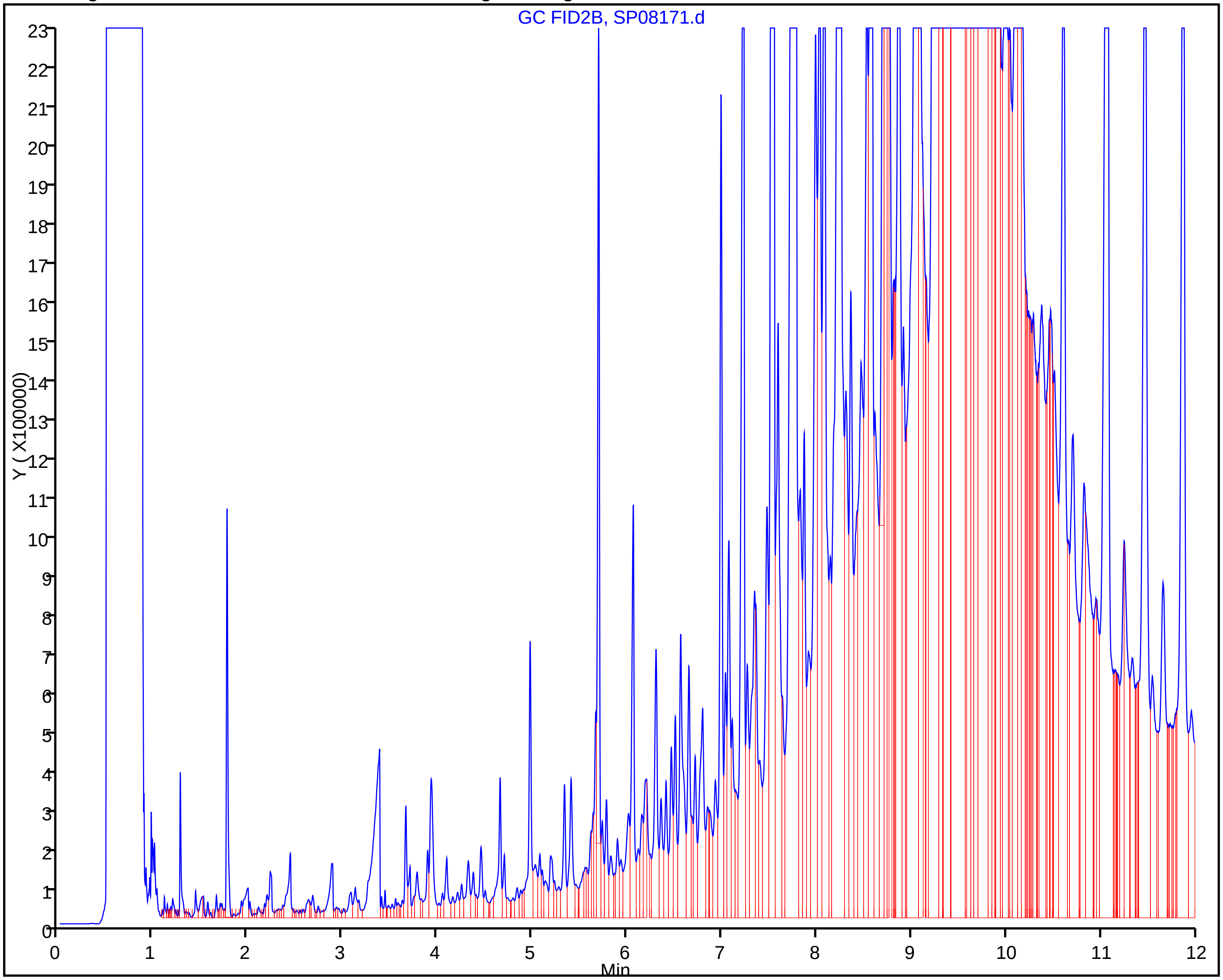
DATUM: NA		DATE	10/11/11
PROJECTION: NA		DWN.	MTG
PROJECT NO. 34110008		SCALE	SHOWN
		APPRVD.	MW

Report Date: 15-Sep-2011 10:04:30 Chrom Revision: 1.2 13-Jul-2011 10:43:06
Data File: \\tacsvr5\ChromData\TAC015\20110914-18870.b\SP08171.d

Injection Date:	15-Sep-2011 04:30:04	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS079-3	Instrument ID:	TAC015
Lims Batch ID:	95375	Lims Sample ID:	31
Operator ID:	KKW	Injection Vol:	1.00 ul

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 2,400 mg/kg

RRO 24,000 mg/kg

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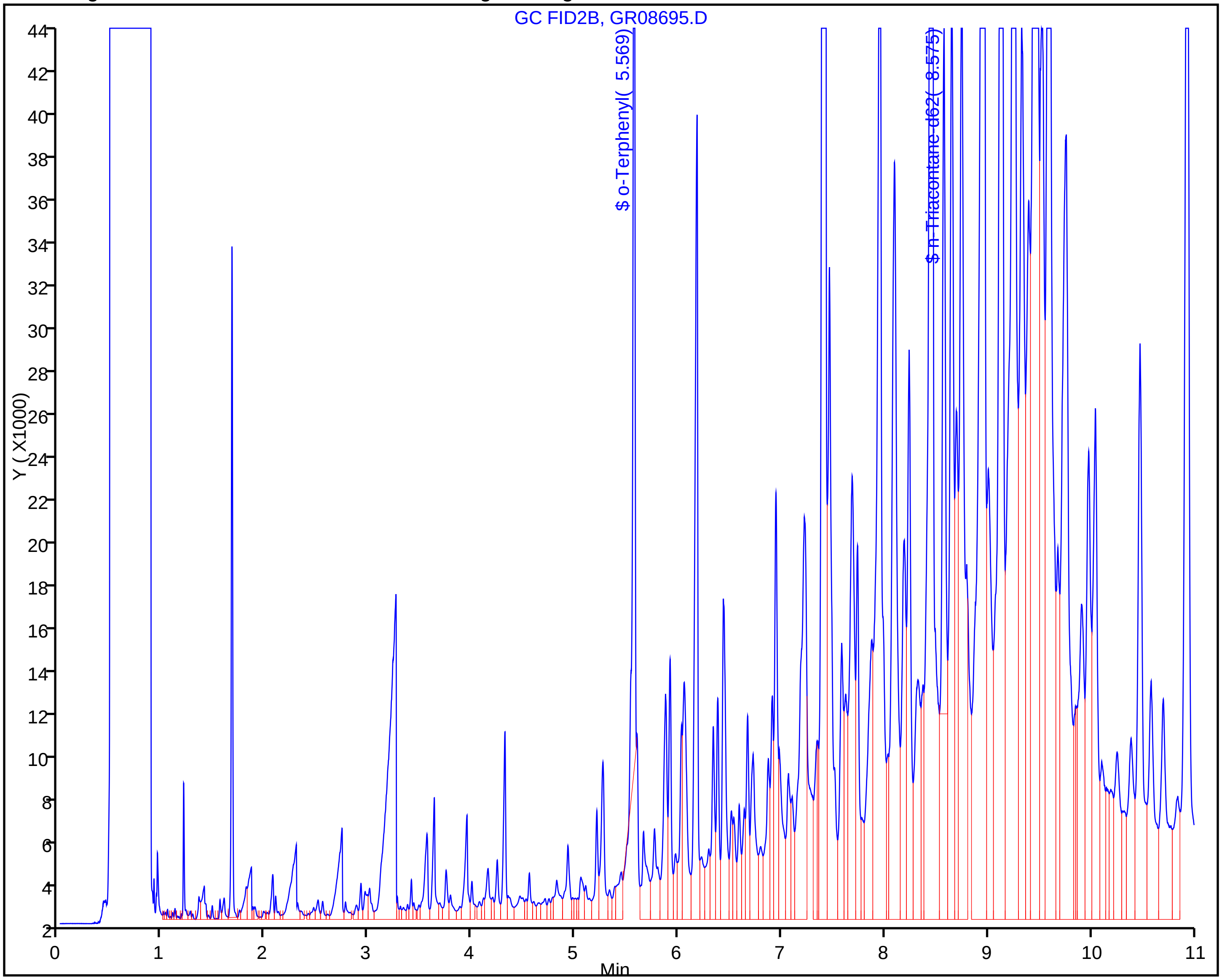
Figure 13
Northeast Cape, St. Lawrence Island, Alaska
NE Cape HTRW Remedial Actions
Sample 11NC28SS079-3 - Without Silica Gel

Report Date: 15-Sep-2011 10:36:08 Chrom Revision: 1.2 13-Jul-2011 10:43:06
Data File: \\Tacsvr5\chromdata\TAC019\20110914-18864.b\GR08695.D

Injection Date:	15-Sep-2011 05:32:30	Limit Group:	Ak 102 DRO AK103 RRO
Client ID:	11NC28SS079-3	Instrument ID:	TAC019
Lims Batch ID:	95344	Lims Sample ID:	45
Operator ID:	EKK	Injection Vol:	1.00 ul
Column Type:	ZB-1	Column Dia:	0.25 mm

Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



DRO 1,500 mg/kg

RRO 7,700 mg/kg

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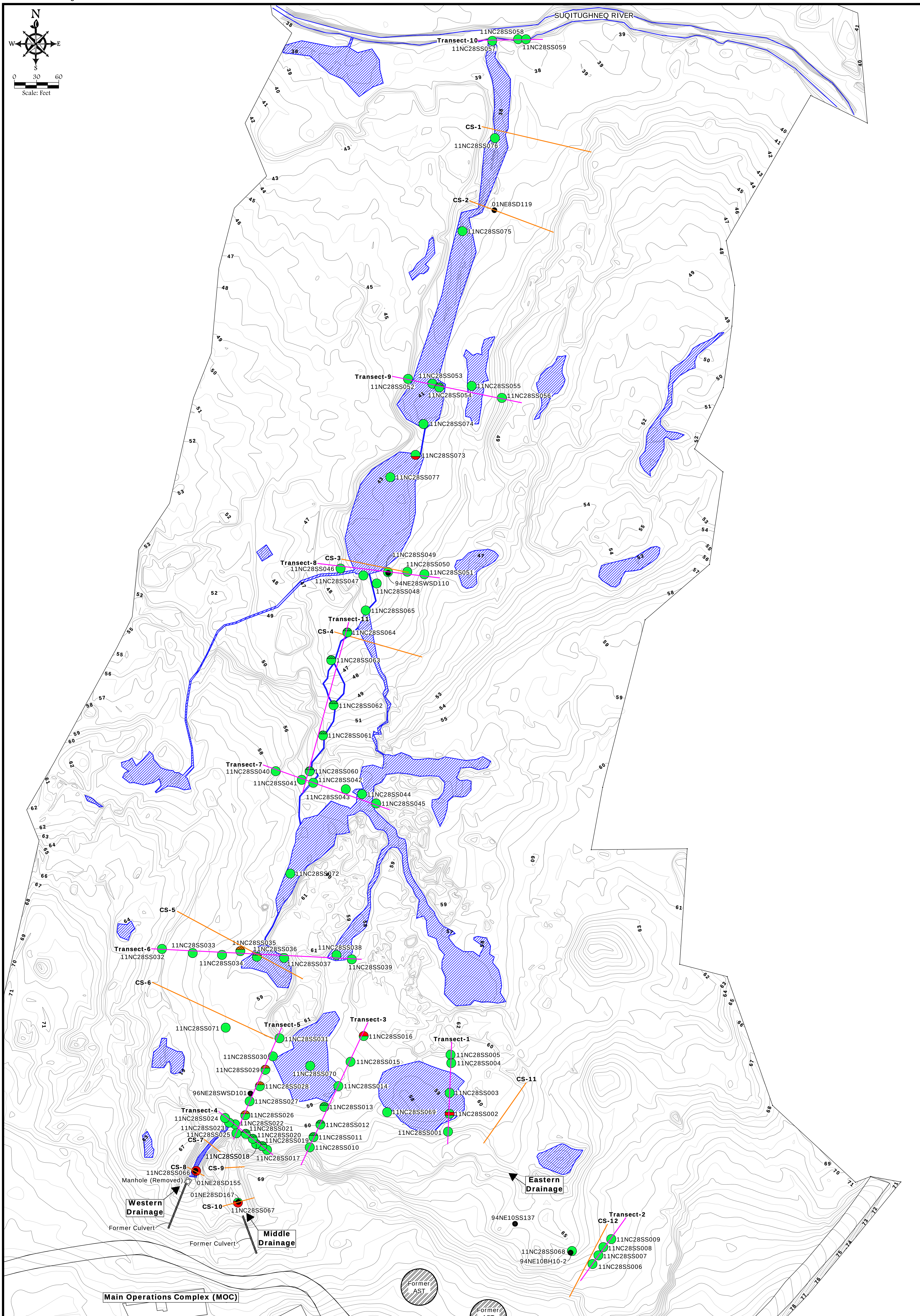
Figure 14
Northeast Cape, St. Lawrence Island, Alaska
NE Cape HTRW Remedial Actions
Sample 11NC28SS079-3 - With Silica Gel

User: MGARCIA Feb 28, 2012 - 3:38pm
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG15-OCT11.DWG - Layout: 34110008-FIG15-OCT11
Xrefs: None - Images: None



Legend

●	historical sample location
(blue line)	surface water
Transect-1	2011 transect location and identification
CS-1	2001 historical transect location and identification
(green circle)	no soil analytes detected above cleanup levels
(hatched green circle)	no sediment analytes detected above cleanup levels
(red circle)	soil exceeding cleanup level of one or more analytes
(hatched orange circle)	sediment exceeding cleanup level of one or more analytes
(hatched blue)	ponded water
	secondary contours
	primary contours
11NC28SS067	sample identification
AST	above ground storage tank
PCBs	polychlorinated biphenyls

Soil Sample Diagram:
Shallow sample depth
Middle sample depth
Deep sample depth

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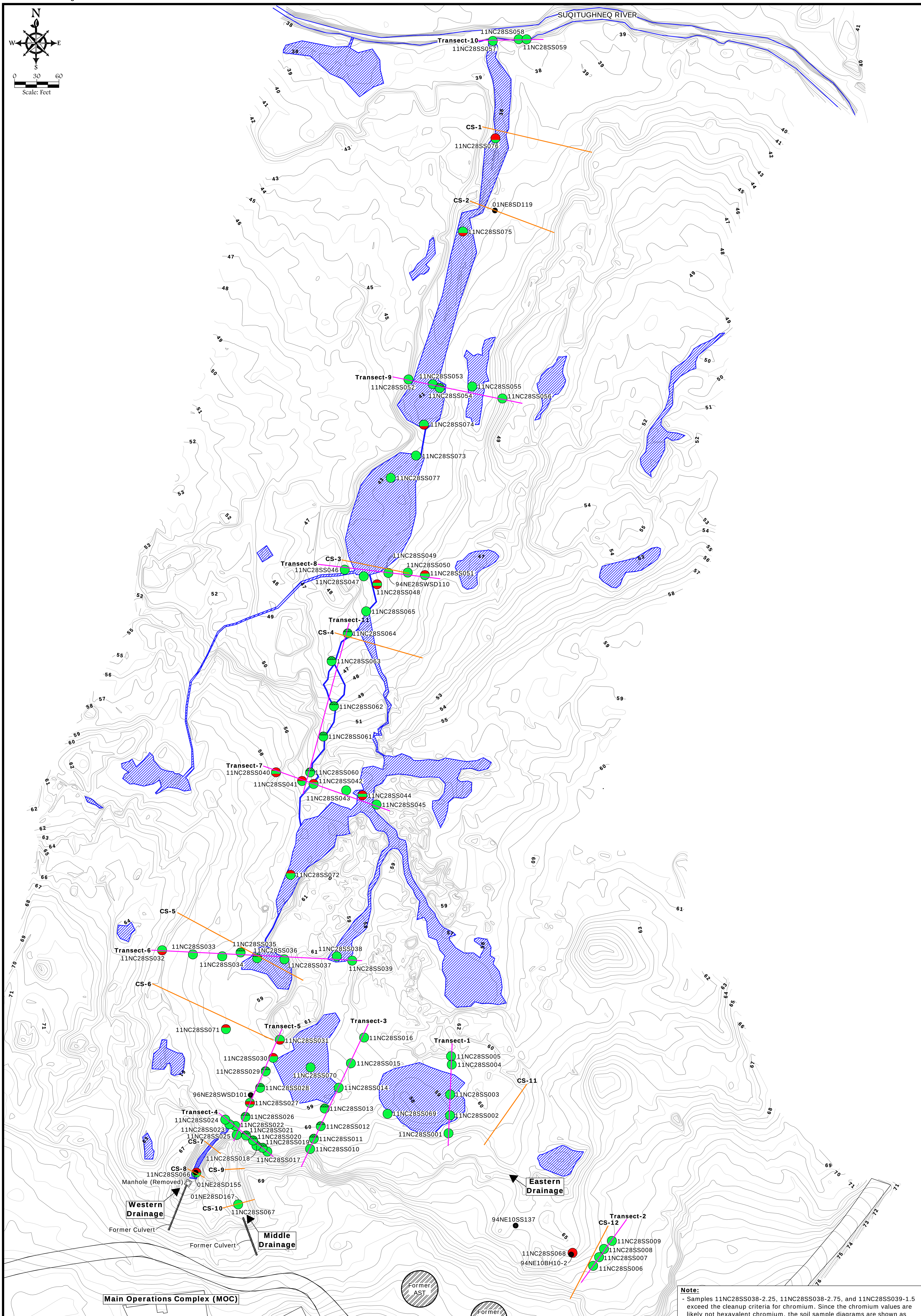
FIGURE 15
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
PCBs EXCEEDING CLEANUP LEVELS

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

User: MGARCIA Feb 28, 2012 - 3:37pm
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG16-OCT11.DWG - Layout: 34110008-FIG16-OCT11
Xrefs: None - Images: None



Note:
- Samples 11NC28SS038-2.25, 11NC28SS038-2.75, and 11NC28SS039-1.5 exceed the cleanup criteria for chromium. Since the chromium values are likely not hexavalent chromium, the soil sample diagrams are shown as green.

Legend

Symbol	Description
●	historical sample location
(blue line)	surface water
Transect-1	2011 transect location and identification
CS-1	2001 historical transect location and identification
(green circle)	no soil analytes detected above cleanup levels
(hatched green circle)	no sediment analytes detected above cleanup levels
(red circle)	soil exceeding cleanup level of one or more analytes
(hatched blue)	ponded water
	secondary contours
	primary contours
11NC28SS067	sample identification
AST	above ground storage tank

Soil Sample Diagram:
Shallow sample depth
Middle sample depth
Deep sample depth

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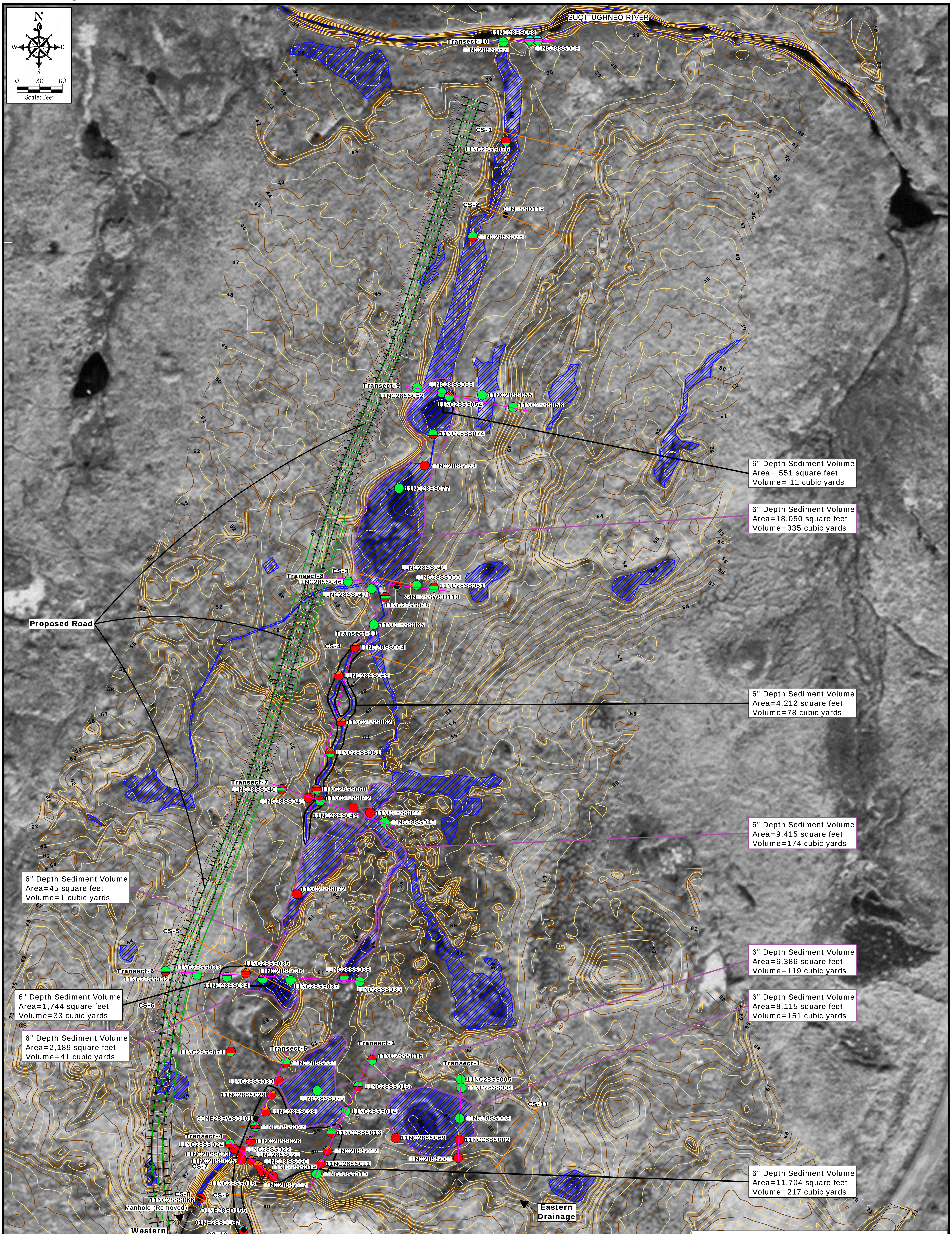
FIGURE 16
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
METALS EXCEEDING CLEANUP LEVELS

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

User: MGARCIA Feb 28, 2012 - 3:35pm
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG17-OCT11.DWG - Layout: 34110008-FIG17-OCT11
Xrefs: None - Images: EASTCAPE-STLAWRENCE_ORTHO_MOSAIC_AK83-9F.TIF



Notes:

- Samples that do not exceed any cleanup levels after silica gel extraction (11NC28SS015-1.5, 11NC28SS032-0.5, and 11NC28SS036-1.5) are shown as green in their soil sample diagrams.
- Sample 11NC28SS013-0.5 is below cleanup criteria for residual range organics (RRO) after silicia gel extraction, but exceeds the National Oceanic and Atmospheric Administration Screening Quick Reference Tables criteria for pyrene. The soil sample diagram is shown as green.
- Sample 11NC28SS038-2.25 and 11NC28SS039-2 are below cleanup criteria for RRO after silica gel extraction, but exceed the cleanup criteria for chromium. Since the chromium values are likely not hexavalent chromium, the soil sample diagram is shown as green.
- Sample 11NC28SS038-2.75 exceeds the cleanup criteria for chromium. Since the chromium value is likely not hexavalent chromium, the soil sample diagram is shown as green.

Legend

- historical sample location
- surface water
- Transect-1 — 2011 transect location and identification
- CS-1 — 2001 historical transect location and identification
- no soil analytes detected above cleanup levels
- no sediment analytes detected above cleanup levels
- soil exceeding cleanup level of one or more analytes
- sediment exceeding cleanup level of one or more analytes
- sediment non-detect result exceeds cleanup level for one or more analytes
- ponded water
- secondary contours
- primary contours
- 11NC28SS067 — sample identification
- AST — above ground storage tank

Soil Sample Diagram:

- Shallow sample depth
- Middle sample depth
- Deep sample depth

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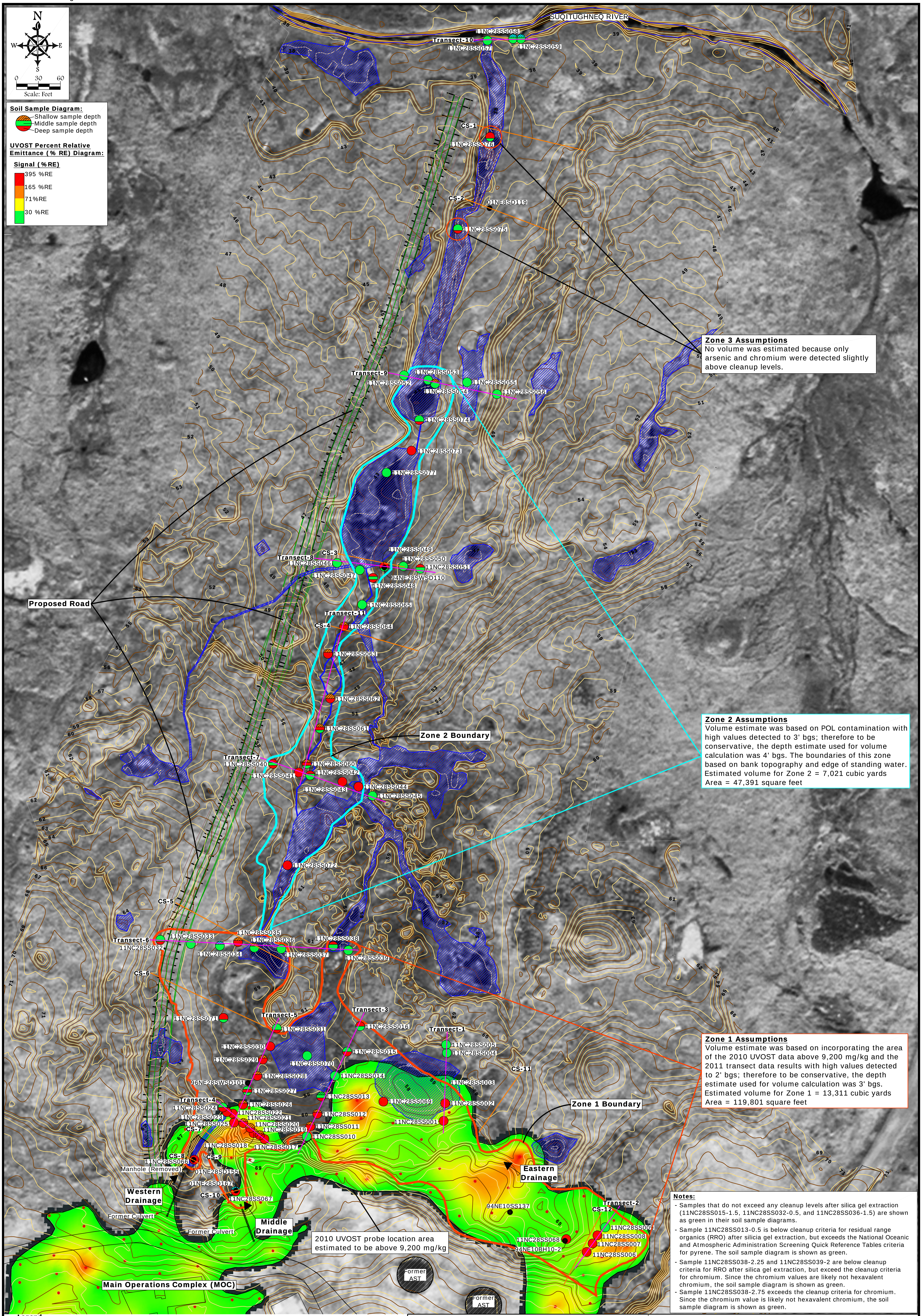
Project No. 34110008

FIGURE 17
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
SITE 28 POTENTIAL SEDIMENT REMOVAL AREAS, ESTIMATED VOLUMES, AND POTENTIAL ROAD LOCATION

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

User: MGARCIA Feb 28, 2012 - 3:34pm
Drawing: O:\JOBS\34110008 2011 NE CAPE\ACAD-ENVIRO\FIGURES-OCT2011\34110008-FIG18-OCT11.DWG - Layout: 34110008-FIG18-OCT11
Xrefs: None - Images:



Legend

- 2010 UVOST locations
- historical sample location
- surface water
- Transect-1 — 2011 transect location and identification
- CS-1 — 2001 historical transect location and identification
- no soil analytes detected above cleanup levels
- no sediment analytes detected above cleanup levels
- soil exceeding cleanup level of one or more analytes
- sediment exceeding cleanup level of one or more analytes
- sediment non-detect result exceeds cleanup level for one or more analytes
- ponded water
- secondary contours
- primary contours
- 11NC28SS067 — sample identification
- AST — above ground storage tank
- bgs — below ground surface
- mg/kg — milligram per kilogram
- POL — petroleum, oil, and lubricant
- UVOST — Ultraviolet Optical Screening Tool

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FIGURE 18
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA
NE CAPE HTRW REMEDIAL ACTIONS
SITE 28 POTENTIAL SOIL REMOVAL AREAS, ESTIMATED VOLUMES, AND POTENTIAL ROAD LOCATION

SCALE: 1" = 60'	DESIGNED:	CHECKED: MW	DRAWN: MTG	DATE: 10/11/11

APPENDIX A

Photograph Log

PHOTOGRAPH LOG
NORTHEAST CAPE SITE 28, 2011

DATE	IMAGE NUMBER/NAME	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
7/17/11	Photograph #1.JPG	Site 28	Typical marshy/pooled water area and dry bank in site 28	Northeast	Russell James
8/18/11	Photograph #2.JPG	Site 28	Overview of site 28 from Suqui River toward MOC	South	Julie Clark
8/14/11	Photograph #3.JPG	Site 28	Local hire Charles Kava obtaining sample material with a hand auger	South	Julie Clark
8/16/11	Photograph #4.JPG	Site 28	Measuring the depth interval at a sample location	Northeast	Eric Barnhill
8/18/11	Photograph #5.JPG	Site 28	Collecting a sediment sample where Site 28 drains into the Suqui River	East	Eric Barnhill
8/13/11	Photograph #6.JPG	Site 28	Typical peaty /silty material	NA	Julie Clark
8/16/11	Photograph #7.JPG	Site 28	Gray silty material beneath vegetative mat at sample location 11NC28SS033	NA	Julie Clark
8/15/11	Photograph #8.JPG	Site 28	Placing sample into sample container	NA	Julie Clark

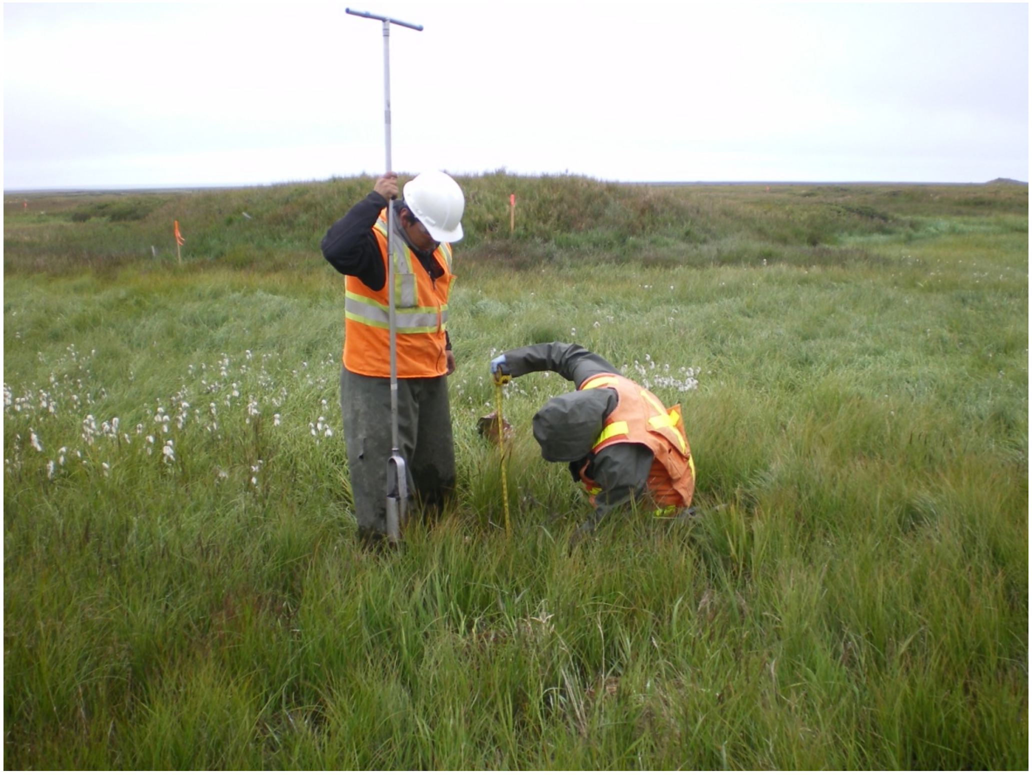
PHOTOGRAPH LOG
NORTHEAST CAPE SITE 28, 2011

DATE	IMAGE NUMBER/NAME	LOCATION	DESCRIPTION OF PHOTOGRAPH	VIEW DIRECTION	PHOTOGRAPHER/COMMENTS
8/15/11	Photograph #9.JPG	Site 28	Sample locations along a transect marked with lath	West	Julie Clark
8/13/11	Photograph #10.JPG	Site 28	Sample location in area of standing water	NA	Julie Clark
8/21/11	Photograph #11.JPG	Site 28 Background Area	Site 28 background sampling area	Northeast	Eric Barnhill
8/21/11	Photograph #12.JPG	Site 28	Collecting Site 28 background sample	South	Eric Barnhill

Photograph 1: Typical marshy/pooled water area with dry bank in Site 28.
Direction: Northeast. Date: July 17, 2011.

Photograph 2: Overview of Site 28 from Suqi River toward MOC.
Direction: South. Date: August 18, 2011.

Photograph 3: Local hire Charles Kava obtaining sample material with a hand auger.
Direction: South. Date: August 14, 2011.



Photograph 4: Measuring the depth interval at a sample location.
Direction: Northeast. Date: August 16, 2011.

Photograph 5: Collecting a sediment sample where Site 28 drains into the Suqi River.
Direction: East. Date: August 18, 2011.

Photograph 6: Typical peaty/silty sample material.
Direction: N/A. Date: August 13, 2011.

Photograph 7: Gray silty material beneath vegetative mat at sample location 11NC28SS033.
Direction: N/A. Date: August 16, 2011.

Photograph 8: Placing Site 28 sample into sample container.
Direction: N/A. Date: August 15, 2011.

Photograph 9: Sample locations along a transect marked with lath.
Direction: West. Date: August 15, 2011.

Photograph 10: Sample location in area of standing water.
Direction: N/A. Date: August 13, 2011.

Photograph 11: Site 28 background sampling area.
Direction: Northeast. Date: August 21, 2011.

Photograph 12: Collecting Site 28 background sample.
Direction: South. Date: August 21, 2011.

APPENDIX B

Field Notes

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

INCH 1 2 3 4 5 6

Name Julie Clark
Bristol Environmental

Address 111 W. 16th Ave.
Anchorage AK 99501

Phone 907-563-0013

Project 2011 NE Cape
Proj. # 34110008

8/10/11 NE Cape-2011 34110008

0715 J. Clark at Security Aviation, waiting for flight to St. Lawrence Island.

0750 Pilots have talked to C. Croley at site, weather not looking good to fly right now. Will check again in ~1 hour.

0850 Weather looks good - will fly to site.

0920 Depart Anchorage.

1145 Arrive at NE Cape site. Lunch and site orientation.

1530 Walk site 28 w/ Russell James, Bristol's CQCSM. Check out the transects, that have already been chosen.

1715 Back at camp. End of work day.

Julie Clark
8/12/11

8/13/11 NE Cape-2011 34110008

0655 Daily safety meeting.

0705 Daily environmental meeting.

0725 Get sample jars/equipment ready for Site 28 sampling.

0840 Meeting w/ Jeremy Craner (USACE QAR) and Russell James (Bristol CQCSM) about Site 28 sampling. USACE wants "clean" samples on either end, and preferential sampling in the middle of transects where contamination is likely to be.

0900 ~~Finish~~ Continue JC getting supplies/equipment together.

1030 Setting up at 1st transect on Eastern side of Site 28.

1130 Refusal @ 1' bgs at 1st sample point on transect # 1. Will abandon this point for now, talk to Russel James at lunch to see what to do.

1145 Trying to collect 2nd sample from 1st transect in standing water, having problems bringing up sample. Will talk to Russel at lunch to see if he has any ideas.

1300 Lunch

JC 8/13/11

8/13/11 NE Cape 2011 34110008

1300 Back out at site 28 w/ Russell. He shows tips on how to bring up sediment samples.

1330 Sampling 2nd point on 1st transect, see field forms for info.

1350 Will continue sampling along 1st transect, see field forms for details.

1530 J. Craner (USACE QAR) at Site 28 to check things out. He & Russell discuss activities so far.

1550 Finished w/ 1st transect. Samples various depths at 5 points along transect, see field forms for details.

1600 Put samples in fridge.

1630 Setting up at 2nd transect, further east of transect 1, eastern-most transect.

1810 Have done 2 points along Transect 2. Head back to camp to put samples in refrigerator and do COCs.

Julie Clark 8/13/11

8/14/11 NE Cape 2011 34110008

0655 Daily safety meeting.

0705 Daily environmental meeting. Eric Barnhill will help at site 28 today.

0715 Get supplies/equipment together for today's sampling.

0850 Out at site 28, prepare to continue sampling Transect 2. See field forms for sample information. Weather: light rain, calm, ~40°F.

0955 Finished at Transect 2, 4 locations along transect.

1015 Setting up at Transect 3. Jeremy Craner (USACE) onsite.

1200 Lunch.

1320 Back out at site 28. Will continue sampling along transect 3. See field forms for sample details.

1645 Finished w/ Transect 3. 7 points along the transect, with samples collected at various depths at each point.

1705 Back at camp for sample management, COCs.

Julie Clark 8/14/11

8/15/11 NE Cape-2011 34110008

0655 Daily safety meeting.

0705 Daily environmental meeting.

0730 Preparing sample Coolers for shipment.

1115 Have sample coolers ready to go. Out at Site 28 to continue sampling. Begin transect 4.

1200 Lunch.

1245 Quick meeting w/ Russell James and Jeremy Cramer about sample locations at Site 28. Jeremy has been corresponding with Aaron Shewman and Carey Cossaboom, letting them know what has been going on. Just reiterating that samples need to be skewed to be collected in sediment areas where contamination is likely to be.

1320 Back out at Site 28, continue sampling along Transect 4.

1640 Finished sampling along Transect 4 - 8 sample locations along the transect, with samples collected at various depths at each of the 8 points

1645 Start sampling Transect 5.

1720 Have sampled 1 point at Transect 5; leave site for dinner

8/15/11 NE Cape-2011 34110008

Photolog for 8/13/11, 8/14/11, 8/15/11:

IMGP3464: Augering for sample in Transect 1 of Site 28, view NE.

3466: Peaty silty soil from 1' logs in Transect 1, position 1.

3467: Augering in Transect 3, lathe marking other Transect 3 locations in background, view S.

3468: Augering in Transect 3, view W.

3469: Sample hole infiltrated w/ water.

3470: Transect 3 looking NE.

3471: Standing water in Site 28 drainage area.

3472: Collecting soil sample in Transect 4.

Julie Clark
8/15/11

8/16/11 NE Cape-2011 34110008

0700 Daily safety meeting
0705 Daily environmental meeting.
~~07~~0720 Prepare supplies/equipment for today's sampling.
0830 Out at Site 28, prepare to continue sampling along Transect 5. Weather: overcast, calm, ~45°F
1140 Finished with Transect 5. Seven points along transect. Will head back to camp to put samples in refrigerator and get more sample containers.
1200 Lunch
1330 Setting up to begin Transect 6. See field forms for sample information.
1600 Russell James, Matt Faust (Bristol), and Jeremy Craner (USACE) at site 28. Walk remaining transects and decide where we could put remaining sample locations. Can reduce some transects: 6 locations on T8, 5-6 locations on T9, remove T10, collect samples at 3 spots right next to Suqi River, and add a transect in the stream. Stream transect will begin just north of T8.

JC 8/16/11

8/16/11 NE Cape-2011 34110008

1705 Finished walking/looking over remaining transects w/ Russell, Matt, & Jeremy.
1720 Finished for today; still several locations to go in Transect 6. Will eat dinner and work on COCs.

[signature] 8/16/11

8/17/11 NE Cape-2011 34110008

0700 Daily safety meeting

0705 Daily environmental meeting.

0730 Prepare samples from 8/15/11 and 8/16/11 for shipment - should have a plane coming in today.

1000 Total of 4 coolers to ship.

1025 Out at Site 28, will continue sampling Transect 6. Weather: overcast, light wind from NE, ~40°F.

1150 Head back to camp for lunch

1200 Lunch.

1315 Back out at Site 28 to continue sampling.

1355 Finished sampling Transect 6. Eight total points along Transect 6, with samples collected at various depths.

1400 Setting up to begin Transect 7.

1645 Finished at Transect 7 - 6 ~~six~~ points along Transect, with samples collected at various depths at each point.

1650 Begin Transect 8. See field forms for details.

1730 Have sampled 2 locations on Transect 8. Head to dinner.

Photolog for 8/16/11 & 8/17/11:

IMCP3473: Soil collected from Transect 5 - clayey silt.

3474: Preparing to auger, Transect 5. View NE

3476: Measuring depth of auger hole, Transect 5. View NE.

8/17/11 NE Cape-2011 34110008

Photolog for 8/16/11 & 8/17/11 (cont.)

3477: Gray silty material like cornstarch in position 2 of Transect 6 (11NC28SS033)

3478: "

3479: "

3480: "

3492: Getting sample material from auger barrel.

3493: Augering at eastern side of Transect 7 (11NC28SS045), View NW.

3494: "

3495: Collecting soil sample.

Julie Clark
8/17/11

8/18/11 NE Cape-2011 34110008

0700 Daily safety meeting.
0705 Daily environmental meeting.
0720 Prepare equipment and supplies for today's sampling at Site 28.
0825 Set up at Transect 8, prepare to continue sampling. See field forms for sampling details.
1040 Finished with Transect 8. Total of 6 points along the transect.
1050 Begin Transect 9. See field forms for details.
1150 Head back to camp for lunch.
1235 Get additional sample containers together.
1330 Back out at Site 28 to continue Transect 9.
1505 Finished w/ Transect 9, five locations along Transect.
1520 At Suqi River; will collect samples from 3 locations where water from drainage basin empties into the river.
1725 Have finished collecting samples from drainage basin. Done in the field for the day.

Julie Clark
8/18/11

8/19/11 NE Cape-2011 34110008

0700 Daily safety meeting
0705 Daily environmental meeting.
0730 Prepare supplies to continue Site 28 sampling.
0925 Out at Site 28, will do Transect 11 in stream between Transects 7 and 8. Layout ~~5?~~ JC transect points and prepare to begin sampling. See field forms for details.
1145 Head back to camp for lunch.
1330 Back out at Site 28 to continue sampling in the stream. See field forms for details.
1530. Have sampled 6 points along Transect 11 in the stream - finished with this transect. Will sample some historic locations with high PCBs.
1545 JC ~~1600~~ Set up to sample historic hotspot location 01NE28SD 155/156. See field form for details.
1625 Set up to sample historic hotspot location 01NE28SD 167/168.
1655 Set up to sample historic hotspot location 94NE28BH10-2.
1715 Done sampling for today - head back to camp.

Julie Clark 8/19/11

0700 Daily safety meeting.
0705 Daily enviro. meeting.
0800 At Site 28 w/ Matt Faust (Bristol CQCSM) and Jeremy Craner (USACE QAR) to stake out remaining Site 28 sample locations.
0850 Have selected 9 discrete sample locations in Site 28 to use up remaining 26 samples.
0905 Set up to start collecting discrete samples. Will start w/ discrete sample # 4 (because sampled 3 discrete historic hotspots yesterday). See field forms for details.
0940 Could not sample discrete point # 4 in pond because of thick vegetative mat overlying rocks. - Sampled as close as possible
1140 Have collected 3 discrete sample points this morning - head back to camp for lunch.
1315 At Site 28 to continue discrete sampling. See field forms for details.
1745 Done sampling for today. Head back to camp for dinner.

Photolog Catchup - photos for 8/20/11:

IMGP3496: At Transect 10 on Suqi River, view W
3497: " , looking ~~N~~ S to MOC.

8/18/11 photolog (cont.)

3498: At transect 10, Suqi River, view E
3500: " , looking S to Site 31.
3501: Sampling Transect 10, location 1, view E.
3502: "
3503: "
3504: "

Julie Clark
8/20/11

8/21/11 NE Cape - 2011 34110008

0655 Daily safety meeting.

0700 Daily environmental meeting.

0720 Get supplies together for site 28 sampling.

0836 At site 28 to continue and hopefully finish discrete sampling.

1000 Finished collecting Site 28 samples. Will move on to background samples.

1045 At background sample area. Will collect ~~4 samples~~ samples at 4 locations, with three different depths (0.5', 1', 1.5') at each location. Samples will be analyzed for DRO/RRO, DRO/RRO silica gel, and TOC only.

1230 Finished w/ background sampling. Head back to camp for lunch.

1345 Back out to background sampling location to mark sample points with lath, also show Jamie Allan (surveyor) where spot is so he can survey the sample locations at a later date.

1500 Back to camp - work on COCs while Eric Barnhill (Bristol) prepares samples for shipment tomorrow.

Julie Clark 8/21/11

8/21/11 NE Cape - 2011 34110008

Photolog for 8/21/11:

3505: Collecting Site 28 background samples, view E

3506: " , view N

3507: " , view E

3508: " , view E

3509: Site 28 background sample area, view E

3510: " , view SE

3511: Collecting Site 28 background samples, view S.

3512: Site 28 background sample area, view SSE

3513: Collecting Site 28 background samples, view SSW

3514: " , view E

Julie Clark 8/21/11

8/22/11 NE Cape-2011 34110008

0655 Daily safety meeting.
0700 Daily enviro meeting.
0720 Pack coolers, will ship Site 28 samples out today.
1400 On flight to Nome on Bering Air - Site 28 sample coolers also on flight and will be Goldstreaked to TestAmerica Seattle.

Julie Clark 8/22/11

NORTHEAST CAPE SITE 28 FIELD FORM

8/13/11
@ 1110

Transect #: 1 Position: 1

Sample ID: 11NC28SS001-05 Depth: 0.5'

Sample Description: Peat w/ some silt, moist, brown loose
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Photo 3465. Soil.

8/13/11
@ 1120

Transect #: 1 Position: 1

Sample ID: 11NC28SS001-10 Depth: 1'

Sample Description: Peat w/ silt, moist brown, mod loose
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Photo 3466. Soil. Slight fuel odor

* 2 vials MeOH

8/13/11
@ 1330

Transect #: 1 Position: 2

Sample ID: 11NC28SS002-2 Depth: 2'

Sample Description: Organic silt, wet, dark brown, fairly dense, mod fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: 1st Sample able to be collected at ~2' bgs - vegetative mat 0-2' bgs. Sediment sample

NORTHEAST CAPE SITE 28 FIELD FORM

8/13/11 @ 1335

Transect #: 1 Position: 2

Sample ID: 11NC28SS002-2.5 Depth: 2.5'

Sample Description: Organic silt, wet, dark brown, fairly dense, mod. HC odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sample collected ~2.5' bgs (vegetative mat 0-2') Sediment

---

8/13/11 @ 1340

Transect #: 1 Position: 2

Sample ID: 11NC28SS002-3 Depth: 3'

Sample Description: Organic silt, brown ~~& gray~~, fairly dense, possible slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment

8/13/11 1410

Transect #: 1 Position: 3'

Sample ID: 11NC28SS003-2.5 Depth: 2.5'

Sample Description: Organic silt, brown & gray, fairly dense, possible slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment. Vegetative mat 0-2.5'.

NORTHEAST CAPE SITE 28 FIELD FORM

8/13/11
1430

Transect #: 1 Position: 3

Sample ID: ~~2~~1NC28SS003 - 3 Depth: 3'

Sample Description: Silty clay, moist-wet, gray, slight fuel odor?, dense
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment, ~~refusal @ 3'~~
(2nd depth @ 003)

8/13/11
1440

Transect #: 1 Position: 3

Sample ID: 11NC28SS003 - 3.5 Depth: 3.5'

Sample Description: Silty clay, wet, grayish brown, dense
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment
(3rd depth @ point 003)

8/13/11
1500

Transect #: 1 Position: 4

Sample ID: 11NC28SS004 - 2.5 Depth: 2.5'

Sample Description: Organic silt, wet, brown, moderately dense
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: 1st depth at this point able to collect a sample is 2.5' bgs, vegetative mat 0-2.25'. Sediment matrix. Refusal at 2.5' bgs cannot auger further
(1st depth at point 004)

NORTHEAST CAPE SITE 28 FIELD FORM

8/13/11
1535

Transect #: 1 Position: 5

Sample ID: 11NC28SS005-05 Depth: 0.5'

Sample Description: Peat w/ silty soil, moist, brown, mod. dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.
1st depth at point 005

8/13/11
1545

Transect #: 1 Position: 5

Sample ID: 11NC28SS005-1 Depth: 1'

Sample Description: Peat w/ silt, moist, brown, dense, no odor,
(material type, moisture content, color, general density, etc.) soil is cold - permafrost.

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.
2nd depth at point 005
Refusal @ ~ 1' 2" —> permafrost

8/13/11
1655

Transect #: 2 Position: 1

Sample ID: 11NC28SS006-0.5 Depth: 0.5'

Sample Description: Mostly Peat w/ silty soil, moist, brown, mod. dense, moderate
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N pretty thin Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 1st depth at point 006

* 2 vials MeOH

NORTHEAST CAPE SITE 28 FIELD FORM

8/13/11
1705

Transect #: 2

Position: 1

Sample ID: 11NC28SS006-1

Depth: 1'

Sample Description: Mostly peat w/ ~~some~~ silty soil, moist, brown, mod. dense, mod. fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N — Y

Standing water? Y/N — N

Sampling tool: T-handle auger — T-handle sludge sampler — Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Refusal @ ~1.25' - rock, 2nd depth at point 006.

* DUPLICATE: 11NC28SS006-2 @ 1715

8/13/11
1735

Transect #: 2

Position: 2

Sample ID: 11NC28SS007-1.5

Depth: 1.5' bgs

Sample Description: Peat w/ silty soil, moist, brown, med. dense, fuel
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N — Y

Standing water? Y/N — N

Sampling tool: T-handle auger — T-handle sludge sampler — Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Vegetative mat 0-1-1.5', so first depth able to collect sample was 1.5' bgs.

