SITE CHARACTERIZATION
FINAL REPORT

FORMER KONGIGANAK SCHOOL TANK FARM
KONGIGANAK, ALASKA

FINAL
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Prepared for:

ALASKA
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Conservation

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ACRONYMS AND ABBREVIATIONS

AAC..... Alaska Administrative Code
ADEC ..... Alaska Department of Environmental Conservation
AK ..... Alaska
bgs ..... Below ground surface
BTEX..... Benzene, toluene, ethylbenzene, and xylenes
CSM ..... Conceptual site model
DRO ..... Diesel range organics
EPA..... U.S. Environmental Protection Agency
GRO ..... Gasoline range organics
LCS ..... Laboratory control sample
LCSD..... Laboratory control sample duplicate
LKSD..... Lower Kuskokwim School District
mg/kg ..... Milligrams per kilogram
MDL..... Method detection limit
MRL..... Method reporting limit
MS/MSD..... Matrix spike/matrix spike duplicate
OASIS ..... OASIS Environmental, Inc.
PAH..... Polycyclic aromatic hydrocarbon
PID ..... Photo-ionization detector
ppmv ..... Parts per million by volume
QA..... Quality assurance
QC..... Quality control
RPD..... Relative percent difference
SIM..... Selective Ion Mode
SCL ..... Soil cleanup level
VOC ..... Volatile organic compound

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1. INTRODUCTION

Under Notice-to-Proceed 18-9028-13-77, the Alaska Department of Environmental Conservation (ADEC) tasked OASIS Environmental, Inc. (OASIS) with conducting a site characterization of the former school tank farm (hereafter, "the site") in Kongiganak, Alaska. Kongiganak is located on the west shore of Kuskokwim Bay and west of the mouth of the Kuskokwim River (Figure 1). The site is located on the north side of the school, which is on the eastern side of the community (Figure 2).

This document presents field observations and analytical results from the site characterization. It also includes a conceptual site model based on data collected during field activities.

1.1. Background

The former Kongiganak school tank farm was operated by the Lower Kuskokwim School District (LKSD) and consisted of ten vertical aboveground storage tanks on a wood platform surrounded by a dirt berm. The tank farm was dismantled in April 2003, at which time a leaky pipe, surface staining, and petroleum odors were noted. Figure 3 presents an aerial view of the site after tank decommissioning in April 2003.

1.2. Objectives

The objectives for this project are to evaluate the potential threat to human health, safety, and welfare and to the environment from releases and spills at the former tank farm and to support the development of potential future remedial activities at the former tank farm.

1.3. Scope of Work

OASIS was contracted to perform the following tasks to meet the objectives outlined in Section 1.2:

- Excavate as many as ten test pits at the former tank farm and use field screening and laboratory sample analysis to evaluate impact to the environment.
- Install three temporary well points around the perimeter of the former tank farm if groundwater was encountered within 10 feet of ground surface.
- Collect as many as three water samples from surface water bodies within 50 feet of the former tank farm.
- Document sources of drinking water within the village.

The scope of work was followed as closely as field conditions allowed. A temporary well point driven to 12 feet below ground surface (bgs) did not encounter groundwater; thus, no groundwater samples were obtained. There were no surface water bodies within 50 feet of the site, so no surface water samples were obtained.

1.4. Regulatory Framework

A regulatory framework for this project has been developed using the following regulations and guidance documents:

- ADEC, 18 Alaska Administrative Code (AAC) 75, *Oil and Other Hazardous Substances Pollution Control*, revised as of October 9, 2008
- ADEC, *Underground Storage Tanks Procedures Manual: Guidance for Treatment of Petroleum-Contaminated Soil and Water and Standard Sampling Procedures*, November 7, 2002
- ADEC, 18 AAC 70, *Water Quality Standards*, amended as of December 28, 2006
- ADEC, *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances, Draft*, as amended through December 12, 2008

1.5. Contaminants of Concern

The contaminants of concern are those compounds that are commonly associated with storage tanks containing petroleum hydrocarbon-based fuels. The list includes the following contaminants: benzene, toluene, ethylbenzene, and xylenes (BTEX); gasoline range organics (GRO); diesel range organics (DRO); and polycyclic aromatic hydrocarbons (PAHs).