8/14/11
0900

Transect #: 2

Position: 3

Sample ID: 11NC28SS008-0.5

Depth: 0.5'

Sample Description: Peat w/ silty soil, moist, brown, med. dense
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N — Y

Standing water? Y/N — N

Sampling tool: T-handle auger — T-handle sludge sampler — Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 20 g sample for MeOH container
1st depth at point 008

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
0920

Transect #: 2 Position: 3

Sample ID: 11NC28SS008-1' Depth: 1'

Sample Description: Peat w/ silty soil, moist, brown, med dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Refusal at 1' bgs - rock. 20 g material for MeOH samples. * MS/MSD - triple volume of sample

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8/14/11
0935

Transect #: 2 Position: 4

Sample ID: 11 NC28SS009-0.5 Depth: 0.5'

Sample Description: Peat w/ silty soil, trace sand, moist, brown, med. dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix 20 g material for MeOH sample. 1st depth at point 009

8/14/11
0950

Transect #: 2 Position: 4

Sample ID: 11NC28SS009-1 Depth: 1'

Sample Description: Silty soil w/ peat, moist, brown med dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix, 20 g material for MeOH sample. Refusal at 1' bgs - rock. 2nd depth at point 009

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
1025

Transect #: 3　　　　Position: 1

Sample ID: 11NC28SS010-0.5　　　　Depth: 0.5'

Sample Description: Fill - gravelly sand, trace organics, Moist, brown, loose, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N very thin　　　　Standing water? Y/N

Sampling tool: T-handle auger　　T-handle sludge sampler　　Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 1st depth at point 010.

8/14/11
1035

Transect #: 3　　　　Position: 1

Sample ID: 11NC28SS010-1　　　　Depth: 1'

Sample Description: Silty clay, moist, mottled brown & gray, med. dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above - thin　　　　Standing water? Y/N

Sampling tool: T-handle auger　　T-handle sludge sampler　　Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 2nd depth at point 010.

8/14/11
1045

Transect #: 3　　　　Position: 1

Sample ID: 11NC28SS010-1.5　　　　Depth: 1.5'

Sample Description: Silty clay, pretty dry (crumbly), mottled brown & gray, med. dense,
(material type, moisture content, color, general density, etc.) slight - moderate fuel odor

Vegetative mat present? Y/N　　　　Standing water? Y/N

Sampling tool: T-handle auger　　T-handle sludge sampler　　Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 3rd depth at point 010.

NORTHEAST CAPE SITE 28 FIELD FORM

5/14/11
1100

Transect #: ~~3~~

Position: 2

Sample ID: 11~~NC28~~SS011-0.5

Depth: 0.5'

Sample Description: 50/50 silt (clay) w/ trace gravel & sand, & peat (50%), moist, brown (peat) w/ brown/gray motting (silty clay), med. dense, slight-mod. fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N pretty thin

Standing water? Y/N

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st depth at point 011

8/14/11
1115

Transect #: 3

Position: 2

Sample ID: 11NC28SS011-1

Depth: 1'

Sample Description: Organic silty clay, moist, brown, moderately dense, fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N but H_2O percolating/ infiltrating into sample hole

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 011
* DUPLICATE 11NC28SS011-2 @ 1130

8/14/11
1135

Transect #: 3

Position: 2

Sample ID: 11NC28SS011-1.5

Depth: 1.5'

Sample Description: Organic silty clay moist, brown, moderately dense, fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N but H_2O percolating/ infiltrating into sample hole

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 011.

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
1325

Transcript #: 3 Position: 3

Sample ID: 11NC28SS012-0.5 Depth: 0.5'

Sample Description: Sandy silt w/ peat, wet, dark brown, mod. dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N pretty thin Standing water? Y/N But H2O percolating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st depth at point 012.

8/14/11
1335

Transect #: 3 Position: 3

Sample ID: 11NC28SS012-1 Depth: 1'

Sample Description: Organic clayey silt, wet, dark brown, mod. dense, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N See above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 012.

8/14/11
1340

Transect #: 3 Position: 3

Sample ID: 11NC28SS012-1.5 Depth: 1.5'

Sample Description: Organic clayey silt, moist, dark brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 012.
* DUPLICATE 11NC28SS012-2 @ 1345

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
1400

Transect #: 3 Position: 4

Sample ID: 11NC28SS013-0.5 Depth: 0.5

Sample Description: Organic silt, wet, dark brown, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N thin, couple inches Standing water? Y/N ~3", plus H_2O percolating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st depth at point 013

8/14/11
1410

Transect #: 3 Position: 4

Sample ID: 11NC28SS013-1 Depth: 1'

Sample Description: Organic silt, moist to wet, brown, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix 2nd depth at point 013

8/14/11
1420

Transect #: 3 Position: 4

Sample ID: 11NC28SS013-1.5 Depth: 1.5'

Sample Description: Organic silt, moist to wet, brown, possible slight fuel odor?
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 013.

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
1440

Transect #: 3
Position: 5
Sample ID: 11NC28SS014-1
Depth: 1' (below ground level, not water level)
Sample Description: Peat and silt (~50/50%), wet, dark brown, strong fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N (Y circled)
Standing water? Y/N (Y circled) ~9-12"
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: 1st sample able to be collected ~1' bgs instead of 0.5', because of vegetative mat. Sediment matrix.

8/14/11
1445

Transect #: 3
Position: 5
Sample ID: 11NC28SS014-1.5
Depth: 1.5' (bgs, not water level)
Sample Description: Organic silt, moist to wet, dark brown, strong fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see above
Standing water? Y/N see above
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 2nd depth collected at point 014.

8/14/11
1500

Transect #: 3
Position: 5
Sample ID: 11NC28SS014-2
Depth: 2' (bgs, not water level)
Sample Description: Organic silt, moist, dark brown, slight fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see above
Standing water? Y/N see above
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 3rd depth collected at point 014.
* MS/MSD

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
1530

Transect #: 3 Position: 6

Sample ID: 11NC28SS015-1.5 Depth: 1.5'

Sample Description: Mostly Peat w/ some silty soil, wet, dark brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) Standing water? Y/N (N circled), but water percolating into sample hole

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Vegetative mat 0-1.5' bgs, so 1st depth able to collect sample is 1.5' bgs. Sediment matrix.

8/14/11
1600

Transect #: 3 Position: 6

Sample ID: 11NC28SS015-2 Depth: 2'

Sample Description: Mostly peat, w/ some silty soil, wet, dark brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) Standing water? Y/N (N circled) Water percolating into sample hole

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 015
Refusal at 2' — either rock or permafrost.

8/14/11
1615

Transect #: 3 Position: 7

Sample ID: 11NC28SS016-0.5 Depth: 0.5'

Sample Description: Peat w/ silty soil, moist, brown,
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) Standing water? Y/N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/14/11
1620

Transect #: 3 Position: 7

Sample ID: 11NC28SS016-1 Depth: 1'

Sample Description: Peat w/ silty soil, moist, dark brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Refusal at 1' bgs - rock.
* 2 vials MeOH

8/15/11
1120

Transect #: 4 Position: 1

Sample ID: 11NC28SS017-0.5 Depth: 0.5'

Sample Description: Gravelly sand w/ some organics, moist, gray. mod. fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Thin, < 6" Standing water? Y/N but water infiltrating sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.
* DUPLICATE 11NC28SS017-2 @ 1125

8/15/11
1135

Transect #: 4 Position: 1

Sample ID: 11NC28SS017-1 Depth: 1'

Sample Description: Organic silt, moist, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

Transect #: 4
Position: 1
8/15/11 1140
Sample ID: 11NC28SS017-1.5
Depth: 1.5'
Sample Description: Silt, moist, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N see above
Standing water? Y / N see above

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

Transect #: 4
Position: 2
8/15/11 1150
Sample ID: 11NC28SS018-0.5
Depth: 0.5'
Sample Description: Organic silt, moist, brown strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N
Standing water? Y/N ~4"

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

Transect #: 4
Position: 2
8/15/11 1330
Sample ID: 11NC28SS018-1'
Depth: 1'
Sample Description: Organic silt, moist, brown, strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N
Standing water? Y/N

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/15/11
1340

Transect #: 4 Position: 2

Sample ID: 11NC28SS018-1.5 Depth: 1.5'

Sample Description: Organic silt, brown, moist, strong fuel odor, organics
(material type, moisture content, color, general density, etc.) at 1.5' bgs

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/15/11
1345

Transect #: 4 Position: 3

Sample ID: 11NC28SS019-0.5 Depth: 0.5'

Sample Description: Organic silt w/ ~~peat~~ sand & organics, gray, moist, slight to moderate fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y / N Standing water? No, but water infiltrating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/15/11
1355

Transect #: 4 Position: 3

Sample ID: 11NC28SS019-1 Depth: 1'

Sample Description: Organic silt, brown, moist, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N see above 0.5'

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/15/11
1405

Transect #: 4 Position: 3

Sample ID: 11NC28SS019-1.5 Depth: 1.5'

Sample Description: Silt w/ some organics, moist, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled) Standing water? Y / N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/15/11
1415

Transect #: 4 Position: 4

Sample ID: 11NC28SS020-0.5 Depth: 0.5'

Sample Description: Peat w/ silty material, moist, brown (peat) & gray (silt), strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled) Standing water? Y / N (Y circled) ~4"

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/15/11
1420

Transect #: 4 Position: 4

Sample ID: 11NC28SS020-1 Depth: 1'

Sample Description: Silt w/ some organics, moist, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled) Standing water? Y / N (Y circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix Refusal at 1'; rock

NORTHEAST CAPE SITE 28 FIELD FORM

8/15/11
1440

Transect #: ~~4~~ 4 | Position: 5
Sample ID: 11NC28SS021-0.5 | Depth: 0.5'
Sample Description: Peat and silt, moist, brown (peat) & gray (silt),
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N
Standing water? Y / N but H2O infiltrating into sample hole
Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix

8/15/11
1445

Transect #: 4 | Position: 5
Sample ID: 11NC28SS021-1 | Depth: 1'
Sample Description: Organic silt, moist, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N
Standing water? Y/N see above
Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix

8/15/11
1455

Transect #: 4 | Position: 5
Sample ID: 11NC28SS021-1.5 | Depth: 1.5'
Sample Description: Silt, moist, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N
Standing water? Y/N see above
Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/15/11
1505

Transect #: 4 Position: 6

Sample ID: 11NC28SS022-1 Depth: 1'

Sample Description: Peat & silt, moist, brown (peat) & gray (silt), strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1' bgs because vegetative mat 0-0.75

8/15/11
1515

Transect #: 4 Position: 6

Sample ID: 11NC28SS022-1.5 Depth: 1.5'

Sample Description: silt, moist, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.
2nd sample collected at point 022

8/15/11
1520

Transect #: 4 Position: 6

Sample ID: 11NC28SS022-2 Depth: 2'

Sample Description: silt, moist, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.
3rd sample collected at point 022

NORTHEAST CAPE SITE 28 FIELD FORM

8/15/11
1530

Transect #: 4 Position: 7

Sample ID: 11NC28SS023-1 Depth: 1'

Sample Description: Silt and organics, moist, dark brown, slight to
(material type, moisture content, color, general density, etc.) moderate fuel odor

Vegetative mat present? Y N Standing water? Y N ~4"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1' bgs because vegetative mat 0-1'
* DUPLICATE 11NC28SS023-2.5 @ 1535

8/15/11
1545

Transect #: 4 Position: 7

Sample ID: 11NC28SS023-1.5 Depth: 1.5'

Sample Description: Organic silt, moist, brown, moderate to strong fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y N see above Standing water? Y N ~4"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix
2nd depth at point 023

8/15/11
1555

Transect #: 4 Position: 7

Sample ID: 11NC28SS023-2 Depth: 2'

Sample Description: Silt w/ organics, moist, brown
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y N see above Standing water? Y N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/15/11
1625

Transect #: 4 Position: 8
Sample ID: 11NC28SS024-1 Depth: 1'
Sample Description: Silt w/ some peat, moist, brown, no noticible odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y / N
Standing water? Y / N
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Soil Matrix, 1st sample collected at 1' bgs because vegetative mat 0-1' bgs.

8/15/11
1635

Transect #: 4 Position: 8
Sample ID: 11NC28SS024-1.5 Depth: 1.5'
Sample Description: Silt w/ trace organics, moist, gray & brown, slight fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N
Standing water? Y/N
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Soil matrix. 2nd Sample collected at ~~Mt~~ point 024. Refusal at 1.5' bgs - rock

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8/15/11
1650

Transect #: 5 Position: 1
Sample ID: 11NC28SS025-0.5 Depth: 0.5'
Sample Description: Sandy silt, moist, gray, no odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N
Standing water? Y/N
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Soil matrix

NORTHEAST CAPE SITE 28 FIELD FORM

Transect #: 5 Position: 1

Sample ID: 11NC28SS025-1 Depth: 1'

8/15/11 1700

Sample Description: Peat & silty soil, some gravel & rocks, moist, brown (peat) & gray (silt), strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled) Standing water? Y / N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

Transect #: 5 Position: 1

Sample ID: 11NC28SS025-1.5 Depth: 1.5'

8/15/11 1710

Sample Description: Peat & silty soil, moist, brown, Moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (N circled) Standing water? Y/N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

Transect #: 5 Position: 2

Sample ID: 11NC28SS026-0.5 Depth: 0.5

8/16/11 0835

Sample Description: 75% peat, w/ 25% fine silty sand, brown (peat) & gray (silty sand), moist, strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) ~6" Standing water? Y/N (N circled) But H2O percolating into sample hole

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
0840

Transect #: ~~5~~ Position: 2

Sample ID: ~~11NC28SS026-1~~ Depth: 1'

Sample Description: Fine ~80% silty sand w/ ~20% peat, moist, brown (peat) & gray,
(material type, moisture content, color, general density, etc.) strong fuel odor

Vegetative mat present? Y / N thin, ~6" Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix, 20 g material for MeOH sample.

8/16/11
0850

Transect #: 5 Position: 2

Sample ID: 11NC28SS026-1.5 Depth: 1.5'

Sample Description: Clayey silt w/ trace organics, moist, dark brown, moderate
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix
* DUPLICATE 11NC28SS026-2 @ 0855

8/16/11
0905

Transect #: 5 Position: 3

Sample ID: 11NC28SS027-0.75 Depth: 0.75'

Sample Description: Silt w/ minor organics, some peat, moist, gray, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N But H_2O infiltrating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected @ 0.75' bgs; vegetative mat 0-0.75'.

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
0915

Transect #: 5 Position: 3

Sample ID: 11NC28SS027-1.25 Depth: 1.25'

Sample Description: Clayey silt w/ minor organics, moist, dark brown,
(material type, moisture content, color, general density, etc.) slight fuel odor

Vegetative mat present? Y / N Standing water? Y / N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 027.
* MS/MSD - triple volume

8/16/11
0925

Transect #: 5 Position: 3

Sample ID: 11NC28SS027-1.75 Depth: 1.75'

Sample Description: Clayey silt, trace organics, moist, dark brown, no fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 027.

8/16/11
0935

Transect #: 5 Position: 4

Sample ID: 11NC28SS028-0.5 Depth: 0.5'

Sample Description: Silt w/ fine sand, trace organics, moist, dark gray,
(material type, moisture content, color, general density, etc.) moderate fuel odor

Vegetative mat present? Y/N Thin, < 0.5' Standing water? Y/N but H_2O infiltrating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
0945

Transcect #: ~~5~~ Position: 4

Sample ID: 11~~NC28SS~~028-1 Depth: 1'

Sample Description: Silt w/ fine sand, trace organics, wet, dark gray,
(material type, moisture content, color, general density, etc.) moderate fuel odor

Vegetative mat present? Y / N Standing water? Y / N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/16/11
0955

Transect #: 5 Position: 4

Sample ID: 11NC28SS028-1.5 Depth: 1.5'

Sample Description: Clayey silt, trace organics, moist, dark brown,
(material type, moisture content, color, general density, etc.) slight fuel odor

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/16/11
1005

Transect #: 5 Position: 5

Sample ID: 11NC28SS029-0.5 Depth: 0.5

Sample Description: Silt w/ trace organics, wet, dark gray & dark brown,
(material type, moisture content, color, general density, etc.) moderate fuel odor

Vegetative mat present? Y/N Very thin, < 0.5' Standing water? Y/N but H2O infiltrating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1015

Transect #: 5 Position: 5

Sample ID: 11NC~~28~~SS029-1 Depth: 1'

Sample Description: Silty clay, moist, gray, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/16/11
1020

Transect #: 5 Position: 5

Sample ID: 11NCSS029-1.5 Depth: 1.5'

Sample Description: Silty clay, wet, gray, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/16/11
1040

Transect #: 5 Position: 6

Sample ID: 11NCSS030-1 Depth: 1'

Sample Description: Silty clay, trace organics wet, dark gray, strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 1' Standing water? Y/~~N~~ ~4"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1' bgs; Vegetative mat 0-1'.

NORTHEAST CAPE SITE 28 FIELD FORM

5/16/11
1055

Transect #: ~~5~~ Position: 6

Sample ID: 11~~NC28~~SS030-1.5 Depth: 1.5'

Sample Description: Clayey silt, trace organics, moist, med. dense, strong
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth collected at point 030.

5/16/11
1100

Transect #: 5 Position: 6

Sample ID: 11NC28SS030-2 Depth: 2'

Sample Description: Clayey silt, trace organics, moist, mod. dense, strong
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth collected at point 030.
* DUPLICATE 11NC28SS030-2.5 @ 1105

5/16/11
1115

Transect #: 5 Position: 7

Sample ID: 11NC28SS031-0.5 Depth: 0.5

Sample Description: ~~[illegible]~~ ~60% Peat w/ 40% silt, moist, mod dense,
(material type, moisture content, color, general density, etc.) no fuel odor

Vegetative mat present? Y/N ~4-6" Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. On bank of transect - end point.
20 g soil in MeOH sample

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1125

Transect #: 5 Position: 7

Sample ID: 11NC28SS031-~~0.5~~ 1 Depth: 1'

Sample Description: Clayey silt w/ organics, moist, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/16/11
1135

Transect #: 5 Position: 7

Sample ID: 11NC28SS031-1.5 Depth: 1.5'

Sample Description: Clayey silt w/ organics, moist, brown, no fuel Odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil Matrix

8/16/11
1355

Transect #: 6 Position: 1

Sample ID: 11NC28SS032-0.5 Depth: 0.5'

Sample Description: 75% peat, 25% silty soil, moist, brown, no fuel Odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 6" Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix *2 vials MeOH *
1st sample along transect, on bank

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1400

Transect #: 6 Position: 1

Sample ID: 11NC28SS032-1 Depth: 1'

Sample Description: Organic silty clay, moist, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (Y circled) Standing water? Y / N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/16/11
1410

Transect #: 6 Position: 1

Sample ID: 11NC28SS032-1.5 Depth: 1.5'

Sample Description: Organic silty clay, moist, mottled brown & gray, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (Y circled) Standing water? Y / N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/16/11
1415

Transect #: 6 Position: 2

Sample ID: 11NC28SS033-0.5 Depth: 0.5'

Sample Description: Silt, moist, gray, pretty loose, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (Y circled) 6" Standing water? Y / N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 0-0.5' is vegetative mat, beneath is gray silt - very definitive change in material. See photos

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1420

Transect #: 6 Position: 2

Sample ID: 11NC28SS033-1 Depth: 1'

Sample Description: Silt, moist, gray, pretty loose, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? (Y)/N 6" Standing water? Y/(N)

Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/16/11
1445

Transect #: 6 Position: 2

Sample ID: 11NC28SS033-1.5 Depth: 1.5'

Sample Description: Silt moist, gray, loose-moderate dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? (Y)/N Standing water? Y/(N)

Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: sediment matrix. Went back to auger final depth to 1.5' bgs, and ~~wet~~ oozed silt had oozed into sample hole. See photos. Material like cornstarch

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8/16/11
1455

Transect #: 6 Position: 3

Sample ID: 11NC28SS034-0.5 Depth: 0.5

Sample Description: Organic silt, w/25% peat, moist, dark brown, relatively loose, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? (Y)/N 0-0.5' Standing water? Y/(N)

Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1500

Transect #: 6 Position: 3

Sample ID: 11NC28SS034-1 Depth: 1'

Sample Description: Organic silt, moist, dark brown, relatively loose, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) Standing water? Y/N (N circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/16/11
1510

Transect #: 6 Position: 3

Sample ID: 11NC28SS034-1.5 Depth: 1.5'

Sample Description: Clayey silt, moist, mottled dark brown and gray, medium dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) Standing water? Y/N (N circled)

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Some wet silt oozing into sample hole

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8/16/11
1520

Transect #: 6 Position: 4

Sample ID: 11NC28SS0~~35~~-0.5 Depth: 0.5'

Sample Description: Organic silt, wet, dark brown, loose, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) 0-6" Standing water? Y/N (Y circled) ~3-4"

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1525

Transect #: 6 Position: 4

Sample ID: ~~11NC28SS035-1~~ Depth: 1'

Sample Description: Organic clayey silt, wet, loose, dark brown and
(material type, moisture content, color, general density, etc.) black, moderate fuel odor

Vegetative mat present? Y / N 0-6" Standing water? Y N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/16/11
1535

Transect #: 6 Position: 4

Sample ID: 11NC28SS035-1.5 Depth: 1.5'

Sample Description: Organic silt, moist, loose, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y N Standing water? Y N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/16/11
1550

Transect #: 6 Position: 5

Sample ID: 11NC28SS036-0.5 Depth: 0.5' (from ground surface, not water)

Sample Description: Organic silt, wet, loose, brown w/ some black peat,
(material type, moisture content, color, general density, etc.) slight fuel odor

Vegetative mat present? Y N Standing water? Y N ~8"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/16/11
1600

Transect #: 6 Position: 5

Sample ID: 11NC28SS036-1 Depth: 1' (bgs, not below water surface)

Sample Description: Organic silt, wet, loose, dark brown, possibly
(material type, moisture content, color, general density, etc.) slight fuel odor (?)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix
* DUPLICATE 11NC28SS036-2 @ 1605

8/16/11
1710

Transect #: 6 Position: 6

Sample ID: 11NC28SS036-1.5 Depth: 1.5' (bgs, not below H2O surface)

Sample Description: Organic silt, moist, loose, dark brown, slight fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

Transect #: Julie Clark Position:

Sample ID: J. Clark Depth:

Sample Description: 8/17/11
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments:

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1040

Transect #: 6 Position: 6

Sample ID: 11NC28SS037-2 Depth: 2' (bgs, NOT below water surface)

Sample Description: Organic silty clay wet, med. dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 2' Standing water? Y/N ~1'

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 2' bgs; because vegetative mat present 0-2' bgs.

8/17/11
1050

Transect #: 6 Position: 6

Sample ID: 11NC28SS037-2.5 Depth: 2.5' (bgs, NOT below H2O surface)

Sample Description: Organic clayey silt, moist, med dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 037

8/17/11
1055

Transect #: 6 Position: 6

Sample ID: 11NC28SS037-3' Depth: 3'

Sample Description: Organic clayey silt, moist, med. dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 037

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1120

Transect #: ~~6~~ 6 Position: 7

Sample ID: ~~11NC28~~SS038 - 1.75 Depth: 1.75' (bgs, NOT H_2O surface)

Sample Description: Organic silt, frozen, wet, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 0-1.75 Standing water? Y/N 6-8"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1.75 because Vegetative mat 0-1.75' bgs.

8/17/11
1125

Transect #: 6 Position: 7

Sample ID: 11NC28SS038-2.25 Depth: 2.25'

Sample Description: Organic silt & ice, frozen, wet, brown, ~~slight~~ no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd sample collected at point 038. A lot more ice at 2.25' than at 1.75'.

8/17/11
1140

Transect #: 6 Position: 7

Sample ID: 11NC28SS038 -2.75 Depth: 2.75'

Sample Description: Organic silt, moist to wet, brown, med dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix, 3rd sample collected at point 038. * MS/MSD - triple volume

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1330

Transect #: ~~6~~ Position: 8

Sample ID: 11NC28SS039-1 Depth: 1'

Sample Description: Organic silt w/ ~40% peat, frozen, hard, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 0-1' Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 1st sample collected at 1' bgs; vegetative Mat 0-1'

8/17/11
1345

Transect #: 6 Position: 8

Sample ID: 11 NC28SS039-1.5 Depth: 1.5'

Sample Description: ~~Soil~~ Organic silt, frozen, hard, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Refusal at 1.5' bgs - permafrost. 2nd depth at point 039

* DUPLICATE 11NC28SS039-2 @ 1350

8/17/11
1405

Transect #: 7 Position: 1

Sample ID: 11NC28SS040-0.5 Depth: 0.5

Sample Description: Silty clay, moist, relatively loose, gray, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N ~4-6" Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1410

Transect #: 7 Position: 1

Sample ID: 11NC28SS040-1 Depth: 1'

Sample Description: Organic silt, moist, pretty loose, brown w/ some
(material type, moisture content, color, general density, etc.) blank, no fuel

Vegetative mat present? Y / N 4-6" Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

8/17/11
1415

Transect #: 7 Position: 1

Sample ID: 11NC28SS040-1.5 Depth: 1.5'

Sample Description: Organic silt, frozen, hard, dark brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 4-6' Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Permafrost @ ~1.5'

8/17/11
1430

Transect #: 7 Position: 2

Sample ID: 11NC28SS041-1 Depth: 1'

Sample Description: Peat w/ trace silt, wet, med. dense, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 0-1' Standing water? Y/N but H_2O infiltrating into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1' bgs because veg. mat 0-1'

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1445

Transect #: 7 Position: 2

Sample ID: 11NC28SS041-1.33 Depth: 1.33'

Sample Description: 60% peat, 40% silt, wet, dark brown & black,
(material type, moisture content, color, general density, etc.) moderate fuel odor

Vegetative mat present? Y/N Standing water? Y/N See above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Refusal at 1.33' bgs - lots of rocks

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8/17/11
1455

Transect #: 7 Position: 3

Sample ID: 11NC28SS042-1 Depth: 1' (bgs, NOT below water surface)

Sample Description: Silt and organics, wet, burnt orange (silt) and dark
(material type, moisture content, color, general density, etc.) brown/black (organics), slight fuel odor

Vegetative mat present? Y/N 1' Standing water? Y/N Yes, ~6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1' bgs; veg mat 0-1'

8/17/11
1500

Transect #: 7 Position: 3

Sample ID: 11NC28SS042-1.5 Depth: 1.5' (bgs, NOT below H_2O surface)

Sample Description: Clayey silt, wet, gray, relatively loose, slight
(material type, moisture content, color, general density, etc.) fuel odor. Like cornstarch.

Vegetative mat present? Y/N 1' Standing water? Y/N ~6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth collected at point 042
* DUPLICATE 11NC28SS042-2.5 @ 1505

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1510

Transect #: 7

Position: 3

Sample ID: 11NC28SS042-2

Depth: 2'

Sample Description: Clayey silt w/ some gravel, wet, med. dense, gray, slight fuel odor. Like cornstarch.
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N 1'

Standing water? Y / N ~6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/17/11
1520

Transect #: 7

Position: 4

Sample ID: 11NC28SS043-1.5

Depth: 1.5'

Sample Description: 75% peat, 25% silt, wet brown, Moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 0-1.5'

Standing water? Y/N ~2"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected @ 1.5' bgs because veg. mat 0-1.5

8/17/11
1525

Transect #: 7

Position: 4

Sample ID: 11NC28SS043-2

Depth: 2'

Sample Description: 60% peat & 40% silt, wet, brown. Moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1540

Transect #: 7

Position: 4

Sample ID: 11~~NC28SS~~043-2.5

Depth: 2.5'

Sample Description: 50% peat, 50% silt, moist, brown, moderate
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y / N

Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Refusal @ 2.5' bgs - rocks

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8/17/11
1550

Transect #: 7

Position: 5

Sample ID: 11NC28SS044-2

Depth: 2'

Sample Description: 80% peat, 20% silt, wet, mod. dense, brown,
(material type, moisture content, color, general density, etc.) strong fuel odor

Vegetative mat present? Y/N 0-2'

Standing water? Y/N ~3"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 2' bgs, because veg. mat 0-2'.

8/17/11
1600

Transect #: 7

Position: 5

Sample ID: 11NC28SS044-2.5

Depth: 2.5'

Sample Description: 70% silt, 30% peat, wet, mod. dense, brown, strong
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N see above

Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd sample collected at point 044.

NORTHEAST CAPE SITE 28 FIELD FORM

Transect #: 7 Position: 5

Sample ID: 11~~NC28~~SS044 -3 Depth: 3'

8/17/11 Sample Description: Organic silt w/ ~25% peat, wet, med. dense, moderate

1610 (material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? (Y)/N see above Standing water? (Y)/N see above

Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 044.
* MS/MSD - triple volume

Transect #: 7 Position: 6

Sample ID: 11NC28SS045-1 Depth: 1'

8/17/11 Sample Description: 50% organic silt; 50% peat, partially frozen, moist,

1625 (material type, moisture content, color, general density, etc.) brown, no fuel odor

Vegetative mat present? (Y)/N 1' Standing water? Y/(N)

Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Sample collected at 1' bgs, because veg. mat present 0-1' bgs

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Transect #: 7 Position: 6

Sample ID: 11NC28SS045-1.5 Depth: 1.5'

8/17/11 Sample Description: Organic silt w/ 25% peat, frozen, hard, brown,

1630 (material type, moisture content, color, general density, etc.) no fuel odor

Vegetative mat present? (Y)/N see above Standing water? Y/(N)

Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. 2nd depth at point 045.
Refusal @ 1.5' bgs - permafrost. Cannot auger to 3rd depth

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1655

Transect #: 8 Position: 1

Sample ID: 11NC28SS046-0.75 Depth: 0.75'

Sample Description: Organic silt w/ ~10% peat, moist, moderately loose,
(material type, moisture content, color, general density, etc.) brown, no odor

Vegetative mat present? Y/N 0.75' Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/17/11
1700

Transect #: 8 Position: 1

Sample ID: 11NC28046-1.25 Depth: 1.25'

Sample Description: Organic silt w/ ~10% peat, moist, moderately loose,
(material type, moisture content, color, general density, etc.) brown, no odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/17/11
1705

Transect #: 8 Position: 1

Sample ID: 11NC28046-1.75 Depth: 1.75'

Sample Description: Organic silt w/ trace fine sand, moist, moderately loose,
(material type, moisture content, color, general density, etc.) brown, no odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/17/11
1715

Transect #: 8 Position: 2

Sample ID: 11NC28SS047-2 Depth: 2'

Sample Description: 60% organic silt, 40% peat, moist, brown, very strong
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N 2' Standing water? Y/N but water very close to surface, and immediately fills hole.

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Collect first sample at 2' bgs because veg. mat present from 0-2' bgs.

8/17/11
1720

Transect #: 8 Position: 2

Sample ID: 11NC28SS047-2.5 Depth: 2.5'

Sample Description: 90% organic silt, 10% peat, moist, brown, very strong fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 047

8/17/11
1725

Transect #: 8 Position: 2

Sample ID: 11NC28SS047-3 Depth: 3'

Sample Description: Organic silt w/ trace fine sand, moist, brown, ~~strong~~ moderate
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 047.

NORTHEAST CAPE SITE 28 FIELD FORM

Transect #: ~~8~~ 8
Position: 3

Sample ID: 11 ~~NC~~ 28SS048 - 1
Depth: 1'

5/18/11
0540

Sample Description: 70% silt, 30% peat, wet, some frozen material, relatively loose, reddish brown,
(material type, moisture content, color, general density, etc.) moderate fuel odor

Vegetative mat present? Y / N
Standing water? Y / N ~1'

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sample collected from stream. Sediment matrix. Sheen generated when sediment disturbed

---

Transect #: 8
Position: 3

Sample ID: 11NC28SS048 -1.5
Depth: 1.5'

5/18/11
0845

Sample Description: Silty clay w/ some organics, some black peat, wet, relatively grayish brown
(material type, moisture content, color, general density, etc.) loose, sligt fuel odor

Vegetative mat present? Y / N
Standing water? Y / N see above

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 048 See above comments

---

Transect #: 8
Position: 3

Sample ID: 11NC28SS048 - 2
Depth: 2'

5/18/11
0850

Sample Description: Silty clay, trace organics, wet, gray w/ some brown, possible
(material type, moisture content, color, general density, etc.) slight fuel odor

Vegetative mat present? Y / N
Standing water? Y / N see above

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 048 See above comments

* DUPLICATE 11NC28SS048 - 2.5 @ 0855

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
0910

Transect #: 8 Position: 4

Sample ID: 11NC28SS049-1.5' Depth: 1.5'

Sample Description: 75% silt, 25% peat, wet, relatively loose, dark brown (silt) and
(material type, moisture content, color, general density, etc.) black (peat), strong fuel odor

Vegetative mat present? Y/N 1.5' Standing water? Y/N but H2O infiltrated into sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Collected at location of historic high PCB result. Sediment matrix. 1st sample collected at 1.5' bgs, because veg mat 0-1.5'

8/18/11
0925

Transect #: 8 Position: 4

Sample ID: 11NC28SS049-2 Depth: 2'

Sample Description: Organic silt w/ some peat, wet, moderately dense, brown (silt)
(material type, moisture content, color, general density, etc.) and black (peat), moderate fuel odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: See above comments. Sediment matrix. 2nd depth at point 049
* DUPLICATE 11NC28SS049-3 @ 0930

8/18/11
0940

Transect #: 8 Position: 4

Sample ID: 11NC28SS049-2.5 Depth: 2.5'

Sample Description: Organic silt w/ some peat, wet, moderately dense, brown (silt),
(material type, moisture content, color, general density, etc.) and black (~~silt~~ peat), moderate fuel odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: See above comments. Sediment matrix. 3rd depth at point 049

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
0955

Transect #: 8

Position: 5

Sample ID: 11NC28SS050-0.75

Depth: 0.75'

Sample Description: Organic silt 60% and peat 40%, wet, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N 0.75'

Standing water? Y / N but some water slowly infiltrating into sample hole

Sampling tool: T-handle auger / T-handle sludge sampler / Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/18/11
1000

Transect #: 8

Position: 5

Sample ID: 11NC28SS050-1.25

Depth: 1.25'

Sample Description: Organic silt w/ some gravel, wet, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N

Sampling tool: T-handle auger / T-handle sludge sampler / Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/18/11
1010

Transect #: 8

Position: 5

Sample ID: 11NC28SS050-1.75

Depth: 1.75'

Sample Description: Organic silt, moist, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N

Sampling tool: T-handle auger / T-handle sludge sampler / Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1020

Transect #: 8 Position: ~~7~~ 6 JC

Sample ID: 11NC28SS051-0.5 Depth: 0.5'

Sample Description: Silty clay w/ ~10% organic silt, moist, mod. dense, gray
(material type, moisture content, color, general density, etc.) (silty clay) & brown (organic silt), no fuel odor

Vegetative mat present? Y/N relatively thin - 4-6" Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/18/11
1025

Transect #: 8 Position: ~~7~~ 6 JC

Sample ID: 11NC28SS051-1 Depth: 1'

Sample Description: Silty clay, moist, mod. dense, gray, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/18/11
1035

Transect #: 8 Position: ~~7~~ 6 JC

Sample ID: 11NC28SS051-1.5 Depth: 1.5'

Sample Description: Silty clay, moist, mod. dense, gray, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix. Refusal @ 1.5' bgs - rock

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1050

Transect #: 9 Position: 1

Sample ID: 11NC28SS052-0.5 Depth: 0.5'

Sample Description: 60% organic silt, 40% peat, moist, mod. dense, brown,
(material type, moisture content, color, general density, etc.) no fuel odor.

Vegetative mat present? Y/N Thin Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

8/18/11
1055

Transect #: 9 Position: 1

Sample ID: 11NC28SS052-1 Depth: 1'

Sample Description: Organic silt, moist, mod. dense, brown, fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

8/18/11
1105

Transect #: 9 Position: 1

Sample ID: 11NC28SS052-1.5 Depth: 1.5'

Sample Description: ~~11NC28SS052-1.5~~ JC Organic silt, moist, mod. dense, brown,
(material type, moisture content, color, general density, etc.) no fuel odor

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

Transect #: 9 | Position: 2
8/18/11 Sample ID: ~~11NC28~~SS053-1 | Depth: 1' (bgs, NOT below water surface)
1115 Sample Description: 75% peat w/ 25% organic silt, wet, relatively loose, brown
(material type, moisture content, color, general density, etc.) w/ slight reddish staining, no odor
Vegetative mat present? (Y)/N 1' | Standing water? (Y)/N 10-12"
Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment Matrix. 1st sample collected at point 053 because veg mat 0-1. Collected at edge of ~~in a~~ small pond.

Transect #: 9 | Position: 2
8/18/11 Sample ID: 11NC28SS053-1.5 | Depth: 1.5' (bgs, NOT below water surface)
1125 Sample Description: Organic silt w/ some peat, moist to wet, relatively loose,
(material type, moisture content, color, general density, etc.) brown, slight fuel odor
Vegetative mat present? (Y)/N see above | Standing water? (Y)/N see above
Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. See notes above. 2nd ~~sam~~ depth at point 053
* DUPLICATE 11NC28SS053-2.5 @ 1130

Transect #: 9 | Position: ~~3~~ 2 JC
8/18/11 Sample ID: 11NC28SS053-2 | Depth: 2' (bgs, not below water surface)
1140 Sample Description: Organic silt w/ some peat, moist to wet, med. dense,
(material type, moisture content, color, general density, etc.) brown, no fuel odor
Vegetative mat present? (Y)/N see above | Standing water? (Y)/N see above
Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment Matrix. See notes above. 3rd depth at point 053
* MS/MSD - triple volume

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1330

Transect #: 9

Position: ~~4~~ 3 JC

Sample ID: 11~~NC28~~SS054-0.5

Depth: 0.5

Sample Description: Organic clayey silt w/ some peat, wet, relatively loose, slight fuel odor

(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled)

Standing water? Y / N (Y circled) ~12-16"

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/18/11
1335

Transect #: 9

Position: ~~4~~ 3 JC

Sample ID: 11NC28SS054-1

Depth: 1'

Sample Description: Organic clayey silt, moist, relatively loose, slight fuel odor

(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled)

Standing water? Y / N (Y circled) see above

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/18/11
1345

Transect #: 9

Position: ~~4~~ 3 JC

Sample ID: 11NC28SS054.1.5

Depth: 1.5'

Sample Description: Organic clayey silt, some silty clay, partially frozen, hard, slight fuel odor

(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (N circled)

Standing water? Y / N (Y circled) see above

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1400

Transect #: 9 | Position: ~~5~~ JC 4

Sample ID: 11~~NC28SS~~055-1.5 | Depth: 1.5'

Sample Description: Organic silt w/ some clay, wet, med. dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N 1.5' | Standing water? Y/N but water infilt rating immediately into sample hole and H2O present when top of veg. mat is pulled away

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.
1st sample collected at 1.5' bgs because veg. mat 0-1.5'

8/18/11
1415

Transect #: 9 | Position: ~~5~~ JC 4

Sample ID: 11NC28SS055-2 | Depth: 2'

Sample Description: ~~11NC28SS055-2~~ JC Organic clayey silt, moist, med. dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above | Standing water? Y/N see above

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth collected at point 055.

8/15/11
1425

Transect #: 9 | Position: ~~5~~ JC 4

Sample ID: 11NC28SS055-2.5 | Depth: 2.5'

Sample Description: Organic clayey silt, moist, fairly dense, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above | Standing water? Y/N see above

Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth collected at point 055

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1445

Transect #: 9 Position: 5

Sample ID: 11NC28SS056-0.75 Depth: 0.75'

Sample Description: Organic silt, moist, relatively loose, brown, no
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N 0.75' Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/18/11
1450

Transect #: 9 Position: 5

Sample ID: 11NC28SS056-1.25 Depth: 1.25'

Sample Description: Organic silt, moist, relatively loose, brown, no fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y/N see above Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix

8/18/11
1500

Transect #: 9 Position: 5

Sample ID: 11NC28SS056-1.75 Depth: 1.75'

Sample Description: Clayey silt, moist, med. dense, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Soil matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1535

Transect #: 10 Position: 1

Sample ID: 11NC28SS057-1.5 Depth: 1.5'

Sample Description: Organic silt w/ some peat, wet, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N ~1.5' Standing water? Y/N 6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: At Suqi River, where drainage basin empties into river. Sediment matrix. 1st sample collected at 1.5' because veg mat @ ~1.5', also having problems keeping material in auger

---

8/18/11
1545

Transect #: 10 Position: 1

Sample ID: 11NC28SS057-2 Depth: 2'

Sample Description: Organic silt, some rocks, wet, brown, possible fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N 6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 057.

8/18/11
1555

Transect #: 10 Position: 1

Sample ID: 11NC28SS057-2.5 Depth: 2.5'

Sample Description: Silty clay w/ some gravel, wet, gray, med. dense, possible fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N 6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 057.

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1625

Transcript #: ~~10~~
Position: 2
Sample ID: 11NC28SS058 - 0.5
Depth: ~0.5'
Sample Description: Silt and organics, wet, dark brown, no fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y / N
Standing water? Y / N ~8-10"
Sampling tool: T-handle auger Shovel T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. At Suqi River where drainage basin empties into the river.

8/18/11
1635

Transect #: 10
Position: 2
Sample ID: 11NC28SS058 -1
Depth: ~1'
Sample Description: Organic silt and peat, wet, pretty loose, dark brown (silt) and black (peat), peat has moderate fuel odor,
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N
Standing water? Y/N see above
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: See comment above. Sediment matrix
* DUPLICATE 11NC28SS058-2 @ 1640

8/18/11
1650

Transect #: 10
Position: 2
Sample ID: 11NC28SS058-1.5
Depth: 1.5'
Sample Description: Silty clay w/ trace fine sand, wet, med. dense, slight fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N
Standing water? Y/N see above
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. Slight sheen produced when sediment is disturbed.

NORTHEAST CAPE SITE 28 FIELD FORM

8/18/11
1705

Transect #: 10 Position: 3

Sample ID: 11NC28SS059-0.5 Depth: ~0.5'

Sample Description: 60% organic silt, 40% peat, wet, loose, dark brown w/
(material type, moisture content, color, general density, etc.) slight gray, no fuel odor

Vegetative mat present? Y / N Standing water? Y / N ~2-3"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer Shovel

Photo info/comments: At Suqi River where water from drainage basin enters the River. Sediment matrix.

8/18/11
1715

Transect #: 10 Position: 3

Sample ID: 11NC28SS059-1 Depth: 1'

Sample Description: 60% organic silt, 40% peat, wet, loose, dark brown,
(material type, moisture content, color, general density, etc.) no fuel odor

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/18/11
1720

Transect #: 10 Position: 3

Sample ID: 11NC28SS059-1.5 Depth: 1.5'

Sample Description: 60% organic silt, 40% peat, wet, loose, dark brown,
(material type, moisture content, color, general density, etc.) possible slight fuel

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11
0950

Transect #: 11 Position: 1

Sample ID: 11NC28SS060-0.5 Depth: 0.5'

Sample Description: Organic silt and gravelly sand ~~silt~~, wet, loose, dark gray, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N ~2-4"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sample collected in stream between T7 and T8. Sediment matrix. Some sheen generated when sediment disturbed

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8/19/11
1000

Transect #: 11 Position: 1

Sample ID: 11NC28SS060-1 Depth: 1'

Sample Description: Gravelly sand w/ some organic silt and peat, wet, relatively loose, dark brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: See comments above. Sediment matrix

* DUPLICATE 11NC28SS060-2 @ 1005

8/19/11
1015

Transect #: 11 Position: 1

Sample ID: 11NC28SS060-1.5 Depth: 1.5

Sample Description: Organic silt, moist, med. dense, brown, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? ~~Y~~ JC N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: See comments above. Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11
1030

Transect #: ~~11~~

Position: 2

Sample ID: ~~11NC28~~SS061-0.25

Depth: 0.25'

Sample Description: Silt, sand, and some vegetation, reddish brown (silt & sand) and black (vegetation), wet, loose, ~~NO~~ JC possible slight odor in silt/sand, moderate/strong odor in veg.
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N

Standing water? Y / N ~4"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer Shovel

Photo info/comments: Collected from stream between T7 and T8. Sediment matrix.

*MS/MSD - triple volume

8/19/11
1035

Transect #: 11

Position: 2

Sample ID: 11NC28SS061-1.5

Depth: 1.5'

Sample Description: Organic silt and peat, dark brown (silt) and black (peat), wet, moderately loose, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: 2nd sample collected at 1.5' bgs, because roots/veg mat present from ~0.5-1.5'. Sediment matrix.
Roots/veg from ~0.5-1.5 has strong fuel odor

8/19/11
1055

Transect #: 11

Position: 2

Sample ID: 11NC28SS061-2

Depth: 2'

Sample Description: ~~Ø~~ JC Clayey silt, trace peat, wet, med. dense, gray, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth collected at point 061.

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11
1110

Transect #: 11 Position: 3

Sample ID: 11NC28SSC62-0.25 Depth: 0.25'

Sample Description: Silt w/ trace sand, wet, loose, reddish brown, no odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N ~6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer Shovel

Photo info/comments: Sediment matrix. Sample collected from stream.

8/19/11
1120

Transect #: 11 Position: 3

Sample ID: 11NC28SSC62-0.75 Depth: 0.75' (bgs, NOT below water)

Sample Description: 60% peat, 40% organic silt, wet, loose, black, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N ~0.25 - ~0.75' bgs Standing water? Y/N

Sampling tool: ~~T-handle auger~~ T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd sample collected at 0.75' bgs, because roots/veg. ~0.25 - 0.75. Roots/veg have strong fuel odor. Refusal at 0.75' bgs - rocks.

8/19/11
1350

Transect #: 11 Position: 4

Sample ID: 11NC28SSC63-0.25 Depth: 0.25'

Sample Description: Organic Silt w/ clay, trace peat, wet, loose, reddish brown, possible slight odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N ~0.5 - 1.75' Standing water? Y/N ~2-3" Shovel

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3 jars of sample - 1 MeOH-pres. 4 oz. septa, 2 16 oz. jars.

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11 / 1405

Transect #: 11

Position: 4

Sample ID: ~~11NC28~~SS063-0.75

Depth: 0.75

Sample Description: 90% peat, 10% organic silt, wet, med. dense, dark brown to black, slight HC odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N

Standing water? Y / N

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer   Shovel

Photo info/comments: Sediment matrix. 2nd depth collected at point 063
3 jars collected.

8/19/11 / 1415

Transect #: 11

Position: 4

Sample ID: 11NC28SS063-1.75

Depth: 1.75'

Sample Description: 60% peat w/ 40% organic silt, wet, med. dense, black (peat) and brown (silt), strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N

Standing water? Y / N

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix 3rd depth collected at point 063.
3 jars collected.

8/19/11 / 1425

Transect #: 11

Position: 5

Sample ID: 11NC28SS064-0.25

Depth: 0.25'

Sample Description: Silt w/ trace sand, trace peat, wet, loose, reddish brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N ~0.25-1.75'

Standing water? Y / N ~2-4"

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ ~~slide hammer~~ Shovel

Photo info/comments: Sediment matrix. 3 jars collected
/ * DUPLICATE 11NC28SS064-0.5 @ 1430

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11 1435

Transect #: 11 Position: 5

Sample ID: 11~~NC25~~SS064 - 1.75 Depth: 1.75'

Sample Description: 80% peat w/ 20% organic silt, wet, black (peat) & brown (silt), mod. ~~dense~~, moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N Standing water? Y / N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth collected at point 064. Sheen generated from this material.

8/19/11 1440

Transect #: 11 Position: 5

Sample ID: 11NC28SS064-2.25 Depth: 2.25

Sample Description: 75% organic silt, 25% peat, moist, pretty dense, brown (silt) & black (peat), slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N Standing water? Y/N

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth collected at point 064.
* DUPLICATE 11NC28SS064-2.5 @ 1445

8/19/11 1505

Transect #: 11 Position: 6

Sample ID: 11NC28SS065-2 Depth: 2'

Sample Description: 60% peat, 40% organic silt, wet, med. dense, black (peat) and brown (silt), strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N ~0.5 - 2' Standing water? Y/N 3-6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. ~~VG~~ 1st sample collected at 2' bgs because Veg. mat present 0-2' bgs

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11
1510

Transect #: 11 Position: 6

Sample ID: ~~11NC28~~SS065-2.5 Depth: 2.5

Sample Description: Organic silt, moist to wet, pretty dense, slight fuel
(material type, moisture content, color, general density, etc.) odor, brown & gray

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at point 065.

8/19/11
1525

Transect #: 11 Position: 6

Sample ID: 11NC28SS065 - 3 Depth: 3'

Sample Description: Organic silt & silty clay, moist, pretty dense, brown (silt)
(material type, moisture content, color, general density, etc.) and gray (silty clay), slight fuel odor

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: sediment matrix. 3rd depth at point 065.
* MS/MSD collected - double volume (6 containers - 2 MeOH 4 oz. 4 16 oz.)

8/19/11
1555

Transect #: N/A Position: N/A

Sample ID: 11NC28SS066-0.75 Depth: 0.75' (below ground, not below water)

Sample Description: Organic silt and peat, wet, dark brown and black, moderate to strong
(material type, moisture content, color, general density, etc.) fuel odor

Vegetative mat present? Y/N Standing water? Y/N 9"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: At historic hotspot 01NE28SD155/156. Sediment matrix.
20 g sample in MeOH container, 2 16 oz. containers.

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11, 1600

Transect #: ~~N/A~~ N/A　　Position: N/A

Sample ID: 11NC28SS066-1.25　　Depth: 1.25' (bgs, NOT below water surface)

Sample Description: Organic silt w/ some peat, wet, pretty dense, dark brown,
(material type, moisture content, color, general density, etc.) strong fuel odor.

Vegetative mat present? Y (N)　　Standing water? (Y) N see above

Sampling tool: (T-handle auger)　T-handle sludge sampler　Sludge sampler w/ slide hammer

Photo info/comments: Historic hotspot 01NE28SD155/156. Sediment matrix.
Refusal at 1.25' bgs - rock.
*DUPLICATE 11NC28SS066-2 @ 1605 ✓

8/19/11 1630

Transect #: N/A　　Position: N/A

Sample ID: 11NC28SS067-0.5　　Depth: 0.5'

Sample Description: Sand, wet, med. dense, brown, no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? (Y)/N 0-6"　　Standing water? (Y)/N ~2"

Sampling tool: (T-handle auger)　T-handle sludge sampler　Sludge sampler w/ slide hammer

Photo info/comments: Historichotspot 01NE28SD167/168.