Analytical results for soil samples have been evaluated using ADEC's Method Two guidelines as described in 18 AAC 75.341. Results have been compared to soil cleanup levels (SCLs) of the "Under 40 Inch Zone" presented in Table B1. SCLs are based upon the most restrictive benchmark for the direct contact pathway, the outdoor inhalation pathway, or the state-wide migration to groundwater pathway. Table 1 summarizes the applicable screening levels for the site.

TABLE 1. CONTAMINANTS OF CONCERN SCREENING LEVELS,
FORMER KONGIGANAK SCHOOL TANK FARM, KONGIGANAK, ALASKA

Compound	ADEC SCL (mg/kg)
Benzene	0.025
Toluene	6.5
Ethylbenzene	6.9
Xylenes	63
GRO	300
DRO	250

Note: mg/kg – Milligrams per kilogram

1.6. Limitations

This site characterization has attempted to locate and quantify source areas of contamination. Based on limited resources and the extent of the area under investigation, there is no guarantee that sufficient data was collected to fully delineate all source areas.

Investigation activities were limited to locations where access was physically possible around the remaining tank farm infrastructure.

Much of the investigation strategy was based on field decisions made using field-generated data. The qualitative nature of field data may not allow for a full understanding of contaminant mass and distribution; therefore, field decisions may not be as informed as decisions made using more quantitative laboratory data.

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2. FIELD ACTIVITIES

This section describes the field activities performed by two OASIS personnel at the former Kongiganak school tank farm during the site characterization from May 26–30, 2009. Field notes are included in Appendix A.

2.1. Site Description

The aerial photograph dated September 17, 2004 (Figure 3), shows the remaining former tank farm infrastructure consisting of a roughly 40 by 40 foot deck and a 40 by 85 foot deck. At the time of the site visit, only the larger of the two decks was standing. The wooden pilings that supported the smaller deck remain in place. A berm partially enclosing an area south of the smaller deck and east of the large deck was found at the southeast corner of the site. Debris consisting of old sections of pipe, liner remnants, lumber, and miscellaneous household items were found on-site.

The photographic log in Appendix B documents the physical status of current site.

2.2. Test Pits

An excavator and operator were hired through the tribal office to dig ten test pits in the former tank farm vicinity. Test pit locations were based on areas that the excavator could physically access, areas where locals remember spills occurring, and field observations (Figure 3). The large wooden platform still exists in the center of the former tank farm area, so no test pits were excavated in this area. Shallow test pits were dug by hand beneath the platform and under a valve south of the platform where the excavator could not access.

Soil found in all test pits was olive gray, well sorted, silt to very fine sand. The near-surface soil was rust colored.

An approximately 1-foot-thick layer of frozen soil was encountered at 8 to 10 inches bgs. The backhoe was able to scratch through the frozen layer and dig to a maximum of 6 to 8 feet bgs, depending on the terrain. Ten test pits were excavated before a clogged fuel line shut down the excavator. Between three and six field screenings were obtained from each test pit at varying depths. Heated headspace photo-ionization detector (PID) analyses helped field personnel determine which samples would be submitted for GRO, BTEX, and DRO analysis. In addition, the two screenings with the highest PID values were also selected for volatile organic compound (VOC) and PAH laboratory analysis. The samples collected from the two hand-dug test pits were not submitted for laboratory analysis due to low PID readings.

2.3. Temporary Well Points

Due to the difficulty of hand-driving a temporary well point through frozen soil, the backfilled test pit, TP-4, was selected as the initial location to install a temporary well point. TP-4 was also lower in elevation than other test pits; therefore, groundwater should have been closer to surface. The temporary well point was initially driven from

7.5 feet bgs (undisturbed soil at the base of the TP-4 excavation) to a depth of 10 feet bgs. The probe was backed off 4 inches to expose the open tip. The probe was allowed to sit for two hours while the rod was periodically checked for groundwater intrusion with a water level indicator. No groundwater entered the rod tip. The rods were pulled from the hole, cleaned, and driven down the same hole to 12 feet bgs. The probe was backed off 4 inches to allow for water infiltration. The water level indicator was used periodically for 30 minutes to check for groundwater influx. No groundwater was found at a depth of 12 feet bgs; therefore, no groundwater samples were collected.

2.4. Sources of Drinking Water in Kongiganak

Personal interviews of Kongiganak residents were conducted to identify local sources of drinking water. Findings include the following:

- Residences in Kongiganak are not plumbed. Residents haul their water, and "honey buckets" are dumped in a lagoon southeast of town. According to local sources, money has been designated to plumb the village.
- The Village Safe Water treatment plant receives its water via a pipeline from Contractor Lake approximately 1 mile north of town, located at a higher elevation that the surrounding area. Residents can purchase water at the treatment plant from a coin-operated pump.
- Residents catch rainwater and melt snow. A popular place for obtaining snow for melt water is upriver along the bluffs on the Kongiganak River about ½ mile northwest of town. The school obtains its water from rainwater, snowmelt, and by purchasing it from Village Safe Water.
- A well was installed in town near the water treatment plant, but it was not used due to high salinity. Photograph 10 in the Photographic Log (Appendix B) shows the old drinking water well casing. The old well is approximately 350 feet south of the former tank farm. No depth or installation date was found for the old well.

3. FINDINGS

This section discusses PID headspace screenings and analytical results for the soil samples that were obtained in Kongiganak. Tables 2, 3, and 4 show sample designations; PID screenings and GRO/BTEX/DRO analytical results; and VOC/PAH analytical results, respectively. Figure 3 is an aerial photograph displaying sample locations and DRO results. The laboratory analytical report is included in Appendix C.

3.1. Sampling Strategy

A total of 47 PID screenings were taken from the ten test pits and two hand-dug shallow test pits at varying depths. Laboratory sample selection was based on the following criteria:

- At least one sample was submitted from each test pit to delineate the horizontal extents of contamination.
- A sample was submitted from the deepest point in each test pit to delineate the vertical extents of contamination.
- Samples were collected from depths with higher PID headspace readings in order to determine if contamination was above SCLs.

Twenty-three samples, including two field duplicates and a sample for matrix spike/matrix spike duplicate (MS/MSD) analysis were submitted to Test America, Anchorage, for analysis of GRO using Alaska (AK) method 101, BTEX using U.S. Environmental Protection Agency (EPA) method 8021B, and DRO using method AK 102. Three samples, including one field duplicate, were submitted to Test America, Portland, for analysis of VOCs using EPA method 8260B and PAHs using EPA method 8270M by Selective Ion Mode (SIM). Samples for VOC and PAH analysis were taken from the two test pits with the highest PID results.

3.2. Results

Test pit TP-4, located just east of the large platform, had the highest PID headspace reading of all test pit samples. The PID results were 715 and 376 parts per million by volume (ppmv) at 4 and 6 feet bgs, respectively. Sample 09-KON-106-SB and field duplicate 09-KON-107-SB were collected from TP-4 at 4 feet bgs and submitted for GRO, BTEX, DRO, VOC, and PAH analysis. DRO results for the sample and the duplicate both exceeded ADEC SCLs with values of 356 and 397 mg/kg, respectively. All other analyses from TP-4 at 4 feet bgs had values below the SCLs. The shallowest screening sample from TP-4 at 2.5 feet bgs had a headspace of 68.7 ppmv. At 7 and 7.5 feet bgs, headspace readings were 44.5 and 43.4 ppmv, respectively. The DRO concentration in sample 09-KON-108-SB, collected at 7.5 feet bgs in TP-4, was 266 mg/kg, which is above the ADEC SCL.

Test pit TP-1, located at the northeastern corner of the old tank platform, had the second highest headspace reading from the test pits. Samples were submitted from TP-1 at 6

and 8 feet bgs where headspace readings were 82.3 and 53.1 ppmv, respectively. DRO concentrations from these locations, identified as samples 09-KON-101-SB and 09-KON-102-SB, respectively, were less than the ADEC SCLs. The toluene concentration in 09-KON-101-SB was 10 mg/kg, exceeding the SCL of 6.5 mg/kg. This was the only non-DRO result of all the samples submitted that exceeded ADEC SCLs.