8/19/11 1635

Transect #: N/A　　Position: N/A

Sample ID: 11NC28SS067-1　　Depth: 1'

Sample Description: Organic silt and sand, wet, med. dense, brown, moderate
(material type, moisture content, color, general density, etc.) fuel odor.

Vegetative mat present? (Y)/N see above　　Standing water? (Y)/N see above

Sampling tool: (T-handle auger)　T-handle sludge sampler　Sludge sampler w/ slide hammer

Photo info/comments: Historic hotspot 01NE28SD167/168

NORTHEAST CAPE SITE 28 FIELD FORM

8/19/11
1640

Transect #: N/A Position: N/A

Sample ID: 11NC28SS067-1.5 Depth: 1.5'

Sample Description (material type, moisture content, color, general density, etc.): Sand w/ some organic silt, wet, med. dense, brown, moderate fuel odor

Vegetative mat present? Y / N (N circled)   Standing water? Y / N (Y circled) see above

Sampling tool: T-handle auger (circled)   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: At historic hotspot 01NE28SD167/168.

8/19/11
1700

Transect #: N/A Position: N/A

Sample ID: 11NC28SS068 ~~0.5~~ 1 Depth: ~~0.5~~ JC 1'

Sample Description (material type, moisture content, color, general density, etc.): 90% peat, 10% organic silt, moist, ~~Pretty loos~~ JC med. dense, brown, strong HC odor

Vegetative mat present? Y/N (Y circled) [illegible]   Standing water? Y/N (N circled)

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Historic hotspot 94NE28 BH10-2.
Refusal at 1' bgs in 3 different spots - rocks.
* 2 vials McOH

8/20/11
0945

Transect #: N/A Position: N/A Discrete Sample 4

Sample ID: 11NC28SS069-1.5 Depth: 1.5' bgs

Sample Description (material type, moisture content, color, general density, etc.): Organic silt w/ ~25% peat, wet, med. dense, brown, strong fuel odor

Vegetative mat present? Y/N (Y circled) 1.5'   Standing water? Y/N (N circled) but water imm

Sampling tool: T-handle auger (circled)   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: 1st sample collected at 1.5' bgs because of veg. mat/roots sediment

NORTHEAST CAPE SITE 28 FIELD FORM

8/20/11
0955

Transect #: N/A Position: N/A Discrete sample 4

Sample ID: 11NC28SS069-2 Depth: 2'

Sample Description: Organic silt w/ ~40% peat, wet, med. dense, brown,
(material type, moisture content, color, general density, etc.) strong fuel odor

Vegetative mat present? Y / N see above Standing water? Y / N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Refusal at 2' bgs - rocks

* DUPLICATE 11NC28SS069-2.5 @ 1000

8/20/11
1020

Transect #: N/A Position: N/A Discrete Sample 5

Sample ID: 11NC28SS070-0.75 Depth: 0.75' (bgs, Not below water)

Sample Description: Organic silt w/ 20% peat, wet, med dense, brown,
(material type, moisture content, color, general density, etc.) slight-moderate fuel

Vegetative mat present? Y / N ~0.75' Standing water? Y / N ~~4-5~~ JC 6-7"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/20/11
1025

Transect #: N/A Position: N/A Discrete Sample 5

Sample ID: 11NC28SS070-1.25 Depth: 1.25' bgs (not below water)

Sample Description: Organic silt, wet, med. dense, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N see above Standing water? Y / N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

NORTHEAST CAPE SITE 28 FIELD FORM

8/20/11
1035

Transect #: ~~N/A~~ N/A

Position: N/A Discrete sample 5

Sample ID: 11~~NC28~~SS070-1.75

Depth: 1.75' (bgs, NOT water surface)

Sample Description: 60% organic silt, 40% peat, wet, moderately dense, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y / N (Y circled)

Standing water? Y / N (Y circled)

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/20/11
1110

Transect #: N/A

Position: N/A Discrete sample 6

Sample ID: 11NC28SS071-1

Depth: 1'

Sample Description: Organic silt, wet, -standing H2O, loose, dark brown, strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) Relatively thin & loose

Standing water? Y/N (N circled) but present after peeling away to veg. layer

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Sheen generated in water. Miscellaneous metal & wood debris in area - had to try several sample holes before finding spot to sample. * DUPLICATE 11NC28SS071-2.5 @ 1115

8/20/11
1120

Transect #: N/A

Position: N/A Discrete sample 6

Sample ID: 11NC28SS071-1.5

Depth: 1.5'

Sample Description: Organic silt, wet, loose, dark brown, moderate-strong fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N (Y circled) see above

Standing water? Y/N see above

Sampling tool: T-handle auger (circled) T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. see comments above

NORTHEAST CAPE SITE 28 FIELD FORM

8/20/11
1130

Transect #: N/A Position: N/A Discrete sample 6

Sample ID: 11NC28SS071 - 2 Depth: 2'

Sample Description: Organic silt, moist, relatively dense, dark brown,
(material type, moisture content, color, general density, etc.) no fuel odor

Vegetative mat present? Y/N see above - Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. See comments above
* MS/MSD - 3 MeOH-pres. 4 oz. septas, 4 16 oz. unpreserved

8/20/11
1330

Transect #: N/A Position: N/A Discrete sample 7

Sample ID: 11NC28SS072 - 1.25 Depth: 1.25' (bgs, NOT below water

Sample Description: 50% peat, 50% organic silt, wet, med. dense, dark
(material type, moisture content, color, general density, etc.) brown & black, strong fuel odor

Vegetative mat present? Y/N Standing water? Y/N ~6"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st sample collected at 1.25' bgs
because veg. mat 0-1.25

8/20/11
1335

Transect #: N/A Position: N/A Discrete sample 7

Sample ID: 11NC28SS072 - 1.75 Depth: 1.75' (bgs, NOT below water)

Sample Description: 80% peat, 20% organic silt, wet, med. dense, dark brown
(material type, moisture content, color, general density, etc.) & black, moderate fuel odor

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2nd depth at discrete location 7

NORTHEAST CAPE SITE 28 FIELD FORM

Transect #: N/A
Position: N/A Discrete Sample 7
Sample ID: 11NC28SS072-2.25
Depth: 2.25'
8/20/11 Sample Description: Peat, silt, and clay, moist, dense, dark brown (peat & silt)
1355 (material type, moisture content, color, general density, etc.) and gray (clay), strong fuel odor
Vegetative mat present? (Y)/N see above
Standing water? (Y)/N see above
Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix 3rd depth at discrete sample 7
* DUPLICATE 11NC28SS072-2.5 @ 1400
Sheen generated in water

Transect #: N/A
Position: N/A Discrete sample 8
Sample ID: 11NC28SS073-1.5'
Depth: 1.5' (bgs, not below water)
8/20/11 Sample Description: Organic silt, wet, med. dense, brown w/ some gray.
1430 (material type, moisture content, color, general density, etc.) moderate fuel odor
Vegetative mat present? (Y)/N 1.5'
Standing water? (Y)/N 12"
Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 1st sample collected at 1.5' bgs because roots/veg mat present 0-1.5'.

Transect #: N/A
Position: N/A Discrete sample 8
Sample ID: 11NC28SS073-2
Depth: 2' (bgs, not below water)
8/20/11 Sample Description: Organic silt, wet, dense, brown, slight fuel odor
1455 (material type, moisture content, color, general density, etc.)
Vegetative mat present? (Y)/N see above
Standing water? (Y)/N see above
Sampling tool: (T-handle auger) T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 2nd depth collected at point 073

NORTHEAST CAPE SITE 28 FIELD FORM

8/20/11
1500

Transect #: N/A

Position: N/A Discrete sample 8

Sample ID: 11NC28SS073-2.5

Depth: 2.5' (bgs, not below water)

Sample Description: Organic silt, some peat, moist, dense, brown, slight to moderate fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above

Standing water? Y/N see above

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 073.

8/20/11
1525

Transect #: N/A

Position: N/A Discrete sample 9

Sample ID: 11NC28SS074-1

Depth: 1' (bgs, not below water)

Sample Description: Organic silt, moist, med. dense, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N ~1'

Standing water? Y/N ~12-16"

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. Sheen present at sample point

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8/20/11
1535

Transect #: N/A

Position: N/A Discrete sample 9

Sample ID: 11NC28SS074-1.5

Depth: 1.5' (bgs, not below water)

Sample Description: Organic silt, some peat, wet, med. dense, brown (silt) and black (peat), slight fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above

Standing water? Y/N see above

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

NORTHEAST CAPE SITE 28 FIELD FORM

8/20/11
1540

Transect #: ~~N/A~~ Position: N/A Discrete sample 9

Sample ID: 11~~NC28~~SS074-2 Depth: 2' (bgs, not below water)

Sample Description: Organic silt, some peat, wet, med. dense, brown,
(material type, moisture content, color, general density, etc.) slight fuel odor

Vegetative mat present? Y/N See above Standing water? Y/N See above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/20/11
1645

Transect #: N/A Position: N/A Discrete sample 10

Sample ID: 11NC28SS075-1.5 Depth: 1.5' (bgs Not below water)

Sample Description: Organic silt & peat, wet-standing H_2O, relatively loose,
(material type, moisture content, color, general density, etc.) brown (silt), black (peat), slight fuel odor

Vegetative mat present? Y/N 1.5' Standing water? Y/N ~1'

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 1st depth collected at 1.5' bgs; Veg. mat 0-1.5

8/20/11
1700

Transect #: N/A Position: N/A Discrete Sample 10

Sample ID: 11NC28SS075-2 Depth: 2' (bgs, Not below water)

Sample Description: Organic silt, some sand & trace peat, wet-standing H_2O,
(material type, moisture content, color, general density, etc.) med. dense, brownish gray & black, slight fuel odor

Vegetative mat present? Y/N See above Standing water? Y/N ~1'

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment Matrix. 2nd depth collected at point 075

NORTHEAST CAPE SITE 28 FIELD FORM

8/20/11
1725

Transect #: N/A
Position: N/A Discrete sample 10
Sample ID: 11~~NC28SS~~075-2.5
Depth: 2.5' (bgs, NOT below water)
Sample Description: Clayey silt, ~~trace~~ wet, dense, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see above
Standing water? Y/N see above
Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix.
* MS/MSD - 2 MeOH 4 oz., 4 16-oz unpres.

8/21/11
0840

Transect #: N/A
Position: N/A Discrete sample 11
Sample ID: 11NC28SS076-1.5
Depth: 1.5' (bgs, NOT below water)
Sample Description: Clayey silt w/ sand, wet, med. dense, brown, no fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N 0-1.5'
Standing water? Y/N ~6-8"
Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 1st sample collected at 1.5' bgs because veg mat 0-1.5'

8/21/11
0850

Transect #: N/A
Position: N/A Discrete sample 11
Sample ID: 11NC28SS076-2
Depth: 2' (bgs, NOT below water)
Sample Description: Clayey silt w/ sand, Wet, med dense, brown w/ some gray, no fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see ~~above~~ above
Standing water? Y/N see above
Sampling tool: T-handle auger | T-handle sludge sampler | Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 2nd depth collected at point 076

NORTHEAST CAPE SITE 28 FIELD FORM

8/21/11
0900

Transect #: N/A
Position: N/A Discrete sample 11
Sample ID: ~~11NC28~~SSC76-2.5
Depth: 2.5'
Sample Description: Silty clay w/ sand, wet, dense, gray and brown, no fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y / N
Standing water? Y / N see above
Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 3rd depth at sample point 076.

8/21/11
0930

Transect #: N/A
Position: N/A Discrete sample 12
Sample ID: 11NC28SSC77-1.5
Depth: 1.5' (bgs, NOT below water)
Sample Description: Organic silt w/ some peat, wet - standing water, pretty dense, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N ~1.5
Standing water? Y/N ~16"
Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 1st sample collected at 1.5' bgs; Veg. mat 0-1.5'

8/21/11
0935

Transect #: N/A
Position: N/A Discrete sample 12
Sample ID: 11NC28SSC77-2
Depth: 2' (bgs, NOT below water)
Sample Description: Organic silt w/ peat, wet, pretty dense, brown, slight fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see above
Standing water? Y/N see above
Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix. 2nd depth sample collected at point 077

NORTHEAST CAPE SITE 28 FIELD FORM

8/21/11
0955

Transect #: N/A

Position: N/A

Sample ID: 11NC35SS077-2.5

Depth: 2.5' (bgs, NOT below water surface)

Sample Description: Organic silt w/ trace peat, wet, dense, brown,
(material type, moisture content, color, general density, etc.) slight fuel odor

Vegetative mat present? Y/N see above

Standing water? Y/N see above

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 3rd depth at point 077.

Transect #:

Position:

Sample ID:

Depth:

Sample Description:
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments:

Transect #:

Position:

Sample ID:

Depth:

Sample Description:
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N

Standing water? Y/N

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments:

Rec
S Clark
8/21/11

NORTHEAST CAPE SITE 28 FIELD FORM

8/21/11
1055

Transect #: Background
Position: 1
Sample ID: 11NC28SS078 - 1.5'
Depth: 1.5'
Sample Description: 90% peat, 10% organic silt, wet, med. dense, brown, no fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N 1.5'
Standing water? Y/N but H_2O immediately infiltrated into sample hole
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix

8/21/11
1100

Transect #: Background
Position: 1
Sample ID: 11NC28SS078-2
Depth: 2'
Sample Description: Organic silt w/ some peat, moist, med. dense, brown, no fuel odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see above
Standing water? Y/N see above
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix

8/21/11
1105

Transect #: Background
Position: 1
Sample ID: 11NC28SS078-2.5
Depth: 2.5'
Sample Description: ~~11NC28SS078-2.5~~ JC Silty clay, some organic silt, moist, med. dense, gray (silty clay) & brown (organic silt), no odor
(material type, moisture content, color, general density, etc.)
Vegetative mat present? Y/N see above
Standing water? Y/N see above
Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer
Photo info/comments: Sediment matrix.
* DUPLICATE 11NC28SS078-3 @ 1110

NORTHEAST CAPE SITE 28 FIELD FORM

8/21/11
1120

Transcect #: ~~Back~~ground Position: 2

Sample ID: 11~~NC28SS~~S079, -2.5 Depth: 2.5'

Sample Description: Organic silt w/ some peat, wet, med dense,
(material type, moisture content, color, general density, etc.) brown, no fuel odor

Vegetative mat present? Y / N ~2.5' Standing water? Y N but water immediately infiltrates sample hole

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: sediment matrix

8/21/11
1125

Transect #: Background. Position: 2

Sample ID: 11NC28SS079-3 Depth: 3'

Sample Description: Organic silt w/ some peat, wet, med. dense, brown, no fuel
(material type, moisture content, color, general density, etc.) odor

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/21/11
1130

Transect #: Background Position: 2

Sample ID: 11NC28SS079-3.5 Depth: 3.5'

Sample Description: Organic silt, ~~some~~ JC wet, med dense, brown no fuel odor
(material type, moisture content, color, general density, etc.)

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments:

NORTHEAST CAPE SITE 28 FIELD FORM

8/21/11
1135

Transect #: Background Position: 3

Sample ID: ~~11NC28~~SS080-2.75 Depth: 2.75' (bgs, not below water)

Sample Description: Peat w/ some organic silt, wet, loose to med. dense,
(material type, moisture content, color, general density, etc.) brown, no fuel odor

Vegetative mat present? Y/N 2.75' Standing water? Y/N ~6-8"

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/21/11
1140

Transect #: Background Position: 3

Sample ID: 11NC28SS080-3.25 Depth: 3.25' (bgs, not below water)

Sample Description: Peat w/ some organic silt, wet, loose-med. dense,
(material type, moisture content, color, general density, etc.) brown, no odor

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/21/11
1155

Transect #: Background Position: 3

Sample ID: 11NC28SS080-3.75 Depth: 3.75' (bgs, not below water)

Sample Description: ~50% organic silt, 50% peat, wet, loose-med dense,
(material type, moisture content, color, general density, etc.) brown, no odor

Vegetative mat present? Y/N see above Standing water? Y/N see above

Sampling tool: T-handle auger T-handle sludge sampler Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

*MS/MSD - double volume

NORTHEAST CAPE SITE 28 FIELD FORM

8/21/11
1200

Transect #: Background   Position: 4

Sample ID: 11NC28SS081-1.25   Depth: 1.25' (bgs, Not below water)

Sample Description: Organic silt w/ ~25% peat, wet - standing water, pretty
(material type, moisture content, color, general density, etc.) loose, brown, no odor

Vegetative mat present? Y/N ~1.25'   Standing water? Y/N ~4"

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix.

8/21/11
1205

Transect #: Background   Position: 4

Sample ID: 11NC28SS081-1.75   Depth: ~~2.25~~ 1.75'

Sample Description: Organic silt w/ ~25% peat, wet - standing water,
(material type, moisture content, color, general density, etc.) loose, brown, no odor

Vegetative mat present? Y/N see above   Standing water? Y/N see above

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix

8/21/11
1215

Transect #: Background   Position: 4

Sample ID: 11NC28SS081-2.25   Depth: 2.25'

Sample Description: ~75% peat, 25% organic silt, moist, loose, brown,
(material type, moisture content, color, general density, etc.) no fuel odor

Vegetative mat present? Y/N see above   Standing water? Y/N see above

Sampling tool: T-handle auger   T-handle sludge sampler   Sludge sampler w/ slide hammer

Photo info/comments: Sediment matrix. 2.5

* DUPLICATE 11NC28SS081 @ 1220

APPENDIX C

Soil Boring Logs

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS001

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404074.089 E 1811048.95
Elevation:	61.334422 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	1
Position:	1
Date Started:	8/13/2011
Date Completed	8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	Peat with some silt, moist, brown, loose
		11NC28SS001-0.5		PT	Peat with silt, moist, brown, moderately loose
1		11NC28SS001-1			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS002

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404098.196 E 1811051.045
Elevation:	59.429591 feet above MSL
Total Depth:	3 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	1
Position:	2
Date Started:	8/13/2011
Date Completed	8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-2')
1					
2		11NC28SS002-2		OL	Organic silt, wet, dark brown, fairly dense, moderate fuel odor
		11NC28SS002-2.5		OL	Organic silt, wet, dark brown, fairly dense, moderate fuel odor
3		11NC28SS002-3		OL	Organic silt, brown, fairly dense, slight fuel odor
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	11NC28SS003	Logged By: Julie Clark
US Army Corps of Engineers NE Cape HTRW AK District	Site ID: Site 28 Site Location: St. Lawrence Island Boring Location: N 3404126.435 E 1811051.168	Drilling Method: Hand Auger Borehole Diameter: 4 inches Transect: 1 Position: 3
Job No. 34110008	Elevation: 59.479807 feet above MSL Total Depth: 3.5 feet	Date Started: 8/13/2011 Date Completed 8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-2.5')
1					
2				OL	Organic silt, brown and gray, fairly dense, possible slight fuel odor
		11NC28SS003-2.5		CL	Silty clay, wet, gray, dense, slight fuel odor
3		11NC28SS003-3		CL	Silty clay, wet, grayish brown, dense
		11NC28SS003-3.5			
4					
5					

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Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS004

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404166.841 E 1811053.364
Elevation:	58.561578 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	1
Position:	4
Date Started:	8/13/2011
Date Completed	8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-2.5)
1					
2	X	11NC28SS004-2.5		OL	Organic silt, wet, brown, moderately dense, refusal at 2.5' bgs
3					
4					
5					

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ENVIRONMENTAL
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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS005

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404178.096 E 1811052.415
Elevation:	61.115151 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	1
Position:	5
Date Started:	8/13/2011
Date Completed	8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	Peat with silty soil, moist, brown, moderately dense, no odor
		11NC28SS005-0.5			
				PT	Peat with silt, moist, brown, dense, no odor, soil is cold, refusal at 1.17' bgs-permafrost
1		11NC28SS005-1			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS006

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3403895.057 E 1811244.287
Elevation:	68.412679 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	2
Position:	1
Date Started:	8/13/2011
Date Completed	8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	Mostly peat with silty soil, moist, brown, moderately dense, moderate fuel odor
		11NC28SS006-0.5		PT	Mostly peat with silty soil, moist, brown, moderately dense, moderate fuel odor, refusal at 1.25' bgs-rock
1		11NC28SS006-1 (DUP 11NC28SS006-2)			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS007

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3403906.734 E 1811252.342
Elevation:	67.788737 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	2
Position:	2
Date Started:	8/13/2011
Date Completed	8/13/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1					Vegetative Mat (0-1.5')
1–1.5	X	11NC28SS007-1.5		PT	Peat with silty soil, moist, brown, medium dense, fuel odor, refusal at 1.6' bgs
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS008

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3403917.84 E 1811258.948
Elevation:	67.697032 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	2
Position:	3
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0		11NC28SS008-0.5		PT	Peat with silty soil, moist, brown, medium dense
1		11NC28SS008-1		PT	Peat with silty soil, moist, brown, medium dense, no fuel odor, refusal at 1' bgs-rock
2					
3					
4					
5					

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No. = number
USCS = Unified Soil Classification System

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	11NC28SS009	Logged By: Julie Clark
US Army Corps of Engineers NE Cape HTRW AK District	Site ID: Site 28 Site Location: St. Lawrence Island Boring Location: N 3403928.732 E 1811269.669	Drilling Method: Hand Auger Borehole Diameter: 4 inches Transect: 2 Position: 4
Job No. 34110008	Elevation: 68.557093 feet above MSL Total Depth: 1 feet	Date Started: 8/14/2011 Date Completed 8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	Peat with silty soil, trace sand, moist, brown, medium dense, no fuel odor
		11NC28SS009-0.5		OL	Silty soil with peat, moist, brown, medium dense, no fuel odor, refusal at 1' bgs-rocks
1		11NC28SS009-1			
2					
3					
4					
5					

Notes:

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	11NC28SS010	
US Army Corps of Engineers NE Cape HTRW AK District		
Job No. 34110008		

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404052.849 E 1810862.033
Elevation:	62.444305 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	1
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X			SP	Fill-gravelly sand, traces of organics, moist, brown, loose, no fuel odor
		11NC28SS010-0.5			
	X			CL	Silty clay, moist, mottled brown and gray, medium dense, no fuel odor
1		11NC28SS010-1			
	X			CL	Silty clay, pretty dry (crumbly), mottled brown and gray, medium dense, slight-moderate fuel odor
		11NC28SS010-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS011

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404066.716 E 1810867.11
Elevation:	60.526575 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	2
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				CL	50% silty clay with trace gravel and sand and 50% peat, moist, brown (peat), with brown/gray mottling (silty clay), medium dense, slight-moderate fuel odor
		11NC28SS011-0.5		CL	Organic silty clay, moist, brown, moderately dense, fuel odor
1		11NC28SS011-1		CL	Organic silty clay, moist, brown, moderately dense, fuel odor
		11NC28SS011-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS012

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404083.593 E 1810876.457
Elevation:	59.838824 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	3
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	Sandy silt with peat, wet, dark brown, moderately dense, no fuel odor
		11NC28SS012-0.5		OL	Organic clayey silt, wet, dark brown, moderately dense, no fuel odor
1		11NC28SS012-1		OL	Organic clayey silt, moist, dark brown, slight fuel odor
		11NC28SS012-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS013

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404107.494 E 1810881.771
Elevation:	59.002956 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	4
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					
	X	11NC28SS013-0.5		OL	Organic silt, wet, dark brown, no fuel odor
1	X	11NC28SS013-1		OL	Organic silt, moist to wet, brown, no fuel odor
	X	11NC28SS013-1.5		OL	Organic silt, moist to wet, brown, possible slight fuel odor
2					
3					
4					
5					

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ENVIRONMENTAL
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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS014

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404135.635 E 1810900.709
Elevation:	58.886696 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	5
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
				PT	50% Peat and 50% silt, wet, dark brown, strong fuel odor
1		11NC28SS014-1		OL	Organic silt, moist to wet, dark brown, strong fuel odor
		11NC28SS014-1.5		OL	Organic silt, moist, dark brown, slight fuel odor
2		11NC28SS014-2			
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS015

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404168.585 E 1810917.157
Elevation:	59.328076 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	6
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.5					Vegetative Mat (0-1.5')
1–1.5	X	11NC28SS015-1.5		PT	Mostly peat with some silty soil, wet, dark brown, moderate fuel odor
1.5–2	X	11NC28SS015-2		PT	Mostly peat with some silty soil, wet, dark brown, moderate fuel odor, refusal at 2' bgs

Depth scale: 0, 1, 2, 3, 4, 5

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS016

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404203.375 E 1810934.958
Elevation:	60.016108 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	3
Position:	7
Date Started:	8/14/2011
Date Completed	8/14/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					
	X	11NC28SS016-0.5		PT	Peat with silty soil, moist, brown
	X			PT	Peat with silty soil, moist, dark brown, slight fuel odor, refusal at 1' bgs-rock
1		11NC28SS016-1			
2					
3					
4					
5					

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Bristol
ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS017

Site ID: Site 28
Site Location: St. Lawrence Island
Boring Location: N 3404049.338
E 1810804.277
Elevation: 61.205311 feet above MSL
Total Depth: 1.5 feet

Logged By: Julie Clark
Drilling Method: Hand Auger
Borehole Diameter: 4 inches
Transect: 4
Position: 1

Date Started: 8/15/2011
Date Completed 8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				SP	Gravelly sand with some organics, moist, gray, moderate fuel odor
		11NC28SS017-0.5		OL	Organic silt, moist, brown, moderate fuel odor
1		11NC28SS017-1		OL	Silt, moist, brown, moderate fuel odor
		11NC28SS017-1.5			
2					
3					
4					
5					

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ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS018

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404057.307 E 1810789.557
Elevation:	60.353281 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	2
Date Started:	8/15/2011
Date Completed	8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					
0–0.5	X	11NC28SS018-0.5		OL	Organic silt, moist, brown, strong fuel odor
0.5–1	X	11NC28SS018-1		OL	Organic silt, moist, brown, strong fuel odor
1–1.5	X	11NC28SS018-1.5		OL	Organic silt, brown, moist, strong fuel odor, organics at 1.5' bgs

Depth scale: 0, 1, 2, 3, 4, 5

Notes:
" = inch or inches
bgs = below ground surface
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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS019

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404054.502 E 1810797.903
Elevation:	60.941952 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	3
Date Started:	8/15/2011
Date Completed	8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	Organic silt with sand and organics, gray, moist, slight to moderate fuel odor
		11NC28SS019-0.5		OL	Organic silt, brown, moist, moderate fuel odor
1		11NC28SS019-1		OL	Silt with some organics, moist, brown, slight fuel odor
		11NC28SS019-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS020

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404064.432 E 1810784.928
Elevation:	60.613399 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	4
Date Started:	8/15/2011
Date Completed	8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	Peat with silty material, moist, brown (peat) and gray (silt), strong fuel odor
		11NC28SS020-0.5		OL	Silt with some organics, moist, brown, moderate fuel odor, refusal at 1' bgs-rock
1		11NC28SS020-1			
2					
3					
4					
5					

Notes:
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NE Cape HTRW AK District

Job No. 34110008

11NC28SS021

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404071.137 E 1810775.509
Elevation:	60.805343 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	5
Date Started:	8/15/2011
Date Completed	8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	Peat and silt, moist, brown (peat) and gray (silt)
		11NC28SS021-0.5		OL	Organic silt, moist, brown, slight fuel odor
1		11NC28SS021-1		OL	Silt, moist, brown, slight fuel odor
		11NC28SS021-1.5			
2					
3					
4					
5					

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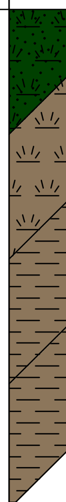
11NC28SS022

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404083.917 E 1810761.247
Elevation:	60.750399 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	6
Date Started:	8/15/2011
Date Completed	8/15/2011



Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
	X			PT	Peat and silt, moist, brown (peat) and gray (silt), strong fuel odor
1	X	11NC28SS022-1 11NC28SS022-1.5		OL	Silt, moist, brown, moderate fuel odor
2	X	11NC28SS022-2		OL	Silt, moist, brown, moderate fuel odor
3					
4					
5					

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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS023

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404086.214 E 1810753.018
Elevation:	60.428852 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	7
Date Started:	8/15/2011
Date Completed	8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
	X			OL	Silt and organics, moist, dark brown, slight to moderate fuel odor
1	X	11NC28SS023-1 (DUP 11NC28SS023-2.5) 11NC28SS023-1.5		OL	Organic silt, moist, brown, moderate to strong fuel odor
	X			OL	Silt with organics, moist, brown
2		11NC28SS023-2			
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS024

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404092.536 E 1810747.49
Elevation:	61.018029 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	4
Position:	8
Date Started:	8/15/2011
Date Completed	8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
				OL	Silt with some peat, moist, brown, no noticible fuel odor
1		11NC28SS024-1		OL	Silt with trace organics, moist, gray and brown, slight fuel odor, refusal at 1.5' bgs-rock
		11NC28SS024-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS025

Site ID: Site 28
Site Location: St. Lawrence Island
Boring Location: N 3404071.886
E 1810762.945
Elevation: 61.369358 feet above MSL
Total Depth: 1.5 feet

Logged By: Julie Clark
Drilling Method: Hand Auger
Borehole Diameter: 4 inches
Transect: 5
Position: 1

Date Started: 8/15/2011
Date Completed 8/15/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				MH	Sandy silt, moist, gray, no fuel odor
		11NC28SS025-0.5		PT	Peat and silty soil, some gravel and rocks, moist, brown (peat) and gray (silt), strong fuel odor
1		11NC28SS025-1		PT	Peat and silty soil, moist, brown, moderate fuel odor
		11NC28SS025-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	11NC28SS026	Logged By: Julie Clark
US Army Corps of Engineers NE Cape HTRW AK District	Site ID: Site 28 Site Location: St. Lawrence Island Boring Location: N 3404096.228 E 1810774.861 Elevation: 59.764705 feet above MSL Total Depth: 1.5 feet	Drilling Method: Hand Auger Borehole Diameter: 4 inches Transect: 5 Position: 2 Date Started: 8/16/2011 Date Completed 8/16/2011
Job No. 34110008		

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	75% peat, with 25% fine silty sand, brown (peat) and gray (silty sand), moist, strong fuel odor
		11NC28SS026-0.5		OL	80% Fine silty sand and 20% peat, moist, brown (peat) and gray (silt), strong fuel odor
1		11NC28SS026-1		OL	Clayey silt with trace organics, moist, dark brown, moderate fuel odor
		11NC28SS026-1.5			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

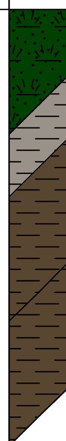
US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS027

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404115.162 E 1810780.77
Elevation:	59.292978 feet above MSL
Total Depth:	1.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	5
Position:	3
Date Started:	8/16/2011
Date Completed	8/16/2011



Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-0.75')
		11NC28SS027-0.75		OL	Silt with minor organics, some peat, moist, gray, slight fuel odor
1				OL	Clayey silt with minor organics, moist, dark brown, slight fuel odor
		11NC28SS027-1.25		OL	Clayey silt, trace organics, moist, dark brown, no fuel odor
		11NC28SS027-1.75			
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS028

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404135.458 E 1810794.585
Elevation:	58.893117 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	5
Position:	4
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X			OL	Silt with fine sand, trace organics, moist, dark gray, moderate fuel odor
	X	11NC28SS028-0.5		OL	Silt with fine sand, trace organics, wet, dark gray, moderate fuel odor
1	X	11NC28SS028-1		OL	Clayey silt, trace organics, moist, dark brown, slight fuel odor
		11NC28SS028-1.5			
2					
3					
4					
5					

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS029

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404157.835 E 1810802.052
Elevation:	58.698466 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	5
Position:	5
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	Silt with trace organics, dark gray and dark brown, moderate fuel odor
		11NC28SS029-0.5		CL	Silty clay, moist, gray, moderate fuel odor
1		11NC28SS029-1		CL	Silty clay, wet, gray, slight fuel odor
		11NC28SS029-1.5			
2					
3					
4					
5					

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Job No. 34110008

11NC28SS030

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404175.897 E 1810812.257
Elevation:	58.435512 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	5
Position:	6
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegitative Mat (0-1')
	X			OL	Silty clay, trace organics, wet, dark gray, strong fuel odor
1	X	11NC28SS030-1		OL	Clayey silt, trace organics, moist, moderately dense, strong fuel odor
	X	11NC28SS030-1.5 11NC28SS030-2 (DUP 11NC28SS030-2.5)		OL	Clayey silt, trace organics, moist, moderately dense, strong fuel odor
2					
3					
4					
5					

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Job No. 34110008

11NC28SS031

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404200.436 E 1810821.152
Elevation:	61.158975 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	5
Position:	7
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0		11NC28SS031-0.5		PT	60% peat and 40% silt, moist, moderately dense, no fuel odor
1		11NC28SS031-1		OL	Clayey silt with organics, moist, brown, no fuel odor
		11NC28SS031-1.5		OL	Clayey silt with organics, moist, brown, no fuel odor
2					
3					
4					
5					

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Job No. 34110008

11NC28SS032

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404321.232 E 1810662.168
Elevation:	61.917712 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	1
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				PT	75% peat and 25% silty soil, moist, brown, no fuel odor
		11NC28SS032-0.5		CL	Organic silty clay, moist, brown, no fuel odor
1		11NC28SS032-1		CL	Organic silty clay, moist, mottled brown and gray, no fuel odor
		11NC28SS032-1.5			
2					
3					
4					
5					

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS033

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404315.658 E 1810703.747
Elevation:	59.763538 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	2
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0		11NC28SS033-0.5		MH	Silt, moist, gray, relatively loose, no fuel odor
1		11NC28SS033-1		MH	Silt, moist, gray, relatively loose, no fuel odor
		11NC28SS033-1.5		MH	Silt, moist, gray, loose-moderately dense, no fuel odor
2					
3					
4					
5					

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS034

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404313.161 E 1810743.386
Elevation:	58.279595 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	3
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X	11NC28SS034-0.5		OL	Organic silt with 25% peat, moist, dark brown, relatively loose, no fuel odor
	X	11NC28SS034-1		OL	Organic silt, moist, dark brown, relatively loose, no fuel odor
1	X	11NC28SS034-1.5		OL	Clayey silt, moist, mottled dark brown and gray, medium dense, no fuel odor
2					
3					
4					
5					

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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS035

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404318.247 E 1810768.182
Elevation:	57.815083 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	4
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	Organic silt, wet, dark brown, loose, moderate fuel odor
		11NC28SS035-0.5		OL	Organic clayey silt, wet, loose, dark brown and black, moderate fuel odor
1		11NC28SS035-1		OL	Organic silt, moist, loose, brown, moderate fuel odor
		11NC28SS035-1.5			
2					
3					
4					
5					

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Job No. 34110008

11NC28SS036

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404310.595 E 1810790.57
Elevation:	57.057979 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	5
Date Started:	8/16/2011
Date Completed	8/16/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X			OL	Organic silt, wet, loose, brown with some black peat, slight fuel odor
		11NC28SS036-0.5			
	X			OL	Organic silt, wet, loose, dark brown, possible slight fuel odor
1		11NC28SS036-1 (DUP 11NC28SS036-2)			
	X			OL	Organic silt, moist, loose, dark brown, slight fuel odor
		11NC28SS036-1.5			
2					
3					
4					
5					

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS037

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404309.055 E 1810827.364
Elevation:	56.884279 feet above MSL
Total Depth:	3 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	6
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.5					Vegetative Mat (0-2')
1.5–2	X			OL	Organic silty clay, wet, medium dense, no fuel odor
2–2.5	X	11NC28SS037-2		OL	Organic clayey silt, moist, medium dense, no fuel odor
2.5–3	X	11NC28SS037-2.5		OL	Organic clayey silt, moist, medium dense, no fuel odor
3		11NC28SS037-3			

Depth scale: 0, 1, 2, 3, 4, 5

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS038

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404312.925 E 1810898.221
Elevation:	57.630686 feet above MSL
Total Depth:	2.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	7
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1.75')
1					
		11NC28SS038-1.75		OL	Organic silt, frozen, wet, brown, slight fuel odor
2				OL	Organic silt and ice, frozen, wet, brown, no fuel odor
		11NC28SS038-2.25		OL	Organic silt, moist to wet, brown, moderately dense, no fuel odor
		11NC28SS038-2.75			
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS039

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404307.109 E 1810918.88
Elevation:	59.138111 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	6
Position:	8
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
	X			OL	Organic silt with 40% peat, frozen, hard, brown, no fuel odor
1	X	11NC28SS039-1		OL	Organic silt, frozen, hard, brown, no fuel odor, refusal at 1.5' bgs-permafrost
		11NC28SS039-1.5 (DUP 11NC28SS039-2)			
2					
3					
4					
5					

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS040

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404561.66 E 1810815.97
Elevation:	57.4 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	7
Position:	1
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					
0–0.5	X	11NC28SS040-0.5		CL	Silty clay, moist, relatively loose, gray, no fuel odor
0.5–1	X	11NC28SS040-1		OL	Organic silt, moist, relatively loose, brown with some black, no fuel odor
1–1.5	X	11NC28SS040-1.5		OL	Organic silt, frozen, hard, dark brown, no fuel odor, refusal at 1.5 bgs'-permafrost

Depth scale: 0, 1, 2, 3, 4, 5

Notes:
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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS041

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404549.96
	E 1810851.24
Elevation:	54.1 feet above MSL
Total Depth:	1.33 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	7
Position:	2
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
				PT	Peat with trace silt, wet, medium dense, moderate fuel odor
1		11NC28SS041-1			
		11NC28SS041-1.33		PT	60% peat and 40% silt, wet, dark brown and black, moderate fuel odor, refusal at 1.33' bgs-rocks
2					
3					
4					
5					

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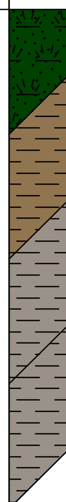
11NC28SS042

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404545.98 E 1810866.77
Elevation:	53.8 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	7
Position:	3
Date Started:	8/17/2011
Date Completed	8/17/2011



Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
				OL	Silt and organics, wet, burnt orange (silt) and dark brown/black (organics), slight fuel odor
1		11NC28SS042-1		OL	Clayey silt (like cornstarch), wet, gray, relatively loose, slight fuel odor
		11NC28SS042-1.5 (DUP 11NC28SS042-2.5)		OL	Clayey silt (like cornstarch) with some gravel, wet, medium density, gray, slight fuel odor
2		11NC28SS042-2			
3					
4					
5					

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Job No. 34110008

11NC28SS043

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404537.26 E 1810910.75
Elevation:	55.1 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	7
Position:	4
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1					Vegetative Mat (0-1.5')
1–1.5	X	11NC28SS043-1.5		PT	75% peat and 25% silt, wet, brown, moderate fuel odor
1.5–2	X	11NC28SS043-2		PT	60% peat and 40% silt, wet, brown, moderate fuel odor
2–2.5	X	11NC28SS043-2.5		PT	50% peat and 50% silt, moist, brown, moderate fuel odor, refusal at 2.5' bgs-rocks

Depth scale: 0, 1, 2, 3, 4, 5

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Job No. 34110008

11NC28SS044

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404530.55 E 1810932.7
Elevation:	55.1 feet above MSL
Total Depth:	3 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	7
Position:	5
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-2')
1					
1.5–2	X			PT	80% peat and 20% silt, wet, moderately dense, brown, strong fuel odor
2–2.5	X	11NC28SS044-2		OL	70% silt and 30% peat, wet, moderately dense, brown, strong fuel odor
2.5–3	X	11NC28SS044-2.5		OL	Organic silt with 25% peat, wet, medium dense, moderate fuel odor
3		11NC28SS044-3			
4					
5					

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Job No. 34110008

11NC28SS045

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404517.92 E 1810951.78
Elevation:	56.6 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	7
Position:	6
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
	X			OL	50% organic silt and 50% peat, partially frozen, moist, brown, no fuel odor
1	X	11NC28SS045-1		OL	Organic silt with 25%peat, frozen, hard, brown, no fuel odor, refusal at 1.5' bgs-permafrost
		11NC28SS045-1.5			
2					
3					
4					
5					

Notes:

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Job No. 34110008

11NC28SS046

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404836.0764 E 1810901.5125
Elevation:	44.5 feet above MSL
Total Depth:	1.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	8
Position:	1
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-0.75')
	X	11NC28SS046-0.75		OL	Organic silt with 10% peat, moist, moderately loose, brown, no fuel odor
1	X	11NC28SS046-1.25		OL	Organic silt with 10% peat, moist, moderately loose, brown, no fuel odor
	X	11NC28SS046-1.75		OL	Organic silt with trace fine sand, moist, moderately loose, brown, no fuel odor
2					
3					
4					
5					

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Job No. 34110008

11NC28SS047

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404826.34 E 1810934.46
Elevation:	43.6 feet above MSL
Total Depth:	3 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	8
Position:	2
Date Started:	8/17/2011
Date Completed	8/17/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-2')
1					
1.5–2	X			OL	60% organic silt and 40% peat, moist, brown, very strong fuel odor
2	X	11NC28SS047-2			
2–2.5	X			OL	90% organic silt and 10% peat, moist, brown, very strong fuel odor
2.5	X	11NC28SS047-2.5			
2.5–3	X			OL	Organic silt with trace fine sand, moist, brown, moderate fuel odor
3		11NC28SS047-3			
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	# 11NC28SS048	Logged By: Julie Clark Drilling Method: Hand Auger Borehole Diameter: 4 inches Transect: 8 Position: 3
US Army Corps of Engineers NE Cape HTRW AK District	Site ID: Site 28 Site Location: St. Lawrence Island Boring Location: N 3404815.55 E 1810952.56	Date Started: 8/18/2011 Date Completed 8/18/2011
Job No. 34110008	Elevation: 43.2 feet above MSL Total Depth: 2 feet	

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
	X			OL	70% silt and 30% peat, some frozen material, wet, relatively loose, reddish brown, moderate fuel odor
1	X	11NC28SS048-1		CL	Silty clay with some organics, some black peat, wet, relatively loose, grayish brown, fuel odor
	X	11NC28SS048-1.5		CL	Silty clay, trace organics, wet, gray with some brown, possible slight fuel odor
2		11NC28SS048-2 (DUP 11NC28SS048-2.5)			
3					
4					
5					

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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS049

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404830.93 E 1810967.73
Elevation:	43.8 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	8
Position:	4
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.0					Vegetative Mat (0-1.5')
1.0–1.5	X	11NC28SS049-1.5		OL	75% silt and 25% peat, wet, relatively loose, dark brown (silt) and black (peat), strong fuel odor
1.5–2.0	X	11NC28SS049-2 (DUP 11NC28SS049-3)		OL	Organic silt with some peat, wet, moderately dense, brown (silt) and black (peat), moderate fuel odor
2.0–2.5	X	11NC28SS049-2.5		OL	Organic silt with some peat, wet, moderately dense, brown (silt) and black (peat), moderate fuel odor

Depth scale: 0, 1, 2, 3, 4, 5

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS050

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404831.38 E 1810993.92
Elevation:	45 feet above MSL
Total Depth:	1.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	8
Position:	5
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-0.75')
		11NC28SS050-0.75		OL	60% organic silt and 40% peat, wet, brown, no fuel odor
1				OL	Organic silt with some gravel, wet, brown, slight fuel odor
		11NC28SS050-1.25		OL	Organic silt, moist, brown, no fuel odor
		11NC28SS050-1.75			
2					
3					
4					
5					

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Job No. 34110008

11NC28SS051

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404827.98 E 1811017.07
Elevation:	46.5 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	8
Position:	6
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X	11NC28SS051-0.5		CL	Silty clay with 10% organic silt, moist, moderately dense, gray (silty clay) and brown (organic silt), no fuel odor
1	X	11NC28SS051-1		CL	Silty clay, moist, moderately dense, gray, no fuel odor
	X	11NC28SS051-1.5		CL	Silty clay, moist, moderately dense, gray, no fuel odor
2					
3					
4					
5					

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11NC28SS052

US Army Corps of Engineers
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Job No. 34110008

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405092.26 E 1810994.91
Elevation:	40.7 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	9
Position:	1
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	60% organic silt and 40% peat, moist, moderately dense, brown, no fuel odor
		11NC28SS052-0.5		OL	Organic silt, moist, moderately dense, brown, fuel odor
1		11NC28SS052-1		OL	Organic silt, moist, medium dense, brown, no fuel odor
		11NC28SS052-1.5			
2					
3					
4					
5					

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US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS053

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405085.77 E 1811027.73
Elevation:	41.3 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	9
Position:	2
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
				PT	75% peat and 25% organic silt, wet, relatively loose, brown with slight reddish staining, no fuel odor
1		11NC28SS053-1		OL	Organic silt with some peat, moist to wet, relatively loose, brown, slight fuel odor
		11NC28SS053-1.5 (DUP 11NC28SS053-2.5)		OL	Organic silt with some peat, moist to wet, medium dense, brown, no fuel odor
2		11NC28SS053-2			
3					
4					
5					

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11NC28SS054

Site ID: Site 28
Site Location: St. Lawrence Island
Boring Location: N 3405080.83
E 1811037.13
Elevation: 41.1 feet above MSL
Total Depth: 1.5 feet

Logged By: Julie Clark
Drilling Method: Hand Auger
Borehole Diameter: 4 inches
Transect: 9
Position: 3

Date Started: 8/18/2011
Date Completed 8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	Organic clayey silt with some peat, wet, relatively loose, slight fuel odor
		11NC28SS054-0.5		OL	Organic clayey silt, moist, relatively loose, slight fuel odor
1		11NC28SS054-1		OL	Organic clayey silt, some silty clay, partially frozen, hard, slight fuel odor
		11NC28SS054-1.5			
2					
3					
4					
5					

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Job No. 34110008

11NC28SS055

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405082.74 E 1811080.93
Elevation:	42.4 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	9
Position:	4
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1.5')
1	X	11NC28SS055-1.5		OL	Organic silt with some clay, wet, moderately dense, no fuel odor
	X	11NC28SS055-2		OL	Organice clayey silt, moist, moderately dense, no fuel odor
2	X	11NC28SS055-2.5		OL	Organic clayey silt, moist, fairly dense, no fuel odor
3					
4					
5					

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Job No. 34110008

11NC28SS056

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405066.53 E 1811121.73
Elevation:	45.7 feet above MSL
Total Depth:	1.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	9
Position:	5
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-0.75')
		11NC28SS056-0.75		OL	Organic silt, moist, relatively loose, brown, no fuel odor
1				OL	Organic silt, moist, relatively loose, brown, no fuel odor
		11NC28SS056-1.25		OL	Clayey silt, moist, medium dense, brown, no fuel odor
		11NC28SS056-1.75			
2					
3					
4					
5					

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Job No. 34110008

11NC28SS057

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405549.44 E 1811108.8
Elevation:	35.9 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	10
Position:	1
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1.5')
1		11NC28SS057-1.5		OL	Organic silt with some peat, wet, brown, no fuel odor
		11NC28SS057-2		OL	Organic silt, some rocks, wet, brown, possible fuel odor
2		11NC28SS057-2.5		CL	Silty clay with some gravel, wet, gray, medium dense, possible fuel odor
3					
4					
5					

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11NC28SS058

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405551.76 E 1811143.75
Elevation:	35.7 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	10
Position:	2
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	Silt and organics, wet, dark brown, no fuel odor
		11NC28SS058-0.5		OL	Organic silt and peat, wet, relatively loose, dark brown (silt), black (peat), peat has moderate fuel odor
1		11NC28SS058-1 (DUP 11NC28SS58-2)		CL	Silty clay with trace fine sand, wet, medium dense, slight fuel odor
		11NC28SS058-1.5			
2					
3					
4					
5					

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Job No. 34110008

11NC28SS059

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405551.68 E 1811154.41
Elevation:	36.3 feet above MSL
Total Depth:	1.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	10
Position:	3
Date Started:	8/18/2011
Date Completed	8/18/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0				OL	60% organic silt and 40% peat, wet, loose, dark brown with slight gray, no fuel odor
		11NC28SS059-0.5		OL	60% organic silt and 40% peat, wet, loose, dark brown, no fuel odor
1		11NC28SS059-1		OL	60% organic silt and 40% peat, wet, loose, dark brown, no fuel odor
		11NC28SS059-1.5			
2					
3					
4					
5					

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USCS = Unified Soil Classification System

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	**11NC28SS060**
US Army Corps of Engineers NE Cape HTRW AK District	Site ID: Site 28 Site Location: St. Lawrence Island Boring Location: N 3404561.5 E 1810861.97 Elevation: 52.8 feet above MSL Total Depth: 1.5 feet
Job No. 34110008	

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	11
Position:	1
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X	11NC28SS060-0.5		OL	Organic silt and gravelly sand, wet, loose, dark gray, moderate fuel odor
	X	11NC28SS060-1 (DUP 11NC28SS060-2)		SP	Gravelly sand with some organic silt and peat, wet, relatively loose, dark brown, moderate fuel odor
1	X	11NC28SS060-1.5		OL	Organic silt, moist, medium dense, brown, moderate fuel odor
2					
3					
4					
5					

Notes:

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NE Cape HTRW AK District

Job No. 34110008

11NC28SS061

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404609.97 E 1810879.92
Elevation:	51.1 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	11
Position:	2
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X	11NC28SS061-0.25		OL	Silt, sand and some vegetation, reddish brown (silt and sand) and black (vegetation), wet, loose, possible slight fuel odor in silt/sand, moderate-strong fuel odor in vegetation
					Vegetative Mat (0.25-1.25' bgs)
1	X	11NC28SS061-1.5		OL	Organic silt and peat, dark brown(silt) and black(peat), wet, moderately loose, slight fuel odor
	X	11NC28SS061-2		OL	Clayey silt, trace peat, wet, medium dense, gray, slight fuel odor
2					
3					
4					
5					

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11NC28SS062

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404650.87 E 1810894.24
Elevation:	49.4 feet above MSL
Total Depth:	0.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	11
Position:	3
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0		11NC28SS062-0.25		OL	Silt with trace sand, wet, loose, reddish brown, no fuel odor
		11NC28SS062-0.75		PT	60% peat and 40% organic silt, wet, loose, black, moderate fuel odor, refusal at 0.75'-rocks
1					
2					
3					
4					
5					

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Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC	**11NC28SS063**	Logged By: Julie Clark Drilling Method: Hand Auger Borehole Diameter: 4 inches Transect: 11 Position: 4
US Army Corps of Engineers NE Cape HTRW AK District	Site ID: Site 28 Site Location: St. Lawrence Island Boring Location: N 3404711.82 E 1810891.07	Date Started: 8/19/2011 Date Completed 8/19/2011
Job No. 34110008	Elevation: 45.9 feet above MSL Total Depth: 1.75 feet	

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X	11NC28SS063-0.25		OL	Organic silt with clay, trace peat, wet, loose, reddish brown, possible slight fuel odor
	X	11NC28SS063-0.75		PT	90% peat and 10% organic silt, wet, moderately dense, dark brown to black, slight fuel odor
1					Vegetative Mat (0.75-1.75 bgs)
	X	11NC28SS063-1.75		PT	60% peat and 40% organic silt, wet, medium dense, black (peat) and brown (silt), strong fuel odor
2					
3					
4					
5					

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Job No. 34110008

11NC28SS064

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404749.28
	E 1810912.84
Elevation:	45.2 feet above MSL
Total Depth:	2.25 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	11
Position:	5
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X	11NC28SS064-0.25		OL	Silt with trace sand and trace peat, wet, loose, reddish brown, no fuel odor
					Vegetative Mat (0.25-1.75 bgs)
1					
	X	11NC28SS064-1.75		PT	80% peat with 20% organic silt, wet, black(peat) and brown (silt), moderately dense, moderate fuel odor
2	X	11NC28SS064-2.25 (DUP 11NC28SS064-2.5)		OL	75% organic silt and 25% peat, moist, pretty dense, brown (silt) and black (peat), slight fuel odor
3					
4					
5					

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11NC28SS065

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404779.07
	E 1810937.75
Elevation:	43.8 feet above MSL
Total Depth:	3 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	11
Position:	6
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.5					Vegetative Mat (0-2')
1.5–2	X			PT	60% peat and 40% organic silt, wet, medium dense, black (peat) and brown (silt), strong fuel odor
2–2.5	X	11NC28SS065-2		OL	Organic silt, moist to wet, relatively dense, brown and gray, slight fuel odor
2.5–3	X	11NC28SS065-2.5		OL	Organic silt and silty clay, moist, pretty dense, brown (silt) and gray (silty clay), slight fuel odor
3		11NC28SS065-3			

Depth scale: 0, 1, 2, 3, 4, 5

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11NC28SS066

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404020.971 E 1810708.453
Elevation:	60.944447 feet above MSL
Total Depth:	1.25 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat
	X	11NC28SS066-0.75		OL	Organic silt and peat, wet, dark brown and black, moderate to strong fuel odor
1	X	11NC28SS066-1.25 (DUP 11NC28SS066-2)		OL	Organic silt with some peat, wet, relatively dense, dark brown, strong fuel odor, refusal at 1.25' bgs-rocks
2					
3					
4					
5					

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11NC28SS067

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3403978.043 E 1810764.906
Elevation:	65.323868 feet above MSL
Total Depth:	1.5 feet
Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0	X			SP	Sand, wet, medium dense, brown, no fuel odor
	X	11NC28SS067-0.5		OL	Organic silt and sand, wet, medium dense, brown, moderate fuel odor
1	X	11NC28SS067-1		SP	Sand with some organic silt, wet, medium dense, brown, moderate fuel odor
		11NC28SS067-1.5			
2					
3					
4					
5					

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11NC28SS068

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3403912.586 E 1811216.509
Elevation:	65.563409 feet above MSL
Total Depth:	1 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/19/2011
Date Completed	8/19/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
1	X	11NC28SS068-1		PT	90% peat and 10% organic silt, moist, moderately dense, brown, strong fuel odor, refusal at 1' bgs-rocks
2					
3					
4					
5					

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Job No. 34110008

11NC28SS069

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404100.379 E 1810966.681
Elevation:	59.70281 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.5					Vegetative Mat (0-1.5')
1–1.5	X			OL	Organic silt with 25% peat, wet, medium dense, brown, strong fuel odor
1.5–2	X	11NC28SS069-1.5; 11NC28SS069-2 (DUP 11NC28SS069-2.5)		OL	Organic silt with 40% peat, wet, medium dense, brown, strong fuel odor, refusal at 2' bgs-rocks

Depth scale: 0, 1, 2, 3, 4, 5

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11NC28SS070

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404163.021 E 1810862.655
Elevation:	58.140304 feet above MSL
Total Depth:	1.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-0.75')
		11NC28SS070-0.75		OL	Organic silt with 20% peat, wet, medium dense, brown, slight-moderate fuel odor
1				OL	Organic silt, wet, medium dense, brown, slight fuel odor
		11NC28SS070-1.25		OL	60% organic silt and 40% peat, wet, medium density, brown, slight fuel odor
		11NC28SS070-1.75			
2					
3					
4					
5					

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11NC28SS071

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404214.737 E 1810748.348
Elevation:	58.185642 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
	X			OL	Organic silt, wet, loose, dark brown, strong fuel odor
1	X	11NC28SS071-1 (DUP 11NC28SS071-2.5)		OL	Organic silt, wet, loose, dark brown, moderate-strong fuel odor
	X	11NC28SS071-1.5		OL	Organic silt, moist, relatively dense, dark brown, no fuel odor
2		11NC28SS071-2			
3					
4					
5					

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11NC28SS072

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404423.13 E 1810835.7
Elevation:	55.3 feet above MSL
Total Depth:	2.25 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1.25')
1		11NC28SS072-1.25		PT	50% peat and 50% organic silt, wet, medium dense, dark brown and black, strong fuel odor
		11NC28SS072-1.75		PT	80% peat and 20% organic silt, wet, medium dense, dark brown and black, moderate fuel odor
2		11NC28SS072-2.25 (DUP 11NC28SS072-2.5)		PT	Peat, silt, and clay, moist, dense, dark brown (peat and silt), and gray (clay), strong fuel odor
3					
4					
5					

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11NC28SS073

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3404989.4 E 1811005.05
Elevation:	42.8 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.0					Vegetative Mat (0-1.5')
1.0–1.5	X	11NC28SS073-1.5		OL	Organic silt, wet, medium dense, brown with some gray, moderate fuel odor
1.5–2.0	X	11NC28SS073-2		OL	Organic silt, wet, dense, brown, slight fuel odor
2.0–2.5	X	11NC28SS073-2.5		OL	Organic silt, some peat, moist, dense, brown, slight to moderate fuel odor

Depth scale: 0, 1, 2, 3, 4, 5

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11NC28SS074

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405031.16 E 1811015.78
Elevation:	41.2 feet above MSL
Total Depth:	2 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1')
				OL	Organic silt, moist, medium dense, brown, slight fuel odor
1		11NC28SS074-1		OL	Organic silt, some peat, wet, medium dense, brown (silt) and black (peat), slight fuel odor
		11NC28SS074-1.5		OL	Organic silt, some peat, wet, medium dense, brown, slight fuel odor
2		11NC28SS074-2			
3					
4					
5					

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11NC28SS075

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405292.08 E 1811068.45
Elevation:	38.2 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/20/2011
Date Completed	8/20/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1.5					Vegetative Mat (0-1.5')
1.5	X	11NC28SS075-1.5		OL	Organic silt and peat, wet, relatively loose, brown (silt), black (peat), slight fuel odor
2	X	11NC28SS075-2		OL	Organic silt, some sand and trace peat, wet with standing water, medium dense, brownish gray and black, slight fuel odor
2.5	X	11NC28SS075-2.5		OL	Clayey silt, wet, dense, brown, slight fuel odor

Depth scale: 0, 1, 2, 3, 4, 5

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11NC28SS076

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405417.96 E 1811112.37
Elevation:	37.9 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	Discrete
Position:	
Date Started:	8/21/2011
Date Completed	8/21/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1					Vegetative Mat (0-1.5')
1–1.5	X	11NC28SS076-1.5		OL	Clayey silt with sand, wet, medium dense, brown, no fuel odor
1.5–2	X	11NC28SS076-2		OL	Clayey silt with sand, wet, medium dense, brown with some gray, no fuel odor
2–2.5	X	11NC28SS076-2.5		CL	Silty clay with sand, wet, dense, gray and brown, no fuel odor

Depth scale: 0, 1, 2, 3, 4, 5

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11NC28SS077

Site ID: Site 28
Site Location: St. Lawrence Island
Boring Location: N 3404959.3
E 1810970.97
Elevation: 42.4 feet above MSL
Total Depth: 2.5 feet

Logged By: Julie Clark
Drilling Method: Hand Auger
Borehole Diameter: 4 inches
Transect: Discrete
Position:

Date Started: 8/21/2011
Date Completed 8/21/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1.5')
1	X			OL	Organic silt with some peat, wet, relatively dense, brown, slight fuel odor
	X	11NC28SS077-1.5		OL	Organic silt with peat, wet, relatively dense, brown, slight fuel odor
2	X	11NC28SS077-2 11NC28SS077-2.5		OL	Organic silt with trace peat, wet, dense, brown, slight fuel odor
3					
4					
5					

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11NC28SS078

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405774.52 E 1816455.4
Elevation:	42.1 feet above MSL
Total Depth:	2.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	BG
Position:	1
Date Started:	8/21/2011
Date Completed	8/21/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–1					Vegetative Mat (0-1.5')
1–1.5	X			PT	90% peat and 10% organic silt, wet, medium dense, brown, no fuel odor
1.5–2	X	11NC28SS078-1.5		OL	Organic silt with some peat, moist, medium dense, brown, no fuel odor
2–2.5	X	11NC28SS078-2		CL	Silty clay, some organic silt, moist, medium dense, gray (silty clay) and brown (organic silt), no fuel odor
2.5		11NC28SS078-2.5 (DUP 11NC28SS078-3)			

Depth scale: 0, 1, 2, 3, 4, 5

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11NC28SS079

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405781.36 E 1816473.22
Elevation:	42.2 feet above MSL
Total Depth:	3.5 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	BG
Position:	2
Date Started:	8/21/2011
Date Completed	8/21/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-2.5')
1					
2				OL	Organic silt with some peat, wet, medium dense, brown, no fuel odor
		11NC28SS079-2.5		OL	Organic silt with some peat, wet, medium dense, brown, no fuel odor
3		11NC28SS079-3		OL	Organic silt, wet, medium dense, brown, no fuel odor
		11NC28SS079-3.5			
4					
5					

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11NC28SS080

Site ID:	Site 28
Site Location:	St. Lawrence Island
Boring Location:	N 3405794.73
	E 1816487.26
Elevation:	41.3 feet above MSL
Total Depth:	3.75 feet

Logged By:	Julie Clark
Drilling Method:	Hand Auger
Borehole Diameter:	4 inches
Transect:	BG
Position:	3
Date Started:	8/21/2011
Date Completed	8/21/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0–2.75					Vegetative Mat 0-2.75')
2.75	X	11NC28SS080-2.75		PT	Peat with some organic silt, wet, loose to medium dense, brown, no fuel odor
3.25	X	11NC28SS080-3.25		PT	Peat with some organic silt, wet, loose-medium dense, brown, no fuel odor
3.75	X	11NC28SS080-3.75		OL	50% organic silt and 50% peat, wet, loose-medium dense, brown, no fuel odor

Depth scale: 0, 1, 2, 3, 4, 5

Notes:
" = inch or inches
bgs = below ground surface
ft = foot or feet
ID = identification
MSL = mean sea level
No. = number
USCS = Unified Soil Classification System

Bristol ENVIRONMENTAL REMEDIATION SERVICES, LLC

US Army Corps of Engineers
NE Cape HTRW AK District

Job No. 34110008

11NC28SS081

Site ID: Site 28
Site Location: St. Lawrence Island
Boring Location: N 3405805.44
E 1816505.91
Elevation: 41.8 feet above MSL
Total Depth: 2.25 feet

Logged By: Julie Clark
Drilling Method: Hand Auger
Borehole Diameter: 4 inches
Transect: BG
Position: 4

Date Started: 8/21/2011
Date Completed 8/21/2011

Depth (ft)	Sample Interval	Lab No.	Graphic Log	USCS	Lithology Description
0					Vegetative Mat (0-1.25')
1		11NC28SS081-1.25		OL	Organic silt with 25% peat, wet, relatively loose, brown, no fuel odor
		11NC28SS081-1.75		OL	Organic silt with 25% peat, wet (standing water), loose, brown, no fuel odor
2		11NC28SS081-2.25 (DUP 11NC28SS081-2.5)		PT	75% peat and 25% organic silt, moist, loose, brown, no fuel odor
3					
4					
5					

Notes:
" = inch or inches
bgs = below ground surface
ft = foot or feet
ID = identification
MSL = mean sea level
No. = number
USCS = Unified Soil Classification System

APPENDIX D

ADEC Checklists

Chemical Data Verification Report

ADEC CHECKLISTS

Laboratory Data Review Checklist

Completed by:	Emily Conway
Title:	Geologist
Date:	October 17, 2011
CS Report Name:	NE Cape 2011 HTRW
Report Date:	
Consultant Firm:	Bristol Environmental Remediation Services
Laboratory Name:	Test America Tacoma
Laboratory Report Number:	580-28053-1
ADEC File Number:	
ADEC RecKey Number:	

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. Correct analyses requested?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      ☐Yes ☐X No ☐NA (Please explain.) Comments:

      Coolers arrived at 0.6, 1.5 and 5.8°C.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

No time on label of MeOH jar, some jars (16oz) only half full.

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

Sample results are usable without qualifications.

4. Case Narrative

a. Present and understandable?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

c. Were all corrective actions documented?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Sample results are usable with some qualifications.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

b. All applicable holding times met?
☐Yes ☐X No ☐NA (Please explain.) Comments:

Some holding times were not met, affected samples are noted in the report and flagged in table.

c. All soils reported on a dry weight basis?

☐Yes ☐ X No ☐NA (Please explain.) Comments:

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

☐Yes ☐X No☐NA (Please explain.) Comments:

Affected samples are highlighted on the report tables.

e. Data quality or usability affected?

Comments:

Sample results are usable with some qualifications.

6. QC Samples

a. Method Blank

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. All method blank results less than PQL?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

iii. If above PQL, what samples are affected?

Comments:

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Comments:

Results are usable without qualification.

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

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
☐X Yes ☐ No ☐NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
☐Yes ☐ No ☐NA (Please explain.) Comments:

Some MS/MSDs failed, LCS/LCSDs are acceptable.

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

Samples are flagged.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
☐Yes ☐ No ☐NA (Please explain.) Comments:

Parent samples are "J" flagged.

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

Sample results are usable with some qualifications.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
☐X Yes ☐ No ☐NA (Please explain.) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Sample results are usable without qualification.

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
☐Yes ☐X No ☐NA (Please explain.) Comments:

Trip Blank 2 (11NC081511) was missed by lab.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
☐X Yes ☐ No ☐NA (Please explain.) Comments:

iii. All results less than PQL?
☐Yes ☐X No ☐NA (Please explain.) Comments:

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

Affected samples are flagged.

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

Sample results are usable with some qualification.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. Submitted blind to lab?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐Yes ☐ X No ☐NA (Please explain.) Comments:

Affected sample results are highlighted in the results table.

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

Comments:

Sample results are useable with qualifications.

f. Decontamination or Equipment Blank (If not used explain why).

☐Yes ☐ X No ☐NA (Please explain.) Comments:

Not required.

i. All results less than PQL?

☐Yes ☐ No ☐X NA (Please explain.) Comments:

Not required.

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

Flags are defined in table.

Laboratory Data Review Checklist

Completed by:	Emily Conway
Title:	Geologist
Date:	October 19, 2011
CS Report Name:	NE Cape 2011 HTRW
Report Date:	
Consultant Firm:	Bristol Environmental Remediation Services
Laboratory Name:	TestAmerica-Tacoma
Laboratory Report Number:	580-28112-1
ADEC File Number:	
ADEC RecKey Number:	

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

      Several analyses were subcontracted to TA-Denver.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. Correct analyses requested?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

      Coolers arrived at 3.8, 2.7, 3.6 and 1.5°C.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
      X Yes ☐ No ☐NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

Container label for sample (580-28112-27) did no match information on COC.

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

Sample results are usable without qualification.

4. Case Narrative
a. Present and understandable?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

c. Were all corrective actions documented?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Sample results are usable with some qualification.

5. Samples Results
a. Correct analyses performed/reported as requested on COC?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

b. All applicable holding times met?
☐Yes ☐ X No ☐NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?
X Yes ☐ No ☐NA (Please explain.) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?
☐Yes ☐ X No ☐NA (Please explain.) Comments:

Affected sample results are highlighted on the results tables .

e. Data quality or usability affected?
Comments:

Results are still usable for project purposes with some qualifications due to elevated PQLs attributed to high sample moisture content.

6. QC Samples
   a. Method Blank
      i. One method blank reported per matrix, analysis and 20 samples?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. All method blank results less than PQL?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Sample results are usable without qualification.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

☐Yes ☐ X No ☐NA (Please explain.) Comments:

Some MS/MSDs failed, LCS/LCSDs are acceptable.

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

Comments:

Parent samples are flagged.

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Sample results are usable with some qualification.

c. Surrogates – Organics Only

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

☐Yes ☐X No☐NA (Please explain.) Comments:

Samples outside limits are flagged.

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Comments:

Sample results are usable with some qualifications.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): <u>Water and Soil</u>

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

iii. All results less than PQL?

X Yes ☐ No ☐NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

Sample results are usable without qualification.

e. Field Duplicate

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

☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. Submitted blind to lab?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐Yes ☐X No ☐NA (Please explain.) Comments:

Affected samples are highlighted in the results table.

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

Comments:

Sample results are usable with qualifications.

f. Decontamination or Equipment Blank (If not used explain why).

☐Yes ☐ No ☐X NA (Please explain.) Comments:

Not required.

i. All results less than PQL?

☐Yes ☐ No ☐X NA (Please explain.) Comments:

Not required.

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

Flags are defined in Table notes.

Laboratory Data Review Checklist

Completed by:	Emily Conway
Title:	Geologist
Date:	October 27, 2011
CS Report Name:	NE Cape 2011 HTRW
Report Date:	
Consultant Firm:	Bristol Environmental Remediation Services
Laboratory Name:	TestAmerica-Seattle
Laboratory Report Number:	580-28198-1
ADEC File Number:	
ADEC RecKey Number:	

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

      Some samples sent to TestAmerica-Denver.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. Correct analyses requested?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
□X Yes □ No □NA (Please explain.) Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
□X Yes □ No □NA (Please explain.) Comments:

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

Sample results are usable without qualification.

4. Case Narrative

a. Present and understandable?
□X Yes □ No □NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?
□X Yes □ No □NA (Please explain.) Comments:

c. Were all corrective actions documented?
□X Yes □ No □NA (Please explain.) Comments:

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

Sample results are usable with some qualifications.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?
□X Yes □ No □NA (Please explain.) Comments:

b. All applicable holding times met?
□Yes □X No □NA (Please explain.) Comments:

Several samples were received with greater than 50% of holding time expired.

c. All soils reported on a dry weight basis?
☐X Yes ☐ No ☐NA (Please explain.) Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?
☐Yes ☐X No☐NA (Please explain.) Comments:

The affected samples are highlighted on the results tables.

e. Data quality or usability affected?
Comments:

Sample results are usable with qualifications.

6. <u>QC Samples</u>
   a. Method Blank
      i. One method blank reported per matrix, analysis and 20 samples?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

      ii. All method blank results less than PQL?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

      iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

Sample results are usable without qualifications.

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

      i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
      ☐X Yes ☐ No ☐NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
X Yes No NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes X No NA (Please explain.) Comments:

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

Some MS/MSDs were outside acceptable limits.

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

Sample results and parent samples are flagged.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
X Yes No NA (Please explain.) Comments:

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

Sample results are usable with qualifications.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
X Yes No NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
Yes X No NA (Please explain.) Comments:

Some recoveries are outside acceptance limits.

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

□X Yes □ No □NA (Please explain.) Comments:

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

Comments:

Sample results are usable with qualifications.

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

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

□ X Yes □ No □NA (Please explain.) Comments:

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

□ Yes □X No □NA (Please explain.) Comments:

Trip blanks were included in all coolers containing VOC samples.

iii. All results less than PQL?

□Yes □X No □NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

Affected samples are flagged.

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

Comments:

Affected GRO sample results are flagged for contamination above the LOQ.

e. Field Duplicate

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

□X Yes □ No □NA (Please explain.) Comments:

ii. Submitted blind to lab?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐Yes ☐X No ☐NA (Please explain.) Comments:

Affected samples are highlighted in the results table.

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

Comments:

Sample results are usable with qualifications.

f. Decontamination or Equipment Blank (If not used explain why).

☐Yes ☐ X No ☐NA (Please explain.) Comments:

Not required.

i. All results less than PQL?

☐Yes ☐ No ☐XNA (Please explain.) Comments:

Not required.

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

☐X Yes ☐ No ☐NA (Please explain.) Comments:

Flags are defined in table notes.

CHEMICAL DATA VERIFICATION REPORT

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
FD	field duplicate
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
RPD	relative percent difference
RRO	residual-range organics
SIM	Selected ion mode
SW	U.S. EPA Solid Waste Method

ACRONYMS AND ABBREVIATIONS (continued)

TestAmerica	TestAmerica Laboratories, Inc.
TOC	total organic carbon
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

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 Site 28 at NE Cape in 2011. 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:
  - 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. In some instances, quality control information beyond QAPP specifications were reported (e.g., additional surrogates). This information was not used for data review unless specifically noted.

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); and
- 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 reviewed data sets include data from samples collected for the NE Cape Remedial Actions at Site 28 in August 2011 which were analyzed by TestAmerica Laboratories, Inc., (TestAmerica) Tacoma, Washington by the following methods.

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency (USEPA) Solid Waste (SW-846) Methods 5035B/ 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;
- Polynuclear aromatic hydrocarbons (PAHs) by SW-846 method 3550C/8270C selected ion mode (SIM);
- Polychlorinated biphenyls (PCBs) by SW-846 method 3550C/8082 (soils);
- Total organic carbon (TOC)-Quad by SW-846 9060;
- Metals by SW-846 method 3050B/6020;
- Mercury by SW-846 method 7471A.

The sampling event and laboratory work order numbers are presented in Table 1-0.

Table 1-0 Laboratory Work Order Numbers

Sampling Event	Sample Matrix	Work Order Number	Revision No	Date
Site 28	Soil	580-28053-1	2	10/24/2011
	Soil	580-28112-1	1	10/24/2011
	Soil	580-28198-1		10/22/2011

Analytical results tables, which includes qualifiers assigned during data review, are presented in Appendix A. The tables include sample IDs, which reference the year (11), the project (NC) for NE Cape, the site (-28 for site 28), the matrix (SB for soil boring, 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.

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.

2.0 DATA VERIFICATION

Two hundred twenty three (223) soil samples which included 23 field duplicates, volume for MS/MSD pairs, and 12 trip blanks were collected in August 2011 and submitted to the laboratory for analysis. Field sample numbers and corresponding laboratory numbers are presented in Table 2-0.1.

Table 2-0.1 Sample Identification and Analysis

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS001-0.5	580-28053-1	28-1-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS001-1	580-28053-2	28-1-1-1	X	X	X	X	X	X	X	X	MS/MSD for BTEX
11NC28SS002-2	580-28053-3	28-1-2-2	X	X	X	X	X	X	X	X	MS/MSD for GRO
11NC28SS002-2.5	580-28053-4	28-1-2-2.5	X	X	X	X	X	X	X	X	
11NC28SS002-3	580-28053-5	28-1-2-3	X	X	X	X	X	X	X	X	
11NC28SS003-2.5	580-28053-6	28-1-3-2.5	X	X	X	X	X	X	X	X	
11NC28SS003-3	580-28053-7	28-1-3-3	X	X	X	X	X	X	X	X	
11NC28SS003-3.5	580-28053-8	28-1-3-3.5	X	X	X	X	X	X	X	X	
11NC28SS004-2.5	580-28053-9	28-1-4-2.5	X	X	X	X	X	X	X	X	
11NC28SS005-0.5	580-28053-10	28-1-5-0.5	X	X	X	X	X	X	X	X	
11NC28SS005-1	580-28053-11	28-1-5-1	X	X	X	X	X	X	X	X	
11NC28SS006-0.5	580-28053-12	28-2-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS006-1	580-28053-13	28-2-1-1	X	X	X	X	X	X	X	X	
11NC28SS006-2	580-28053-14	28-2-1-1	X	X	X	X	X	X	X	X	FD of 11NC28SS006-1

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS007-1.5	580-28053-15	28-2-2-1.5	X	X	X	X	X	X	X	X	
11NC28SS008-0.5	580-28053-16	28-2-3-0.5	X	X	X	X	X	X	X	X	
11NC28SS008-1	580-28053-17	28-2-3-1	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS009-0.5	580-28053-18	28-2-4-0.5	X	X	X	X	X	X	X	X	
11NC28SS009-1	580-28053-19	28-2-4-1	X	X	X	X	X	X	X	X	
11NC28SS010-0.5	580-28053-20	28-3-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS010-1	580-28053-21	28-3-1-1	X	X	X	X	X	X	X	X	MS/MSD for TOC
11NC28SS010-1.5	580-28053-22	28-3-1-1.5	X	X	X	X	X	X	X	X	
11NC28SS011-0.5	580-28053-23	28-3-2-0.5	X	X	X	X	X	X	X	X	
11NC28SS011-1	580-28053-24	28-3-2-1	X	X	X	X	X	X	X	X	
11NC28SS011-2	580-28053-25	28-3-2-1	X	X	X	X	X	X	X	X	FD of 11NC28SS011-1
11NC28SS011-1.5	580-28053-26	28-3-2-1.5	X	X	X	X	X	X	X	X	
11NC28SS012-0.5	580-28053-27	28-3-3-0.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS012-1	580-28053-28	28-3-3-1	X	X	X	X	X	X	X	X	
11NC28SS012-1.5	580-28053-29	28-3-3-1.5	X	X	X	X	X	X	X	X	
11NC28SS012-2	580-28053-30	28-3-3-1.5	X	X	X	X	X	X	X	X	FD of 11NC28SS012-1.5
11NC28SS013-0.5	580-28053-31	28-3-4-0.5	X	X	X	X	X	X	X	X	
11NC28SS013-1	580-28053-32	28-3-4-1	X	X	X	X	X	X	X	X	
11NC28SS013-1.5	580-28053-33	28-3-4-1.5	X	X	X	X	X	X	X	X	
11NC28SS014-1	580-28053-34	28-3-5-1	X	X	X	X	X	X	X	X	
11NC28SS014-1.5	580-28053-35	28-3-5-1.5	X	X	X	X	X	X	X	X	
11NC28SS014-2	580-28053-36	28-3-5-2	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS015-1.5	580-28053-37	28-3-6-1.5	X	X	X	X	X	X	X	X	
11NC28SS015-2	580-28053-38	28-3-6-2	X	X	X	X	X	X	X	X	
11NC28SS016-0.5	580-28053-39	28-3-7-0.5	X	X	X	X	X	X	X	X	
11NC28SS016-1	580-28053-40	28-3-7-1	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC081511TripBlank1	580-28053-41		X	X							
11NC081511TripBlank2	580-28053-42		X	X							
11NC28SS017-0.5	580-28112-1	28-4-1-0.5	X	X	X	X	X	X	X	X	MS/MSD for TOC
11NC28SS017-2	580-28112-2	28-4-1-0.5	X	X	X	X	X	X	X	X	FD of 11NC28SS017-0.5
11NC28SS017-1	580-28112-3	28-4-1-1	X	X	X	X	X	X	X	X	
11NC28SS017-1.5	580-28112-4	28-4-1-1.5	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PAHs, metals
11NC28SS018-0.5	580-28112-5	28-4-2-0.5	X	X	X	X	X	X	X	X	
11NC28SS018-1	580-28112-6	28-4-2-1	X	X	X	X	X	X	X	X	
11NC28SS018-1.5	580-28112-7	28-4-2-1.5	X	X	X	X	X	X	X	X	MS/MSD for PAHs
11NC28SS019-0.5	580-28112-8	28-4-3-0.5	X	X	X	X	X	X	X	X	
11NC28SS019-1	580-28112-9	28-4-3-1	X	X	X	X	X	X	X	X	
11NC28SS019-1.5	580-28112-10	28-4-3-1.5	X	X	X	X	X	X	X	X	MS/MSD for PCBs
11NC28SS020-0.5	580-28112-11	28-4-4-0.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS020-1	580-28112-12	28-4-4-1	X	X	X	X	X	X	X	X	MS/MSD for TOC
11NC28SS021-0.5	580-28112-13	28-4-5-0.5	X	X	X	X	X	X	X	X	
11NC28SS021-1	580-28112-14	28-4-5-1	X	X	X	X	X	X	X	X	
11NC28SS021-1.5	580-28112-15	28-4-5-1.5	X	X	X	X	X	X	X	X	
11NC28SS022-1	580-28112-16	28-4-6-1	X	X	X	X	X	X	X	X	
11NC28SS022-1.5	580-28112-17	28-4-6-1.5	X	X	X	X	X	X	X	X	
11NC28SS022-2	580-28112-18	28-4-6-2	X	X	X	X	X	X	X	X	
11NC28SS023-1	580-28112-19	28-4-7-1	X	X	X	X	X	X	X	X	
11NC28SS023-2.5	580-28112-20	28-4-7-1	X	X	X	X	X	X	X	X	FD of 11NC28SS023-1
11NC28SS023-1.5	580-28112-21	28-4-7-1.5	X	X	X	X	X	X	X	X	
11NC28SS023-2	580-28112-22	28-4-7-2	X	X	X	X	X	X	X	X	
11NC28SS024-1	580-28112-23	28-4-8-1	X	X	X	X	X	X	X	X	
11NC28SS024-1.5	580-28112-24	28-4-8-1.5	X	X	X	X	X	X	X	X	
11NC28SS025-0.5	580-28112-25	28-5-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS025-1	580-28112-26	28-5-1-1	X	X	X	X	X	X	X	X	
11NC28SS025-1.5	580-28112-27	28-5-1-1.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS026-0.5	580-28112-28	28-5-2-0.5	X	X	X	X	X	X	X	X	
11NC28SS026-1	580-28112-29	28-5-2-1	X	X	X	X	X	X	X	X	
11NC28SS026-1.5	580-28112-30	28-5-2-1.5	X	X	X	X	X	X	X	X	
11NC28SS026-2	580-28112-31	28-5-2-1.5	X	X	X	X	X	X	X	X	FD of 11NC28SS026-1.5
11NC28SS027-0.75	580-28112-32	28-5-3-0.75	X	X	X	X	X	X	X	X	
11NC28SS027-1.25	580-28112-33	28-5-3-1.25	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS027-1.75	580-28112-34	28-5-3-1.75	X	X	X	X	X	X	X	X	
11NC28SS028-0.5	580-28112-35	28-5-4-0.5	X	X	X	X	X	X	X	X	
11NC28SS028-1	580-28112-36	28-5-4-1	X	X	X	X	X	X	X	X	
11NC28SS028-1.5	580-28112-37	28-5-4-1.5	X	X	X	X	X	X	X	X	
11NC28SS029-0.5	580-28112-38	28-5-5-0.5	X	X	X	X	X	X	X	X	
11NC28SS029-1	580-28112-39	28-5-5-1	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS029-1.5	580-28112-40	28-5-5-1.5	X	X	X	X	X	X	X	X	
11NC28SS030-1	580-28112-41	28-5-6-1	X	X	X	X	X	X	X	X	
11NC28SS030-1.5	580-28112-42	28-5-6-1.5	X	X	X	X	X	X	X	X	MS/MSD for PCBs
11NC28SS030-2	580-28112-43	28-5-6-2	X	X	X	X	X	X	X	X	
11NC28SS030-2.5	580-28112-44	28-5-6-2	X	X	X	X	X	X	X	X	FD of 11NC28SS030-2
11NC28SS031-0.5	580-28112-45	28-5-7-0.5	X	X	X	X	X	X	X	X	
11NC28SS031-1	580-28112-46	28-5-7-1	X	X	X	X	X	X	X	X	MS/MSD for PAHs
11NC28SS031-1.5	580-28112-47	28-5-7-1.5	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, metals
11NC28SS032-0.5	580-28112-48	28-6-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS032-1	580-28112-49	28-6-1-1	X	X	X	X	X	X	X	X	MS/MSD for TOC
11NC28SS032-1.5	580-28112-50	28-6-1-1.5	X	X	X	X	X	X	X	X	
11NC28SS033-0.5	580-28112-51	28-6-2-0.5	X	X	X	X	X	X	X	X	MS/MSD for mercury

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS033-1	580-28112-52	28-6-2-1	X	X	X	X	X	X	X	X	MS/MSD for 6020 metals
11NC28SS033-1.5	580-28112-53	28-6-2-1.5	X	X	X	X	X	X	X	X	
11NC28SS034-0.5	580-28112-54	28-6-3-0.5	X	X	X	X	X	X	X	X	MS/MSD for TOC
11NC28SS034-1	580-28112-55	28-6-3-1	X	X	X	X	X	X	X	X	
11NC28SS034-1.5	580-28112-56	28-6-3-1.5	X	X	X	X	X	X	X	X	
11NC28SS035-0.5	580-28112-57	28-6-4-0.5	X	X	X	X	X	X	X	X	
11NC28SS035-1	580-28112-58	28-6-4-1	X	X	X	X	X	X	X	X	
11NC28SS035-1.5	580-28112-59	28-6-4-1.5	X	X	X	X	X	X	X	X	
11NC28SS036-0.5	580-28112-60	28-6-5-0.5	X	X	X	X	X	X	X	X	
11NC28SS036-1	580-28112-61	28-6-5-1	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX,
11NC28SS036-2	580-28112-62	28-6-5-1	X	X	X	X	X	X	X	X	FD of 11NC28SS036-1; MS/MSD for PCBs
11NC28SS036-1.5	580-28112-63	28-6-5-1.5	X	X	X	X	X	X	X	X	MS/MSD for PAHs

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC081711TripBlank1	580-28112-64		X	X							
11NC081711TripBlank2	580-28112-65		X	X							
11NC081711TripBlank3	580-28112-66		X	X							
11NC28SS037-2	580-28198-1	28-6-6-2	X	X	X	X	X	X	X	X	
11NC28SS037-2.5	580-28198-2	28-6-6-2.5	X	X	X	X	X	X	X	X	
11NC28SS037-3	580-28198-3	28-6-6-3	X	X	X	X	X	X	X	X	
11NC28SS038-1.75	580-28198-4	28-6-7-1.75	X	X	X	X	X	X	X	X	
11NC28SS038-2.25	580-28198-5	28-6-7-2.25	X	X	X	X	X	X	X	X	
11NC28SS038-2.75	580-28198-6	28-6-7-2.75	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS039-1	580-28198-7	28-6-8-1	X	X	X	X	X	X	X	X	
11NC28SS039-1.5	580-28198-8	28-6-8-1.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS039-2	580-28198-9	28-6-8-1.5	X	X	X	X	X	X	X	X	FD of 11NC28SS039-1.5
11NC28SS040-0.5	580-28198-10	28-7-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS040-1	580-28198-11	28-7-1-1	X	X	X	X	X	X	X	X	
11NC28SS040-1.5	580-28198-12	28-7-1-1.5	X	X	X	X	X	X	X	X	
11NC28SS041-1	580-28198-13	28-7-2-1	X	X	X	X	X	X	X	X	
11NC28SS041-1.33	580-28198-14	28-7-2-1.33	X	X	X	X	X	X	X	X	
11NC28SS042-1	580-28198-15	28-7-3-1	X	X	X	X	X	X	X	X	
11NC28SS042-1.5	580-28198-16	28-7-3-1.5	X	X	X	X	X	X	X	X	
11NC28SS042-2.5	580-28198-17	28-7-3-1.5	X	X	X	X	X	X	X	X	FD of 11NC28SS042-1.5
11NC28SS042-2	580-28198-18	28-7-3-2	X	X	X	X	X	X	X	X	
11NC28SS043-1.5	580-28198-19	28-7-4-1.5	X	X	X	X	X	X	X	X	
11NC28SS043-2	580-28198-20	28-7-4-2	X	X	X	X	X	X	X	X	
11NC28SS043-2.5	580-28198-21	28-7-4-2.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS044-2	580-28198-22	28-7-5-2	X	X	X	X	X	X	X	X	MS/MSD for TOC
11NC28SS044-2.5	580-28198-23	28-7-5-2.5	X	X	X	X	X	X	X	X	
11NC28SS044-3	580-28198-24	28-7-5-3	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS045-1	580-28198-25	28-7-6-1	X	X	X	X	X	X	X	X	
11NC28SS045-1.5	580-28198-26	28-7-6-1.5	X	X	X	X	X	X	X	X	
11NC28SS046-0.75	580-28198-27	28-8-1-0.75	X	X	X	X	X	X	X	X	
11NC28SS046-1.25	580-28198-28	28-8-1-1.25	X	X	X	X	X	X	X	X	
11NC28SS046-1.75	580-28198-29	28-8-1-1.75	X	X	X	X	X	X	X	X	
11NC28SS047-2	580-28198-30	28-8-2-2	X	X	X	X	X	X	X	X	
11NC28SS047-2.5	580-28198-31	28-8-2-2.25	X	X	X	X	X	X	X	X	
11NC28SS047-3	580-28198-32	28-8-2-3	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS048-1	580-28198-33	28-8-3-1	X	X	X	X	X	X	X	X	
11NC28SS048-1.5	580-28198-34	28-8-3-1.5	X	X	X	X	X	X	X	X	
11NC28SS048-2	580-28198-35	28-8-3-2	X	X	X	X	X	X	X	X	MS/MSD for 6020 metals
11NC28SS048-2.5	580-28198-36	28-8-3-2	X	X	X	X	X	X	X	X	FD of 11NC28SS048-2
11NC28SS049-1.5	580-28198-37	28-8-4-1.5	X	X	X	X	X	X	X	X	
11NC28SS049-2	580-28198-38	28-8-4-2	X	X	X	X	X	X	X	X	
11NC28SS049-3	580-28198-39	28-8-4-2	X	X	X	X	X	X	X	X	FD of 11NC28SS049-2
11NC28SS049-2.5	580-28198-40	28-8-4-2.5	X	X	X	X	X	X	X	X	
11NC28SS050-0.75	580-28198-41	28-8-5-0.75	X	X	X	X	X	X	X	X	
11NC28SS050-1.25	580-28198-42	28-8-5-1.25	X	X	X	X	X	X	X	X	
11NC28SS050-1.75	580-28198-43	28-8-5-1.75	X	X	X	X	X	X	X	X	
11NC28SS051-0.5	580-28198-44	28-8-6-0.5	X	X	X	X	X	X	X	X	
11NC28SS051-1	580-28198-45	28-8-6-1	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS051-1.5	580-28198-46	28-8-6-1.5	X	X	X	X	X	X	X	X	
11NC28SS052-0.5	580-28198-47	28-9-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS052-1	580-28198-48	28-9-1-1	X	X	X	X	X	X	X	X	
11NC28SS052-1.5	580-28198-49	28-9-1-1.5	X	X	X	X	X	X	X	X	
11NC28SS053-1	580-28198-50	28-9-2-1	X	X	X	X	X	X	X	X	
11NC28SS053-1.5	580-28198-51	28-9-2-1.5	X	X	X	X	X	X	X	X	
11NC28SS053-2.5	580-28198-52	28-9-2-1.5	X	X	X	X	X	X	X	X	FD of 11NC28SS053-1.5
11NC28SS053-2	580-28198-53	28-9-2-2	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS054-0.5	580-28198-54	28-9-3-0.5	X	X	X	X	X	X	X	X	
11NC28SS054-1	580-28198-55	28-9-3-1	X	X	X	X	X	X	X	X	
11NC28SS054-1.5	580-28198-56	28-9-3-1.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS055-1.5	580-28198-57	28-9-4-1.5	X	X	X	X	X	X	X	X	
11NC28SS055-2	580-28198-58	28-9-4-2	X	X	X	X	X	X	X	X	
11NC28SS055-2.5	580-28198-59	28-9-4-2.5	X	X	X	X	X	X	X	X	
11NC28SS056-0.75	580-28198-60	28-9-5-0.75	X	X	X	X	X	X	X	X	
11NC28SS056-1.25	580-28198-61	28-9-5-1.25	X	X	X	X	X	X	X	X	
11NC28SS056-1.75	580-28198-62	28-9-5-1.75	X	X	X	X	X	X	X	X	
11NC28SS057-1.5	580-28198-63	28-10-1-1.5	X	X	X	X	X	X	X	X	
11NC28SS057-2	580-28198-64	28-10-1-2	X	X	X	X	X	X	X	X	
11NC28SS057-2.5	580-28198-65	28-10-1-2.5	X	X	X	X	X	X	X	X	
11NC28SS058-0.5	580-28198-66	28-10-2-0.5	X	X	X	X	X	X	X	X	
11NC28SS058-1	580-28198-67	28-10-2-1	X	X	X	X	X	X	X	X	
11NC28SS058-2	580-28198-68	28-10-2-1	X	X	X	X	X	X	X	X	FD of 11NC28SS058-1
11NC28SS058-1.5	580-28198-69	28-10-2-1.5	X	X	X	X	X	X	X	X	
11NC28SS059-0.5	580-28198-70	28-10-3-0.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS059-1	580-28198-71	28-10-3-1	X	X	X	X	X	X	X	X	
11NC28SS059-1.5	580-28198-72	28-10-3-1.5	X	X	X	X	X	X	X	X	
11NC28SS060-0.6	580-28198-73	28-11-1-0.5	X	X	X	X	X	X	X	X	
11NC28SS060-1	580-28198-74	28-11-1-1	X	X	X	X	X	X	X	X	
11NC28SS060-2	580-28198-75	28-11-1-1	X	X	X	X	X	X	X	X	FD of 11NC28SS060-1
11NC28SS060-1.5	580-28198-76	28-11-1-1.5	X	X	X	X	X	X	X	X	
11NC28SS061-0.025	580-28198-77	28-11-2-0.25	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS061-1.5	580-28198-78	28-11-2-0.5	X	X	X	X	X	X	X	X	
11NC28SS061-2	580-28198-79	28-11-2-2	X	X	X	X	X	X	X	X	
11NC28SS062-0.25	580-28198-80	28-11-3-0.25	X	X	X	X	X	X	X	X	
11NC28SS062-0.75	580-28198-81	28-11-3-0.75	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS063-0.25	580-28198-82	28-11-4-0.25	X	X	X	X	X	X	X	X	
11NC28SS063-0.75	580-28198-83	28-11-4-0.75	X	X	X	X	X	X	X	X	
11NC28SS063-1.75	580-28198-84	28-11-4-1.75	X	X	X	X	X	X	X	X	
11NC28SS064-0.25	580-28198-85	28-11-5-0.25	X	X	X	X	X	X	X	X	
11NC28SS064-0.5	580-28198-86	28-11-5-0.5	X	X	X	X	X	X	X	X	
11NC28SS064-1.75	580-28198-87	28-11-5-1.75	X	X	X	X	X	X	X	X	
11NC28SS064-2.25	580-28198-88	28-11-5-2.25	X	X	X	X	X	X	X	X	
11NC28SS064-2.5	580-28198-89	28-11-5-2.25	X	X	X	X	X	X	X	X	FD of 11NC28SS064-2.25
11NC28SS065-2	580-28198-90	28-11-6-2	X	X	X	X	X	X	X	X	
11NC28SS065-2.5	580-28198-91	28-11-6-2.5	X	X	X	X	X	X	X	X	
11NC28SS065-3	580-28198-92	28-11-6-3	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS066-0.75	580-28198-93	28-DIS-01-0.75	X	X	X	X	X	X	X	X	
11NC28SS066-1.25	580-28198-94	28-DIS-01-1.25	X	X	X	X	X	X	X	X	
11NC28SS066-2	580-28198-95	28-DIS-01-1.25	X	X	X	X	X	X	X	X	FD of 11NC28SS066-1.25
11NC28SS067-0.5	580-28198-96	28-DIS-02-0.5	X	X	X	X	X	X	X	X	
11NC28SS067-1	580-28198-97	28-DIS-02-1	X	X	X	X	X	X	X	X	
11NC28SS067-1.5	580-28198-98	28-DIS-02-1.5	X	X	X	X	X	X	X	X	
11NC28SS068-1	580-28198-99	28-DIS-03-1	X	X	X	X	X	X	X	X	
11NC28SS069-1.5	580-28198-100	28-DIS-04-1.5	X	X	X	X	X	X	X	X	
11NC28SS069-2	580-28198-101	28-DIS-04-2	X	X	X	X	X	X	X	X	
11NC28SS069-2.5	580-28198-102	28-DIS-04-2	X	X	X	X	X	X	X	X	FD of 11NC28SS069-2
11NC28SS070-0.75	580-28198-103	28-DIS-05-0.75	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS070-1.25	580-28198-104	28-DIS-05-1.25	X	X	X	X	X	X	X	X	
11NC28SS070-1.75	580-28198-105	28-DIS-05-1.75	X	X	X	X	X	X	X	X	
11NC28SS071-1	580-28198-106	28-DIS-06-1	X	X	X	X	X	X	X	X	
11NC28SS071-2.5	580-28198-107	28-DIS-06-1	X	X	X	X	X	X	X	X	FD of 11NC28SS071-1
11NC28SS071-1.5	580-28198-108	28-DIS-06-1.5	X	X	X	X	X	X	X	X	
11NC28SS071-2	580-28198-109	28-DIS-06-2	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS072-1.25	580-28198-110	28-DIS-07-1.25	X	X	X	X	X	X	X	X	
11NC28SS072-1.75	580-28198-111	28-DIS-07-1.75	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS072-2.25	580-28198-112	28-DIS-07-2.25	X	X	X	X	X	X	X	X	
11NC28SS072-2.5	580-28198-113	28-DIS-07-2.25	X	X	X	X	X	X	X	X	FD of 11NC28SS072-2.25
11NC28SS073-1.5	580-28198-114	28-DIS-08-1.5	X	X	X	X	X	X	X	X	
11NC28SS073-2	580-28198-115	28-DIS-08-2	X	X	X	X	X	X	X	X	
11NC28SS073-2.5	580-28198-116	28-DIS-08-2.5	X	X	X	X	X	X	X	X	
11NC28SS074-1	580-28198-117	28-DIS-09-1	X	X	X	X	X	X	X	X	
11NC28SS074-1.5	580-28198-118	28-DIS-09-1.5	X	X	X	X	X	X	X	X	
11NC28SS074-2	580-28198-119	28-DIS-09-2	X	X	X	X	X	X	X	X	
11NC28SS075-1.5	580-28198-120	28-DIS-10-1.5	X	X	X	X	X	X	X	X	
11NC28SS075-2	580-28198-121	28-DIS-10-2	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS075-2.5	580-28198-122	28-DIS-10-2.5	X	X	X	X	X	X	X	X	MS/MSD for GRO, BTEX, DRO/RRO, DRO/RRO with silica gel, PCBs,PAHs, metals, TOC
11NC28SS076-1.5	580-28198-123	28-DIS-11-1.5	X	X	X	X	X	X	X	X	
11NC28SS076-2	580-28198-124	28-DIS-11-2	X	X	X	X	X	X	X	X	
11NC28SS076-2.5	580-28198-125	28-DIS-11-2.5	X	X	X	X	X	X	X	X	
11NC28SS077-1.5	580-28198-126	28-DIS-12-1.5	X	X	X	X	X	X	X	X	
11NC28SS077-2	580-28198-127	28-DIS-12-2	X	X	X	X	X	X	X	X	
11NC28SS077-2.5	580-28198-128	28-DIS-12-2.5	X	X	X	X	X	X	X	X	
11NC28SS078-1.5	580-28198-129	28-BG-1-1.5	X	X	X	X	X	X	X	X	

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS078-2	580-28198-130	28-BG-1-2	X	X	X	X	X	X	X	X	
11NC28SS078-2.5	580-28198-131	28-BG-1-2.5	X	X	X	X	X	X	X	X	
11NC28SS078-3	580-28198-132	28-BG-1-2.5	X	X	X	X	X	X	X	X	FD of 11NC28SS078-2.5
11NC28SS079-2.5	580-28198-133	28-BG-2-2.5	X	X	X	X	X	X	X	X	
11NC28SS079-3	580-28198-134	28-BG-2-3	X	X	X	X	X	X	X	X	
11NC28SS079-3.5	580-28198-135	28-BG-2-3.5	X	X	X	X	X	X	X	X	
11NC28SS080-2.75	580-28198-136	28-BG-3-2.75	X	X	X	X	X	X	X	X	
11NC28SS080-3.25	580-28198-137	28-BG-3-3.25	X	X	X	X	X	X	X	X	
11NC28SS080-3.75	580-28198-138	28-BG-3-3.75	X	X	X	X	X	X	X	X	MS/MSD for DRO/RRO, DRO/RRO with silica gel, TOC

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC28SS081-1.25	580-28198-139	28-BG-4-1.25	X	X	X	X	X	X	X	X	
11NC28SS081-1.75	580-28198-140	28-BG-4-1.75	X	X	X	X	X	X	X	X	
11NC28SS081-2.25	580-28198-141	28-BG-4-2.25	X	X	X	X	X	X	X	X	
11NC28SS081-2.5	580-28198-142	28-BG-4-2.25	X	X	X	X	X	X	X	X	FD of 11NC28SS081-2.25
11NC082211TripBlank1	580-28198-143		X	X							
11NC082211TripBlank2	580-28198-144		X	X							
11NC082211TripBlank3	580-28198-145		X	X							
11NC082211TripBlank4	580-28198-146		X	X							

Table 2-0.1 Sample Identification and Analysis (continued)

Field Sample ID	Laboratory Sample Number	Location ID	GRO (AK101)	BTEX (SW8260B)	DRO/RRO (AK102/103)	DRO/RRO with Silica Gel (AK102/103)	PCB (SW8082)	PAHs (8270C SIM)	Total Metals (SW6020/7471A)	TOC (9060)	Remarks
11NC082211TripBlank5	580-28198-147		X	X							
11NC082211TripBlank6	580-28198-148		X	X							
11NC082211TripBlank7	580-28198-149		X	X							

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	TOC	=	total organic carbon
MS	=	matrix spike	metals	=	6020: arsenic, barium, cadmium, chromium, lead, nickel selenium, silver, vanadium 7471A: mercury

2.1 Sample Receipt Conditions

Samples were received within 0-6 degrees Celsius and in good condition.

Sample IDs listed on the chain-of-custody (CoC) form did not match the sample labels for two samples:

Logged in Sample No.	Lab ID	CoC ID	Label ID
11NC28SS062-0.75	580-28198-81	11NC28SS062-0.75	11NC28SS062-0.**25**
11NC28SS063-0.25	580-28198-82	11NC28SS063-0.25	11NC28SS0**62**-0.25

Discrepancies in the sample IDs are shown in bold. Samples were logged in per the CoC.