Test pit TP-6, located outside the old berm at the southeastern corner of the site, was sampled at 3.5 feet bgs (09-KON-111-SB) and 7 feet bgs (09-KON-122-SB). The shallower sample had a DRO result of 1,460 mg/kg. Its corresponding headspace value was only 14 ppmv. The deeper sample had a headspace reading of 8.2 ppmv and no detectable DRO values.

Test pit TP-10, located just north of the large platform, was sampled at 2 feet bgs (09-KON-113-SB and duplicate 09-KON-114-SB) and at 7 feet bgs (09-KON-112-SB). The headspace reading from the shallower sample was 59.1 ppmv and had corresponding DRO concentrations of 2,730 and 555 mg/kg for the duplicate pair. The deeper sample had a headspace reading of 15.4 ppmv and a DRO concentration of 59.4 mg/kg.

All other samples submitted had GRO, BTEX, and DRO concentrations below ADEC SCLs. Samples 09-KON-101-SB (TP-1 at 6 feet bgs) and duplicate pair 09-KON-106-SB/09-KON-107-SB (TP-4 at 4 feet bgs) were also sampled for VOCs and PAHs. None of the VOC or PAH compounds in the samples exceeded ADEC SCLs except for toluene in 09-KON-101-SB.

4. QUALITY ASSURANCE REVIEW

OASIS evaluated the field procedures and laboratory results for quality assurance (QA), and quality control (QC). The data were reviewed to determine the integrity of the reported analytical results and ensure they met data quality objectives. The ADEC laboratory data review checklist was used to guide the data review and is included in Appendix D.

While excavating test pits, samples were collected for field screening and laboratory analyses simultaneously and placed in separate re-sealable plastic bags. Samples were field screened, the PID data were evaluated, and analytical samples were selected for placement in jars and preserved. However, GRO, BTEX, and VOC analytical values should be considered low-biased estimates because the analytical samples were not placed in jars and preserved immediately following collection from the test pits. In addition, non-detect results for GRO/BTEX/VOC analyses should not be used for regulatory compliance determinations because of the low bias.

OASIS delivered the test pit soil samples to Test America, Inc. in Anchorage, Alaska, on June 1, 2009, under appropriate chain-of-custody procedures. The laboratory received the shipment with interior cooler temperatures within the range of 2.0º to 6.0º Celsius. All of the samples collected were analyzed within acceptable holding times.

The method reporting limits (MRLs) listed by the lab for several volatile compounds were above the corresponding ADEC Method Two Migration to Groundwater cleanup levels. The laboratory stated the limits were high due to high moisture content in the samples. OASIS asked the laboratory to report the results to the method detection limit (MDL). Results detected above the MDL but below the MRL were flagged as estimated due to quantitation uncertainty. Several MDLs were still above the ADEC cleanup levels including: 1,2-dichloroethane, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,1,2-trichloroethane, trichloroethene, 1,2,3-trichloropropane, and vinyl chloride. Table 5 shows the compounds with ADEC cleanup levels higher than the laboratory MDL. None of these chlorinated compounds were considered contaminants of concern at the site and the data should be acceptable for use. OASIS has no reason to believe that spills containing chlorinated compounds occurred at the site.

Method blank samples were analyzed in the laboratory with each batch of samples to evaluate instrument and systematic laboratory preparation contamination. Method blanks did not contain any analytes at concentrations above their respective reporting limits.

Laboratory control samples (LCS) and duplicates (LCSD) and MS/MSD samples were within acceptable limits for all analytical methods with the following exception. The BTEX LCSD recovery was very low because the analyst forgot to spike the sample. The corresponding LCS, MS, and MSD recoveries were within control limits. The relative percent difference (RPD) for the MS/MSD pair was also within the control limits. The

BTEX results should be acceptable for use without qualification for the LCSD recovery failure.