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

Laboratory Work Order	QC Batch	QC Batch Date
580-28053-1	580-93220	8/20/2011
	580-93234	8/20/2011
	580-93246	8/21/2011
	580-93922	8/30/2011
580-28112-1	580-93467	8/23/2011
	580-93490	8/24/2011
	580-93673	8/25/2011
	580-93754	8/26/2011
580-28198-1	280-83553	8/17/2011
	280-83556	8/31/2011
	280-83718	8/18/2011
	280-83746	8/18/2011
	280-83775	8/19/2011
	280-83964	8/31/2011
	280-84106	8/22/2011

Notes:
BTEX = benzene, toluene, ethylbenzene, and xylenes
QC = quality control

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

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

Several samples were re-analyzed outside the holding time of 14 days due to either surrogate or LCS/LCSD outliers. Hold time exceedances are associated with a low bias and are QL qualified. Results were reviewed and, to be conservative, the highest detected concentration was selected for reporting. Surrogate recoveries were evaluated in conjunction with the hold time exceedances. Results associated with a high surrogate recovery and outside hold were QN qualified to indicate uncertainty in the bias since the hold time is associated with a low bias while the high surrogate recoveries would indicate a potential high bias. Samples associated with low surrogate recoveries were QL qualified due to the hold time exceedance and additional qualifiers were not required. Results reported outside the holding time are listed below.

Client Sample ID	Lab Sample ID	Analyte	Result, mg/kg	Qualifier	Days to Analysis
11NC28SS037-2	580-28198-1	Toluene	1.1	QL	19
11NC28SS037-2.5	580-28198-2	Toluene	0.43	QL	19
11NC28SS037-3	580-28198-3	Toluene	0.52	QL	19
11NC28SS038-2.75	580-28198-6	Toluene	0.12	QL	19
11NC28SS039-1.5	580-28198-8	Toluene	0.16	QL	19
11NC28SS040-1.5	580-28198-12	Toluene	0.13	QL	19
11NC28SS042-1	580-28198-15	Toluene	0.49	QL	19
11NC28SS042-2.5	580-28198-17	Toluene	0.054	QL	20
11NC28SS042-2	580-28198-18	Toluene	0.05	QL	20
11NC28SS043-1.5	580-28198-19	Ethylbenzene	1.2	QL	20
11NC28SS043-1.5	580-28198-19	m-Xylene & p-Xylene	4.8	QL	20
11NC28SS043-1.5	580-28198-19	o-Xylene	4.0	QL	20
11NC28SS043-2	580-28198-20	Ethylbenzene	1.3	QN	20
11NC28SS043-2	580-28198-20	m-Xylene & p-Xylene	5.5	QN	20
11NC28SS043-2	580-28198-20	o-Xylene	4.3	QN	20
11NC28SS043-2.5	580-28198-21	Ethylbenzene	1.6	QN	20
11NC28SS043-2.5	580-28198-21	m-Xylene & p-Xylene	6.2	QN	20

Client Sample ID	Lab Sample ID	Analyte	Result, mg/kg	Qualifier	Days to Analysis
11NC28SS043-2.5	580-28198-21	o-Xylene	4.1	QN	20
11NC28SS044-2	580-28198-22	Ethylbenzene	5.4	QL	20
11NC28SS044-2	580-28198-22	m-Xylene & p-Xylene	31	QL	20
11NC28SS044-2	580-28198-22	o-Xylene	13	QL	20
11NC28SS044-2	580-28198-22	Toluene	0.39	QL	20
11NC28SS044-2.5	580-28198-23	o-Xylene	3.8	QL	20
11NC28SS044-2.5	580-28198-23	Toluene	0.22	QL	20
11NC28SS044-3	580-28198-24	Toluene	0.97	QL	20
11NC28SS045-1	580-28198-25	Toluene	0.12	QL	21
11NC28SS045-1.5	580-28198-26	Toluene	0.12	QL	21
11NC28SS046-0.75	580-28198-27	Toluene	0.082	QL	21
11NC28SS047-2	580-28198-30	Ethylbenzene	12	QL	21
11NC28SS047-2	580-28198-30	m-Xylene & p-Xylene	55	QL	21
11NC28SS047-2	580-28198-30	o-Xylene	28	QL	21
11NC28SS047-2	580-28198-30	Toluene	0.84	QL	21
11NC28SS047-2.5	580-28198-31	Ethylbenzene	3.5	QL	21
11NC28SS047-2.5	580-28198-31	m-Xylene & p-Xylene	19	QL	21
11NC28SS047-2.5	580-28198-31	o-Xylene	7.3	QL	21
11NC28SS047-2.5	580-28198-31	Toluene	0.18	QL	21
11NC28SS047-3	580-28198-32	Toluene	0.18	QL	21
11NC28SS048-1	580-28198-33	Toluene	0.24	QL	20
11NC28SS053-1	580-28198-50	Toluene	0.24	QL	18
11NC28SS053-1.5	580-28198-51	m-Xylene & p-Xylene	0.19	QL	18
11NC28SS053-1.5	580-28198-51	o-Xylene	0.31	QL	18
11NC28SS053-2.5	580-28198-52	o-Xylene	0.38	QL	18
11NC28SS053-2	580-28198-53	o-Xylene	0.23	QL	18
11NC28SS070-0.75	580-28198-103	Ethylbenzene	0.19	QL	18
11NC28SS070-1.25	580-28198-104	m-Xylene & p-Xylene	0.35	QL	18
11NC28SS070-1.25	580-28198-104	o-Xylene	0.14	QL	18
11NC28SS070-1.25	580-28198-104	Toluene	0.15	QL	18
11NC28SS070-1.75	580-28198-105	Ethylbenzene	0.18	QN	18
11NC28SS070-1.75	580-28198-105	m-Xylene & p-Xylene	0.39	QN	18
11NC28SS070-1.75	580-28198-105	Toluene	0.22	QN	18

Surrogates were outside QAPP control limits as shown below. Several samples were analyzed twice and had results selected from both runs for reporting. For those samples, surrogates may have been outside control limits for both analyses and the analysis date is also noted:

Sample No.	Lab ID	Date of Analysis	Surrogate	%R	Control Limits
11NC28SS017-0.5	580-28112-1	8/23/2011	4-Bromofluorobenzene	140	85-120
11NC28SS017-2	580-28112-2	8/23/2011	4-Bromofluorobenzene	134	85-120
11NC28SS019-0.5	580-28112-8	8/27/2011	4-Bromofluorobenzene	131	85-120
11NC28SS025-1	580-28112-26	8/24/2011	4-Bromofluorobenzene	146	85-120
11NC28SS026-1	580-28112-29	8/25/2011	4-Bromofluorobenzene	122	85-120
11NC28SS030-1	580-28112-41	8/25/2011	4-Bromofluorobenzene	121	85-120
11NC28SS033-1	580-28112-52	8/26/2011	4-Bromofluorobenzene	83	85-120
11NC28SS033-1.5	580-28112-53	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC28SS034-0.5	580-28112-54	8/26/2011	4-Bromofluorobenzene	82	85-120
11NC28SS034-1	580-28112-55	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC28SS034-1.5	580-28112-56	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC28SS035-0.5	580-28112-57	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC28SS036-0.5	580-28112-60	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC081711TripBlank1	580-28112-64	8/26/2011	4-Bromofluorobenzene	83	85-120
11NC081711TripBlank2	580-28112-65	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC081711TripBlank3	580-28112-66	8/26/2011	4-Bromofluorobenzene	84	85-120
11NC28SS037-2	580-28198-1	8/31/2011	4-Bromofluorobenzene	84	85-120
11NC28SS037-2	580-28198-1	8/31/2011	Toluene-d8	83	85-115
11NC28SS037-2	580-28198-1	9/5/2011	Toluene-d8	77	85-115
11NC28SS037-3	580-28198-3	8/31/2011	4-Bromofluorobenzene	79	85-120
11NC28SS037-3	580-28198-3	8/31/2011	Toluene-d8	78	85-115
11NC28SS037-3	580-28198-3	9/5/2011	Toluene-d8	79	85-115
11NC28SS038-1.75	580-28198-4	8/31/2011	Toluene-d8	83	85-115
11NC28SS038-2.75	580-28198-6	8/31/2011	4-Bromofluorobenzene	71	85-120
11NC28SS038-2.75	580-28198-6	8/31/2011	Toluene-d8	72	85-115
11NC28SS038-2.75	580-28198-6	9/5/2011	Toluene-d8	80	85-115
11NC28SS039-1.5	580-28198-8	8/31/2011	4-Bromofluorobenzene	63	85-120
11NC28SS039-1.5	580-28198-8	8/31/2011	Toluene-d8	62	85-115
11NC28SS039-1.5	580-28198-8	9/5/2011	4-Bromofluorobenzene	76	85-120

Sample No.	Lab ID	Date of Analysis	Surrogate	%R	Control Limits
11NC28SS039-1.5	580-28198-8	9/5/2011	Toluene-d8	59	85-115
11NC28SS039-2	580-28198-9	8/31/2011	4-Bromofluorobenzene	77	85-120
11NC28SS039-2	580-28198-9	8/31/2011	Toluene-d8	78	85-115
11NC28SS040-0.5	580-28198-10	8/31/2011	4-Bromofluorobenzene	67	85-120
11NC28SS040-0.5	580-28198-10	8/31/2011	Toluene-d8	67	85-115
11NC28SS040-1	580-28198-11	8/31/2011	4-Bromofluorobenzene	84	85-120
11NC28SS040-1	580-28198-11	8/31/2011	Toluene-d8	79	85-115
11NC28SS040-1.5	580-28198-12	8/31/2011	4-Bromofluorobenzene	73	85-120
11NC28SS040-1.5	580-28198-12	8/31/2011	Toluene-d8	72	85-115
11NC28SS040-1.5	580-28198-12	9/5/2011	Toluene-d8	71	85-115
11NC28SS041-1	580-28198-13	8/31/2011	4-Bromofluorobenzene	81	85-120
11NC28SS041-1	580-28198-13	8/31/2011	Toluene-d8	80	85-115
11NC28SS041-1.33	580-28198-14	8/31/2011	4-Bromofluorobenzene	77	85-120
11NC28SS041-1.33	580-28198-14	8/31/2011	Toluene-d8	70	85-115
11NC28SS042-1	580-28198-15	9/5/2011	Toluene-d8	70	85-115
11NC28SS042-1.5	580-28198-16	8/31/2011	Toluene-d8	79	85-115
11NC28SS042-2.5	580-28198-17	8/31/2011	4-Bromofluorobenzene	82	85-120
11NC28SS042-2.5	580-28198-17	8/31/2011	Toluene-d8	80	85-115
11NC28SS042-2	580-28198-18	9/1/2011	4-Bromofluorobenzene	62	85-120
11NC28SS042-2	580-28198-18	9/1/2011	Toluene-d8	65	85-115
11NC28SS043-2	580-28198-20	9/7/2011	Toluene-d8	127	85-115
11NC28SS043-2.5	580-28198-21	9/7/2011	Toluene-d8	120	85-115
11NC28SS044-2	580-28198-22	9/1/2011	4-Bromofluorobenzene	84	85-120
11NC28SS044-2	580-28198-22	9/1/2011	Toluene-d8	66	85-115
11NC28SS044-2	580-28198-22	9/7/2011	4-Bromofluorobenzene	65	85-120
11NC28SS044-2	580-28198-22	9/7/2011	Toluene-d8	71	85-115
11NC28SS044-2.5	580-28198-23	9/1/2011	4-Bromofluorobenzene	82	85-120
11NC28SS044-2.5	580-28198-23	9/1/2011	Toluene-d8	75	85-115
11NC28SS044-2.5	580-28198-23	9/7/2011	4-Bromofluorobenzene	72	85-120
11NC28SS044-2.5	580-28198-23	9/7/2011	Toluene-d8	65	85-115
11NC28SS044-3	580-28198-24	9/1/2011	Toluene-d8	84	85-115
11NC28SS044-3	580-28198-24	9/7/2011	4-Bromofluorobenzene	66	85-120
11NC28SS044-3	580-28198-24	9/7/2011	Toluene-d8	53	85-115
11NC28SS045-1	580-28198-25	9/1/2011	4-Bromofluorobenzene	77	85-120
11NC28SS045-1	580-28198-25	9/1/2011	Toluene-d8	79	85-115

Sample No.	Lab ID	Date of Analysis	Surrogate	%R	Control Limits
11NC28SS045-1	580-28198-25	9/7/2011	4-Bromofluorobenzene	82	85-120
11NC28SS045-1	580-28198-25	9/7/2011	Toluene-d8	75	85-115
11NC28SS045-1.5	580-28198-26	9/7/2011	Toluene-d8	83	85-115
11NC28SS046-0.75	580-28198-27	9/1/2011	4-Bromofluorobenzene	64	85-120
11NC28SS046-0.75	580-28198-27	9/1/2011	Toluene-d8	66	85-115
11NC28SS046-0.75	580-28198-27	9/7/2011	4-Bromofluorobenzene	76	85-120
11NC28SS046-0.75	580-28198-27	9/7/2011	Toluene-d8	75	85-115
11NC28SS046-1.25	580-28198-28	9/1/2011	4-Bromofluorobenzene	62	85-120
11NC28SS046-1.25	580-28198-28	9/1/2011	Toluene-d8	64	85-115
11NC28SS046-1.25	580-28198-28	9/7/2011	4-Bromofluorobenzene	74	85-120
11NC28SS046-1.25	580-28198-28	9/7/2011	Toluene-d8	77	85-115
11NC28SS046-1.75	580-28198-29	9/1/2011	4-Bromofluorobenzene	70	85-120
11NC28SS046-1.75	580-28198-29	9/1/2011	Toluene-d8	73	85-115
11NC28SS047-2	580-28198-30	9/1/2011	Toluene-d8	78	85-115
11NC28SS047-2.5	580-28198-31	8/31/2011	4-Bromofluorobenzene	124	85-120
11NC28SS047-3	580-28198-32	9/7/2011	4-Bromofluorobenzene	77	85-120
11NC28SS047-3	580-28198-32	9/7/2011	Toluene-d8	65	85-115
11NC28SS048-1	580-28198-33	8/31/2011	4-Bromofluorobenzene	82	85-120
11NC28SS048-1	580-28198-33	8/31/2011	Toluene-d8	81	85-115
11NC28SS048-1	580-28198-33	9/7/2011	4-Bromofluorobenzene	47	85-120
11NC28SS048-1	580-28198-33	9/7/2011	Toluene-d8	27	85-115
11NC28SS052-1.5	580-28198-49	9/2/2011	Toluene-d8	84	85-115
11NC28SS053-1	580-28198-50	9/2/2011	Toluene-d8	84	85-115
11NC28SS053-1	580-28198-50	9/5/2011	Toluene-d8	68	85-115
11NC28SS053-1.5	580-28198-51	9/2/2011	Toluene-d8	84	85-115
11NC28SS053-2	580-28198-53	9/2/2011	Toluene-d8	80	85-115
11NC28SS053-2.5	580-28198-52	9/2/2011	Toluene-d8	81	85-115
11NC28SS054-0.5	580-28198-54	9/2/2011	4-Bromofluorobenzene	80	85-120
11NC28SS054-0.5	580-28198-54	9/2/2011	Toluene-d8	81	85-115
11NC28SS056-1.25	580-28198-61	9/2/2011	4-Bromofluorobenzene	84	85-120
11NC28SS056-1.25	580-28198-61	9/2/2011	Toluene-d8	80	85-115
11NC28SS056-1.75	580-28198-62	9/2/2011	Toluene-d8	82	85-115
11NC28SS057-1.5	580-28198-63	9/2/2011	4-Bromofluorobenzene	84	85-120
11NC28SS057-1.5	580-28198-63	9/2/2011	Toluene-d8	80	85-115
11NC28SS058-2	580-28198-68	9/2/2011	Toluene-d8	82	85-115

Sample No.	Lab ID	Date of Analysis	Surrogate	%R	Control Limits
11NC28SS059-1.5	580-28198-72	9/2/2011	4-Bromofluorobenzene	83	85-120
11NC28SS059-1.5	580-28198-72	9/2/2011	Toluene-d8	80	85-115
11NC28SS060-0.5	580-28198-73	9/2/2011	4-Bromofluorobenzene	224	85-120
11NC28SS060-1	580-28198-74	9/2/2011	4-Bromofluorobenzene	179	85-120
11NC28SS060-1.5	580-28198-76	9/2/2011	4-Bromofluorobenzene	136	85-120
11NC28SS060-2	580-28198-75	9/2/2011	4-Bromofluorobenzene	202	85-120
11NC28SS061-1.5	580-28198-78	9/2/2011	4-Bromofluorobenzene	139	85-120
11NC28SS062-0.75	580-28198-81	9/2/2011	4-Bromofluorobenzene	135	85-120
11NC28SS063-1.75	580-28198-84	9/2/2011	4-Bromofluorobenzene	189	85-120
11NC28SS066-0.75	580-28198-93	9/2/2011	4-Bromofluorobenzene	209	85-120
11NC28SS066-2	580-28198-95	9/3/2011	4-Bromofluorobenzene	138	85-120
11NC28SS067-1	580-28198-97	9/3/2011	Toluene-d8	80	85-115
11NC28SS069-1.5	580-28198-100	9/3/2011	4-Bromofluorobenzene	136	85-120
11NC28SS069-1.5	580-28198-100	9/3/2011	Toluene-d8	129	85-115
11NC28SS069-2.5	580-28198-102	9/3/2011	4-Bromofluorobenzene	77	85-120
11NC28SS069-2.5	580-28198-102	9/3/2011	Toluene-d8	67	85-115
11NC28SS070-0.75	580-28198-103	9/3/2011	Toluene-d8	77	85-115
11NC28SS070-0.75	580-28198-103	9/6/2011	4-Bromofluorobenzene	73	85-120
11NC28SS070-0.75	580-28198-103	9/6/2011	Toluene-d8	72	85-115
11NC28SS070-1.25	580-28198-104	9/3/2011	Toluene-d8	77	85-115
11NC28SS070-1.25	580-28198-104	9/7/2011	4-Bromofluorobenzene	74	85-120
11NC28SS070-1.25	580-28198-104	9/7/2011	Toluene-d8	64	85-115
11NC28SS070-1.75	580-28198-105	9/3/2011	4-Bromofluorobenzene	145	85-120
11NC28SS070-1.75	580-28198-105	9/3/2011	Toluene-d8	130	85-115
11NC28SS070-1.75	580-28198-105	9/6/2011	4-Bromofluorobenzene	130	85-120
11NC28SS070-1.75	580-28198-105	9/6/2011	Toluene-d8	118	85-115
11NC28SS071-1	580-28198-106	9/3/2011	Toluene-d8	83	85-115
11NC28SS071-1.5	580-28198-108	9/3/2011	4-Bromofluorobenzene	78	85-120
11NC28SS072-1.25	580-28198-110	9/3/2011	Toluene-d8	83	85-115
11NC28SS072-1.75	580-28198-111	9/3/2011	4-Bromofluorobenzene	82	85-120
11NC28SS072-1.75	580-28198-111	9/3/2011	Toluene-d8	79	85-115
11NC28SS073-2.5	580-28198-116	9/3/2011	Toluene-d8	79	85-115
11NC28SS074-1	580-28198-117	9/3/2011	Toluene-d8	80	85-115
11NC28SS074-1.5	580-28198-118	9/3/2011	4-Bromofluorobenzene	169	85-120
11NC28SS074-1.5	580-28198-118	9/3/2011	Toluene-d8	155	85-115

Sample No.	Lab ID	Date of Analysis	Surrogate	%R	Control Limits
11NC28SS074-2	580-28198-119	9/3/2011	4-Bromofluorobenzene	84	85-120
11NC28SS074-2	580-28198-119	9/3/2011	Toluene-d8	77	85-115
11NC28SS075-2	580-28198-121	9/3/2011	4-Bromofluorobenzene	2	85-120
11NC28SS075-2	580-28198-121	9/3/2011	Toluene-d8	2	85-115
11NC28SS076-1.5	580-28198-123	9/3/2011	Toluene-d8	83	85-115
11NC28SS076-2	580-28198-124	9/3/2011	4-Bromofluorobenzene	82	85-120
11NC28SS076-2	580-28198-124	9/3/2011	Toluene-d8	79	85-115
11NC28SS076-2.5	580-28198-125	9/3/2011	Toluene-d8	84	85-115
11NC28SS077-1.5	580-28198-126	9/3/2011	Toluene-d8	78	85-115
11NC28SS077-2	580-28198-127	9/3/2011	Toluene-d8	81	85-115
11NC28SS077-2.5	580-28198-128	9/3/2011	Toluene-d8	82	85-115
11NC082211TripBlank2	580-28198-144	9/3/2011	Toluene-d8	83	85-115
11NC082211TripBlank6	580-28198-148	9/1/2011	Toluene-d8	83	85-115
11NC082211TripBlank6	580-28198-148	9/5/2011	Toluene-d8	84	85-115
11NC082211TripBlank6	580-28198-148	9/7/2011	4-Bromofluorobenzene	73	85-120
11NC082211TripBlank6	580-28198-148	9/7/2011	Toluene-d8	78	85-115

Detected results associated with high recoveries were QH qualified and all results associated with low recoveries were QL qualified. For surrogate recoveries less than 10%, results were not detected and qualified as rejected (R). Note, additional surrogates and surrogate control limits cited in the data package were not those specified in the QAPP. Data review was performed using surrogates and control limits provided on QAPP Table 12-5.

LCS/LCSD recoveries were outside QAPP Table 12-5 control limits as follows:

Analytical Batch	Analyte	%R	Control Limits (%R)	RPD	Control Limits (RPD)
280-84140	m,p-Xylene	79/--	80-125	--	<30
280-84082	Ethylbenzene	74/--	75/125	--	<30
	m,p-Xylene	76/73	80-125	--	<30
	o-Xylene	--/72	75-125	--	<30

Associated results were qualified as estimated with a low bias (QL). No further qualification was required for samples that had been qualified due to low surrogate recoveries or hold time exceedances.

MS/MSD analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-5 control limits:

Spiked Sample	Analyte	%R	Control Limits (%R)	RPD	Control Limits (RPD)	Comments
11NC28SS001-1 (580-28053-2)	All in control					
11NC28SS008-1 (580-28053-17)	Ethylbenzene	70/--	75-125	--	<30	Both MSD %R and RPD in control, no qualifiers
	m,p-Xylene	73/--	80-125	--		
	o-Xylene	69/--	75-125	--		
11NC28SS014-2 (580-28053-36)	m,p-Xylene	79/--	80-125	--	<30	Both MSD %R and RPD in control, no qualifiers
11NC28SS017-1.5 (580-28112-4)	Benzene	--/27	75-125	93	<30	
	Toluene	--/29	70-125	96	<30	
	Ethylbenzene	30/-22	75-125	--	<30	Sample concentration 2.8x spike concentration; ML qualified.
	o-Xylene	18/-28	75-125	--	<30	Sample concentration >4x spike concentration, no qualifiers.
	m,p-Xylene	--/52	80-125	--	<30	20x dilution, no qualifiers.
11NC28SS027-1.25 (580-28112-33)	All in control					
11NC28SS031-1.5 (580-28112-47)	Benzene	--/33	75-125	105	<30	
	Toluene	--/31	70-125	107	<30	
	Ethylbenzene	--/31	75-125	108	<30	
	o-Xylene	--/30	75-125	108	<30	
	m,p-Xylene	--/29	80-125	111	<30	
11NC28SS036-1 (580-28112-61)	All in control					
11NC28SS038-2.75 (580-28198-6)[a]	Benzene	142/--	75-125	--	<30	
	Ethylbenzene	142/--	75-125	32	<30	
	m,p-Xylene	142/--	80-125	32	<30	
	o-Xylene	142/--	75-125	34	<30	
	Toluene	156/--	70-125	32	<30	
11NC28SS044-3 (580-28198-24)[a]	m,p-Xylene	60	80-125	NA	<30	
	o-Xylene	68	75-125	NA	<30	
	Toluene	--/--	70-125	35	<30	

Spiked Sample	Analyte	%R	Control Limits (%R)	RPD	Control Limits (RPD)	Comments
11NC28SS053-2 (580-28198-53)	All in control					
11NC28SS061-0.25 (580-28198-77)	All in control					
11NC28SS065-3 (580-28198-92)	All in control					
11NC28SS071-2 (580-28198-109)	All in control					
11NC28SS075-2.5 (580-28198-122)	All in control					

Notes:
[a]Sample analyzed twice, result from run selected for reporting shown for MS/MSD recoveries.
-- = in control
NA = not applicable

The majority of MS/MSD results were in control and qualification due to MS/MSD outliers was limited to the spiked sample. Results associated with high recoveries were MH qualified and results associated with low recoveries were ML qualified to indicate bias due to matrix effects. For RPD outliers only, results were MN qualified to indicate bias could not be determined. No qualifiers were assigned when the spiked sample had significant concentrations of the spiked analyte or as noted above in the comment section. For samples qualified due to surrogate or hold times, qualifiers should be changed from Q to M with the direction of bias noted.

For samples analyzed in laboratory work order 580-28053, batch 580-93922, m & p xylene (0.0111 mg/kg) was detected in the associated method blank. Associated results were not detected and qualification was not required.

For samples analyzed in laboratory work order 580-28112, m & p-xylene was detected in all associated method blanks at concentrations ranging from 0.0119 to 0.0236 mg/kg. The highest method blank result was used to qualify project samples and all samples in this laboratory work order with m & p-xylene concentrations of 0.236 mg/kg or less were B qualified to indicate the potential for high bias.

For samples analyzed in laboratory work order 580-28198, analytes were detected in method blanks as follows:

Analyte	Concentration (mg/kg)	Analysis Batch	Comments
Toluene	0.0536	280-84731	Qualified
Ethylbenzene	0.104	280-84815	All results >10x blank
m,p-Xylene	0.0882	280-84815	All results >10x blank
Toluene	0.14	280-84815	Qualified

Results in associated samples at concentrations less than 10x the blank concentration were B qualified to indicate blank contamination and a possible high bias.

2.3 GRO Analyses

TestAmerica analyzed samples for GRO by ADEC method AK101. The sample QC batches are summarized in Table 2-3.1.

Table 2-3.1 GRO QC Batches

Laboratory Work Order	QC Batch	QC Batch Date
580-28053-1	580-93220	8/20/2011
	580-93234	8/20/2011
	580-93246	8/21/2011
	580-93922	8/30/2011
580-28112-1	580-93467	8/23/2011
	580-93490	8/24/2011
	580-93673	8/25/2011
	580-93754	8/26/2011
580-28198	280-83271	8/26/2011
	280-83273	8/26/2011
	280-83274	8/26/2011
	280-83275	8/26/2011
	280-83277	8/26/2011
	280-83278	8/26/2011
	280-83280	8/26/2011

Notes:
GRO = gasoline-range organics QC = quality control

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

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

The following samples were analyzed outside the QAPP hold time requirement of 14 days. The hold time specified in Method AK101 for soil is 28 days and no qualifiers were assigned.

Sample No.	Lab ID	Days to Analysis	Sample No.	Lab ID	Days to Analysis
11NC28SS069-2	580-28198-101	16	11NC28SS073-2	580-28198-115	16
11NC28SS069-2.5	580-28198-102	16	11NC28SS073-2.5	580-28198-116	17
11NC28SS070-0.75	580-28198-103	16	11NC28SS074-1	580-28198-117	17
11NC28SS070-1.25	580-28198-104	16	11NC28SS074-1.5	580-28198-118	17
11NC28SS070-1.75	580-28198-105	16	11NC28SS075-1.5	580-28198-120	17
11NC28SS071-1	580-28198-106	16	11NC28SS074-2	580-28198-119	17
11NC28SS047-2.5	580-28198-31	16	11NC28SS064-0.25	580-28198-85	18
11NC28SS071-2.5	580-28198-107	16	11NC28SS054-0.5	580-28198-54	19
11NC28SS071-1.5	580-28198-108	16	11NC28SS054-1	580-28198-55	19
11NC28SS044-2.5	580-28198-23	16	11NC28SS054-1.5	580-28198-56	19
11NC28SS072-1.25	580-28198-110	16	11NC28SS055-1.5	580-28198-57	19
11NC28SS071-2	580-28198-109	16	11NC28SS055-2	580-28198-58	19
11NC28SS072-1.75	580-28198-111	16	11NC28SS055-2.5	580-28198-59	19
11NC28SS072-2.25	580-28198-112	16	11NC28SS056-0.75	580-28198-60	19
11NC28SS072-2.5	580-28198-113	16	11NC28SS047-3	580-28198-32	20
11NC28SS073-1.5	580-28198-114	16			

Several samples were diluted due to high analyte concentration. 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:

Sample No.	Lab ID	Surrogate	%R	Control Limits
11NC081511TripBlank1	580-28053-41	Trifluorotoluene	171	50-150
11NC081711TripBlank1	580-28112-64	Trifluorotoluene	170	50-150
11NC081711TripBlank2	580-28112-65	Trifluorotoluene	171	50-150
11NC081711TripBlank3	580-28112-66	Trifluorotoluene	174	50-150

Detected results associated with high recoveries were QH qualified to indicate the potential for high bias. Note, surrogates and control limits provided by the laboratory were not those specified in the QAPP. Data review was performed using surrogates and control limits provided on QAPP Table 12-1.

MS/MSDs analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-1 control limits:

Sample No.	Lab ID	%R	Control Limits (%R)	RPD	Control Limits (RPD)
11NC28SS002-2	580-28053-3	--/-4	50-150	51	≤50%
11NC28SS008-1	580-28053-17	48/35	50-150	--	≤50%
11NC28SS014-2	580-28053-36	All in control			
11NC28SS017-1.5	580-28112-4	-15/-42	50-150	--	≤50%
11NC28SS027-1.25	580-28112-33	All in control			
11NC28SS031-1.5	580-28112-47	All in control			
11NC28SS036-1	580-28112-61	All in control			
11NC28SS038-2.75	580-28198-6	All in control			
11NC28SS044-3	580-28198-24	Not evaluated, 10x dilution			
11NC28SS053-2	580-28198-53	-29/42	50-150	--	≤50%
11NC28SS061-0.025	580-28198-77	-108/-106	50-150	--	≤50%
11NC28SS065-3	580-28198-92	-0.9/-9			
11NC28SS071-2	580-28198-109	All in control			
11NC28SS075-2.5	580-28198-122	All in control			

Note:
-- = in control

The majority of MS/MSD results were in control and qualification due to MS/MSD outliers was limited to the spiked sample. Results associated with low recoveries were ML qualified to indicate low bias due to matrix effects. While GRO concentrations in unspiked samples were not 4x the spike concentration (and would not be evaluated) concentrations were relatively high and more severe qualifiers due to exceedingly low recoveries were not required. When low recoveries were associated with high RPDs, the low recovery was considered the overriding outlier and qualification was based on the recovery information.

2.4 PCB ANALYSES

TestAmerica analyzed samples by method SW-846 8082A. The extraction batches are summarized in Table 2-4.1.

Table 2-4.1 PCB QC Batches

Laboratory Work Order	QC Batch	QC Batch Dates
580-28053-1	280-82415	8/22/2011
	280-82494	8/22/2011
580-28112-1	280-82850	8/24/2011
	280-82911	8/24/2011
	280-82924	8/24/2011
	280-82935	8/24/2011
580-28198-1	280-83255	8/26/2011
	280-83281	8/26/2011
	280-83321	8/26/2011
	280-83337	8/26/2011
	280-83393	8/27/2011
	280-83413	8/28/2011
	280-83419	8/28/2011

Notes:
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. An MB, LCS/LCSD, and MS/MSD pair were performed with each QC batch.

The following items were reviewed and met QAPP criteria: holding times, MB, and LCS/LCSD 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 for samples analyzed at a dilution of 4x or less were outside QAPP control limits as follows:

Sample No.	Affected Analyte	Surrogate	%R	Control Limits
11NC28SS002-2	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS002-3	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS003-2.5	All PCBs	Decachlorobiphenyl	48	60-125
11NC28SS003-3	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS004-2.5	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS005-0.5	Detected PCBs	Decachlorobiphenyl	129	60-125
11NC28SS006-1	All PCBs	Decachlorobiphenyl	59	60-125
11NC28SS006-2	Detected PCBs	Decachlorobiphenyl	144	60-125
11NC28SS007-1.5	All PCBs	Decachlorobiphenyl	54	60-125
11NC28SS010-0.5	All PCBs	Decachlorobiphenyl	55	60-125
11NC28SS017-0.5	All PCBs	Decachlorobiphenyl	46	60-125
11NC28SS017-2	All PCBs	Decachlorobiphenyl	48	60-125
11NC28SS017-1	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS018-0.5	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS018-1	All PCBs	Decachlorobiphenyl	57	60-125
11NC28SS018-1.5	All PCBs	Decachlorobiphenyl	45	60-125
11NC28SS019-0.5	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS019-1	All PCBs	Decachlorobiphenyl	59	60-125
11NC28SS019-1.5	All PCBs	Decachlorobiphenyl	57	60-125
11NC28SS020-0.5	All PCBs	Decachlorobiphenyl	51	60-125
11NC28SS020-1	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS021-0.5	All PCBs	Decachlorobiphenyl	40	60-125
11NC28SS021-1	All PCBs	Decachlorobiphenyl	47	60-125
11NC28SS021-1.5	All PCBs	Decachlorobiphenyl	49	60-125
11NC28SS022-1	All PCBs	Decachlorobiphenyl	59	60-125
11NC28SS023-1	All PCBs	Decachlorobiphenyl	52	60-125
11NC28SS023-2.5	All PCBs	Decachlorobiphenyl	55	60-125
11NC28SS023-1.5	All PCBs	Decachlorobiphenyl	59	60-125
11NC28SS023-2	All PCBs	Decachlorobiphenyl	58	60-125
11NC28SS025-0.5	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS025-1	All PCBs	Decachlorobiphenyl	55	60-125

Sample No.	Affected Analyte	Surrogate	%R	Control Limits
11NC28SS025-1.5	All PCBs	Decachlorobiphenyl	48	60-125
11NC28SS026-0.5	All PCBs	Decachlorobiphenyl	21	60-125
11NC28SS026-1	All PCBs	Decachlorobiphenyl	22	60-125
11NC28SS026-1.5	All PCBs	Decachlorobiphenyl	32	60-125
11NC28SS026-2	All PCBs	Decachlorobiphenyl	30	60-125
11NC28SS027-0.75	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS027-1.25	All PCBs	Decachlorobiphenyl	38	60-125
11NC28SS027-1.75	All PCBs	Decachlorobiphenyl	34	60-125
11NC28SS028-0.5	All PCBs	Decachlorobiphenyl	25	60-125
11NC28SS028-1	All PCBs	Decachlorobiphenyl	32	60-125
11NC28SS028-1.5	All PCBs	Decachlorobiphenyl	38	60-125
11NC28SS029-0.5	All PCBs	Decachlorobiphenyl	19	60-125
11NC28SS029-1	All PCBs	Decachlorobiphenyl	28	60-125
11NC28SS029-1.5	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS031-0.5	All PCBs	Decachlorobiphenyl	57	60-125
11NC28SS031-1	All PCBs	Decachlorobiphenyl	57	60-125
11NC28SS031-1.5	All PCBs	Decachlorobiphenyl	48	60-125
11NC28SS035-0.5	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS035-1	All PCBs	Decachlorobiphenyl	44	60-125
11NC28SS040-0.5	All PCBs	Decachlorobiphenyl	40	60-125
11NC28SS040-1	All PCBs	Decachlorobiphenyl	54	60-125
11NC28SS041-1	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS041-1.33	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS043-2.5	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS044-2	All PCBs	Decachlorobiphenyl	55	60-125
11NC28SS044-2.5	All PCBs	Decachlorobiphenyl	55	60-125
11NC28SS045-1	All PCBs	Decachlorobiphenyl	59	60-125
11NC28SS045-1.5	All PCBs	Decachlorobiphenyl	58	60-125
11NC28SS054-0.5	All PCBs	Decachlorobiphenyl	48	60-125
11NC28SS060-1	All PCBs	Decachlorobiphenyl	50	60-125
11NC28SS062-0.75	All PCBs	Decachlorobiphenyl	45	60-125
11NC28SS065-3	All PCBs	Decachlorobiphenyl	51	60-125
11NC28SS066-2	All PCBs	Decachlorobiphenyl	27	60-125
11NC28SS067-0.5	All PCBs	Decachlorobiphenyl	58	60-125
11NC28SS068-1	All PCBs	Decachlorobiphenyl	48	60-125

Sample No.	Affected Analyte	Surrogate	%R	Control Limits
11NC28SS069-1.5	All PCBs	Decachlorobiphenyl	36	60-125
11NC28SS069-2	All PCBs	Decachlorobiphenyl	57	60-125
11NC28SS069-2.5	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS070-0.75	All PCBs	Decachlorobiphenyl	58	60-125
11NC28SS070-1.25	All PCBs	Decachlorobiphenyl	59	60-125
11NC28SS071-1	All PCBs	Decachlorobiphenyl	45	60-125
11NC28SS071-1.5	All PCBs	Decachlorobiphenyl	54	60-125
11NC28SS071-2	All PCBs	Decachlorobiphenyl	54	60-125
11NC28SS071-2.5	All PCBs	Decachlorobiphenyl	43	60-125
11NC28SS072-1.25	All PCBs	Decachlorobiphenyl	56	60-125
11NC28SS072-1.75	All PCBs	Decachlorobiphenyl	53	60-125
11NC28SS072-2.5	All PCBs	Decachlorobiphenyl	48	60-125
11NC28SS073-1.5	All PCBs	Decachlorobiphenyl	52	60-125
11NC28SS073-2	All PCBs	Decachlorobiphenyl	55	60-125
11NC28SS077-2	All PCBs	Decachlorobiphenyl	52	60-125
11NC28SS077-2.5	All PCBs	Decachlorobiphenyl	53	60-125

Detected PCB results associated with high recoveries for the surrogate dechlorobiphenyl (DCB) were QH qualified to indicate the potential for high bias and all PCB results associated with low DCB recoveries are QL qualified to indicate the potential for low bias.

Although included in the QAPP, recoveries for the surrogate tetrachloro-m-xylene (TCX) were not reported. The surrogate DCB is more closely associated with PCBs and no action was required due to the lack of TCX recovery information.

The RPD for PCB-1260 in the LCS/LCSD for laboratory work order 580-28198-1, prep batch 280-83419 was 28% which exceeds the control criteria of <20%. The RPDs for the MS/MSD for this batch were in control and data qualifiers were not assigned.

MS/MSDs analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-4 control limits:

Spiked Sample	Lab ID	Analyte	%R	Control Limits (%R)	RPD	Control Limits (RPD)
11NC28SS008-1	580-28053-17	PCBs		All in control		
11NC28SS014-2	580-28053-36	PCBs		All in control		
11NC28SS036-2	580-28112-62	PCBs		All in control		
11NC28SS019-1.5	580-28112-10	PCB-1016	26/27	40-140	31	<20
		PCB 1260	45/51	60-130	42	<20
11NC28SS027-1.25	580-28112-33	PCB-1016	44/0	40-140	200	<20
		PCB 1260	58/53	60-130	--	<20
11NC28SS030-1.5	580-28112-42	PCB 1260	142/--	60-130	36	<20
11NC28SS038-2.75	580-28198-6	PCB-1016	222/168	40-140	33	<20
11NC28SS044-3	580-28198-24	PCB-1016	--/37	40-140	--	<20
		PCB 1260	--/53	60-130	24	<20
11NC28SS053-2	580-28198-53	PCB-1016	--/--	40-140	27	<20
11NC28SS061-0.025	580-28198-77	PCBs		All in control		
11NC28SS065-3	580-28198-92	PCBs		All in control		
11NC28SS071-2	580-28198-109	PCB-1016	--/--	60-130	28	<20
		PCB 1260	58/--	40-140	--	<20
11NC28SS075-2.5	580-28198-122	PCBs		All in control		

The majority of MS/MSD results were in control and qualification due to MS/MSD outliers was limited to the spiked sample. All results associated with low recoveries were ML qualified and detected results associated with high recoveries were MH qualified. When recovery outliers were associated with high RPDs, recoveries were considered the overriding outlier and qualification was based on the recovery information. Where samples had been previously qualified due to surrogate outliers, qualifiers due to matrix interference takes precedence and should be used. For the single sample with an MSD recovery of zero, an ML qualifier was considered adequate since there was recovery in the MS and the spike concentration (0.147 mg/kg) was well below the screening criteria of 1 mg/kg.

The laboratory narrative indicated that more than one PCB compound was present for the following samples.

Sample No.	Lab ID	Comment
11NC28SS026-0.5	580-28112-28	QL Qualified due to surrogate, no further qualifier
11NC28SS026-1	580-28112-29	QL Qualified due to surrogate, no further qualifier
11NC28SS028-0.5	580-28112-35	QL Qualified due to surrogate, no further qualifier
11NC28SS029-0.5	580-28112-38	QL Qualified due to surrogate, no further qualifier
11NC28SS054-0.5	580-28198-54	QL Qualified due to surrogate, no further qualifier
11NC28SS061-1.5	580-28198-78	MN Qualified
11NC28SS062-0.75	580-28198-81	QL Qualified due to surrogate, no further qualifier
11NC28SS066-0.75	580-28198-93	MN Qualified
11NC28SS066-1.25	580-28198-94	MN Qualified
11NC28SS066-2	580-28198-95	QL Qualified due to surrogate, no further qualifier
11NC28SS067-0.5	580-28198-96	QL Qualified due to surrogate, no further qualifier

Detected results were qualified as estimated with an unknown bias (MN). For samples qualified due to low surrogate recovery, further qualification was not required.

The laboratory narrative indicated that due to weathering or other environmental processes, PCBs in the following sample do not closely match any of the laboratory's PCB standards:

Sample No.	Lab ID	Comment
11NC28SS030-1	580-28112-41	MN Qualified
11NC28SS030-1.5	580-28112-42	MN Qualified
11NC28SS030-2	580-28112-43	MN Qualified
11NC28SS030-2.5	580-28112-44	MN Qualified
11NC28SS031-0.5	580-28112-45	QL Qualified due to surrogate, no further qualifier
11NC28SS035-0.5	580-28112-57	QL Qualified due to surrogate, no further qualifier
11NC28SS035-1	580-28112-58	QL Qualified due to surrogate, no further qualifier
11NC28SS036-0.5	580-28112-60	MN Qualified
11NC28SS041-1	580-28198-13	QL Qualified due to surrogate, no further qualifier
11NC28SS041-1.33	580-28198-14	QL Qualified due to surrogate, no further qualifier
11NC28SS042-1	580-28198-15	MN Qualified
11NC28SS067-1	580-28198-97	MN Qualified
11NC28SS067-1.5	580-28198-98	MN Qualified
11NC28SS069-2	580-28198-101	QL Qualified due to surrogate, no further qualifier
11NC28SS069-2.5	580-28198-102	QL Qualified due to surrogate, no further qualifier
11NC28SS071-1	580-28198-106	QL Qualified due to surrogate, no further qualifier
11NC28SS071-2.5	580-28198-107	QL Qualified due to surrogate, no further qualifier

11NC28SS071-1.5	580-28198-108	QL Qualified due to surrogate, no further qualifier
11NC28SS073-1.5	580-28198-114	QL Qualified due to surrogate, no further qualifier
11NC28SS073-2	580-28198-115	QL Qualified due to surrogate, no further qualifier
11NC28SS073-2.5	580-28198-116	MN Qualified
11NC28SS077-2	580-28198-127	QL Qualified due to surrogate, no further qualifier

Results were reported as either PCB-1254 or PCB-1260. Detected results were MN qualified to indicate uncertainty in the result due to matrix effects. No additional qualifiers were assigned to results qualified due to low surrogate recoveries.

2.5 PAH Analyses

TestAmerica analyzed samples by SW-846 method 8270C SIM for PAHs. The extraction batches are summarized in Table 2-5-1.

Table 2-5.1 PAH QC Batches

Laboratory Work Order	QC Batch	QC Batch Dates
580-28053-1	280-82271	8/19/2011
	280-82278	8/19/2011
580-28112-1	280-82758	8/24/2011
	280-82796	8/24/2011
	280-82807	8/24/2011
	280-82838	8/24/2011
580-28198-1	280-83243	8/26/2011
	280-83266	8/26/2011
	280-83303	8/26/2011
	280-83336	8/26/2011
	280-83373	8/27/2011
	280-83379	8/27/2011
	280-83389	8/27/2011

Notes:
PAH = polynuclear aromatic hydrocarbons
QC = quality control

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

The following items were reviewed and met QAPP criteria: holding times and LCS/LCSD recoveries and RPDs. All samples used for MS/MSDs were analyzed at a 5x dilution or higher and were not evaluated.

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:

Sample No.	Lab ID.	Surrogate	%R	Control Limits
11NC28SS003-3.5	580-28053-8	Nitrobenzene-d5	141	35-100
11NC28SS005-0.5	580-28053-10	Nitrobenzene-d5	101	35-100
11NC28SS010-1	580-28053-21	Nitrobenzene-d5	102	35-100
11NC28SS013-1	580-28053-32	Nitrobenzene-d5	127	35-100
11NC28SS014-1.5	580-28053-35	Nitrobenzene-d5	222	35-100
11NC28SS033-0.5	580-28112-51	Nitrobenzene-d5	133	35-100
11NC28SS033-1	580-28112-52	Nitrobenzene-d5	142	35-100
11NC28SS037-2.5	580-28198-2	Nitrobenzene-d5	140	35-100
11NC28SS037-3	580-28198-3	Nitrobenzene-d5	121	35-100
11NC28SS039-1	580-28198-7	Nitrobenzene-d5	133	35-100
11NC28SS039-1.5	580-28198-8	Nitrobenzene-d5	182	35-100
11NC28SS039-2	580-28198-9	Nitrobenzene-d5	163	35-100
11NC28SS040-0.5	580-28198-10	Nitrobenzene-d5	188	35-100
11NC28SS040-1	580-28198-11	Nitrobenzene-d5	181	35-100

The laboratory qualified results for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene due to surrogate outliers for nitrobenzene-d5 in data packages 580-28053 and 580-28198; for data review, this association was also used for data package 580-28112. Detected results for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene that were associated with high nitrobenzene-d5 recoveries were QH qualified to indicate the potential for a high bias.

PAH compounds were detected in the method blanks as shown below.

Laboratory Work Order	Preparation Batch	Analytes	Units	Concentration
580-28053	280-82278	Naphthalene	µg/kg	0.321
		2-Methylnaphthalene	µg/kg	0.407
580-28112	280-82758	Naphthalene	µg/kg	3.23
		1-Methylnaphthalene	µg/kg	1.86
		2-Methylnaphthalene	µg/kg	3.55
	280-82796	Naphthalene	µg/kg	0.845
		1-Methylnaphthalene	µg/kg	0.390
		2-Methylnaphthalene	µg/kg	0.715
	280-82807	Naphthalene	µg/kg	5.05
		1-Methylnaphthalene	µg/kg	2.94
		2-Methylnaphthalene	µg/kg	5.89
	280-82838	Naphthalene	µg/kg	0.565
		1-Methylnaphthalene	µg/kg	0.335
		2-Methylnaphthalene	µg/kg	0.421
580-28198	280-83266	Naphthalene	µg/kg	2.64
		1-Methylnaphthalene	µg/kg	1.06
		2-Methylnaphthalene	µg/kg	2.24
	280-83379	Naphthalene	µg/kg	0.327
		2-Methylnaphthalene	µg/kg	0.295

Associated results detected at concentrations less than 10x the blank concentration were B qualified to indicate the potential for a high bias.

Samples used for MS/MSDs were diluted and results were not evaluated for the following:

Sample No.	Lab ID	Dilution
11NC28SS008-1	580-28053-17	20x
11NC28SS014-2	580-28053-36	5x
11NC28SS018-1.5	580-28112-7	600x
11NC28SS027-1.25	580-28112-33	20x
11NC28SS031-1	580-28112-46	5x
11NC28SS036-1.5	580-28112-63	10x
11NC28SS038-2.75	580-28198-6	5x
11NC28SS044-3	580-28198-24	100x
11NC28SS053-2	580-28198-53	5x
11NC28SS061-0.025	580-28198-77	50x
11NC28SS065-3	580-28198-92	25x
11NC28SS071-2	580-28198-109	15x
11NC28SS075-2.5	580-28198-122	5x

No data from the MS/MSDs is available to evaluate matrix effect for method 8270C SIM. One alternative for future sampling events would be to specify samples for MS/MSD analysis from less contaminated areas to minimize the need for dilution.

2.6 DRO/RRO Analyses

TestAmerica analyzed samples for DRO/RRO following ADEC methods AK102/103. Both DRO/RRO and DRO/RRO after silica gel cleanup were reported for each sample. Prep batches were the same for both DRO/RRO and DRO/RRO with silica gel cleanup. However, different analytical batches were used for the silica gel cleanup. Both the prep batches and the analysis batches are summarized in Table 2-6.1.

Table 2-6.1 DRO/RRO QC Batches

Laboratory Work Order	Analyses	Prep Batch	Prep Date	Analysis Batch	Analysis Date
580-28053-1	DRO/RRO	580-93791	8/26/2011	580-94068	8/30/2011
	DRO	580-93791	8/26/2011	580-94183	8/31/2011
	DRO/RRO	580-93796	8/26/2011	580-94059	8/31/2011
	DRO/RRO w/Silica Gel	580-93791	8/26/2011	580-94627	9/7/2011
	DRO w/Silica Gel	580-93791	8/26/2011	580-94776	9/7/2011
	DRO/RRO w/Silica Gel	580-93796	8/26/2011	580-94881	9/7/2011
	DRO w/Silica Gel	580-93796	8/26/2011	580-94976	9/9/2011
580-28112-1	RRO	580-93810	8/26/2011	580-94186	9/1/2011
	DRO	580-93810	8/26/2011	580-94338	9/1/2011
	RRO w/Silica Gel	580-93810	8/26/2011	580-95131	9/12/2011
	DRO w/Silica Gel	580-93810	8/26/2011	580-95221	9/13/2011
	DRO w/Silica Gel	580-93810	8/26/2011	580-95375	9/14/2011
	DRO/RRO	580-93833	8/26/2011	580-94183	9/1/2011
	DRO/RRO	580-93833	8/26/2011	580-94492	9/3/2011
	DRO/RRO w silica gel	580-93833	8/26/2011	580-95216	9/13/2011
	DRO/RRO w silica gel	580-93833	8/26/2011	580-95344	9/14/2011
	DRO/RRO	580-93838	8/26/2011	580-94266	9/1/2011
	DRO/RRO	580-93838	8/26/2011	580-94393	9/2/2011
	DRO/RRO w silica gel	580-93838	8/26/2011	580-95140	9/12/2011
	DRO/RRO w silica gel	580-93838	8/26/2011	580-95225	9/13/2011
	DRO/RRO	580-94125	8/30/2011	580-94624	9/6/2011
	DRO/RRO w silica gel	580-94125	8/30/2011	580-95432	9/15/2011

Table 2-6.1 DRO/RRO QC Batches (continued)

Laboratory Work Order	Analyses	Prep Batch	Prep Date	Analysis Batch	Analysis Date
580-28198-1	DRO/RRO	580-94125	8/30/2011	580-94624	9/7/2011
	DRO	580-94125	8/30/2011	580-94772	9/7/2011
	DRO/RRO w silica gel	580-94125	8/30/2011	580-95432	9/15/2011
	DRO/RRO w silica gel	580-94125	8/30/2011	580-95556	9/17/2011
	DRO/RRO w silica gel	580-94125	8/30/2011	580-95614	9/19/2011
	DRO	580-94125	8/30/2011	580-95716	9/20/2011
	DRO/RRO	580-94170	8/31/2011	580-95228	9/14/2011
	DRO	580-94170	8/31/2011	580-95330	9/14/2011
	DRO/RRO w silica gel	580-94170	8/31/2011	580-95825	9/22/2011
	DRO/RRO w silica gel	580-94170	8/31/2011	580-95882	9/22/2011
	DRO/RRO	580-94177	8/31/2011	580-94772	9/8/2011
	DRO/RRO w silica gel	580-94177	8/31/2011	580-95885	9/23/2011
	DRO/RRO w silica gel	580-94177	8/31/2011	580-96087	9/26/2011
	DRO	580-94177	8/31/2011	580-96181	9/27/2011
	DRO/RRO	580-94271	9/1/2011	580-94776	9/8/2011
	DRO	580-94271	9/1/2011	580-94843	9/8/2011
	DRO/RRO w silica gel	580-94271	9/1/2011	580-96008	9/23/2011
	DRO/RRO	580-94295	9/1/2011	580-94964	9/10/2011
	DRO	580-94295	9/1/2011	580-95140	9/12/2011
	DRO/RRO w silica gel	580-94295	9/1/2011	580-96011	9/24/2011
	DRO/RRO w silica gel	580-94356	9/1/2011	580-95330	9/15/2011
	DRO	580-94356	9/1/2011	580-95445	9/15/2011
	DRO/RRO	580-94356	9/1/2011	580-95710	9/21/2011
	DRO/RRO w silica gel	580-94377	9/2/2011	580-95344	9/15/2011
	DRO/RRO	580-94377	9/2/2011	580-95375	9/15/2011
	DRO/RRO	580-94384	9/2/2011	580-94528	9/4/2011
	DRO/RRO w silica gel	580-94384	9/2/2011	580-95344	9/15/2011

Notes:
DRO = diesel-range organics
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, LCS/LCSD, and MS/MSD were analyzed with each batch.

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

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 control limits specified in QAPP Tables 12-2and 12-3 as follows:

Sample No.	Lab ID	Surrogate	%R	Control Limits
Affected Analyte: RRO				
11NC28SS006-0.5	580-28053-12	n-triacontane-d62	155	50-150
11NC28SS017-1	580-28112-3	n-triacontane-d62	174	50-150
11NC28SS020-1	580-28112-12	n-triacontane-d62	155	50-150
11NC28SS022-2	580-28112-18	n-triacontane-d62	172	50-150
11NC28SS023-2.5	580-28112-20	n-triacontane-d62	153	50-150
11NC28SS023-1.5	580-28112-21	n-triacontane-d62	170	50-150
11NC28SS023-2	580-28112-22	n-triacontane-d62	163	50-150
11NC28SS024-1.5	580-28112-24	n-triacontane-d62	163	50-150
11NC28SS026-1.5	580-28112-30	n-triacontane-d62	191	50-150
11NC28SS026-2	580-28112-31	n-triacontane-d62	179	50-150
11NC28SS030-2	580-28112-43	n-triacontane-d62	166	50-150
11NC28SS031-0.5	580-28112-45	n-triacontane-d62	189	50-150
11NC28SS031-1	580-28112-46	n-triacontane-d62	195	50-150
11NC28SS031-1.5	580-28112-47	n-triacontane-d62	176	50-150
11NC28SS032-0.5	580-28112-48	n-triacontane-d62	193	50-150
11NC28SS032-1	580-28112-49	n-triacontane-d62	165	50-150
11NC28SS034-1.5	580-28112-56	n-triacontane-d62	162	50-150
11NC28SS035-0.5	580-28112-57	n-triacontane-d62	39	50-150
11NC28SS035-1.5	580-28112-59	n-triacontane-d62	174	50-150
11NC28SS036-1	580-28112-61	n-triacontane-d62	192	50-150
11NC28SS036-2	580-28112-62	n-triacontane-d62	162	50-150

Sample No.	Lab ID	Surrogate	%R	Control Limits
11NC28SS036-1.5	580-28112-63	n-triacontane-d62	199	50-150
11NC28SS037-2	580-28198-1	n-triacontane-d62	185	50-150
11NC28SS037-2.5	580-28198-2	n-triacontane-d62	179	50-150
11NC28SS038-1.75	580-28198-4	n-triacontane-d62	181	50-150
11NC28SS038-2.25	580-28198-5	n-triacontane-d62	182	50-150
11NC28SS038-2.75	580-28198-6	n-triacontane-d62	186	50-150
11NC28SS039-2	580-28198-9	n-triacontane-d62	167	50-150
11NC28SS040-1	580-28198-11	n-triacontane-d62	201	50-150
11NC28SS040-1.5	580-28198-12	n-triacontane-d62	172	50-150
11NC28SS041-1.33	580-28198-14	n-triacontane-d62	151	50-150
11NC28SS055-1.5	580-28198-57	n-triacontane-d62	180	50-150
11NC28SS067-1.5	580-28198-98	n-triacontane-d62	28	50-150
11NC28SS075-2.5	580-28198-122	n-triacontane-d62	192	50-150
11NC28SS081-1.25	580-28198-139	n-triacontane-d62	225	50-150
11NC28SS081-1.75	580-28198-140	n-triacontane-d62	182	50-150
11NC28SS081-2.25	580-28198-141	n-triacontane-d62	210	50-150
11NC28SS081-2.5	580-28198-142	n-triacontane-d62	189	50-150
Affected Analyte: RRO with Silica Gel Cleanup				
11NC28SS040-0.5	580-28198-10	n-triacontane-d62	182	50-150
11NC28SS067-1	580-28198-97	n-triacontane-d62	12	50-150

Detected results for the affected analyte associated with a high recovery were QH qualified to indicate the potential for a high bias. Results associated with a low recovery were QL qualified to indicate the potential for a low bias.

Analytes were detected in the method blanks as follows:

Analyte	Concentration (mg/kg)	Analysis Batch	Comments
DRO	9.84	580-94266	Associated results >10x blank concentration
DRO	5.99	580-94624	Associated results >10x blank concentration
DRO with silica gel cleanup	4.91	580-95131	Only RRO reported, no associated DRO results
DRO with silica gel cleanup	6.70	580-95216	Associated results >10x blank concentration
RRO	13.5	580-94183	Associated results >10x blank concentration
RRO	27.5	580-94624	Associated results >10x blank concentration

Analyte	Concentration (mg/kg)	Analysis Batch	Comments
RRO with silica gel cleanup	10.0	580-95131	Associated results >10x blank concentration
RRO with silica gel cleanup	18.3	580-95216	Associated results >10x blank concentration
DRO	2.12	580-94528	Associated results >10x blank concentration
DRO	5.99	580-94624	Associated results >10x blank concentration
RRO	27.5	580-94624	Associated results >10x blank concentration
DRO	2.76	580-94772	Associated results >10x blank concentration
DRO	4.16	580-94964	Associated results >10x blank concentration
DRO with silica gel	6.34	580-95330	Associated results >10x blank concentration
DRO with silica gel	4.06	580-95344	Associated results >10x blank concentration
RRO with silica gel	10.4	580-95344	Associated results >10x blank concentration
DRO with silica gel	8.21	580-95344	Associated results <10x blank concentration B qualified
RRO with silica gel	22.3	580-95344	Associated results >10x blank concentration
DRO with silica gel	2.87	580-95825	Associated results >10x blank concentration
DRO with silica gel	3.14	580-95885	Associated results <10x blank concentration B qualified
RRO with silica gel	11.7	580-95885	Associated results <10x blank concentration B qualified

Associated results detected at concentrations less than 10x the blank concentration were B qualified to indicate the potential for a high bias.

MS/MSD analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-2 and 12-3 control limits:

Spiked Sample	Lab ID	%R	Control Limits (%R)	RPD	Control Limits (RPD)	Comments
DRO:						
11NC28SS008-1	580-28053-17	Not evaluated	72-128	--	≤20%	Sample concentration>4x spike concentration
11NC28SS014-2	580-28053-36	63/--	72-128	--	≤20%	
11NC28SS017-1.5	580-28112-4	Not evaluated	72-128	--	≤20%	Sample concentration>4x spike concentration
11NC28SS027-1.25	580-28112-33	--/52	72-128	--	≤20%	
11NC28SS031-1.5	580-28112-47	--/--	72-128	--	≤20%	
11NC28SS038-2.75	580-28198-6	--/--	72-128	--	≤20%	
11NC28SS044-3	580-28198-24	Not evaluated	72-128	--	≤20%	Sample concentration>4x spike concentration
11NC28SS053-2	580-28198-53	61/56	72-128	--	≤20%	
11NC28SS061-0.025	580-28198-77	Not evaluated	72-128	26	≤20%	Sample concentration>4x spike concentration
11NC28SS065-3	580-28198-92	159/128	72-128	--	≤20%	
11NC28SS071-2	580-28198-109	45/113	72-128	36	≤20%	
11NC28SS075-2.5	580-28198-122	--/--	72-128	--	≤20%	
11NC28SS080-3.75	580-28198-138	--/--	72-128	--	≤20%	
DRO with Silica Gel Cleanup						
11NC28SS008-1	580-28053-17	Not evaluated	72-128	--	≤20%	Sample concentration>4x spike concentration
11NC28SS014-2	580-28053-36	53/63	72-128	--	≤20%	
11NC28SS017-1.5	580-28112-4	Not evaluated	72-128	--	≤20%	Sample concentration>4x spike concentration
11NC28SS027-1.25	580-28112-33	--/52	72-128	-	≤20%	Sample concentration>4x spike concentration
11NC28SS031-1.5	580-28112-47	--/--	72-128	--	≤20%	
11NC28SS038-2.75	580-28198-6	--/--	72-128	--	≤20%	
11NC28SS044-3	580-28198-24	Not evaluated	72-128	31	≤20%	Sample concentration>4x spike concentration
11NC28SS053-2	580-28198-53	--/--	72-128	--	≤20%	
11NC28SS061-0.025	580-28198-77	Not evaluated	72-128	32	≤20%	Sample concentration>4x spike concentration
11NC28SS065-3	580-28198-92	176/--	72-128	21	≤20%	
11NC28SS071-2	580-28198-109	46/--	72-128	38	≤20%	
11NC28SS075-2.5	580-28198-122	--/--	72-128	--	≤20%	
11NC28SS080-3.75	580-28198-138	--/--	72-128	--	≤20%	

RRO						
11NC28SS008-1	580-28053-17	164/--	53-116	23	≤20%	
11NC28SS014-2	580-28053-36	Not evaluated	53-116	--	≤20%	Sample concentration>4x spike concentration
11NC28SS017-1.5	580-28112-4	Not evaluated	53-116	--	≤20%	Sample concentration>4x spike concentration
11NC28SS027-1.25	580-28112-33	--/121	53-116	--	≤20%	
11NC28SS031-1.5	580-28112-47	--/--	53-116	--	≤20%	
11NC28SS038-2.75	580-28198-6	Not evaluated	53-116	--	≤20%	Sample concentration>4x spike concentration
11NC28SS044-3	580-28198-24	--/--	53-116	--	≤20%	
11NC28SS053-2	580-28198-53	39/--	53-116	--	≤20%	
11NC28SS061-0.025	580-28198-77	--/--	53-116	--	≤20%	
11NC28SS065-3	580-28198-92	162/205	53-116	--	≤20%	
11NC28SS071-2	580-28198-109	39/--	53-116	--	≤20%	
11NC28SS075-2.5	580-28198-122	138/191	53-116	--	≤20%	
11NC28SS080-3.75	580-28198-138	-17/--	53-116	34	≤20%	Sample concentration 2.5x spike concentration
RRO with Silica Gel Cleanup						
11NC28SS008-1	580-28053-17	--/--	53-116	--	≤20%	
11NC28SS014-2	580-28053-36	--/--	53-116	--	≤20%	
11NC28SS017-1.5	580-28112-4	--/--	53-116	--	≤20%	
11NC28SS027-1.25	580-28112-33	--/--	53-116	--	≤20%	
11NC28SS031-1.5	580-28112-47	--/--	53-116	--	≤20%	
11NC28SS038-2.75	580-28198-6	--/--	53-116	--	≤20%	
11NC28SS044-3	580-28198-24	--/--	53-116	--	≤20%	
11NC28SS053-2	580-28198-53	--/132	53-116	--	≤20%	
11NC28SS061-0.025	580-28198-77	--/127	53-116	--	≤20%	
11NC28SS065-3	580-28198-92	132/123	53-116	--	≤20%	
11NC28SS071-2	580-28198-109	--/--	53-116	--	≤20%	
11NC28SS075-2.5	580-28198-122	--/137	53-116	--	≤20%	
11NC28SS080-3.75	580-28198-138	--/--	53-116	--	≤20%	

Note:
-- = in control

The majority of MS/MSD results were in control and qualification due to MS/MSD outliers was limited to the spiked sample. Results associated with low recoveries were ML qualified and detected results associated with high recoveries were MH qualified. When recovery outliers were associated with high RPDs, recoveries were considered the overriding outlier and qualification was based on the recovery information. For the single sample with a negative MS recovery, an ML qualifier was considered adequate since the sample concentration was 2.5x the spike concentration. MS/MSD recoveries and RPDs are not evaluated when the sample concentration is greater than four times the spike concentration since the spike addition is negligible in relation to the sample concentration.

2.7 TOC ANALYSES

TestAmerica analyzed samples for TOC-Quad by SW-846 method 9060. The QC batches are summarized in Table 2-7.1.

Table 2-7.1 TOC QC Batches

Laboratory Work Order	QC Batch	QC Batch Date
580-28053-1	580-93888	8/28/2011
	580-94049	8/30/2011
	580-94459	8/30/2011
580-28112-1	580-94711	9/7/2011
	580-95027	9/9/2011
	580-95143	9/12/2011
	580-95395	9/14/2011
	580-95700	9/18/2011
580-28198-1	280-86252	9/8/2011
	280-86399	9/9/2011
	280-86438	9/13/2011
	280-86515	9/14/2011
	280-86544	9/15/2011
	280-88408	9/28/2011
	280-88512	9/27/2011
	280-88568	9/29/2011
	580-96187	9/21/2011

Required QC for a batch of up to 20 samples includes an MB, LCS/LCSD pair, and MS/MSD pair. A MB, LCS/LCSD, and MS/MSD pair were analyzed per batch with the exception that no LCSD was provided for laboratory work orders 580-28053-1 and 580-28112-1 and batch 580-96187 for laboratory work order 580-28198-1. Precision information was available through the MS/MSD pair and the lack of an LCSD will not affect data usability.

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

Several samples were analyzed outside the 28 day hold time. In some instance, the laboratory narrative indicated samples were frozen within the 28 days extending the hold time to six months and qualification was not required. Samples that were not frozen prior to 28 days and analyzed outside the 28 day hold time were QL qualified to indicate an estimated result with a potential low bias. Samples analyzed outside the hold time of 28 days and QL qualified were:

Sample No.	Lab ID	Days to Analysis
11NC28SS069-1.5	580-28198-100	38
11NC28SS069-2	580-28198-101	38
11NC28SS069-2.5	580-28198-102	38
11NC28SS070-0.75	580-28198-103	38
11NC28SS070-1.25	580-28198-104	38
11NC28SS070-1.75	580-28198-105	38
11NC28SS071-1	580-28198-106	38
11NC28SS071-2.5	580-28198-107	38
11NC28SS071-1.5	580-28198-108	38
11NC28SS071-2	580-28198-109	38
11NC28SS072-1.25	580-28198-110	38
11NC28SS072-2.25	580-28198-112	38
11NC28SS078-1.5	580-28198-129	31
11NC28SS078-2	580-28198-130	31
11NC28SS078-2.5	580-28198-131	31
11NC28SS078-3	580-28198-132	31
11NC28SS079-2.5	580-28198-133	32
11NC28SS079-3	580-28198-134	32
11NC28SS079-3.5	580-28198-135	31
11NC28SS080-2.75	580-28198-136	31
11NC28SS080-3.25	580-28198-137	31
11NC28SS080-3.75	580-28198-138	31
11NC28SS081-1.25	580-28198-139	31
11NC28SS081-1.75	580-28198-140	31
11NC28SS081-2.25	580-28198-141	31
11NC28SS081-2.5	580-28198-142	31

MS/MSDs analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-9 control limits:

Sample No.	Lab ID	% R Control Limits (76-128%)	RPD Control Limit (<28%)	Comments
11NC28SS008-1	580-28053-17	Not evaluated	--	Sample concentration>4x spike concentration
11NC28SS010-1	580-28053-21	--/--	--	
11NC28SS014-2	580-28053-36	Not evaluated	--	Sample concentration>4x spike concentration
11NC28SS017-0.5	580-28112-1	--/--	--	
11NC28SS020-1	580-28112-12	Not evaluated	--	Sample concentration>4x spike concentration
11NC28SS027-1.25	580-28112-33	Not evaluated	--	Sample concentration>4x spike concentration
11NC28SS032-1	580-28112-49	482/438	--	Sample concentration>3.4x spike concentration
11NC28SS034-0.5	580-28112-54	--/na	-- (lab duplicate)	
11NC28SS038-2.75	580-28198-6	--/--	--	
11NC28SS044-2	580-28198-22	--/--	--	
11NC28SS044-3	580-28198-24	--/--	--	
11NC28SS053-2	580-28198-53	--/--	--	
11NC28SS061-0.025	580-28198-77	--/--	--	
11NC28SS071-2	580-28198-109	--/--	--	
11NC28SS075-2.5	580-28198-122	--/--	--	
11NC28SS080-3.75	580-28198-138	--/na		Sample concentration>4x spike concentration

The majority of MS/MSD results were in control and qualification due to MS/MSD outliers was limited to the spiked sample. Detected results associated with high recoveries were MH qualified. MS/MSD recoveries are not evaluated when the sample concentration is greater than four times the spike concentration since the spike addition is negligible in relation to the sample concentration. RPDs for MS/MSDs at 4x the spike concentration were in control.

The laboratory noted that nine samples, including an MS/MSD pair were analyzed before the first continuing calibration verification (CCV) due to an analyst error. Recoveries and RPDs for the MS/MSD pair were in control and no action was taken to qualify the results.

2.8 METALS ANALYSES

TestAmerica analyzed soil samples by SW-846 method 6020. The QC batches are summarized in Table 2-8.1.

Table 2-8.1 Metals QC Batches

Laboratory Work Order	QC Batch	QC Batch Date
580-28053-1	580-93639	8/24/2011
	580-93648	8/24/2011
580-28112-1	580-94027	8/29/2011
	580-94090	8/30/2011
	580-94124	8/30/2011
	580-94132	8/30/2011
580-28198-1	580-94820	9/7/2011
	580-94830	9/7/2011
	580-94856	9/8/2011
	580-94864	9/8/2011
	580-94945	9/9/2011
	580-94946	9/8/2011
	580-94949	9/8/2011
	580-94984	9/9/2011

Note:
QC = quality control

Required QC for a batch of up to 20 samples includes an MB, LCS/LCSD pair, 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 criteria: holding time and LCS/LCSD %Rs and RPDs.

Analytes were detected in the method blanks as follows:

Prep Batch	Analyte	Concentration (mg/kg)
580-94027	Barium	0.0593
580-94090	Barium	0.0598
580-94124	Barium	0.0492
580-94132	Barium	0.0411
580-94820	Barium	0.0786
580-94830	Barium	0.0714
580-94856	Barium	0.0824
580-94864	Barium	0.0793
580-94945	Silver	0.0375
580-94946	Cadmium	0.00876
	Lead	0.0226
580-94949	Barium	0.0379

With the exception of silver, all associated results were greater than 10x the method blank concentration and qualification was not required. Sample results associated with the detection of silver in the method blank were <10x the blank concentration and were B qualified.

MS/MSDs analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-7 control limits:

Spiked Sample	Analyte	%R	%R Control Limits	RPD	RPD Control Limits	Comments
11NC28SS008-1 (580-28053-17)	Arsenic	--/--	80-120	29	<20	No qualifiers due to RPD; lab duplicate on the same sample had RPDs in control (<20% RPD).
	Barium	--/--	80-120	25	<20	
	Cadmium	--/--	80-120	29	<20	
	Chromium	66/--	80-120	39	<20	
	Lead	--/--	80-120	36	<20	
	Nickel	--/--	80-120	28	<20	
	Selenium	--/--	80-120	28	<20	
	Silver	--/--	80-120	28	<20	
	Vanadium	--/--	80-120	34	<20	
11NC28SS014-2 (580-28053-36)	All in control					

Spiked Sample	Analyte	%R	%R Control Limits	RPD	RPD Control Limits	Comments
11NC28SS017-1.5 (580-28112-4)	Arsenic	--/--	80-120	23	<20	No qualifiers due to RPD; lab duplicate on the same sample had RPDs in control (<20% RPD).
	Barium	--/--	80-120	21	<20	
	Cadmium	--/--	80-120	25	<20	
	Lead	--/--	80-120	21	<20	
	Selenium	--/--	80-120	23	<20	
	Silver	--/--	80-120	25	<20	
11NC28SS027-1.25 (580-28112-33)	Chromium	79/--	80-120	--	<20	
	Lead	--/125	80-120	26	<20	
11NC28SS031-1.5 (580-28112-47)	All in control					
11NC28SS033-1 (580-28112-52)	All in control					
11NC28SS038-2.75 (580-28198-6)	All in control					
11NC28SS044-3 (580-28198-24)	All in control					
11NC28SS048-2 (580-28198-35)	All in control					
11NC28SS053-2 (580-28198-53)	All in control					
11NC28SS061-0.025 (580-28198-77)	All in control					
11NC28SS065-3 (580-28198-92)	All in control					
11NC28SS071-2 (580-28198-109)	All in control					
11NC28SS075-2.5 (580-28198-122)	Chromium	--/126	80-120	--	<20	

Results associated with low matrix spike recoveries were ML qualified and detected results associated with high spike recoveries were MH qualified to indicate bias due to a matrix effect. Associated samples were those samples from the same analytical preparation batch.

Laboratory duplicate RPDs were outside the laboratory control limits of <20% as follows:

Spiked Sample	Analyte	RPD	RPD Control Limits
11NC28SS027-1.25 (580-28112-33)	Chromium	38	<20
	Nickel	31	<20
11NC28SS031-1.5 (580-28112-47)	Cadmium	28	<20
11NC28SS065-3 (580-28198-92)	Cadmium	23	<20
	Lead	26	<20

Duplicate samples and the associated detected project sample in the batch were QN qualified to indicate the matrix may be non-homogenous. For chromium samples qualified due to matrix, no further qualifiers were assigned.

2.9 MERCURY ANALYSES

TestAmerica analyzed soil samples for mercury by SW-846 method 7471A. The QC batches are summarized in Table 2-9.1.

Table 2-9.1 Mercury QC Batches

Laboratory Work Order	QC Batch	QC Batch Date
580-28053-1	580-93726	8/25/2011
	580-93742	8/25/2011
580-28112-1	580-93988	8/29/2011
	580-94252	8/31/2011
	580-94322	9/1/2011
	580-94323	9/1/2011
580-28198-1	580-94611	9/6/2011
	580-94638	9/6/2011
	580-94650	9/6/2011
	580-94664	9/6/2011
	580-94675	9/7/2011
	580-94683	9/7/2011
	580-94723	9/7/2011
	580-94737	9/7/2011

Note:
QC = quality control

Required QC for a batch of up to 20 samples includes an MB, LCS/LCSD pair, and an MS/MSD pair. An MB, LCS/LCSD pair, and MS/MSD pair 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 %Rs and RPDs, and MS/MSD %Rs.

MS/MSDs analyzed are listed below. Recoveries and RPDs are noted when they were outside QAPP Table 12-8 control limits:

Spiked Sample	Lab ID	%R Control Limits: 80-120%	RPD Control Limit: <20%	Comments
11NC28SS008-1	580-28053-17	--/--	--	
11NC28SS014-2	580-28053-36	--/--	--	
11NC28SS017-1.5	580-28112-4	--/--	--	
11NC28SS027-1.25	580-28112-33	--/--	--	
11NC28SS031-1.5	580-28112-47	--/--	22	Lab duplicate in control, no qualifier.
11NC28SS033-0.5	580-28112-51	--/--	--	
11NC28SS038-2.75	580-28198-6	--/--	--	
11NC28SS044-3	580-28198-24	--/--	--	
11NC28SS053-2	580-28198-53	--/--	--	
11NC28SS061-0.025	580-28198-77	--/--	--	
11NC28SS065-3	580-28198-92	--/--	--	
11NC28SS071-2	580-28198-109	--/--	--	
11NC28SS075-2.5	580-28198-122	--/--	--	

The single RPD outlier was associated with an acceptable laboratory duplicate RPD and no data qualifiers were assigned due to MS/MSD results.

For laboratory work order 580-28198-1, analytical batch 580-94638, the laboratory duplicate had an RPD of 27% 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.

2.10 FIELD QA/QC

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

2.10.1 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 ≤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 the following frequencies per method:

- Twenty three field duplicate pairs were collected for 223 samples at a frequency of 10% for BTEX, GRO, DRO/RRO, DRO/RRO with silica gel cleanup, PCBs, PAHs, metals and TOC.

Field Duplicate RPDs

Tables 2-10.1 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 2-10.1 Field Sample Duplicate Pair Results

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS006-1 28-2-1-1 (580-28053-13)	11NC28SS006-2 28-2-1-1 (580-28053-14)	Percent Moisture	%	--	64	70	9
		DRO	mg/kg	9200 [1]	39000	57000	38
		DRO w/ SG	mg/kg	9200 [1]	34000	47000	32
		RRO	mg/kg	9200 [1]	3200	3700	14
		RRO w/ SG	mg/kg	9200 [1]	730	770	5
		TOC	mg/kg	--	180000	240000	29
		GRO	mg/kg	300 [2]	18	52	**97**
		PCB-1254	mg/kg	1 [1]	0.046 J	ND (0.064)	nc
		PCB-1260	mg/kg	1 [1]	0.027 J	ND (0.064)	nc
		PCBs-Total	mg/kg	1 [1]	0.073 J	ND (0.130)	nc
		Arsenic	mg/kg	11 [1]	1.5	3.4	**78**
		Barium	mg/kg	1100 [2]	77	96	22
		Cadmium	mg/kg	5 [2]	0.36 J	0.56 J	nc
		Chromium	mg/kg	25 [2]	14	22	44
		Lead	mg/kg	400 [2]	19	31	48
		Nickel	mg/kg	86 [2]	7.3	14	**63**
		Selenium	mg/kg	3.4 [2]	3.2	3	6
		Silver	mg/kg	11.2 [2]	0.25 J	0.27 J	nc
		Vanadium	mg/kg	3400 [2]	17	29	**52**
		Mercury	mg/kg	1.4 [2]	0.096	0.11	14
11NC28SS011-1 28-3-2-1 (580-28053-24)	11NC28SS011-2 28-3-2-1 (580-28053-25)	Percent Moisture	%	--	48	53	10
		DRO	mg/kg	9200 [1]	11000	30000	**93**
		DRO w/ SG	mg/kg	9200 [1]	10000	23000	**79**
		RRO	mg/kg	9200 [1]	4700	5300	12
		RRO w/ SG	mg/kg	9200 [1]	2400	1800	29
		TOC	mg/kg	--	110000	110000	0
		GRO	mg/kg	300 [2]	90	110	20
		Benzene	mg/kg	2 [1]	0.093	0.12	25
		Ethylbenzene	mg/kg	6.9 [2]	0.35	0.5	35
		m,p-Xylene	µg/kg	Total =	1800	2700	40
		o-Xylene	µg/kg	63000	2400	3600	40
		Total Xylenes	mg/kg	63 [2]	4.2	6.3	40
		PCB-1254	mg/kg	1 [1]	0.041 J	0.027 J	nc
		PCB-1260	mg/kg	1 [1]	0.032 J	0.018 J	nc
		PCBs-Total	mg/kg	1 [1]	0.073 J	0.045 J	nc
		Arsenic	mg/kg	11 [1]	3.4	3.6	6
		Barium	mg/kg	1100 [2]	87	110	23
		Cadmium	mg/kg	5 [2]	0.37	0.35 J	nc
		Chromium	mg/kg	25 [2]	81	23	**112**
		Lead	mg/kg	400 [2]	25	27	8
		Nickel	mg/kg	86 [2]	13	13	0
		Selenium	mg/kg	3.4 [2]	0.74 J	1.0 J	nc
		Silver	mg/kg	11.2 [2]	0.082 J	0.11 J	nc
		Vanadium	mg/kg	3400 [2]	23	30	26
		Mercury	mg/kg	1.4 [2]	0.083	0.11	28
		1-Methylnaphthalene	mg/kg	6.2 [2]	11	10	10
		2-Methylnaphthalene	mg/kg	6.1 [2]	20	18	11
		Fluorene	mg/kg	220 [2]	0.75	0.68	10
		Naphthalene	mg/kg	120 [1]	5.7	5.5	4
		Phenanthrene	mg/kg	3000 [2]	0.77	0.75	3
		Pyrene	mg/kg	1000 [2]	0.130 J	ND (0.280)	nc

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS012-1.5 28-3-3-1.5 (580-28053-29)	11NC28SS012-2 28-3-3-1.5 (580-28053-30)	Percent Moisture	%	--	57	60	5
		DRO	mg/kg	9200 [1]	3600	4400	20
		DRO w/ SG	mg/kg	9200 [1]	2400	3300	32
		RRO	mg/kg	9200 [1]	4000	3000	29
		RRO w/ SG	mg/kg	9200 [1]	800	640	22
		TOC	mg/kg	--	180000	180000	0
		GRO	mg/kg	300 [2]	37	47	24
		Benzene	mg/kg	2 [1]	0.073	0.096	27
		Ethylbenzene	mg/kg	6.9 [2]	0.13	0.16	21
		m,p-Xylene	µg/kg	Total =	610	770	23
		o-Xylene	µg/kg	63000	440	510	15
		Total Xylenes	mg/kg	63 [2]	1.05	1.28	20
		PCB-1254	mg/kg	1 [1]	ND (0.032)	0.049 J	nc
		Arsenic	mg/kg	11 [1]	4.5	4.7	4
		Barium	mg/kg	1100 [2]	130	140	7
		Cadmium	mg/kg	5 [2]	0.33 J	0.32 J	nc
		Chromium	mg/kg	25 [2]	20	21	5
		Lead	mg/kg	400 [2]	14	13	7
		Nickel	mg/kg	86 [2]	13	13	0
		Selenium	mg/kg	3.4 [2]	1.5	1.5	0
		Silver	mg/kg	11.2 [2]	0.13 J	0.12 J	nc
		Vanadium	mg/kg	3400 [2]	35	35	0
		Mercury	mg/kg	1.4 [2]	0.093	0.095	2
		1-Methylnaphthalene	mg/kg	6.2 [2]	4.4	4.2	5
		2-Methylnaphthalene	mg/kg	6.1 [2]	7.9	7.5	5
		Fluorene	mg/kg	220 [2]	0.39	0.39	0
		Naphthalene	mg/kg	120 [1]	2.7	2.3	16
		Phenanthrene	mg/kg	3000 [2]	0.290 J	0.36	nc
11NC28SS017-0.5 28-4-1-0.5 (580-28112-1)	11NC28SS017-2 28-4-1-0.5 (580-28112-2)	Percent Moisture	%	--	23	19	19
		DRO	mg/kg	9200 [1]	30000	23000	26
		DRO w/ SG	mg/kg	9200 [1]	30000	20000	40
		RRO	mg/kg	9200 [1]	3000	3200	6
		RRO w/ SG	mg/kg	9200 [1]	2700	2700	0
		TOC	mg/kg	--	18000	18000	0
		GRO	mg/kg	300 [2]	370	320	14
		Benzene	mg/kg	2 [1]	0.020 J	ND (0.014)	nc
		Ethylbenzene	mg/kg	6.9 [2]	0.22	0.13	**51**
		m,p-Xylene	µg/kg	Total =	820	510	47
		o-Xylene	µg/kg	63000	840	580	37
		Total Xylenes	mg/kg	63 [2]	1.66	1.09	41
		PCB-1260	mg/kg	1 [1]	0.0084 J	0.016 J	nc
		PCBs-Total	mg/kg	1 [1]	0.0084 J	0.016 J	nc
		Arsenic	mg/kg	11 [1]	4.7	4.6	2
		Barium	mg/kg	1100 [2]	65	54	18
		Cadmium	mg/kg	5 [2]	0.36	0.42	15
		Chromium	mg/kg	25 [2]	15	18	18
		Lead	mg/kg	400 [2]	36	47	27
		Nickel	mg/kg	86 [2]	11	11	0
		Selenium	mg/kg	3.4 [2]	0.57 J	0.50 J	nc
		Silver	mg/kg	11.2 [2]	0.079 J	0.074 J	nc
		Vanadium	mg/kg	3400 [2]	22	21	5
		Mercury	mg/kg	1.4 [2]	0.044	0.054	20
		1-Methylnaphthalene	mg/kg	6.2 [2]	8.3	3.5	**81**

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
		2-Methylnaphthalene	mg/kg	6.1 [2]	6.6	2.9	**78**
		Benzo[a]anthracene	mg/kg	3.6 [2]	ND (0.320)	0.120 J	nc
		Chrysene	mg/kg	360 [2]	ND (0.320)	0.130 J	nc
		Fluoranthene	mg/kg	1400 [2]	0.140 J	0.160 J	nc
		Fluorene	mg/kg	220 [2]	1.4	0.72	**64**
		Phenanthrene	mg/kg	3000 [2]	1	ND (0.310)	nc
		Pyrene	mg/kg	1000 [2]	0.270 J	0.370 J	nc
11NC28SS023-1 28-4-7-1 (580-28112-19)	11NC28SS023-2.5 28-4-7-1 (580-28112-20)	Percent Moisture	%	--	59	57	3
		DRO	mg/kg	9200 [1]	55000	50000	10
		DRO w/ SG	mg/kg	9200 [1]	58000	53000	9
		RRO	mg/kg	9200 [1]	7400	6200	18
		RRO w/ SG	mg/kg	9200 [1]	3000	2600	14
		TOC	mg/kg	--	160000	170000	6
		GRO	mg/kg	300 [2]	190	170	11
		Benzene	mg/kg	2 [1]	0.14	0.12	15
		Ethylbenzene	mg/kg	6.9 [2]	0.86	1.5	**54**
		m,p-Xylene	µg/kg	Total =	2200	4800	**74**
		o-Xylene	µg/kg	63000	160	290	**58**
		Total Xylenes	mg/kg	63 [2]	2.36	5.09	**73**
		PCB-1260	mg/kg	1 [1]	0.013 J	0.027 J	nc
		PCBs-Total	mg/kg	1 [1]	0.013 J	0.027 J	nc
		Arsenic	mg/kg	11 [1]	6.2	5.6	10
		Barium	mg/kg	1100 [2]	140	150	7
		Cadmium	mg/kg	5 [2]	0.68	0.56	19
		Chromium	mg/kg	25 [2]	22	23	4
		Lead	mg/kg	400 [2]	16	17	6
		Nickel	mg/kg	86 [2]	17	16	6
		Selenium	mg/kg	3.4 [2]	1.9	1.8	5
		Silver	mg/kg	11.2 [2]	0.12 J	0.14 J	nc
		Vanadium	mg/kg	3400 [2]	36	37	3
		Mercury	mg/kg	1.4 [2]	0.096	0.090	6
		1-Methylnaphthalene	mg/kg	6.2 [2]	68	56	19
		2-Methylnaphthalene	mg/kg	6.1 [2]	87	71	20
		Acenaphthene	mg/kg	180 [2]	ND (1.200)	4.4	nc
		Fluorene	mg/kg	220 [2]	9	6.2	37
		Naphthalene	mg/kg	120 [1]	32	24	29
		Phenanthrene	mg/kg	3000 [2]	3.6	2.4	40
11NC28SS026-1.5 28-5-2-1.5 (580-28112-30)	11NC28SS026-2 28-5-2-1.5 (580-28112-31)	Percent Moisture	%	--	50	50	0
		DRO	mg/kg	9200 [1]	110000	110000	0
		DRO w/ SG	mg/kg	9200 [1]	21000	24000	13
		RRO	mg/kg	9200 [1]	7300	7600	4
		RRO w/ SG	mg/kg	9200 [1]	3700	4300	15
		TOC	mg/kg	--	170000	150000	13
		GRO	mg/kg	300 [2]	180	120	40
		Benzene	mg/kg	2 [1]	0.12	0.11	9
		Ethylbenzene	mg/kg	6.9 [2]	1.5	1.3	14
		m,p-Xylene	µg/kg	Total =	7300	6300	15
		o-Xylene	µg/kg	63000	5000	4000	22
		Total Xylenes	mg/kg	63 [2]	12.3	10.3	18
		Arsenic	mg/kg	11 [1]	4.1	4.4	7
		Barium	mg/kg	1100 [2]	110	100	10
		Cadmium	mg/kg	5 [2]	0.28 J	0.37	nc
		Chromium	mg/kg	25 [2]	17	17	0

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
		Lead	mg/kg	400 [2]	15	19	24
		Nickel	mg/kg	86 [2]	10	10	0
		Selenium	mg/kg	3.4 [2]	1.7	1.5	13
		Silver	mg/kg	11.2 [2]	0.10 J	0.10 J	nc
		Vanadium	mg/kg	3400 [2]	32	30	6
		Mercury	mg/kg	1.4 [2]	0.11	0.095	15
		1-Methylnaphthalene	mg/kg	6.2 [2]	30	29	3
		2-Methylnaphthalene	mg/kg	6.1 [2]	50	50	0
		Fluorene	mg/kg	220 [2]	2.7	2.7	0
		Naphthalene	mg/kg	120 [1]	22	22	0
		Phenanthrene	mg/kg	3000 [2]	0.930 J	0.950 J	nc
11NC28SS030-2 28-5-6-2 (580-28112-43)	11NC28SS030-2.5 28-5-6-2 (580-28112-44)	Percent Moisture	%	--	35	56	46
		DRO	mg/kg	9200 [1]	38000	56000	38
		DRO w/ SG	mg/kg	9200 [1]	35000	57000	48
		RRO	mg/kg	9200 [1]	4100	5300	26
		RRO w/ SG	mg/kg	9200 [1]	1500	2100	33
		TOC	mg/kg	--	130000	160000	21
		GRO	mg/kg	300 [2]	160	300	**61**
		Benzene	mg/kg	2 [1]	0.38	0.65	**52**
		Ethylbenzene	mg/kg	6.9 [2]	3.8	6.4	**51**
		m,p-Xylene	µg/kg	Total =	17000	31000	**58**
		o-Xylene	µg/kg	63000	6500	11000	**51**
		Total Xylenes	mg/kg	63 [2]	23.5	42	**56**
		Toluene	mg/kg	6.5 [2]	0.051 J	0.11	nc
		PCB-1254	mg/kg	1 [1]	0.032 J	ND (0.022)	nc
		PCB-1260	mg/kg	1 [1]	0.036 J	0.026 J	nc
		PCBs-Total	mg/kg	1 [1]	0.068 J	0.026 J	nc
		Arsenic	mg/kg	11 [1]	3.7	5.3	36
		Barium	mg/kg	1100 [2]	96	140	37
		Cadmium	mg/kg	5 [2]	0.3	0.34 J	nc
		Chromium	mg/kg	25 [2]	16	21	27
		Lead	mg/kg	400 [2]	14	14	0
		Nickel	mg/kg	86 [2]	10	14	33
		Selenium	mg/kg	3.4 [2]	1.1	1.7	43
		Silver	mg/kg	11.2 [2]	0.075 J	0.10 J	nc
		Vanadium	mg/kg	3400 [2]	25	34	31
		Mercury	mg/kg	1.4 [2]	0.072	0.10	33
		1-Methylnaphthalene	mg/kg	6.2 [2]	78	120	42
		2-Methylnaphthalene	mg/kg	6.1 [2]	140	220	44
		Acenaphthene	mg/kg	180 [2]	5.1	8.2	47
		Fluorene	mg/kg	220 [2]	6.8	11	47
		Naphthalene	mg/kg	120 [1]	49	77	44
		Phenanthrene	mg/kg	3000 [2]	5.1	7.3	35

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS036-1 28-6-5-1 (580-28112-61)	11NC28SS036-2 28-6-5-1 (580-28112-62)	Percent Moisture	%	--	62	64	3
		DRO	mg/kg	9200 [1]	3100	2600	18
		DRO w/ SG	mg/kg	9200 [1]	2700	2200	20
		RRO	mg/kg	9200 [1]	8300	7900	5
		RRO w/ SG	mg/kg	9200 [1]	2400	2100	13
		TOC	mg/kg	--	130000	140000	7
		GRO	mg/kg	300 [2]	13	27	**70**
		Ethylbenzene	mg/kg	6.9 [2]	0.065 J	0.092 J	nc
		m,p-Xylene	µg/kg	Total = 63000	190	280	38
		o-Xylene	µg/kg		250	320	25
		Total Xylenes	mg/kg	63 [2]	0.44	0.6	31
		Arsenic	mg/kg	11 [1]	4	3.9	3
		Barium	mg/kg	1100 [2]	130	120	8
		Cadmium	mg/kg	5 [2]	0.5	0.49	2
		Chromium	mg/kg	25 [2]	19	19	0
		Lead	mg/kg	400 [2]	15	13	14
		Nickel	mg/kg	86 [2]	13	13	0
		Selenium	mg/kg	3.4 [2]	1.2 J	1.3	nc
		Silver	mg/kg	11.2 [2]	0.099 J	0.094 J	nc
		Vanadium	mg/kg	3400 [2]	30	29	3
		Mercury	mg/kg	1.4 [2]	0.083	0.087	5
		1-Methylnaphthalene	mg/kg	6.2 [2]	2.1	2.2	5
		2-Methylnaphthalene	mg/kg	6.1 [2]	3.9	4.2	7
		Fluorene	mg/kg	220 [2]	0.170 J	0.200 J	nc
		Naphthalene	mg/kg	120 [1]	1.9	2	5
		Phenanthrene	mg/kg	3000 [2]	0.100 J	0.120 J	nc
11NC28SS039-1.5 28-6-8-1.5 (580-28198-8)	11NC28SS039-2 28-6-8-1.5 (580-28198-9)	Percent Moisture	%	--	67	80	18
		DRO	mg/kg	9200 [1]	980	1300	28
		DRO w/ SG	mg/kg	9200 [1]	310	440	35
		RRO	mg/kg	9200 [1]	12000	16000	29
		RRO w/ SG	mg/kg	9200 [1]	2000	2400	18
		TOC	mg/kg	--	230000	270000	16
		Arsenic	mg/kg	11 [1]	4.4	6.4	37
		Barium	mg/kg	1100 [2]	130	190	38
		Cadmium	mg/kg	5 [2]	0.50 J	0.71 J	nc
		Chromium	mg/kg	25 [2]	24	39	48
		Lead	mg/kg	400 [2]	13	21	47
		Nickel	mg/kg	86 [2]	11	16	37
		Selenium	mg/kg	3.4 [2]	2	3.2	46
		Silver	mg/kg	11.2 [2]	0.14 J	0.24 J	nc
		Vanadium	mg/kg	3400 [2]	40	61	42
		Mercury	mg/kg	1.4 [2]	0.090	0.13	36
		1-Methylnaphthalene	mg/kg	6.2 [2]	0.08	0.12	40
		2-Methylnaphthalene	mg/kg	6.1 [2]	0.12	0.19	45
		Fluorene	mg/kg	220 [2]	0.023 J	0.033 J	nc
		Naphthalene	mg/kg	120 [1]	0.063	0.099	44

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS042-1.5 28-7-3-1.5 (580-28198-16)	11NC28SS042-2.5 28-7-3-1.5 (580-28198-17)	Percent Moisture	%	--	30	32	6
		DRO	mg/kg	9200 [1]	390	300	26
		DRO w/ SG	mg/kg	9200 [1]	360	160	**77**
		RRO	mg/kg	9200 [1]	360	290	22
		RRO w/ SG	mg/kg	9200 [1]	71	41	**54**
		TOC	mg/kg	--	9800	8700	12
		GRO	mg/kg	300 [2]	35	30	15
		Arsenic	mg/kg	11 [1]	1.8	1.5	18
		Barium	mg/kg	1100 [2]	42	41	2
		Cadmium	mg/kg	5 [2]	0.059 J	0.063 J	nc
		Chromium	mg/kg	25 [2]	10	9.4	6
		Lead	mg/kg	400 [2]	5.5	5.3	4
		Nickel	mg/kg	86 [2]	6.3	6	5
		Silver	mg/kg	11.2 [2]	0.042 J	0.038 J	nc
		Vanadium	mg/kg	3400 [2]	15	14	7
		Mercury	mg/kg	1.4 [2]	0.014 J	0.019 J	nc
		1-Methylnaphthalene	mg/kg	6.2 [2]	0.44	0.48	9
		2-Methylnaphthalene	mg/kg	6.1 [2]	0.77	0.86	11
		Acenaphthene	mg/kg	180 [2]	0.022 J	0.022 J	nc
		Fluorene	mg/kg	220 [2]	0.030 J	0.032 J	nc
		Naphthalene	mg/kg	120 [1]	0.32	0.37	14
11NC28SS048-2 28-8-3-2 (580-28198-35)	11NC28SS048-2.5 28-8-3-2 (580-28198-36)	Percent Moisture	%	--	27	28	4
		DRO	mg/kg	9200 [1]	410	330	22
		DRO w/ SG	mg/kg	9200 [1]	310	190	48
		RRO	mg/kg	9200 [1]	1300	1300	0
		RRO w/ SG	mg/kg	9200 [1]	330	330	0
		TOC	mg/kg	--	29000	27000	7
		GRO	mg/kg	300 [2]	8.9	32	**113**
		m,p-Xylene	µg/kg	63000	ND (120)	130 J	nc
		Total Xylenes	mg/kg	63 [2]	ND (0.178)	0.130 J	nc
		Arsenic	mg/kg	11 [1]	2.6	2.7	4
		Barium	mg/kg	1100 [2]	120	140	15
		Cadmium	mg/kg	5 [2]	0.17 J	0.20 J	nc
		Chromium	mg/kg	25 [2]	23	25	8
		Lead	mg/kg	400 [2]	9.9	10	1
		Nickel	mg/kg	86 [2]	15	15	0
		Selenium	mg/kg	3.4 [2]	0.46 J	0.48 J	nc
		Silver	mg/kg	11.2 [2]	0.094 J	0.10 J	nc
		Vanadium	mg/kg	3400 [2]	36	39	8
		Mercury	mg/kg	1.4 [2]	0.048	0.056	15
		1-Methylnaphthalene	mg/kg	6.2 [2]	1	0.8	22
		2-Methylnaphthalene	mg/kg	6.1 [2]	1.5	1.3	14
		Acenaphthene	mg/kg	180 [2]	0.041	0.033	22
		Fluorene	mg/kg	220 [2]	0.064	0.053	19
		Naphthalene	mg/kg	120 [1]	0.440	0.360	20
		Phenanthrene	mg/kg	3000 [2]	0.020 J	0.016 J	nc

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS049-2 28-8-4-2 (580-28198-38)	11NC28SS049-3 28-8-4-2 (580-28198-39)	Percent Moisture	%	--	60	59	2
		DRO	mg/kg	9200 [1]	4200	5500	27
		DRO w/ SG	mg/kg	9200 [1]	4900	6200	23
		RRO	mg/kg	9200 [1]	2300	2200	4
		RRO w/ SG	mg/kg	9200 [1]	740	610	19
		TOC	mg/kg	--	140000	130000	7
		GRO	mg/kg	300 [2]	95	170	**57**
		m,p-Xylene	µg/kg	Total =	580 J	760	nc
		o-Xylene	µg/kg	63000	350	470	29
		Total Xylenes	mg/kg	63 [2]	0.930 J	1.23	nc
		Arsenic	mg/kg	11 [1]	3	2.3	26
		Barium	mg/kg	1100 [2]	110	100	10
		Cadmium	mg/kg	5 [2]	0.23 J	0.21 J	nc
		Chromium	mg/kg	25 [2]	14	13	7
		Lead	mg/kg	400 [2]	9.3	8.7	7
		Nickel	mg/kg	86 [2]	9.5	8.8	8
		Selenium	mg/kg	3.4 [2]	1.3 J	1.1 J	nc
		Silver	mg/kg	11.2 [2]	0.093 J	0.087 J	nc
		Vanadium	mg/kg	3400 [2]	31	28	10
		Mercury	mg/kg	1.4 [2]	0.067	0.10	40
		1-Methylnaphthalene	mg/kg	6.2 [2]	6.9	7.5	8
		2-Methylnaphthalene	mg/kg	6.1 [2]	12	13	8
		Acenaphthene	mg/kg	180 [2]	ND (0.290)	0.320 J	nc
		Fluorene	mg/kg	220 [2]	0.61	0.67	9
		Naphthalene	mg/kg	120 [1]	3.300	3.800	14
		Phenanthrene	mg/kg	3000 [2]	0.240 J	0.260 J	nc
11NC28SS053-1.5 28-9-2-1.5 (580-28198-51)	11NC28SS053-2.5 28-9-2-1.5 (580-28198-52)	Percent Moisture	%	--	62	61	2
		DRO	mg/kg	9200 [1]	1400	1000	33
		DRO w/ SG	mg/kg	9200 [1]	1300	990	27
		RRO	mg/kg	9200 [1]	2800	2300	20
		RRO w/ SG	mg/kg	9200 [1]	600	530	12
		TOC	mg/kg	--	150000	140000	7
		GRO	mg/kg	300 [2]	95	27	**111**
		o-Xylene	µg/kg	63000	280 J	310 J	nc
		Total Xylenes	mg/kg	63 [2]	0.280 J	0.310 J	nc
		Arsenic	mg/kg	11 [1]	3.2	3.4	6
		Barium	mg/kg	1100 [2]	120	110	9
		Cadmium	mg/kg	5 [2]	0.23 J	0.23 J	nc
		Chromium	mg/kg	25 [2]	13	12	8
		Lead	mg/kg	400 [2]	8.6	8.2	5
		Nickel	mg/kg	86 [2]	7.8	7.4	5
		Selenium	mg/kg	3.4 [2]	1.6	1.6	0
		Silver	mg/kg	11.2 [2]	0.074 J	0.072 J	nc
		Vanadium	mg/kg	3400 [2]	28	25	11
		Mercury	mg/kg	1.4 [2]	0.067	0.066	2
		1-Methylnaphthalene	mg/kg	6.2 [2]	0.850 J	1.9	nc
		2-Methylnaphthalene	mg/kg	6.1 [2]	1.000 J	2.4	nc
		Acenaphthene	mg/kg	180 [2]	0.130 J	0.110 J	nc
		Acenaphthylene	mg/kg	180 [2]	0.072 J	0.016 J	nc
		Anthracene	mg/kg	3000 [2]	ND (0.650)	0.092 J	nc
		Fluorene	mg/kg	220 [2]	0.210 J	0.200 J	nc
		Naphthalene	mg/kg	120 [1]	0.550 J	1.5	nc
		Phenanthrene	mg/kg	3000 [2]	ND (0.650)	0.079 J	nc