The GRO LCS and LCSD surrogate recoveries were biased high. The corresponding MS/MSD surrogate recoveries and the LCS/LCSD RPDs were within control limits. The DRO MSD surrogate recovery was also biased high. Again the corresponding DRO QC samples were within control limits. The surrogate recoveries for all project samples were within control limits and no qualification is necessary.

One trip blank was submitted for analysis of BTEX and one for VOCs. The BTEX trip blank contained 0.314 mg/kg toluene. The VOC trip blank contained 0.288 mg/kg toluene and 0.025 mg/kg trichloroethene. All detected toluene results with concentrations less than ten times that in the trip blanks have been flagged “B” for blank contamination.

Surrogate recoveries were within acceptable recovery ranges for all organic analyses.

RPDs were calculated for field duplicate results above the MDLs. The GRO RPD for the 09-KON-106-SB and -107-SB sample pair was 65%, above the ADEC suggested limit of 50%. The DRO RPD for the 09-KON-113-SB and -114-SB sample pair was 132%, also above the suggested limit of 50%. The data have not been qualified based on the RPD discrepancies due to the inherent heterogeneity of soil.

The data should be acceptable for use with the qualifications noted.

5. CONCEPTUAL SITE MODEL

The contaminants of concern, already mentioned in Section 1.5, have been identified from a review of ADEC's contaminated sites database and the results of this site characterization.

The following tables present a human health conceptual site model (CSM) for the contaminants of concern at the former Kongiganak school tank farm site. Appendix E contains a copy of ADEC's CSM Scoping Form and Human Health CSM for the site. The CSM Scoping Form was used to generate the Human Health CSM form and Table 6.

TABLE 6. CONCEPTUAL SITE MODEL SUMMARY

Elements of CSM	Site Specific Factors
Source	Aboveground storage tanks
Release Mechanism	Spills; leaks; direct discharges
Impacted Media	Surface soil; subsurface soil; possible groundwater
Transport Mechanism	Migration or leaching to subsurface; migration or leaching to groundwater
Exposure Media	Soil; groundwater; biota
Exposure Routes	Ingestion of soil and groundwater; ingestion of wild foods
Receptors	Residents; commercial or industrial workers; site visitors; construction workers

The pathways shown in Table 7 for current and future receptors are considered complete at this time for the contaminants of concern because the pathways are complete or may become complete in the future based on potential development or use. Although migration to groundwater has not been evaluated because groundwater was not encountered during this investigation, it is included as a possibly impacted media. Ingestion of biota was not identified as a complete pathway because no compounds listed in Table A-1, List of Compounds of Potential Concern for Bioaccumulation, in the CSM Scoping Form were found in measurable quantities.

TABLE 7. COMPLETE RECEPTOR PATHWAYS

Residents	Site Worker	Site Visitor	Construction Worker	Subsistence
Incidental Soil Ingestion Ingestion of Groundwater	Incidental Soil Ingestion Ingestion of Groundwater	Incidental Soil Ingestion Ingestion of Groundwater	Incidental Soil Ingestion Ingestion of Groundwater	Incidental Soil Ingestion Ingestion of Groundwater

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6. SUMMARY

OASIS performed a site characterization at the former Kongiganak school tank farm from May 26–30, 2009. Ten test pits were dug with a locally contracted backhoe; two shallow pits were dug by hand; 47 headspace readings were obtained from varying depths; 23 soil samples were submitted for analysis; and interviews were conducted with residents about drinking water sources. No surface bodies of water were found to be located within 50 feet of contamination. Groundwater was not encountered at 12 feet bgs; therefore, it was not sampled.

6.1. Discussion

DRO concentrations above ADEC SCLs were found in three of the ten pits (TP-4, TP-6, and TP-10). The PID and DRO results from test pit TP-10 suggest that DRO contamination does not extend below 3.5 feet bgs. In addition, the DRO results from the test pits surrounding TP-10 were all below the ADEC SCL. Therefore, the DRO impacts around TP-10 have been assessed in the vertical direction, and to the north, west, and east in the horizontal direction. Because no test pits could be advanced below the large tank deck, immediately south of TP-10 has not been fully assessed. However, the DRO results from test pit TP-2 located south of the large tank deck were below the ADEC SCL, so there is horizontal control in the southern direction.