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS058-1 28-10-2-1 (580-28198-67)	11NC28SS058-2 28-10-2-1 (580-28198-68)	Percent Moisture	%	--	51	51	0
		DRO	mg/kg	9200 [1]	7200	4500	46
		DRO w/ SG	mg/kg	9200 [1]	7900	4600	**53**
		RRO	mg/kg	9200 [1]	2500	2100	17
		RRO w/ SG	mg/kg	9200 [1]	1400	1000	33
		TOC	mg/kg	--	41000	43000	5
		GRO	mg/kg	300 [2]	12	6.4	**61**
		Arsenic	mg/kg	11 [1]	5.3	5	6
		Barium	mg/kg	1100 [2]	83	74	11
		Cadmium	mg/kg	5 [2]	0.25 J	0.23 J	nc
		Chromium	mg/kg	25 [2]	16	14	13
		Lead	mg/kg	400 [2]	15	13	14
		Nickel	mg/kg	86 [2]	11	10	10
		Selenium	mg/kg	3.4 [2]	1.3	1.1 J	nc
		Silver	mg/kg	11.2 [2]	0.077 J	0.070 J	nc
		Vanadium	mg/kg	3400 [2]	28	26	7
		Mercury	mg/kg	1.4 [2]	0.052	0.043	19
		1-Methylnaphthalene	mg/kg	6.2 [2]	0.170 J	0.110 J	nc
		2-Methylnaphthalene	mg/kg	6.1 [2]	0.160 J	0.110 J	nc
		Fluorene	mg/kg	220 [2]	0.049 J	ND (0.250)	nc
		Naphthalene	mg/kg	120 [1]	0.050 J	0.045 J	nc
11NC28SS060-1 28-11-1-1 580-28198-74	11NC28SS060-2 28-11-1-1 580-28198-75	Percent Moisture	%	--	31	30	3
		DRO	mg/kg	9200 [1]	32000	23000	33
		DRO w/ SG	mg/kg	9200 [1]	35000	26000	30
		RRO	mg/kg	9200 [1]	2500	1800	33
		RRO w/ SG	mg/kg	9200 [1]	1400	1100	24
		TOC	mg/kg	--	29000	27000	7
		GRO	mg/kg	300 [2]	320	410	25
		Ethylbenzene	mg/kg	6.9 [2]	0.085 J	0.120 J	nc
		Arsenic	mg/kg	11 [1]	3.9	3.5	11
		Barium	mg/kg	1100 [2]	61	51	18
		Cadmium	mg/kg	5 [2]	0.13 J	0.11 J	nc
		Chromium	mg/kg	25 [2]	14	12	15
		Lead	mg/kg	400 [2]	8.3	7.4	11
		Nickel	mg/kg	86 [2]	7.7	6.3	20
		Selenium	mg/kg	3.4 [2]	0.60 J	0.60 J	nc
		Silver	mg/kg	11.2 [2]	0.044 J	0.034 J	nc
		Vanadium	mg/kg	3400 [2]	23	20	14
		Mercury	mg/kg	1.4 [2]	0.033	0.023	36
		1-Methylnaphthalene	mg/kg	6.2 [2]	5.8	4.9	17
		2-Methylnaphthalene	mg/kg	6.1 [2]	6.3	5.4	15
		Fluorene	mg/kg	220 [2]	1.000 J	1.000 J	nc
		Naphthalene	mg/kg	120 [1]	2.8	2.7	4
		Phenanthrene	mg/kg	3000 [2]	0.520 J	0.510 J	nc

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS064-2.25 28-11-5-2.25 (580-28198-88)	11NC28SS064-2.5 28-11-5-2.25 (580-28198-89)	Percent Moisture	%	--	49	45	9
		DRO	mg/kg	9200 [1]	2500	4800	**63**
		DRO w/ SG	mg/kg	9200 [1]	2400	4900	**68**
		RRO	mg/kg	9200 [1]	3900	3800	3
		RRO w/ SG	mg/kg	9200 [1]	1200	1300	8
		TOC	mg/kg	--	93000	130000	33
		GRO	mg/kg	300 [2]	43	76	**55**
		Ethylbenzene	mg/kg	6.9 [2]	0.140 J	0.120 J	nc
		m,p-Xylene	µg/kg	Total = 63000	350 J	380 J	nc
		o-Xylene	µg/kg		280	330	16
		Total Xylenes	mg/kg	63 [2]	0.630 J	0.710 J	nc
		Arsenic	mg/kg	11 [1]	4.6	4.3	7
		Barium	mg/kg	1100 [2]	130	140	7
		Cadmium	mg/kg	5 [2]	0.21 J	0.22 J	nc
		Chromium	mg/kg	25 [2]	20	22	10
		Lead	mg/kg	400 [2]	10	10	0
		Nickel	mg/kg	86 [2]	14	15	7
		Selenium	mg/kg	3.4 [2]	1.1 J	1.1 J	nc
		Silver	mg/kg	11.2 [2]	0.080 J	0.080 J	nc
		Vanadium	mg/kg	3400 [2]	35	38	8
		Mercury	mg/kg	1.4 [2]	0.068	0.071	4
		1-Methylnaphthalene	mg/kg	6.2 [2]	3.9	5.1	27
		2-Methylnaphthalene	mg/kg	6.1 [2]	6.4	9	34
		Acenaphthene	mg/kg	180 [2]	0.190 J	0.220 J	nc
		Fluorene	mg/kg	220 [2]	0.230 J	0.280 J	nc
		Naphthalene	mg/kg	120 [1]	1.2	1.9	45
		Phenanthrene	mg/kg	3000 [2]	0.074 J	ND (0.170)	nc
11NC28SS066-1.25 28-DIS-01-1.25 (580-28198-94)	11NC28SS066-2 28-DIS-01-1.25 (580-28198-95)	Percent Moisture	%	--	41	35	16
		DRO	mg/kg	9200 [1]	42000	24000	**55**
		DRO w/ SG	mg/kg	9200 [1]	46000	24000	**63**
		RRO	mg/kg	9200 [1]	7100	4900	37
		RRO w/ SG	mg/kg	9200 [1]	5900	3300	**57**
		TOC	mg/kg	--	58000	53000	9
		GRO	mg/kg	300 [2]	720	1100	42
		Ethylbenzene	mg/kg	6.9 [2]	0.130 J	0.150 J	nc
		m,p-Xylene	µg/kg	Total = 63000	770	810	5
		o-Xylene	µg/kg		1000	930	7
		Total Xylenes	mg/kg	63 [2]	1.77	1.74	2
		Toluene	mg/kg	6.5 [2]	0.280 J	0.300 J	nc
		PCB-1254	mg/kg	1 [1]	0.79	0.6	27
		PCB-1260	mg/kg	1 [1]	0.42	0.32	27
		PCBs-Total	mg/kg	1 [1]	1.21	0.92	27
		Arsenic	mg/kg	11 [1]	8	5.9	30
		Barium	mg/kg	1100 [2]	270	92	**98**
		Cadmium	mg/kg	5 [2]	1.8	0.78	**79**
		Chromium	mg/kg	25 [2]	24	19	23
		Lead	mg/kg	400 [2]	280	130	**73**
		Nickel	mg/kg	86 [2]	13	11	17
		Selenium	mg/kg	3.4 [2]	0.84 J	0.90 J	nc
		Silver	mg/kg	11.2 [2]	0.23 J	0.11 J	nc
		Vanadium	mg/kg	3400 [2]	24	24	0
		Mercury	mg/kg	1.4 [2]	0.84	0.57	38
		1-Methylnaphthalene	mg/kg	6.2 [2]	15	11	31

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
		2-Methylnaphthalene	mg/kg	6.1 [2]	15	7.1	**71**
		Benzo[a]pyrene	mg/kg	2.1 [2]	0.210 J	0.220 J	nc
		Fluoranthene	mg/kg	1400 [2]	ND (0.580)	0.220 J	nc
		Fluorene	mg/kg	220 [2]	1.6	1.6	0
		Naphthalene	mg/kg	120 [1]	6.5	3.6	**57**
		Phenanthrene	mg/kg	3000 [2]	0.930 J	0.940 J	nc
		Pyrene	mg/kg	1000 [2]	ND (0.580)	0.260 J	nc
11NC28SS069-2 28-DIS-04-2 (580-28198-101)	11NC28SS069-2.5 28-DIS-04-2 (580-28198-102)	Percent Moisture	%	--	57	42	30
		DRO	mg/kg	9200 [1]	23000	17000	30
		DRO w/ SG	mg/kg	9200 [1]	28000	20000	33
		RRO	mg/kg	9200 [1]	3400	2400	34
		RRO w/ SG	mg/kg	9200 [1]	1200	750	46
		TOC	mg/kg	--	49000	53000	8
		GRO	mg/kg	300 [2]	3500	770	**128**
		Ethylbenzene	mg/kg	6.9 [2]	3.9	2.6	40
		m,p-Xylene	µg/kg	Total = 63000	20000	12000	50
		o-Xylene	µg/kg		11000	6800	47
		Total Xylenes	mg/kg	63 [2]	31	18.8	49
		PCB-1260	mg/kg	1 [1]	0.032 J	0.016 J	nc
		PCBs-Total	mg/kg	1 [1]	0.032 J	0.016 J	nc
		Arsenic	mg/kg	11 [1]	3.8	2.7	34
		Barium	mg/kg	1100 [2]	100	68	38
		Cadmium	mg/kg	5 [2]	0.29 J	0.25 J	nc
		Chromium	mg/kg	25 [2]	13	9.2	34
		Lead	mg/kg	400 [2]	15	12	22
		Nickel	mg/kg	86 [2]	7.2	5.7	23
		Selenium	mg/kg	3.4 [2]	1.4	0.92 J	nc
		Silver	mg/kg	11.2 [2]	0.13 J	0.086 J	nc
		Vanadium	mg/kg	3400 [2]	27	18	40
		Mercury	mg/kg	1.4 [2]	0.060	0.033	**58**
		1-Methylnaphthalene	mg/kg	6.2 [2]	57	46	21
		2-Methylnaphthalene	mg/kg	6.1 [2]	95	80	17
		Fluorene	mg/kg	220 [2]	3.9	2.8	33
		Naphthalene	mg/kg	120 [1]	32	29	10
		Phenanthrene	mg/kg	3000 [2]	2.600 J	1.900 J	nc

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
11NC28SS071-1 28-DIS-06-1 (580-28198-106)	11NC28SS071-2.5 28-DIS-06-1 (580-28198-107)	Percent Moisture	%	--	58	61	5
		DRO	mg/kg	9200 [1]	26000	28000	1
		DRO w/ SG	mg/kg	9200 [1]	31000	35000	12
		RRO	mg/kg	9200 [1]	14000	13000	7
		RRO w/ SG	mg/kg	9200 [1]	13000	12000	8
		TOC	mg/kg	--	95000	34000	**95**
		GRO	mg/kg	300 [2]	200	220	10
		Ethylbenzene	mg/kg	6.9 [2]	1	ND (0.160)	nc
		m,p-Xylene	µg/kg	63000	870	940	8
		Total Xylenes	mg/kg	63 [2]	0.87	0.94	8
		PCB-1254	mg/kg	1 [1]	0.32	0.23	33
		PCB-1260	mg/kg	1 [1]	0.31	0.24	25
		PCBs-Total	mg/kg	1 [1]	0.63	0.47	29
		Arsenic	mg/kg	11 [1]	6.5	7.4	13
		Barium	mg/kg	1100 [2]	120	140	15
		Cadmium	mg/kg	5 [2]	1	1.2	18
		Chromium	mg/kg	25 [2]	26	29	11
		Lead	mg/kg	400 [2]	71	81	13
		Nickel	mg/kg	86 [2]	18	21	15
		Selenium	mg/kg	3.4 [2]	1.5	1.5 J	nc
		Silver	mg/kg	11.2 [2]	0.18 J	0.21 J	nc
		Vanadium	mg/kg	3400 [2]	37	39	5
		Mercury	mg/kg	1.4 [2]	0.26	0.30	14
		1-Methylnaphthalene	mg/kg	6.2 [2]	30	51	**52**
		2-Methylnaphthalene	mg/kg	6.1 [2]	51	85	50
		Fluorene	mg/kg	220 [2]	3.1	4.9	45
		Naphthalene	mg/kg	120 [1]	10	17	**52**
		Phenanthrene	mg/kg	3000 [2]	1.600 J	2.6	nc
11NC28SS072-2.25 28-DIS-07-2.25 (580-28198-112)	11NC28SS072-2.5 28-DIS-07-2.25 (580-28198-113)	Percent Moisture	%	--	43	41	5
		DRO	mg/kg	9200 [1]	36000	27000	29
		DRO w/ SG	mg/kg	9200 [1]	44000	34000	26
		RRO	mg/kg	9200 [1]	4000	3500	13
		RRO w/ SG	mg/kg	9200 [1]	1300	930	33
		TOC	mg/kg	--	150000	110000	31
		GRO	mg/kg	300 [2]	770	990	25
		Ethylbenzene	mg/kg	6.9 [2]	4.5	6.6	38
		m,p-Xylene	µg/kg	Total = 63000	19000	27000	35
		o-Xylene	µg/kg		11000	16000	37
		Total Xylenes	mg/kg	63 [2]	30	43	36
		Arsenic	mg/kg	11 [1]	3.5	3.3	6
		Barium	mg/kg	1100 [2]	130	130	0
		Cadmium	mg/kg	5 [2]	0.26 J	0.27 J	nc
		Chromium	mg/kg	25 [2]	15	16	6
		Lead	mg/kg	400 [2]	8.8	9.8	11
		Nickel	mg/kg	86 [2]	9.1	9.8	7
		Selenium	mg/kg	3.4 [2]	1.2	1.2	0
		Silver	mg/kg	11.2 [2]	0.075 J	0.073 J	nc
		Vanadium	mg/kg	3400 [2]	30	31	3
		Mercury	mg/kg	1.4 [2]	0.067	0.063	6
		1-Methylnaphthalene	mg/kg	6.2 [2]	120	2.4	**192**
		2-Methylnaphthalene	mg/kg	6.1 [2]	210	2.9	**195**
		Acenaphthene	mg/kg	180 [2]	5.8	ND (0.120)	nc
		Fluoranthene	mg/kg	1400 [2]	ND (2.100)	0.083 J	nc

Table 2-10.1 Field Sample Duplicate Pair Results (continued)

Parent Field ID Location (Lab ID)	FD ID Location (Lab ID)	Target Analytes	Units	Screen Level	Parent Result	FD Result	RPD (%)
		Fluorene	mg/kg	220 [2]	5.9	0.4	**175**
		Naphthalene	mg/kg	120 [1]	86	1.3	**194**
		Phenanthrene	mg/kg	3000 [2]	2.800 J	0.28	nc
		Pyrene	mg/kg	1000 [2]	ND (2.100)	0.083 J	nc
11NC28SS078-2.5 28-BG-1-2.5 (580-28198-131)	11NC28SS078-3 28-BG-1-2.5 (580-28198-132)	Percent Moisture	%	--	28	22	24
		DRO	mg/kg	9200 [1]	74	110	39
		DRO w/ SG	mg/kg	9200 [1]	50	63	23
		RRO	mg/kg	9200 [1]	670	1200	**57**
		RRO w/ SG	mg/kg	9200 [1]	420	640	42
		TOC	mg/kg	--	24000	34000	34
11NC28SS081-2.25 28-BG-4-2.25 (580-28198-141)	11NC28SS081-2.5 28-BG-4-2.25 (580-28198-142)	Percent Moisture	%	--	78	79	1
		DRO	mg/kg	9200 [1]	1100	1000	10
		DRO w/ SG	mg/kg	9200 [1]	680	540	23
		RRO	mg/kg	9200 [1]	11000	11000	0
		RRO w/ SG	mg/kg	9200 [1]	2800	2700	4
		TOC	mg/kg	--	350000	360000	3
Sediment:							
11NC28SS064-0.25 28-11-5-0.25 (580-28198-85)	11NC28SS064-0.5 28-11-5-0.25 (580-28198-86)	Percent Moisture	%		68	66	3
		DRO	mg/kg	3500 [1]	4000	8100	**68**
		DRO w/ SG	mg/kg	3500 [1]	4500	8800	**65**
		RRO by AK103	mg/kg	3500 [1]	620	970	44
		RRO w/ SG	mg/kg	3500 [1]	370	520	34
		TOC	mg/kg	--	48000	41000	16
		GRO	mg/kg	--	7.8	14	**57**
		Arsenic	mg/kg	93 [1]	72	67	7
		Barium	mg/kg	--	120	120	0
		Cadmium	mg/kg	596[3]	0.12	0.076	45
		Chromium	mg/kg	270 [1]	7.6	9.2	19
		Lead	mg/kg	530 1[1]	6.1	6	2
		Nickel	mg/kg	18000[3]	3.7	4.4	17
		Selenium	mg/kg	--	ND (1.2)	0.63 J	nc
		Silver	mg/kg	--	ND (0.061)	0.034 J	nc
		Vanadium	mg/kg	--	16	18	12
		Mercury	mg/kg	174[3]	ND (0.025)	0.025 J	nc

Notes:

BOLD = Exceeds acceptance criteria

[1]Site-specific cleanup levels established in 2009 Decision Document

[2]Cleanup levels from 18AAC75 Section 341, Tables B1 and B2, Migration to Groundwater

[3]NOAA SQuiRT sediment cleanup values only shown for analytes that have no established site-specific cleanup criteria

J = The analyte was positively identified at a concentration below the LOQ and is considered estimated

%	=	percent	nc	=	not calculated, one or more concentration below the LOQ
µg/kg	=	micrograms per kilogram	ND ( )	=	Not detected. Value in parenthesis is the limit of detection.
DRO	=	diesel range organics	PCBs	=	polychlorinated biphenyl
FD	=	field duplicate	RPD	=	relative percent difference
GRO	=	gasoline range organics	RRO	=	residual range organics
ID	=	identifier	TOC	=	total organic carbon
LOQ	=	limit of quantitation	w/SG	=	with silica gel cleanup
mg/kg	=	milligrams per kilogram			

Project screening criteria were included on Table 2-10.1 to aid in the evaluation of duplicate results.

The field duplicate RPDs were reviewed to determine whether imprecision was observed for any single analyte. The analyte with the highest number of calculated RPDs that exceeded the QAPP criteria of <50% was GRO which had RPDs >50% for 10 of the 23 field duplicate samples. Of these, there was a single instance where one duplicate pair showed a result both above and below the screening criteria of 300 mg/kg (11NC28SS030-2). The next analyte with the second highest number of RPD exceedances was for DRO with silica gel cleanup in 6 of the 23 field duplicate samples. Of these both the duplicate and parent result were both either above or below the screening criteria of 9,200 mg/kg (or 3,500 mg/kg for sediment). Since, in all cases, more than half of the duplicate pairs had acceptable RPDs, QN qualification for RPDs >50% was limited to the duplicate pair.

For samples with one or both results detected at a concentration below the LOQ (J flagged), RPDs were not calculated (nc). For these results, either the screening levels are well above the uncertainty, or no screening level was established, and results were not qualified.

2.10.2 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:

- BTEX, GRO, and PAHs: 14 soil MS/MSDs were analyzed at a frequency of 6%.
- DRO/RRO, DRO/RRO with silica gel cleanup, and mercury: 13 soil MS/MSDs were analyzed at a frequency of 6%.

- 6020 metals (arsenic, barium, cadmium, chromium, lead, nickel selenium, silver and vanadium) and PCBs: 12 soil MS/MSDs at a frequency of 5%.
- TOC: 17 soil MS/MSDs at a frequency of 8%.

The MS and MSD recoveries and RPDs are discussed in Sections 2.2 through 2.14.

2.10.3 Trip Blanks

Methanol trip blanks are included in shipments containing soil samples which are submitted to the laboratory for BTEX and GRO analyses. Trip blanks are collected to assess the potential for 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 BTEX and GRO analysis and were free of target analytes with the exceptions noted below.

Laboratory Work Order 580-28053

- GRO was detected at concentrations greater than the detection limit but less than the LOQ in the two trip blanks shipped with samples on 8/15/11 at concentrations of 1.1 ug/kg and 1.9 ug/kg. It was unclear as to which samples were associated with each trip blank and all associated detected results <10 times the highest trip blank concentration were B qualified to indicate the potential for high bias. No qualifiers were assigned to GRO results ≥10 the highest trip blank concentration.

Laboratory Work Order 580-28112

- All trip blank results for BTEX and GRO not detected.

Laboratory Work Order 580-28198

- Toluene was detected in the second run for Trip Blank 6 (50 ug/kg) and in the second run for Trip Blank 7 (56 ug/kg). Toluene was not detected in the initial runs indicating the contamination was introduced at the laboratory rather than shipping procedures. Qualification was limited to results reported in the same analytical batches as the trip blanks (280-84815 and 280-84731). Method blanks for those batches had toluene detections at similar concentrations and associated results were B qualified due to the method blank contamination. Further qualification was not required.
- GRO was detected at concentrations greater than the detection limit but less than the LOQ in the seven trip blanks shipped with samples on 8/22/11 at concentrations ranging from 1.7 ug/kg to 2.9 ug/kg. It was unclear as to which samples were associated with each trip blank and all associated detected results <10 times the

highest trip blank concentration were B qualified to indicate the potential for high bias. No qualifiers were assigned to GRO results ≥10 the highest trip blank concentration.

2.11 SAMPLE QUALIFIERS

Sample qualifiers are presented in Table 2-11.

Table 2-11 Sample Qualifiers

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS037-2 11NC28SS037-3 11NC28SS038-2.75 11NC28SS039-1.5 11NC28SS040-1.5 11NC28SS042-1 11NC28SS042-2 11NC28SS042-2.5 11NC28SS044-3 11NC28SS045-1 11NC28SS045-1.5 11NC28SS046-0.75 11NC28SS047-3 11NC28SS048-1 11NC28SS053-1	580-28198-1 580-28198-3 580-28198-6 580-28198-8 580-28198-12 580-28198-15 580-28198-18 580-28198-17 580-28198-24 580-28198-25 580-28198-26 580-28198-27 580-28198-32 580-28198-33 580-28198-50	Toluene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS037-2.5	580-28198-2	Toluene	Hold time exceedance	QL	Low
11NC28SS044-2 11NC28SS047-2 11NC28SS047-2.5	580-28198-22 580-28198-30 580-28198-31	Ethylbenzene m&p-Xylene o-Xylene Toluene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS043-1.5	580-28198-19	Ethylbenzene m&p-Xylene o-Xylene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS044-2.5	580-28198-23	o-Xylene Toluene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS053-1.5	580-28198-51	m&p-Xylene o-Xylene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS053-2.5 11NC28SS053-2	580-28198-52 580-28198-53	o-Xylene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS070-0.75	580-28198-103	Ethylbenzene	Hold time exceedance and low surrogate recovery	QL	Low
11NC28SS070-1.25	580-28198-104	m&p-Xylene o-Xylene Toluene	Hold time exceedance and low surrogate recovery	QL	Low

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS043-2 11NC28SS043-2.5	580-28198-20 580-28198-21	Ethylbenzene m&p-Xylene o-Xylene	Hold time exceedance and high surrogate recovery	QN	Unknown
11NC28SS070-1.75	580-28198-105	Ethylbenzene m&p-Xylene Toluene	Hold time exceedance and high surrogate recovery	QN	Unknown
11NC28SS017-0.5 11NC28SS017-2 11NC28SS019-0.5 11NC28SS025-1 11NC28SS026-1 11NC28SS030-1	580-28112-1 580-28112-2 580-28112-8 580-28112-26 580-28112-29 580-28112-41	BTEX	High surrogate recovery	Detects: QH	High
11NC28SS060-0.5 11NC28SS060-1 11NC28SS060-2	580-28198-73 580-28198-74 580-28198-75	Ethylbenzene	High surrogate recovery	Detects: QH	High
11NC28SS060-1.5 11NC28SS070-1.75 11NC28SS074-1.5	580-28198-76 580-28198-105 580-28198-118	o-Xylene	High surrogate recovery	Detects: QH	High
11NC28SS061-1.5 11NC28SS063-1.75	580-28198-78 580-28198-84	Ethylbenzene m&p-Xylene o-Xylene	High surrogate recovery	Detects: QH	High
11NC28SS069-1.5	580-28198-100	Benzene Ethylbenzene m&p-Xylene o-Xylene	High surrogate recovery	Detects: QH	High
11NC28SS033-1 11NC28SS033-1.5 11NC28SS034-0.5 11NC28SS034-1 11NC28SS034-1.5 11NC28SS035-0.5 11NC28SS036-0.5 11NC081711TripBlank1 11NC081711TripBlank2 11NC081711TripBlank3 11NC28SS038-1.75 11NC28SS039-2 11NC28SS040-0.5 11NC28SS040-1 11NC28SS041-1 11NC28SS041-1.33 11NC28SS042-1.5 11NC28SS046-1.25 11NC28SS046-1.75 11NC28SS052-1.5 11NC28SS054-0.5 11NC28SS056-1.25 11NC28SS056-1.75 11NC28SS057-1.5	580-28112-52 580-28112-53 580-28112-54 580-28112-55 580-28112-56 580-28112-57 580-28112-60 580-28112-64 580-28112-65 580-28112-66 580-28198-4 580-28198-9 580-28198-10 580-28198-11 580-28198-13 580-28198-14 580-28198-16 580-28198-28 580-28198-29 580-28198-49 580-28198-54 580-28198-61 580-28198-62 580-28198-63	Benzene Ethylbenzene m&p-Xylene o-Xylene Toluene	Low surrogate recovery	QL	Low

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS058-2 11NC28SS059-1.5 11NC28SS066-2 11NC28SS067-1 11NC28SS069-2.5 11NC28SS071-1 11NC28SS071-1.5 11NC28SS072-1.25 11NC28SS072-1.75 11NC28SS073-2.5 11NC28SS074-1 11NC28SS074-2 11NC28SS076-1.5 11NC28SS076-2 11NC28SS076-2.5 11NC28SS077-1.5 11NC28SS077-2 11NC28SS077-2.5 11NC082211TripBlank2 11NC082211TripBlank6	580-28198-68 580-28198-72 580-28198-95 580-28198-97 580-28198-102 580-28198-106 580-28198-108 580-28198-110 580-28198-111 580-28198-116 580-28198-117 580-28198-119 580-28198-123 580-28198-124 580-28198-125 580-28198-126 580-28198-127 580-28198-128 580-28198-144 580-28198-148				
11NC28SS053-2.5 11NC28SS053-2 11NC28SS070-0.75	580-28198-52 580-28198-53 580-28198-103	Benzene Ethylbenzene m&p-Xylene Toluene	Low surrogate recovery	QL	Low
11NC28SS044-2 11NC28SS047-2	580-28198-22 580-28198-30	Benzene	Low surrogate recovery	QL	Low
11NC28SS070-1.25	580-28198-104	Benzene Ethylbenzene	Low surrogate recovery	QL	Low
11NC28SS044-2.5	580-28198-23	Benzene Ethylbenzene m&p-Xylene	Low surrogate recovery	QL	Low
11NC28SS053-1.5	580-28198-51	Benzene Ethylbenzene Toluene	Low surrogate recovery	QL	Low
11NC28SS037-2 11NC28SS037-3 11NC28SS039-1.5 11NC28SS040-1.5 11NC28SS042-2 11NC28SS042-2.5 11NC28SS044-3 11NC28SS045-1 11NC28SS046-0.75 11NC28SS048-1 11NC28SS053-1	580-28198-1 580-28198-3 580-28198-8 580-28198-12 580-28198-18 580-28198-17 580-28198-24 580-28198-25 580-28198-27 580-28198-33 580-28198-50	Benzene Ethylbenzene m&p-Xylene o-Xylene	Low surrogate recovery	QL	Low
11NC28SS075-2	580-28198-121	Benzene Ethylbenzene m&p-Xylene o-Xylene Toluene	Exceedingly low surrogate recovery	R	Low

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS024-1 11NC28SS027-0.75 11NC28SS027-1.25 11NC28SS027-1.75 11NC28SS031-0.5 11NC28SS031-1 11NC28SS036-0.5 11NC28SS036-1	580-28112-23 580-28112-32 580-28112-33 580-28112-34 580-28112-45 580-28112-46 580-28112-60 580-28112-61	m&p-Xylene	Method blank contamination	B	High
11NC28SS017-1.5	580-28112-4	Benzene Ethylbenzene Toluene	Low MS/MSD recoveries	ML	Low
11NC28SS031-1.5	580-28112-47	Benzene Ethylbenzene m&p-Xylene o-Xylene Toluene	Low MSD recovery and high MS/MSD RPD	ML	Low
11NC28SS038-2.75	580-28198-6	Toluene	High MS recovery and high MS/MSD RPD	MH	High
11NC28SS044-3	580-28198-24	m&p-Xylene o-Xylene	Low MS recovery	ML	Low
11NC28SS037-2.5 11NC28SS037-3 11NC28SS038-2.75 11NC28SS039-1.5 11NC28SS040-1.5 11NC28SS042-1 11NC28SS042-2.5 11NC28SS042-2 11NC28SS044-2 11NC28SS044-2.5 11NC28SS044-3 11NC28SS045-1 11NC28SS045-1.5 11NC28SS046-0.75 11NC28SS047-2 11NC28SS047-2.5 11NC28SS047-3 11NC28SS048-1	580-28198-2 580-28198-3 580-28198-6 580-28198-8 580-28198-12 580-28198-15 580-28198-17 580-28198-18 580-28198-22 580-28198-23 580-28198-24 580-28198-25 580-28198-26 580-28198-27 580-28198-30 580-28198-31 580-28198-32 580-28198-33	Toluene	Method blank contamination	B	High
11NC28SS037-2 11NC28SS037-2.5 11NC28SS037-3 11NC28SS038-1.75 11NC28SS038-2.25 11NC28SS038-2.75 11NC28SS039-1 11NC28SS039-1.5 11NC28SS039-2 11NC28SS040-0.5 11NC28SS040-1 11NC28SS040-1.5	580-28198-1 580-28198-2 580-28198-3 580-28198-4 580-28198-5 580-28198-6 580-28198-7 580-28198-8 580-28198-9 580-28198-10 580-28198-11 580-28198-12	m&p-Xylene (Analysis batch 280-84140)	Low LCS recovery	QL	Low

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS041-1 11NC28SS041-1.33 11NC28SS042-1 11NC28SS042-1.5	580-28198-13 580-28198-14 580-28198-15 580-28198-16				
11NC28SS042-2 11NC28SS042-2.5 11NC28SS044-3 11NC28SS045-1 11NC28SS045-1.5 11NC28SS046-0.75 11NC28SS046-1.25 11NC28SS046-1.75 11NC28SS047-3 11NC28SS048-1	580-28198-18 580-28198-17 580-28198-24 580-28198-25 580-28198-26 580-28198-27 580-28198-28 580-28198-29 580-28198-32 580-28198-33	Ethylbenzene m&p-Xylene o-Xylene (Analysis batch 280-84082)	Low LCS recovery	QL	Low
11NC28SS044-2.5	580-28198-23	Ethylbenzene m&p-Xylene (Analysis batch 280-84082)	Low LCS recovery	QL	Low
11NC081511TripBlank1 11NC081711TripBlank1 11NC081711TripBlank2 11NC081711TripBlank3	580-28053-41 580-28112-64 580-28112-65 580-28112-66	GRO	High surrogate recovery	QH	High
11NC28SS002-2 11NC28SS008-1 11NC28SS017-1.5 11NC28SS053-2 11NC28SS061-0.25 11NC28SS065-3	580-28053-3 580-28053-17 580-28112-4 580-28198-53 580-28198-77 580-28198-92	GRO	Low MS and or MSD recovery	ML	Low
11NC28SS001-0.5 11NC28SS003-2.5 11NC28SS003-3.5 11NC28SS006-1 11NC28SS011-0.5 11NC28SS012-0.5 11NC28SS013-0.5 11NC28SS013-1 11NC28SS014-1 11NC28SS014-1.5 11NC28SS014-2 11NC28SS016-0.5 11NC28SS037-2.5 11NC28SS037-3 11NC28SS038-1.75 11NC28SS038-2.25 11NC28SS038-2.75 11NC28SS040-0.5 11NC28SS041-1 11NC28SS042-2 11NC28SS045-1 11NC28SS045-1.5 11NC28SS046-0.75	580-28053-1 580-28053-6 580-28053-8 580-28053-13 580-28053-23 580-28053-27 580-28053-31 580-28053-32 580-28053-34 580-28053-35 580-28053-36 580-28053-39 580-28198-2 580-28198-3 580-28198-4 580-28198-5 580-28198-6 580-28198-10 580-28198-13 580-28198-18 580-28198-25 580-28198-26 580-28198-27	GRO	Trip blank contamination	B	High

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS046-1.25	580-28198-28				
11NC28SS046-1.75	580-28198-29				
11NC28SS048-1	580-28198-33				
11NC28SS048-1.5	580-28198-34				
11NC28SS048-2	580-28198-35				
11NC28SS050-0.75	580-28198-41				
11NC28SS050-1.25	580-28198-42				
11NC28SS050-1.75	580-28198-43				
11NC28SS051-0.5	580-28198-44				
11NC28SS051-1	580-28198-45				
11NC28SS051-1.5	580-28198-46				
11NC28SS052-0.5	580-28198-47				
11NC28SS052-1	580-28198-48				
11NC28SS052-1.5	580-28198-49				
11NC28SS053-2.5	580-28198-52				
11NC28SS054-1	580-28198-55				
11NC28SS054-1.5	580-28198-56				
11NC28SS055-1.5	580-28198-57				
11NC28SS055-2	580-28198-58				
11NC28SS055-2.5	580-28198-59				
11NC28SS056-0.75	580-28198-60				
11NC28SS056-1.25	580-28198-61				
11NC28SS057-1.5	580-28198-63				
11NC28SS058-1	580-28198-67				
11NC28SS058-1.5	580-28198-69				
11NC28SS058-2	580-28198-68				
11NC28SS059-0.5	580-28198-70				
11NC28SS059-1	580-28198-71				
11NC28SS059-1.5	580-28198-72				
11NC28SS062-0.25	580-28198-80				
11NC28SS063-0.25	580-28198-82				
11NC28SS064-0.25	580-28198-85				
11NC28SS064-0.5	580-28198-86				
11NC28SS065-3	580-28198-92				
11NC28SS067-0.5	580-28198-96				
11NC28SS070-0.75	580-28198-103				
11NC28SS070-1.25	580-28198-104				
11NC28SS070-1.75	580-28198-105				
11NC28SS071-2	580-28198-109				
11NC28SS073-1.5	580-28198-114				
11NC28SS074-1	580-28198-117				
11NC28SS074-1.5	580-28198-118				
11NC28SS074-2	580-28198-119				
11NC28SS075-1.5	580-28198-120				
11NC28SS075-2	580-28198-121				
11NC28SS075-2.5	580-28198-122				
11NC28SS076-1.5	580-28198-123				
11NC28SS076-2	580-28198-124				
11NC28SS076-2.5	580-28198-125				
11NC28SS077-1.5	580-28198-126				
11NC28SS077-2	580-28198-127				

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS077-2.5	580-28198-128				
11NC28SS014-2 11NC28SS027-1.25 11NC28SS053-2	580-28053-36 580-28112-33 580-28198-53	DRO	Low MS or MSD recovery	ML	Low
11NC28SS065-3	580-28198-92	DRO	High MS or MSD recovery	MH	High
11NC28SS071-2	580-28198-109	DRO	High and low MS/MSD recoveries	MN	Unknown
11NC28SS078-2.5 11NC28SS078-3 11NC28SS051-1.5	580-28198-131 580-28198-132 580-28198-46	DRO with silica gel	Method blank contamination	B	High
11NC28SS014-2 11NC28SS027-1.25 11NC28SS071-2	580-28053-36 580-28112-33 580-28198-109	DRO with silica gel	Low MS or MSD recovery	ML	Low
11NC28SS065-3	580-28198-92	DRO with silica gel	High MS or MSD recovery	MH	High
11NC28SS053-2 11NC28SS071-2 11NC28SS080-3.75	580-28198-53 580-28198-109 580-28198-138	RRO	Low MS or MSD recovery	ML	Low
11NC28SS008-1 11NC28SS027-1.25 11NC28SS065-3 11NC28SS075-2.5	580-28053-17 580-28112-33 580-28198-92 580-28198-122	RRO	High MS or MSD recovery	MH	High
11NC28SS051-1.5	580-28198-46	RRO with silica gel	Method blank contamination	B	High
11NC28SS006-0.5 11NC28SS017-1 11NC28SS020-1 11NC28SS022-2 11NC28SS023-2.5 11NC28SS023-1.5	580-28053-12 580-28112-3 580-28112-12 580-28112-18 580-28112-20 580-28112-21	RRO	High surrogate recovery	Detects: QH	High

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS023-2 11NC28SS024-1.5 11NC28SS026-1.5 11NC28SS026-2 11NC28SS030-2 11NC28SS031-0.5 11NC28SS031-1 11NC28SS031-1.5 11NC28SS032-0.5 11NC28SS032-1 11NC28SS034-1.5 11NC28SS035-1.5 11NC28SS036-1 11NC28SS036-2 11NC28SS036-1.5 11NC28SS037-2 11NC28SS037-2.5 11NC28SS038-1.75 11NC28SS038-2.25 11NC28SS038-2.75 11NC28SS039-2 11NC28SS040-1 11NC28SS040-1.5 11NC28SS041-1.33 11NC28SS055-1.5 11NC28SS075-2.5 11NC28SS081-1.25 11NC28SS081-1.75 11NC28SS081-2.25 11NC28SS081-2.5	580-28112-22 580-28112-24 580-28112-30 580-28112-31 580-28112-43 580-28112-45 580-28112-46 580-28112-47 580-28112-48 580-28112-49 580-28112-56 580-28112-59 580-28112-61 580-28112-62 580-28112-63 580-28198-1 580-28198-2 580-28198-4 580-28198-5 580-28198-6 580-28198-9 580-28198-11 580-28198-12 580-28198-14 580-28198-57 580-28198-122 580-28198-139 580-28198-140 580-28198-141 580-28198-142				
11NC28SS035-0.5 11NC28SS067-1.5	580-28112-57 580-28198-98	RRO	Low surrogate recovery	QL	Low
11NC28SS040-0.5	580-28198-10	RRO with silica gel	High surrogate recovery	Detects: QH	High
11NC28SS067-1	580-28198-97	RRO with silica gel	Low surrogate recovery	QL	Low
11NC28SS053-2 11NC28SS061-0.25 11NC28SS065-3 11NC28SS075-2.5	580-28198-53 580-28198-77 580-28198-92 580-28198-122	RRO with silica gel	High MS or MSD recovery	MH	High
11NC28SS003-3.5 11NC28SS005-0.5 11NC28SS010-1 11NC28SS013-1 11NC28SS014-1.5 11NC28SS033-1 11NC28SS033-0.5 11NC28SS037-2.5 11NC28SS037-3 11NC28SS039-1 11NC28SS039-1.5	580-28053-8 580-28053-10 580-28053-21 580-28053-32 580-28053-35 580-28112-52 580-28112-51 580-28198-2 580-28198-3 580-28198-7 580-28198-8	Naphthalene 1-Methylnaphthalene 2-Methylnaphthalene	High surrogate recovery	Detects: QH	High

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS039-2 11NC28SS040-0.5 11NC28SS040-1	580-28198-9 580-28198-10 580-28198-11				
11NC28SS031-1 11NC28SS031-1.5 11NC28SS032-0.5 11NC28SS032-1 11NC28SS032-1.5 11NC28SS033-0.5 11NC28SS033-1.5 11NC28SS034-1 11NC28SS034-1.5 11NC28SS045-1	580-28112-46 580-28112-47 580-28112-48 580-28112-49 580-28112-50 580-28112-51 580-28112-53 580-28112-55 580-28112-56 580-28198-25	1-Methylnaphthalene	Method blank contamination	B	High
11NC28SS031-1 11NC28SS031-1.5 11NC28SS032-0.5 11NC28SS032-1 11NC28SS032-1.5 11NC28SS033-0.5 11NC28SS033-1.5 11NC28SS034-0.5 11NC28SS034-1 11NC28SS034-1.5 11NC28SS045-1	580-28112-46 580-28112-47 580-28112-48 580-28112-49 580-28112-50 580-28112-51 580-28112-53 580-28112-54 580-28112-55 580-28112-56 580-28198-25	2-Methylnaphthalene	Method blank contamination	B	High
11NC28SS031-1 11NC28SS031-1.5 11NC28SS032-0.5 11NC28SS033-1 11NC28SS033-1.5 11NC28SS034-0.5 11NC28SS034-1.5 11NC28SS045-1 11NC28SS045-1.5 11NC28SS046-1.75	580-28112-46 580-28112-47 580-28112-48 580-28112-52 580-28112-53 580-28112-54 580-28112-56 580-28198-25 580-28198-26 580-28198-29	Naphthalene	Method blank contamination	B	High
11NC28SS002-2 11NC28SS002-3 11NC28SS003-2.5 11NC28SS003-3 11NC28SS004-2.5 11NC28SS006-1 11NC28SS007-1.5 11NC28SS010-0.5 11NC28SS017-0.5 11NC28SS017-2 11NC28SS017-1 11NC28SS018-0.5 11NC28SS018-1 11NC28SS018-1.5 11NC28SS019-0.5 11NC28SS019-1 11NC28SS019-1.5	580-28053-3 580-28053-5 580-28053-6 580-28053-7 580-28053-9 580-28053-13 580-28053-15 580-28053-20 580-28112-1 580-28112-2 580-28112-3 580-28112-5 580-28112-6 580-28112-7 580-28112-8 580-28112-9 580-28112-10	All PCBs	Low surrogate recovery	QL	Low

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS020-0.5	580-28112-11				
11NC28SS020-1	580-28112-12				
11NC28SS021-0.5	580-28112-13				
11NC28SS021-1	580-28112-14				
11NC28SS021-1.5	580-28112-15				
11NC28SS022-1	580-28112-16				
11NC28SS023-1	580-28112-19				
11NC28SS023-2.5	580-28112-20				
11NC28SS023-1.5	580-28112-21				
11NC28SS023-2	580-28112-22				
11NC28SS025-0.5	580-28112-25				
11NC28SS025-1	580-28112-26				
11NC28SS025-1.5	580-28112-27				
11NC28SS026-0.5	580-28112-28				
11NC28SS026-1	580-28112-29				
11NC28SS026-1.5	580-28112-30				
11NC28SS026-2	580-28112-31				
11NC28SS027-0.75	580-28112-32				
11NC28SS027-1.25	580-28112-33				
11NC28SS027-1.75	580-28112-34				
11NC28SS028-0.5	580-28112-35				
11NC28SS028-1	580-28112-36				
11NC28SS028-1.5	580-28112-37				
11NC28SS029-0.5	580-28112-38				
11NC28SS029-1	580-28112-39				
11NC28SS029-1.5	580-28112-40				
11NC28SS031-0.5	580-28112-45				
11NC28SS031-1	580-28112-46				
11NC28SS031-1.5	580-28112-47				
11NC28SS035-0.5	580-28112-57				
11NC28SS035-1	580-28112-58				
11NC28SS040-0.5	580-28198-10				
11NC28SS040-1	580-28198-11				
11NC28SS041-1	580-28198-13				
11NC28SS041-1.33	580-28198-14				
11NC28SS043-2.5	580-28198-21				
11NC28SS044-2	580-28198-22				
11NC28SS044-2.5	580-28198-23				
11NC28SS045-1	580-28198-25				
11NC28SS045-1.5	580-28198-26				
11NC28SS054-0.5	580-28198-54				
11NC28SS060-1	580-28198-74				
11NC28SS062-0.75	580-28198-81				
11NC28SS065-3	580-28198-92				
11NC28SS066-2	580-28198-95				
11NC28SS067-0.5	580-28198-96				
11NC28SS068-1	580-28198-99				
11NC28SS069-1.5	580-28198-100				
11NC28SS069-2	580-28198-101				
11NC28SS069-2.5	580-28198-102				
11NC28SS070-0.75	580-28198-103				

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS070-1.25 11NC28SS071-1 11NC28SS071-1.5 11NC28SS071-2 11NC28SS071-2.5 11NC28SS072-1.25 11NC28SS072-1.75 11NC28SS072-2.5 11NC28SS073-1.5 11NC28SS073-2 11NC28SS077-2 11NC28SS077-2.5	580-28198-104 580-28198-106 580-28198-108 580-28198-109 580-28198-107 580-28198-110 580-28198-111 580-28198-113 580-28198-114 580-28198-115 580-28198-127 580-28198-128				
11NC28SS019-1.5 11NC28SS027-1.25 11NC28SS044-3	580-28112-10 580-28112-33 580-28198-24	All PCBs	Low MS/MSD recoveries	ML	Low
11NC28SS030-1.5	580-28112-42	PCB 1260	High MS recovery	Detects: MH	High
11NC28SS071-2	580-28198-109	PCB 1260	Low MS recovery	ML	Low
11NC28SS061-1.5 11NC28SS066-0.75 11NC28SS066-1.25	580-28198-78 580-28198-93 580-28198-94	All PCBs	Peak overlaps due to the presence of more than one Aroclor	Detects: MN	Unknown
11NC28SS030-1 11NC28SS030-1.5 11NC28SS030-2 11NC28SS030-2.5 11NC28SS036-0.5 11NC28SS042-1 11NC28SS067-1 11NC28SS067-1.5 11NC28SS073-2.5	580-28112-41 580-28112-42 580-28112-43 580-28112-44 580-28112-60 580-28198-15 580-28198-97 580-28198-98 580-28198-116	PCB 1254 and 1260	PCB pattern did not match calibration standards due to weathering	Detects: MN	Unknown

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS069-1.5 11NC28SS069-2 11NC28SS069-2.5 11NC28SS070-0.75 11NC28SS070-1.25 11NC28SS070-1.75 11NC28SS071-1 11NC28SS071-2.5 11NC28SS071-1.5 11NC28SS071-2 11NC28SS072-1.25 11NC28SS072-2.25 11NC28SS078-1.5 11NC28SS078-2 11NC28SS078-2.5 11NC28SS078-3 11NC28SS079-2.5 11NC28SS079-3 11NC28SS079-3.5 11NC28SS080-2.75 11NC28SS080-3.25 11NC28SS080-3.75 11NC28SS081-1.25 11NC28SS081-1.75 11NC28SS081-2.25 11NC28SS081-2.5	580-28198-100 580-28198-101 580-28198-102 580-28198-103 580-28198-104 580-28198-105 580-28198-106 580-28198-107 580-28198-108 580-28198-109 580-28198-110 580-28198-112 580-28198-129 580-28198-130 580-28198-131 580-28198-132 580-28198-133 580-28198-134 580-28198-135 580-28198-136 580-28198-137 580-28198-138 580-28198-139 580-28198-140 580-28198-141 580-28198-142	Total Organic Carbon	Hold time exceedance	QL	Low
11NC28SS032-1	580-28112-49	Total Organic Carbon	High MS/MSD recovery	Detects: MH	High
11NC28SS001-0.5 11NC28SS001-1 11NC28SS002-2 11NC28SS002-2.5 11NC28SS002-3 11NC28SS003-2.5 11NC28SS003-3 11NC28SS003-3.5 11NC28SS004-2.5 11NC28SS005-0.5 11NC28SS005-1 11NC28SS006-0.5 11NC28SS006-1 11NC28SS006-2 11NC28SS007-1.5 11NC28SS008-0.5 11NC28SS008-1 11NC28SS009-0.5 11NC28SS009-1 11NC28SS010-0.5	580-28053-1 580-28053-2 580-28053-3 580-28053-4 580-28053-5 580-28053-6 580-28053-7 580-28053-8 580-28053-9 580-28053-10 580-28053-11 580-28053-12 580-28053-13 580-28053-14 580-28053-15 580-28053-16 580-28053-17 580-28053-18 580-28053-19 580-28053-20	Chromium	Low MS recovery	ML	Low
11NC28SS022-2 11NC28SS023-1 11NC28SS023-1.5	580-28112-18 580-28112-19 580-28112-21	Chromium	Low MS recovery	ML	Low

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS023-2	580-28112-22				
11NC28SS023-2.5	580-28112-20				
11NC28SS024-1	580-28112-23				
11NC28SS024-1.5	580-28112-24				
11NC28SS025-0.5	580-28112-25				
11NC28SS025-1	580-28112-26				
11NC28SS025-1.5	580-28112-27				
11NC28SS026-0.5	580-28112-28				
11NC28SS026-1	580-28112-29				
11NC28SS026-1.5	580-28112-30				
11NC28SS026-2	580-28112-31				
11NC28SS027-0.75	580-28112-32				
11NC28SS027-1.25	580-28112-33				
11NC28SS027-1.75	580-28112-34				
11NC28SS073-2	580-28198-115	Chromium	High MSD recovery	Detects: MH	High
11NC28SS073-2.5	580-28198-116				
11NC28SS074-1	580-28198-117				
11NC28SS074-1.5	580-28198-118				
11NC28SS074-2	580-28198-119				
11NC28SS075-1.5	580-28198-120				
11NC28SS075-2	580-28198-121				
11NC28SS075-2.5	580-28198-122				
11NC28SS076-1.5	580-28198-123				
11NC28SS076-2	580-28198-124				
11NC28SS076-2.5	580-28198-125				
11NC28SS077-1.5	580-28198-126				
11NC28SS077-2	580-28198-127				
11NC28SS077-2.5	580-28198-128				
11NC28SS022-2	580-28112-18	Lead	High MSD recovery	Detects: MH	High
11NC28SS023-1	580-28112-19				
11NC28SS023-1.5	580-28112-21				
11NC28SS023-2	580-28112-22				
11NC28SS023-2.5	580-28112-20				
11NC28SS024-1	580-28112-23				
11NC28SS024-1.5	580-28112-24				
11NC28SS025-0.5	580-28112-25				
11NC28SS025-1	580-28112-26				
11NC28SS025-1.5	580-28112-27				
11NC28SS026-0.5	580-28112-28				
11NC28SS026-1	580-28112-29				
11NC28SS026-1.5	580-28112-30				
11NC28SS026-2	580-28112-31				
11NC28SS027-0.75	580-28112-32				
11NC28SS027-1.25	580-28112-33				
11NC28SS027-1.75	580-28112-34				
11NC28SS022-2	580-28112-18	Nickel	High laboratory duplicate RPD	Detects: QN	Unknown
11NC28SS023-1	580-28112-19				
11NC28SS023-1.5	580-28112-21				
11NC28SS023-2	580-28112-22				
11NC28SS023-2.5	580-28112-20				
11NC28SS024-1	580-28112-23				