Test pit TP-4 had DRO results above ADEC SCLs in all samples, including the deepest sample collected from the pit at 7.5 feet bgs. The DRO results in the surrounding test pits were all below the ADEC SCL. The vertical extent of DRO contamination in TP-4 was not determined as all samples collected from the test pit, including the deepest sample, exceeded ADEC SCLs for DRO. The northern extent of the DRO contamination was determined by the clean samples in TP-3. The eastern extent is between TP-4 and TP-6. No test pits were advanced to the south-southeast of TP-4 or to the west, due to the presence of the large tank deck.

Test pit TP-6 had a DRO result of 1,460 mg/kg at 3.5 feet bgs, although the PID result was only 14 ppmv. The field notes state that this sample had high organic content. An OASIS chemist reviewed the chromatogram from this DRO sample and noted that the response in the DRO range was due to biogenic interference. It is unlikely that this location is impacted by petroleum hydrocarbons. The chromatogram for this DRO sample is included at the end of the laboratory report in Appendix C.

Test pit TP-1 contained toluene above the ADEC SCL at a depth of 6 feet bgs. The TP-1 sample from 8 feet bgs contained detectable toluene below the SCL; hence, the vertical extent of toluene contamination was assessed. The northern and southern extents of the toluene contamination are determined by test pits TP-5 and TP-9. The areas to the southwest and southeast of TP-1 were not tested and the extent of toluene contamination is not fully assessed horizontally.

There are no current drinking water sources that might be impacted by the former tank farm site. Groundwater was not encountered at 12 feet bgs and groundwater petroleum hydrocarbon impacts have not been assessed.

6.2. Recommendations

An updated CSM model displays that the exposure pathways are complete for incidental soil ingestion and ingestion of groundwater. Groundwater was not sampled because the water table was deeper than could be accessed by hand-driven test points. For the CSM model, it is assumed that the groundwater has been impacted. Temporary, mechanically installed wells will need to be driven to confirm effects on groundwater. Additional soil samples may be required beneath the large tank deck, once it is removed, southwest of TP-1, and east of TP-4.

At this time, OASIS does not recommend pursuing remedial options given what appears to be a minimal extent of contamination and because groundwater is not used for drinking water and there is a new school opening this fall on the other side of Kongiganak. Therefore, staff and students will be removed from the contamination. However, any future improvements at the former school tank farm will require corrective action to address the soil contamination.

7. REFERENCES

Alaska Department of Environmental Conservation (ADEC), March 2009, Contaminated Sites Database, File # 2454.38.004, accessed via the Internet at: http://www.dec.state.ak.us/spar/csp/search/IC_Tracking/Site_Report.aspx?Hazard_ID=4015.

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TABLES

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TABLE 2
Sample Summary
Former Kongiganak School Tank Farm