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS024-1.5	580-28112-24				
11NC28SS025-0.5	580-28112-25				
11NC28SS025-1	580-28112-26				
11NC28SS025-1.5	580-28112-27				
11NC28SS026-0.5	580-28112-28				
11NC28SS026-1	580-28112-29				
11NC28SS026-1.5	580-28112-30				
11NC28SS026-2	580-28112-31				
11NC28SS027-0.75	580-28112-32				
11NC28SS027-1.25	580-28112-33				
11NC28SS027-1.75	580-28112-34				
11NC28SS028-0.5	580-28112-35	Cadmium	High laboratory duplicate RPD	Detects: QN	Unknown
11NC28SS028-1	580-28112-36				
11NC28SS028-1.5	580-28112-37				
11NC28SS029-0.5	580-28112-38				
11NC28SS029-1	580-28112-39				
11NC28SS029-1.5	580-28112-40				
11NC28SS030-1	580-28112-41				
11NC28SS030-1.5	580-28112-42				
11NC28SS030-2	580-28112-43				
11NC28SS030-2.5	580-28112-44				
11NC28SS031-0.5	580-28112-45				
11NC28SS031-1	580-28112-46				
11NC28SS031-1.5	580-28112-47				
11NC28SS032-0.5	580-28112-48				
11NC28SS032-1	580-28112-49				
11NC28SS032-1.5	580-28112-50				
11NC28SS033-0.5	580-28112-51				
11NC28SS063-0.25	580-28198-82	Cadmium and Lead	High laboratory duplicate RPD	Detects: QN	Unknown
11NC28SS063-0.75	580-28198-83				
11NC28SS063-1.75	580-28198-84				
11NC28SS064-0.25	580-28198-85				
11NC28SS064-0.5	580-28198-86				
11NC28SS064-1.75	580-28198-87				
11NC28SS064-2.25	580-28198-88				
11NC28SS064-2.5	580-28198-89				
11NC28SS065-2	580-28198-90				
11NC28SS065-2.5	580-28198-91				
11NC28SS065-3	580-28198-92				
11NC28SS066-0.75	580-28198-93				
11NC28SS066-1.25	580-28198-94				
11NC28SS066-2	580-28198-95				
11NC28SS067-0.5	580-28198-96				
11NC28SS067-1	580-28198-97				
11NC28SS067-1.5	580-28198-98				

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS037-2 11NC28SS037-2.5 11NC28SS037-3 11NC28SS038-1.75 11NC28SS038-2.25 11NC28SS038-2.75 11NC28SS039-1 11NC28SS039-1.5 11NC28SS039-2 11NC28SS040-0.5 11NC28SS040-1 11NC28SS040-1.5 11NC28SS041-1 11NC28SS041-1.33 11NC28SS042-1 11NC28SS042-1.5 11NC28SS042-2.5	580-28198-1 580-28198-2 580-28198-3 580-28198-4 580-28198-5 580-28198-6 580-28198-7 580-28198-8 580-28198-9 580-28198-10 580-28198-11 580-28198-12 580-28198-13 580-28198-14 580-28198-15 580-28198-16 580-28198-17	Silver	Method blank contamination	B	High
11NC28SS042-2 11NC28SS043-1.5 11NC28SS043-2 11NC28SS043-2.5 11NC28SS044-2 11NC28SS044-2.5 11NC28SS044-3 11NC28SS045-1 11NC28SS045-1.5 11NC28SS046-0.75 11NC28SS046-1.25 11NC28SS046-1.75 11NC28SS047-3 11NC28SS048-1 11NC28SS048-2 11NC28SS048-2.5	580-28198-18 580-28198-19 580-28198-20 580-28198-21 580-28198-22 580-28198-23 580-28198-24 580-28198-25 580-28198-26 580-28198-27 580-28198-28 580-28198-29 580-28198-32 580-28198-33 580-28198-35 580-28198-36	Mercury	High laboratory duplicate RPD	Detects: QN	Unknown
11NC28SS017-0.5 11NC28SS017-2 11NC28SS071-1 11NC28SS071-2.5 11NC28SS072-2.25 11NC28SS072-2.5	580-28112-1 580-28112-2 580-28198-106 580-28198-107 580-28198-112 580-28198-113	1-Methylnaphthalene	High field duplicate RPD	QN	Unknown
11NC28SS017-0.5 11NC28SS017-2 11NC28SS066-1.25 11NC28SS066-2 11NC28SS072-2.25 11NC28SS072-2.5	580-28112-1 580-28112-2 580-28198-94 580-28198-95 580-28198-112 580-28198-113	2-Methylnaphthalene	High field duplicate RPD	QN	Unknown
11NC28SS017-0.5 11NC28SS017-2 11NC28SS072-2.25 11NC28SS072-2.5	580-28112-1 580-28112-2 580-28198-112 580-28198-113	Fluorene	High field duplicate RPD	QN	Unknown
11NC28SS066-1.25 11NC28SS066-2	580-28198-94 580-28198-95	Naphthalene	High field duplicate RPD	QN	Unknown

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS071-1 11NC28SS071-2.5 11NC28SS072-2.25 11NC28SS072-2.5	580-28198-106 580-28198-107 580-28198-112 580-28198-113				
11NC28SS030-2 11NC28SS030-2.5	580-28112-43 580-28112-44	Benzene	High field duplicate RPD	QN	Unknown
11NC28SS017-0.5 11NC28SS017-2 11NC28SS023-1 11NC28SS023-2.5 11NC28SS030-2 11NC28SS030-2.5	580-28112-1 580-28112-2 580-28112-19 580-28112-20 580-28112-43 580-28112-44	Ethylbenzene	High field duplicate RPD	QN	Unknown
11NC28SS023-1 11NC28SS023-2.5 11NC28SS030-2 11NC28SS030-2.5	580-28112-19 580-28112-20 580-28112-43 580-28112-44	m,p-Xylene o-Xylene Total Xylenes	High field duplicate RPD	QN	Unknown
11NC28SS006-1 11NC28SS006-2 11NC28SS030-2 11NC28SS030-2.5 11NC28SS036-1 11NC28SS036-2 11NC28SS048-2 11NC28SS048-2.5 11NC28SS049-2 11NC28SS049-3 11NC28SS053-1.5 11NC28SS053-2.5 11NC28SS058-1 11NC28SS058-2 11NC28SS064-0.25 11NC28SS064-0.5 11NC28SS064-2.25 11NC28SS064-2.5 11NC28SS069-2 11NC28SS069-2.5	580-28053-13 580-28053-14 580-28112-43 580-28112-44 580-28112-61 580-28112-62 580-28198-35 580-28198-36 580-28198-38 580-28198-39 580-28198-51 580-28198-52 580-28198-67 580-28198-68 580-28198-85 580-28198-86 580-28198-88 580-28198-89 580-28198-101 580-28198-102	GRO	High field duplicate RPD	QN	Unknown
11NC28SS011-1 11NC28SS011-2 11NC28SS064-0.25 11NC28SS064-0.5 11NC28SS064-2.25 11NC28SS064-2.5 11NC28SS066-1.25 11NC28SS066-2	580-28053-24 580-28053-25 580-28198-85 580-28198-86 580-28198-88 580-28198-89 580-28198-94 580-28198-95	DRO	High field duplicate RPD	QN	Unknown
11NC28SS011-1 11NC28SS011-2 11NC28SS042-1.5 11NC28SS042-2.5 11NC28SS058-1 11NC28SS058-2 11NC28SS064-0.25	580-28053-24 580-28053-25 580-28198-16 580-28198-17 580-28198-67 580-28198-68 580-28198-85	DRO with silica gel	High field duplicate RPD	QN	Unknown

Table 2-11 Sample Qualifiers (continued)

Field Sample Identification	Laboratory Sample Number	Compounds Affected	Reason	Flag	Bias
11NC28SS064-0.5 11NC28SS064-2.25 11NC28SS064-2.5 11NC28SS066-1.25 11NC28SS066-2 DUP	580-28198-86 580-28198-88 580-28198-89 580-28198-94 580-28198-95				
11NC28SS078-2.5 11NC28SS078-3	580-28198-131 580-28198-132	RRO	High field duplicate RPD	QN	Unknown
11NC28SS042-1.5 11NC28SS042-2.5 11NC28SS066-1.25 11NC28SS066-2	580-28198-16 580-28198-17 580-28198-94 580-28198-95	RRO with silica gel	High field duplicate RPD	QN	Unknown
11NC28SS006-1 11NC28SS006-2	580-28053-13 580-28053-14	Arsenic Nickel Vanadium	High field duplicate RPD	QN	Unknown
11NC28SS066-1.25 11NC28SS066-2	580-28198-94 580-28198-95	Barium Cadmium Lead	High field duplicate RPD	QN	Unknown
11NC28SS011-1 11NC28SS011-2	580-28053-24 580-28053-25	Chromium	High field duplicate RPD	QN	Unknown
11NC28SS069-2 11NC28SS069-2.5	580-28198-101 580-28198-102	Mercury	High field duplicate RPD	QN	Unknown
11NC28SS071-1 11NC28SS071-2.5	580-28198-106 580-28198-107	TOC	High field duplicate RPD	QN	Unknown

3.0 SUMMARY

This Report evaluates the analytical data generated during the NE Cape Remedial Actions conducted at Site 28 during August 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 with the exception that sample labels did not match the CoC for two samples. Samples were logged in per the CoC. Affected samples were:

CoC ID	Label ID
11NC28SS062-0.75	11NC28SS062-0.**25**
11NC28SS063-0.25	11NC28SS0**62**-0.25

- Holding times were met with the following exceptions:
  - Several samples for BTEX analysis were re-analyzed outside the 14 day hold time due to either surrogate or LCS recovery outliers. Results were reviewed and, to be conservative, the highest detected value was selected for reporting. One or more analytes in the BTEX list were qualified as estimated with a low bias (QL) due to hold time exceedance in 29 samples. In most cases, these results were also associated with surrogate outliers. For three samples a high surrogate recovery was observed and these results were qualified as estimated with an unknown bias (QN) for the others a low surrogate recovery was observed and the QL qualifier is correct.
  - TOC results for 26 samples were qualified as estimated with a low bias (QL) due to a hold time exceedance.
- Extraction and analytical procedures were acceptable based on MBs, LCS/LCSDs, MS/MSDs, and surrogates except as noted below:
  - Detected results were qualified as estimated with a high bias (QH) due to high surrogate recoveries as follows:
    - One or more analyte on the BTEX list for 15 samples,
    - GRO results for four trip blank samples,
    - Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene results for 14 samples,
    - RRO results for 36 samples,
    - RRO results with silica gel cleanup for 1 sample, and

- Results were qualified as estimated with a low bias (QL) due to low surrogate recoveries as follows:
  - One or more analyte on the BTEX list for 63 samples,
  - RRO results for 2 samples,
  - RRO results with silica gel cleanup for 1 sample, and
  - PCBs for 80 samples.
- BTEX results in one sample were qualified as rejected (R) due to an exceedingly low (<10%) surrogate recovery.
- The following results were B qualified due to associated method blank contamination at a concentration <10x the sample concentration:
  - Toluene results for 18 samples,
  - m&p-xylene results for 12 samples,
  - DRO with silica gel cleanup results for 3 samples,
  - RRO with silica gel cleanup results for 1 sample,
  - 1-methylenaphthalene, 2-methylnaphthalene, and naphthalene results in 10, 11, and 10 samples, respectively, and
  - Silver for 17 samples.
- One or more analyte on the BTEX list was QL qualified in 27 samples due to a low LCS recovery.
- Samples were qualified due to either high (MH) or low (ML) MS/MSD recoveries to indicate potential bias due to a matrix effect. For organic compounds (BTEX, GRO, DRO/RRO, PAHs and PCBs) qualification was limited to the spiked sample since several MS/MSD pairs were analyzed and no trends were observed. An MN qualifier was used to indicate a matrix effect with an unknown bias when both a high and low MS/MSD recovery were observed or for a high MS/MSD RPD, unassociated with bias. Qualified organic samples were:
  - BTEX results associated with low recoveries were ML qualified for three samples and detected BTEX results associated with high recoveries were MH qualified for one sample,
  - GRO results were ML qualified for six samples,
  - DRO results were ML qualified in three samples, MH qualified in one sample, and, MN qualified in one sample.
  - DRO results with silica gel cleanup were ML qualified for three samples and MH qualified for one sample,
  - RRO results were ML qualified in three samples and MH qualified in one sample,
  - RRO results with silica gel cleanup were MH qualified in four samples,
  - PCB results were ML qualified in four sample and detected PCB results were MH qualified in one sample,
  - TOC results for MH qualified for one sample.
- For metals samples when either a low or high MS/MSD recovery is observed, all associated results are qualified to indicate a potential matrix effect. Qualified samples were:

    - Chromium results for 37 were ML qualified,
  - Detected chromium results for 15 samples were MH qualified, and
  - Detected lead results for 17 samples were MH qualified.

- Laboratory duplicates were outside control criteria for nickel, cadmium, lead and mercury. Associated detected results were qualified as estimated with an unknown bias (QN) as follows:
  - Nickel results for 17 samples,
  - Cadmium results for 34 samples,
  - Lead results for 17 samples, and
  - Mercury results for 16 samples.
- Detected PCB results for three samples were MN qualified due to the presence of more than one PCB which resulted in peak overlap.
- Detected PCB 1254 and 1260 results in nine samples were MN qualified because the PCB pattern did not match calibration standards due to weathering.

• Field quality control results met QAPP criteria with the following exceptions:

- Imprecision was observed in field duplicate samples for 1-methylnaphthalene, 2-methylnaphthalene, fluorene, naphthalene, benzene, ethylbenzene, m&p-xylene, o-xylene, total xylene, GRO, DRO, DRO with silica gel cleanup, RRO, RRO with silica gel cleanup, arsenic, barium, cadmium, chromium, nickel, lead, mercury, vanadium and TOC in one to nine of the 22 field duplicate pairs. In all cases, the majority of duplicate sample results met the RPD criteria and qualification was limited to the field duplicate pair.
- GRO results for 84 samples were B qualified due to associated trip blank contamination at a concentration <10x the sample concentration.

Based on this review, the analytical data generated during the NE Cape Remedial Action at Site 28 are complete, correct, consistent, and compliant with method procedures and QC requirements, and are usable as qualified with the exception of BTEX results for one sample.

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APPENDIX E

Response to Comment Forms

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	DATE: November 10, 2011 REVIEWER: Carey Cossaboom PHONE: 753-2689	Action taken on comment by:

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
1.	Pg. 3, 1st par., last sen.	Should reword somehow. "Surface water run-off and groundwater below the MOC gravel pad impacts this tundra and wetland area."	This sentence has been reworded and moved to a later paragraph in response to J. Craner's comments.	A
2.	Pg. 10 table	Check the first Sample ID; 1991 is not mentioned as a sampling year on page 9.	This sample ID was incorrect and has been changed to "94NE28SW/SD110".	A
3.	Pg. 11, 2nd par., last sen.	With reference to Figure 6, are samples 58 and 59 in the Site 28 drainage or in the Suqi River? The figure makes them look in the river. If so, it should be mentioned in the text here.	These samples were collected in the Site 28 drainage, not the Suqi River. Samples were collected near the southern bank of the Suqi River.	A
4.	Pg. 12, Sec. 4.2.2, 1st sen.	"….in chromatograms, and biogenics …" (nit picky)	Change was made as suggested.	A
5.	Pg. 12, Sec. 4.2.2, 5th sen.	Did you actually task someone from the ADEC to review your sample results?	ADEC was not contacted for review of silica gel treated DRO/RRO results.	Then for clarification, I suggest you add a clause at the front of this sentence, such as: "With confirmation sampling (in the future at this site), a qualified person …"
6.	Pg. 13, last sen.	"This suggests that fuel is present at concentrations far in exceedance of NOM (biogenics) in the diesel range and less so in the residual range." Wording is misleading? How about: This suggests that the NOM signature occurs mostly in the residual range on chromatograms.	Sentence was reworded as suggested.	A
7.	Figure 6	I think it would be better if red were used only on samples that exceed cleanup levels AFTER silica-gel extraction. That would eliminate the red from 7 samples (Transect 3 -#s 13,15,16 and Transect 6, #s 32, 36, 38 39).	It is not clear that ADEC will allow use of silica gel treated results to demonstrate cleanup levels have been met.	D I think they will.
8.	General Figures	I like the sediment cross-hatching, and think it would be helpful to show on every colored circle, regardless if it's red or green. The orange from Table 1 should be in the colored circles as well (not just red).	Figures will be modified with cross-hatching and orange for sediments. Per other comments, separate figures for soil and sediment will be provided in final report.	A

REVIEW COMMENTS **PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007**
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: November 10, 2011** **REVIEWER: Carey Cossaboom** **PHONE: 753-2689**	**Action taken on comment by:**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
9.	Pg. 17, last par.	Should mention that your analyses did not distinguish trivalent from hexavalent chromium and that hexavalent Cr (the bad stuff) is unlikely to occur at a non-industrial setting like NE Cape. Trivalent Cr has much higher cleanup levels; and Cr is not considered a COC at NE Cape.	Sentences modified to state: Arsenic was detected in sample 11NC28SS076 at the cleanup value of 11 mg/kg, and chromium was detected in samples 11NC28SS075 and 11NC28SS076 at 26 mg/kg and 30 mg/kg respectively, just above the cleanup value of 25 mg/kg. The chromium results are for total chromium and did not distinguish between trivalent and hexavalent chromium. Hexavalent chromium, which is more toxic than trivalent chromium, is generally associated with industrial manufacturing and is unlikely to occur at a non-industrial setting such as NE Cape. Chromium is not considered a COC at NE Cape.	A
10.	Figure 17	The Zone 1 excavation area could shrink considering comment #7 above.	Waiting for ADEC to review and acceptance of silica gel treated results. Volumes will be calculated based on acceptance or non-acceptance of silica gel treated results.	A
11.	Figure 17	Digging Zone 2 to four feet could be a nightmare. It could change the hydraulic gradient such that a mini-canyon would form along the stream route and cause havoc with the Suqi River. Should we consider a much less aggressive vacuum device, say only going 1 foot deep?	Excavation depths and volumes are being modified based on sediment removal to 6 inches below present sediment elevations.	A
12.	Pg. 17, 2^{nd} par.,	"Figure 17 shows three areas of potential soil/sediment removal, along with removal depths and estimated volumes for each zone. " Remediation decisions will need to take into consideration whether aggressive soil/sediment removal would cause more harm than good.	The text has been changed based on your comment	A
13.	Figure 17	SITE 28 POTENTIAL SEDIMENT REMOVAL AREAS, ESTIMATED VOLUMES, AND POTENTIAL ROAD LOCATION	The Figure 17 caption has been modified as suggested.	A

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: November 10, 2011** **REVIEWER: Carey Cossaboom** **PHONE: 753-2689**	**Action taken on comment by:**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
14.	Figure 18	SITE 28 POTENTIAL SOIL REMOVAL AREAS, ESTIMATED VOLUMES, AND POTENTIAL ROAD LOCATION	The Figure 18 caption has been modified as suggested.	A

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	DATE: 21 Nov 2011 REVIEWER: Aaron Shewman PHONE: 753-5558	Action taken on comment by: Bristol

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
1.	FIGURES	General – Please add labels for the Western, Middle, and Eastern Drainages, as well as the former AST footprints to all figures; On figures with “transects”, please add “Transect-1” to the legend; Define primary and secondary contours in the legend. Figure 17 – Display soil and sediment results on separate figures. Label more contours near the surface water. Add slope indicators to all depressions, including ponds, since topo labels do not exist on all primary and secondary contours. Add blue hatch to indicate areas of ponded water. Consider turning off the “2010 UVOST Locations”. Define the purple, light blue (and light blue hatch). Define the UVOST results polygon including green/yellow/orange/red polygon shading, and show it only on the “soil figure”. On the new soil figure, refine the zone boundaries by excluding topographic high areas such as the one located north of Transect-5. Include area values in the assumptions for each zone;		Drainage and AST footprint labels will be added to all figures Transect will be added to legend Primary and secondary contours will be added to legend. Separate figures will be prepared for soil and sediment. Cross hatchings will be added to figures to show depressions (no slope indicators). Blue cross hatches will be added to figures to show ponded water. Topo labels will be bolded; more topo labels will be added to final figures. 2010 UVOST locations will be removed. Text will note when UVOST results were used in calculating estimated volumes. Legend will be revised to define purple, light blue and light blue hatch on figures. UVOST results polygon and shading will be defined and included in soil results. UVOST locations will be “turned off” on figure. Zone boundaries will be refined and topographic high areas will be excluded.	A, but I would like to see revised Figure 17 from the draft Tech Memo before the Tech Memo becomes final.

U.S. ARMY CORPS OF ENGINEERS	**DATE: 21 Nov 2011** **REVIEWER: Aaron Shewman** **PHONE: 753-5558**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** **A - comment accepted** **W - comment withdrawn** **(if neither, explain)**	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
		In the "Soil Sample Diagram", If a portion of a circle is white, does the white portion indicate a sample was not collected? If so, what interval was not sampled? Please clarify. It is not clear what a circle with half shading and half white represents, please clarify.		Area values will be added to volumes for each zone. The "Soil Sample Diagram' as part of the legend shows that each location had up to 3 depths. On the figure there are no white portions shown at any of the sample locations. This symbol information will be better clarified in the text.	
2.	TABLES	Split soil and sediment data into two separate tables. Please add a column for total PCBs. When this is complete, Transect-1 and others may have PCB results greater than either soil or sediment cleanup levels. Please define colored highlights in the table notes.		Separate soil and sediment tables will be included in revision. Total PCBs column will be added to tables. Red and orange highlights had defined soil and sediment results. Separate tables will remove highlights. Positive soil results exceeding the appropriate cleanup level will be red highlighted. Sediment results (separate table per comments) will be orange highlighted. Non-detect results exceeding cleanup levels will be blue highlighted on both soil and sediment tables.	A
3.	Section 2.0	3rd paragraph – Consider re-writing as follows to clarify: "Soil staining has been observed near the head of the Eastern Drainage and at the former AST locations. The Western Drainage originated from a manhole and small, concrete supporting structure just north of the perimeter access road, which emptied into an artificially created swale. The manhole likely served as a cleanout for the drain leading		The suggested edits have been made to the 3rd and 4th paragraphs of Section 2.0.	A

U.S. ARMY CORPS OF ENGINEERS	DATE: 21 Nov 2011 REVIEWER: Aaron Shewman PHONE: 753-5558	Action taken on comment by: Bristol

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
		from Building 110 (Heat and Electrical Power Building) at the MOC. In 2010, the concrete manhole structure was cleaned and removed. A 12-inch corrugated metal pipe, which was attached to the manhole and continued upgradient toward the MOC, was cut and 63 feet of the pipe was removed. The open end of the pipe was then filled with bentonite and welded shut. In the Middle Drainage, another 12-inch corrugated metal pipe, measuring 32 feet in length, was completely removed. Sediments in the upper portion of Site 28 Drainage Basin have been described as stained and will produce sheen when disturbed. Prior to 2011, sampling activities occurred at the drainage basin between 1994 and 2001. Based on data available prior to 2011, the primary contaminants of concern (COCs) in sediments were chromium, lead, zinc, PCBs, polynuclear aromatic hydrocarbons (PAHs), DRO, and residual range organics (RRO). The highest concentrations of contaminants were located proximal to the edge of the MOC gravel pad." 4th paragraph, last sentence – Consider modifying to read "Data indicated the most heavily contaminated areas of the drainage basin were found immediately below the former location of two culverts, located in the Western and Middle Drainages.			
4.	Section 3.1.1	3rd sentence – consider adding "(e.g., ponded areas)" to the end of the sentence. Then follow with a sentence describing these areas.		Suggested change was made. A sentence which reads "Shorter transects may have less samples than longer ones, with sample locations being more densely populated in stream channels and standing water." was added.	A
5.	Section 3.3	Please change "lathe" to "lath".		Change was made as directed.	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: 21 Nov 2011** **REVIEWER: Aaron Shewman** **PHONE: 753-5558**	**Action taken on comment by: Bristol**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
6.	Section 3.4	Consider modifying from "DRO, RRO, DRO and RRO with silica gel cleanup" to read "DRO/RRO, and DRO/RRO with silica gel cleanup".		Change was made as suggested.	A
7.	Section 4.0	2nd sentence – Insert "was" between "level" and "not". 3rd paragraph – "The Site 28 laboratory Level IV data reports will be provided to the USACE chemist"…Be certain to update this statement in the final memo.		"was" was inserted between "level" and "not". Sentence in the third paragraph was changed to read "The Site 28 laboratory Level IV data reports are provided electronically along with electronic data deliverables."	A
8.	Section 4.1	Please tabulate DRO and RRO data from 2001 and 2011 similar to PCB results. Please darken the gray shade in the existing table.		The historical DRO and RRO results will be included in a table	A
9.	Section 4.2.1	1st paragraph, 9th sentence – Please insert "(i.e., straight chain)" after "non-polar compounds" to clarify the link between these two terms.		Change was made as suggested by client.	A
10.	Section 4.2.2	1st paragraph, 2nd sentence – Please change "alternation" to "alteration".		Change was made.	A
11.	Section 4.2.2.1	Please add a discussion of POL results for samples collected from the Middle Drainage, or describe why there is not a section specific to the Middle Drainage.		The middle drainage was added to section 4.2.2.2. (western drainage) because of the close proximity of the drainages as well as exhibiting similar DRO concentrations.	A
12.	Section 4.6	1st paragraph, 1st sentence – Consider modifying to read "The point source(s) of contamination that have impacted Site 28 appear to originate from several locations within the MOC, including the former aboveground storage tanks near the Eastern Drainage, and from two former culverts that terminated in the Western and Middle Drainages." 2nd paragraph, 1st sentence – I believe lead was also detected above cleanup levels, but please confirm.		Change was made to the 1st paragraph as suggested. Lead did exceed cleanup levels in sample 11NC28SS066-0_75. Lead was added to the list of contaminants exceeding cleanup levels in the first sentence of the 2nd paragraph. Change was made to the 2nd paragraph, 2nd	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: 21 Nov 2011** **REVIEWER: Aaron Shewman** **PHONE: 753-5558**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** **A - comment accepted** **W - comment withdrawn** **(if neither, explain)**	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
		2nd paragraph, 2nd sentence – Consider rewriting to "Based on the total number of exceedances, DRO is the COC that is most frequently observed." It appears zinc was not present above cleanup levels, but please confirm. If zinc was not present above cleanup levels, then consider adding a statement that zinc was not present above cleanup levels in these samples as it was in historic samples (see Section 2, page 3). 4th and 5th paragraph – please add "sediment" to "soil" where appropriate in the discussion to be more correct. 4th paragraph, last sentence – Be certain to update or delete this statement in the final memo. 6th paragraph, first sentence – Consider replacing "just" with "only".		sentence as suggested. Sentence now reads "Based on the total number of exceedances, DRO is the COC that is most frequently observed." The contractor did not analyze for zinc because it was not in the Scope of Work. "sediment" was added to paragraphs 3 and 4 to more fully describe the nature of each zone being discussed. 4th para, last sentence will be deleted 6th para: "just" was replaced with "only".	
13.	Section 5.0	7th sentence – change "by" to "to". 9th sentence – strike "the" and insert commas after "sampling", and "filtration". Last sentence – Change "material" to "sediments".		Changes were made as directed.	A
14.					
15.					
16.					
		----- End of Comments ----			

REVIEW COMMENTS

PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: 17 Nov 2011** **REVIEWER: Gordon Osgood** **PHONE: 753-5599**	**Action taken on comment by: Bristol**

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	BRISTOL RESPONSE	COMMENTOR REPLY (A-AGREE) (D-DISAGREE)
1.	GIS	Vector spatial data was not delivered. Review cannot be conducted. Reference: 2009 MED Section 5.1.	Figures were created in AutoCAD	Acknowledged.
2.	GIS	Imagery used as background in Figures 4, 12, 17 was not delivered.	Bristol will include the Aerial image in the next deliverable.	Acknowledged
3.	Drawings	Native format drawing files were not delivered. Review cannot be conducted. Reference: 2009 MED Section 4.1	Native files will be delivered with the Final Tech Memo report.	Note this approach opens the possibility of an additional deliverable after the "Final". If Bristol prefers, a pre-final package of just the drawings, survey data, and GIS-related portions of the electronic deliverable could be submitted to enable review in advance of the "Final".
4.	Survey	Survey data was not delivered in delimited format indicated in 2009 MED section 6.1.	Survey data will be delivered electronically with the Final Tech Memo report.	Acknowledged. See comment 3 reply.
5.	Survey App D Labeled Sheet 2of3	Survey Note 6 references an accompanying printed report with field survey data. The report was not delivered. Survey data should be provided in delimited format. Minor - this sheet is probably supposed to indicate "Sheet 2of 4".	Survey reports will be provided electronically with the final report.	Acknowledged. See comment 3 reply.
6.	Survey App D Sheet 4of4	Sample location data shown on sheet is needed in delimited format. Excel spreadsheet is acceptable.	Files will be delivered with the final report.	Acknowledged. See comment 3 reply.
7.	Survey App D Sheet 3of4	Transect point location data shown on sheet is needed in delimited format. Excel spreadsheet is acceptable.	Files will be delivered with the final report.	Acknowledged. See comment 3 reply.
8.	General	Per 2009 MED, spatial data should be delivered under a folder titled Supplemental Data.	Spatial data will be delivered with the final report in a subfolder within a folder titled "Supplemental Data"	Acknowledged.
9.	General	If there is concern about delivering survey and GIS data at a draft stage, POA can hold the draft submittal on disk instead of loading it to our server. Upon receipt of the final, POA can destroy or return the draft disk.	Comment acknowledged.	
10.				

REVIEW COMMENTS

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

DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	**DATE: 17 Nov 2011** **REVIEWER: Gordon Osgood** **PHONE: 753-5599**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**BRISTOL RESPONSE**	**COMMENTOR REPLY (A-AGREE) (D-DISAGREE)**
11.				
12.				
13.				
14.				

REVIEW COMMENTS	**PROJECT: Northeast Cape** **DOCUMENT: Site 28 Technical Memorandum**

U.S. ARMY CORPS OF ENGINEERS CEPOA-EN-ES-M	**DATE:** 18 November 2011 **REVIEWER: Teresa Lee** **PHONE: 907-753-2788**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sht. No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** A - comment accepted W - comment withdrawn (if neither, explain)	**CONTRACTOR RESPONSE**	**USAED RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
1.	Section 4.0 3rd paragraph	It states that if an analyte was not detected but the LOD was greater than the cleanup level, the analyte was considered above the cleanup level. However useful for possible estimation for removal purposes for a worst case scenario, these samples should not be referenced as contaminated. Please split out those multiple analytes that contamination at the cleanup level cannot be discerned due to elevated LODs from those that are known contaminated. Only include in exceedence totals throughout the document, figures, and tables analytes that have hits above the cleanup criteria. The contract requires this data be dealt with during the data review as stated below: "Data qualifier flags: a comparison shall be made between the laboratory LOD/LOQ for each sample ID and the project established LOD/LOQ for the method/analyte/matrix in the QAPP. If the Laboratory's LOD/LOQ exceeds the project's action limits established for the method/analyte/matrix in the UFP-QAPP, then the data shall be flagged."		Contaminated sample totals will be revised to indicate only exceedances where the analyte was positively identified. A separate discussion will include result totals that were non-detect above cleanup levels. In most instances samples were diluted due to high target analyte concentrations, such as PCBs where Aroclor 1260 was present above cleanup levels. Regarding the LOD/LOQ exceeding project action limits, if non-detects exceed cleanup levels, the result will be highlighted in blue on the table and the blue highlight well be defined in the table notes. Positive results exceeding PALs will be red on the soil results tables and orange on the sediment tables.	A
2.	Section 4.0 2nd paragraph	After a brief review of the data, it became apparent that there were multiple factors contributing to the elevated LODs/LOQs to include dilutions and for SW8270SIM and SW8082, insufficient sample size.		Text was added to include other factors such as insufficient sample mass that resulted in elevated LOD/LOQs.	A

REVIEW COMMENTS	PROJECT: Northeast Cape DOCUMENT: Site 28 Technical Memorandum	
U.S. ARMY CORPS OF ENGINEERS CEPOA-EN-ES-M	**DATE:** 18 November 2011 **REVIEWER: Teresa Lee** **PHONE: 907-753-2788**	**Action taken on comment by: Bristol**

Item No.	Drawing Sht. No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
3.	All figures	Those sample points where there are not hits above the clean-up criteria, just nondetects with elevated LODs, should not be depicted as exceeding the cleanup level. However an alternate highlight color and/or data qualifier with legend denotation for this may be useful. Please revise.		Figures will be revised to only highlight sample points will positive results above the project action limits (cleanup levels). Results tables will have non-detect results greater than cleanup levels blue highlighted.	A
4.	Section 4.2 1st paragraph Table 1	It states that the nine non-detect samples with elevated LODs are presented in Table 1 as exceeding cleanup levels. The assumption should not be made that these samples exceed cleanup levels. Please revise. Rather, these samples should be either highlighted a different color or bolded with an appropriate footnote so that this data quality issue can be easily viewable and thus taken into consideration.		Paragraph was rewritten to state that 67 primary sample results exceeded cleanup levels for PAHs with positive detections and nine sample results were non-detect with reported LODs greater than cleanup levels. Regarding the LOD/LOQ exceeding project action limits, if non-detects exceed cleanup level, the result will be highlighted blue on the table and the blue highlight well be defined in the table notes. Positive results exceeding PALs will be red on the soil results tables and orange on the sediment tables.	A
5.	Section 4.6	If estimated volumes are increased due to areas deemed exceedences due to elevated LODs only, this should be revised not to include those areas.		Volumes will be revised to include only areas with positive results exceeding cleanup levels.	A
6.	Table 1	Define in the legend what the colors red and orange denote.		Red noted soil sample, orange noted sediment sample. Per Craner comment (Item 28) Table 1 will be separated into 2 tables (soil and sediment) with proper labeling of soil and sediment in the headers, a note will be added to the legend stating that red shading indicates positive detected exceedances in soil, sediment exceedances will be orange, non-detect exceedances will be blue.	A

REVIEW COMMENTS **PROJECT: Northeast Cape**

DOCUMENT: Site 28 Technical Memorandum

U.S. ARMY CORPS OF ENGINEERS CEPOA-EN-ES-M	DATE: 18 November 2011 REVIEWER: Teresa Lee PHONE: 907-753-2788	Action taken on comment by: Bristol

Item No.	Drawing Sht. No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
7.	Table 1	Some areas are highlighted to indicate an exceedance that in fact are not (such as 11NC28SS016-0_5 for PCBs). Please remedy.		Table results will be reviewed for exceedances and corrected when error is found.	A
8.	Table 1	A column should be added for total PCBs.		A column will be added for total PCBs.	A
9.	Table 1	Please us the Unit mg/Kg throughout.		Units will be changed to mg/Kg	A

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

#	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.
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.
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.
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 that the '…estimate incorporates the area from the 2010 UVOST	The 15 foot depth and 13,000 to 22,000 tons of potential contamination was based on interpretation of the

#	Page #	Section	ADEC Comment	Response
			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.	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.
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.
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

#	Page #	Section	ADEC Comment	Response
			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.
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.
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.
9.		Proposed Road	Has landowner approval been requested for the proposed road? Could construction of the proposed road (disturbance, culvert	The road has not been approved by the landowner and is not being considered

#	Page #	Section	ADEC Comment	Response
			installation, backfilling) result in new preferential pathways and subsequent contaminant migration?	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.
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.
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.
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.
13.			**End of ADEC Comments**	

REVIEW COMMENTS **PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007**
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	DATE: 8 November 2011 REVIEWER: Jeremy Craner PHONE: 753-2628	Action taken on comment by: Bristol

Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)
1.	General Comment	The overall report outline is sufficient, however, there are several areas within the report that contain text not following the correct heading/subheading or in a logical sequence (i.e., nature and extent of contamination before presentation of sample results). Relocating this text would make the report much easier to read and understand. Comments are added below to reorganize sentences and paragraphs where though appropriate.		Comments and organization have been reviewed and text modified for clarity.	A
2.	General Comment	Section 2.0 is difficult to follow due mostly to the order in which the text is presented. Also, background and site description information is very vague with few details and does not give the reader a good description of site features. Comments were added below in an attempt to reorganize and add pertinent background information to this leading section.		Section 2 has been edited and restructured. Text has been added for clarity.	A
3.	Pg. 3, Section 2.0, first paragraph	Suggest rewording first paragraph: "The Site 28 drainage basin is located north of the MOC and drains north into the Suqitughneq (Suqi) River, as shown on Figure 3. This site contains variable surface features consisting of wetlands, rolling tundra, ponds and flowing streams. The most significant source of surface water emerges from the ground in the form of seeps immediately north of the MOC gravel pad and periodically throughout the drainage basin. Two distinct sub-drainages containing feeder streams originating as seeps drain into the main stream approximately ¼ of the way down the drainage. Surface water runoff, usually during and immediately following occasional rainfall events, can contribute significant amounts of water to the basin. The general area also contains subsurface discontinuous permafrost which significantly impacts the appearance of surface topography. "		The first paragraph has been reworded as suggested by client. The sentence that mentions fuel releases has been moved to paragraph 3.	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: 8 November 2011** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** **A - comment accepted** **W - comment withdrawn** **(if neither, explain)**	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
4.	Pg. 3., Section 2.0, first paragraph, second sentence	Move original second sentence "This site has been impacted by…." to a later paragraph when discussing site contamination. It is located awkwardly in the middle of the site description.		Sentence has been moved to later paragraph in Section 2.	A
5.	Pg. 3, second paragraph	First sentence: Insert the words "distinct" before "drainages" and "upgradient" before "MOC". Second sentence: change "originated" to "originates", insert the word "located" before "downgradient". Need to refer to a figure (preferably Figure 4) containing the locations of the western, middle, and eastern drainages.		Paragraph has been changed as recommended. Figure 4 has been referenced in the paragraph. Callouts for the locations of these drainages will be added to the figure	A
6.	Figure 4	Label the MOC, western, middle, and eastern drainages, metal pipes and former metal pipes. Suggest somehow shading or delineating the entire extent of ONLY the drainage basin – it is tough to see the lateral extent of the basin.		Drainage labels will be added to figures. The location of the culverts and manhole will be shown on the figure. Additional contours and blue cross-hatching showing water will be added to figure 4.	A
7.	Pg. 3, third paragraph, first sentence	Move sentence to another location where contamination is discussed. It is not a good introductory sentence to this paragraph and its location is confusing to the reader.		This section has been rewritten for clarity. Paragraphs 1 and 2 discuss the general nature of the site and background information. Paragraphs 3 and 4 discuss contamination and historical sample results.	A
8.	Pg. 3, third paragraph	Need to reword to clearly describe in an organized manner the western, middle, and eastern drainages. Middle drainage is not mentioned. Relocate 8th sentence "Sediments in this area…" to a following paragraph Break "Sampling activities have occurred…" and following sentences into a separate paragraph. Add the introductory sentence from previous paragraph to state "Site 28 has been impacted by historic MOC bulk fuel releases and other		Paragraph has been reworded and edited for clarification. A. Shewman also had comments regarding this section which were also addressed.	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: 8 November 2011** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** A - comment accepted W - comment withdrawn (if neither, explain)	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
		MOC sources… Sediments in this area have been described…. .” Reword slightly to clarify: “Previous soil and sediment sampling activities have occurred at the drainage basin between 1994 and 2011. These results indicated that the primary COCs in soil/sediment are chromium, lead, zinc, PCBs, PAHs, and DRO/RRO and that the highest concentrations of contaminants are located proximal to the MOC.”			
9.	Pg. 3, fourth paragraph	First sentence: Change “samples were collected in” to “samples were collected from” Last sentence: Reword to clarify “The most heavily contaminated surface water of the drainage basin was near the head of the western and middle drainages, which formerly contaminated culverts that drained the gravel pad of the MOC.”		First sentence: Change was made as requested Last sentence now reads: “Data indicated that the most heavily contaminated surface waters of the drainage basin were found at the head of the western and middle drainages, located at the terminus of the former culverts.”	A
10.	Pg. 5, Section 3.1.1, first paragraph	Third sentence: remove period after accumulate, reposition parentheses accordingly. Fourth sentence: Reword to further clarify “Originally, a total of 70 sample locations were planned, with samples collected not to exceed 7 locations along a transect from three different depths… Fifth sentence: Reword to “This general procedure was followed, though some variability occurred due to site conditions. For example:”		This paragraph has been reworded for clarity. The edited sections now read: “Figure 4 shows transect and sample locations. Originally, a total of seventy sample locations were planned, having seven locations along a transect at three different depths (0.5 feet below ground surface [bgs], 1.0 foot bgs, and 1.5 feet bgs), for a total of 210 samples. This general procedure was followed wherever possible, though some variability occurred due to site conditions, for example:”	A
11.	Pg. 5, Section 3.1.1	Suggest adding another bullet stating “The total number of sample locations collected along each transect varied depending upon total transect length and site features.”		A bullet was added, which states: Shorter transects may have less samples than longer ones, with sample locations being more densely	A

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** **A - comment accepted** **W - comment withdrawn** **(if neither, explain)**	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
				populated in stream channels and standing water.	
12.	Pg 5, Section 3.1.2	Second sentence: Reword to clarify "Following the sampling of the initially selected transects, a surplus of XX samples remained. Therefore, it was decided that these remaining samples should be collected at other discrete locations within the drainage that: 1) historically contained elevated contaminant concentrations, and 2) currently are low lying depositional areas where contaminants have most likely accumulated."		This paragraph was changed to incorporate these suggestions. Now reads: "Following sampling of the initially selected transects, thirty-two surplus samples remained. It was decided that these remaining samples would be collected at other discrete locations within the drainage that met the following conditions: 1. Discrete samples were collocated with historical samples that contained elevated contaminant concentrations, particularly PCBs; and 2. Samples were in low-lying depositional areas where contaminants most likely accumulated."	A
3.	Pg. 6, Section 3.1.2, second paragraph	Second sentence: change "deeper" to "greater" Third sentence: add "was" following the first "sample"		Changes were made as directed by client.	A
4.	Pg. 6, Section 3.2	Fourth sentence: Add text for clarification: "All bank samples collected along the basin slope located topographically higher than the stream, ponds, and wetlands were considered to be a soil matrix." Fifth sentence: Add text: "In the low lying marshy areas,		Changes were made as suggested.	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: 8 November 2011** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** **A - comment accepted** **W - comment withdrawn** **(if neither, explain)**	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
		ponds, and active stream channels, ...”			
5.	Pg. 6, Section 3.2	Suggest adding a last sentence stating: “Thus, the determining that a sample is either “soil” or “sediment” can have a significant impact concerning future removal actions.”		A final sentence was added which reads: “As a result, characterization of the sample’s physical properties can have a significant impact on future removal actions.”	A
6.	Pg. 6, Section 3.3, first paragraph	First sentence: Add detail: “Site 28 samples were collected using a 4-inch diameter AMS® hand auger with T-handle.” Discuss in this section how sluffing in the boreholes was dealt with and how the specific sample depths were measured in the field. Where the samples collected of high integrity? Also, discuss specifically how decon of the auger and bowl was conducted (alconox solution, DI water, brushes, etc.).		Edits have been made as suggested, as follows: “Site 28 samples were collected using a 4-inch diameter hand auger with T-handle. Sample depths were measured by marking the auger handle at the ground surface at its sample collection depth. The distance between this reference mark and the sample contained within the auger barrel is equal to the depth bgs. Samples were collected from within the auger barrel, but not from any area within the barrel where the possibility for slough could cross-contaminate samples (e.g., the uppermost exposed soil in the auger barrel). The sampling method, combined with the prevalent silts and clays, resulted in strong auger borehole structural integrity, as well as a high integrity sample collection protocol.” Decontamination procedures were elaborated upon, as follows: “Decontamination procedures consisted of an Alconox® wash followed by a double rinse of tap water and de-ionized (DI) water. Brushes were used during the initial wash to aid in the removal of solid particles.”	A
18	Pg. 7,	First sentence: Add a comma following “arsenic”		Comma was added.	A

U.S. ARMY CORPS OF ENGINEERS	**DATE: 8 November 2011** **REVIEWER: Jeremy Craner** **PHONE: 753-2628**	**Action taken on comment by: Bristol**

Item No.	**Drawing Sheet No., Spec. Para.**	**COMMENTS**	**REVIEW CONFERENCE** **A - comment accepted** **W - comment withdrawn** **(if neither, explain)**	**CONTRACTOR RESPONSE**	**USAED/ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)**
	Section 3.3, second paragraph				
19	Pg. 7, Section 3.4, second paragraph	First sentence: Reword to "Background samples were analyzed for DRO/RRO, DRO/RRO with silica gel cleanup, and TOC."		Comment was addressed on A. Shewman's comment sheet.	A
20	Pg. 8, Section 3.5	First sentence: Mention that the surveying work was conducted by "licensed professional surveyors" Following third sentence: Refer in text to delineation of drainage areas in Figure 4 for visualization.		The text "licensed professional surveyors at" was added to the first sentence. Reference to Figure 4 was added.	A
21	Pg. 9, Section 4.0	Third paragraph under Section 4.0: This is partially a summary of analytical results. Why is it presented before the data results? Suggest relocating this text to a latter section that makes more sense and leaving in place the text that does not summarize results.		This paragraph serves as an introduction to the upcoming sections regarding sample results. It provides the broad caveats and general information that the reader may want to keep in mind during his/her reading of the detailed analytical results sections that follow.	A – OK, but this paragraph is a summary of specific analytical sample results/exceedances that have not yet been presented or discussed in Section 4.0. Not sure how this helps the reader with broad and general understandings. Sentences within the paragraph that state the initial reference to the table and figure

REVIEW COMMENTS **PROJECT: NE Cape HTRW Remedial Actions W911KB-06-D-0007 Task Order 0007**
DOCUMENT: Site 28 Technical Memorandum Rev 0 – October 2011 Location: St. Lawrence Island, Alaska

U.S. ARMY CORPS OF ENGINEERS	DATE: 8 November 2011 REVIEWER: Jeremy Craner PHONE: 753-2628	Action taken on comment by: Bristol

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					make sense.
22	Pg. 9, Section 4.1, First paragraph	First sentence: after "2001", suggest adding "and to assess current COC concentrations." Second sentence: Reword to clarify "Discrete samples were collected at six locations that historically contained elevated PCB results."		Paragraph was changed as suggested.	A
23	Pg.10, Embedded Table	- Make shading darker for historic data. - Suggest adding brief 1-2 sentences discussing the correlation between historic and recent PCB results. - Suggest adding another table similar to this one that compares historic vs. current DRO results.		Shading was made darker. Historical PCB results will be briefly discussed Added a column to the table with DRO results.	A
24	Pg. 11, Section 4.2, Second paragraph	This paragraph discusses extent of contamination. Suggest relocating to Section 4.6.		This section discusses fuel constituents specifically and serves to provide a more detailed, compartmentalized fuels-specific discussion. Much of this information is repeated in section 4.6, but the contractor believes it is relevant here in Section 4.2.	A
25	Pg. 14, Second bullet item	Add "RRO" following 13,000 mg/kg		Change was made as requested.	A
26	Pg. 16, Section 4.5	Only mentions that the data verification and the ADEC checklists were completed, but does not mention overall validation results. Was the data deemed usable for project objectives? Please state as necessary.		Data has been submitted to third party (AECOM) for review. Review to be completed on January 30, 2012 and submitted with HTRW final report.	A
27	Pg. 17, Section 4.6	It would be helpful if the square footage of Zones 1, 2, and 3 were added to the text and Figure 17 so that volumes could be verified.		Square footage will be added to Zones 1-3 in the text and on Fig. 17	A
28	Table 1	- Highly suggest separating into two tables: one containing only soil results and one containing only sediment results. USACE intends on removing only		Table 1 will be separated into soil and sediment tables. Additional tables will be created that showed only samples with	A

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		sediment in the future; separation of soil and sediment will aid in clarifying the presentation and communication of data to stakeholders. - Suggest adding a third related table that summarizes only exceedances of site specific analytes as determined in the 2009 decision document. This will enable the reader to easily disseminate only those analytes that require cleanup actions. Tough to determine from this huge table with small notes and limited shading. - Both actions can be completed somewhat easily using excel sorting functions.		exceedances for the final report.	
29	Figure 4	Shade or delineate extent of drainage area for visualization; label western, middle, and eastern drainage; label current and former pipes, manhole, etc.; label MOC (all mentioned in previous comments and initially in comment 6).		Figure 4 is being revised based on multiple comments that should clarify extent of water. Labels will be added showing drainages and culvert locations	A
30	Figures 5, 6, 15, 16, and 17.	USACE intends to remove only sediment in the future. In order to visualize, delineate, and determine volumes of soil vs. sediment, it is highly suggested that the exceedances for each media are separated instead of displayed as combined. Symbols with hatching currently attempt to distinguish those samples that contain sediment, however, it is difficult to visualize and the hatching does not always coincide with Table 1. Separate figures for soil and sediment will aid in communicating with stakeholders early in the decision making process.		Bristol was not scoped in 2011 to sample sediment that is always submerged and from areas not associated with a tundra mat. Therefore showing just the sediment on the maps we believe would not necessarily present what the USACE would need to remove in the future. Further sediment characterization is recommended for 2012. The sediment shown on the figures and on the table will be made consistent in the Final Site 28 Tech Memo	A
31	Figure 17	- Suggest removing blurry UVOST data points. - What are the purple lines shown in Zone 1?		The blurry UVOST labels will be removed. The purple lines are the areas that were used to delineate plume volumes in the wetland area north of the MOC pad	A
32	Appendix C, Boring	Please add the “Depth (ft)” values to the far left column of each boring log. It is difficult to determine the specific		Depth values will be added to the left column of each boring log	A

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	Logs	sample depths/intervals and the associated lithology of each borehole.			
33	Appendix D	Hard copy of topographic survey report not included.		Survey data will be included in the final report	A
		----- End of Comments ----			

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

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June 4, 2012

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

Re: ADEC Approval of the Final February 2012 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 a copy of the final Northeast Cape Site 28 TM which is dated February 2012 and was received by ADEC on March 13, 2012. ADEC has completed its review of the final TM and determined that ADEC's comments and revision requests have been adequately addressed. ADEC approves the final TM and has filed it as the final document on record.

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)