Sample ID	Date	Sample Location	Depth	Analyses				Comments
				GRO/BTEX	DRO	PAH	VOC's	
09-KON-101-SB	5/27/2009	TP-1	6 ft	✔	✔	✔	✔	
09-KON-102-SB	5/27/2009	TP-1	8 ft	✔	✔			
09-KON-103-SB	5/27/2009	TP-2	4.5 ft	✔	✔			
09-KON-104-SB	5/27/2009	TP-2	7.5 ft	✔	✔			MS/MSD for DRO/GRO/BTEX
09-KON-105-SB	5/27/2009	TP-3	3.5 ft	✔	✔			Wet (from above frozen ground)
09-KON-106-SB	5/27/2009	TP-4	4 ft	✔	✔	✔	✔	
09-KON-107-SB	5/27/2009	TP-4	4 ft (duplicate)	✔	✔	✔	✔	Duplicate of 09-KON-106-SB
09-KON-108-SB	5/27/2009	TP-4	7.5 ft	✔	✔			
09-KON-109-SB	5/27/2009	TP-5	6.5 ft	✔	✔			
09-KON-110-SB	5/27/2009	TP-5	8 ft	✔	✔			
09-KON-111-SB	5/27/2009	TP-6	3.5 ft	✔	✔			High organic content
09-KON-112-SB	5/28/2009	TP-10	7 ft	✔	✔			
09-KON-113-SB	5/28/2009	TP-10	2 ft	✔	✔			
09-KON-114-SB	5/28/2009	TP-10	2 ft (duplicate)	✔	✔			Duplicate of 09-KON-113-SB
09-KON-115-SB	5/28/2009	TP-8	3.5 ft	✔	✔			Moderate organic content
09-KON-116-SB	5/28/2009	TP-9	7.5 ft	✔	✔			
09-KON-117-SB	5/28/2009	TP-8	5.5 ft	✔	✔			
09-KON-118-SB	5/28/2009	TP-7	5.5 ft	✔	✔			
09-KON-119-SB	5/28/2009	TP-7	7 ft	✔	✔			
09-KON-120-SB	5/29/2009	TP-5	3 ft	✔	✔			
09-KON-121-SB	5/29/2009	TP-9	4 ft	✔	✔			
09-KON-122-SB	5/29/2009	TP-6	7 ft	✔	✔			
09-KON-123-SB	5/29/2009	TP-3	4 ft	✔	✔			

Key:

ft = Feet

GRO = Gasoline-range organics (AK 101)

BTEX = Benzene, toluene, ethylbenzene, xylenes (total) (EPA 8021B)

DRO = Diesel-range organics (AK 102)

PAH = Polynuclear aromatic compound (EPA 8270M-SIM)

VOC = Volatile organic compound (EPA 8260B)

TABLE 3
Test Pit Analytical Results
Former Kongiganak School Tank Farm

Test Pit	Sample Depth (feet)	Sample Number	PID (ppmv)	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	DRO (mg/kg)
TP-1	1	---	15.3	---	---	---	---	---	---
	2.5	---	9	---	---	---	---	---	---
	5	---	14	---	---	---	---	---	---
	6	09-KON-101-SB	82.3	22.4 JL	ND (0.0105)	**10.0 JL**	ND (0.290)	0.0459 JL	201
	8	09-KON-102-SB	53.1	6.97 JL	0.00246 JL	2.72 B	ND (0.00574)	ND (0.0275)	161
TP-2	2	---	12.6	---	---	---	---	---	---
	3	---	14.1	---	---	---	---	---	---
	4.5	09-KON-103-SB	20	0.843 JL	0.00180 JL	0.0373 JB	0.00731 JL	ND (0.0751)	142
	6	---	12.9	---	---	---	---	---	---
	7	---	13.1	---	---	---	---	---	---
	7.5	09-KON-104-SB	13.6	0.594 JL	0.00272 JL	0.0293 JB	ND (0.00475)	ND (0.0227)	21.8 J
TP-3	2.5	---	11.7	---	---	---	---	---	---
	3.5	09-KON-105-SB	16.3	0.857 JL	0.00160 JL	0.121 JB	ND (0.00694)	ND (0.0332)	32.4
	4	09-KON-123-SB	12.5	1.39 JL	0.00343 JL	0.268 B	ND (0.00635)	ND (0.0304)	174
TP-4	2.5	---	68.7	---	---	---	---	---	---
	4	09-KON-106-SB	715	55.8 JL	0.00571 JL	0.181 B	1.00 JL	5.57 JL	**356**
	4 (dup)	09-KON-107-SB	715	28.4 JL	0.00433 JL	0.150 B	0.721 JL	4.82 JL	**397**
	6	---	376	---	---	---	---	---	---
	7	---	44.5	---	---	---	---	---	---
	7.5	09-KON-108-SB	43.4	10.5 JL	0.00325 JL	0.107 B	0.0659 JL	0.496 JL	**266**
TP-5	3	09-KON-120-SB	12.4	0.585 J	0.00427 JL	0.0238 JB	ND (0.00587)	ND (0.0281)	183
	4	---	12.3	---	---	---	---	---	---
	5.5	---	12.7	---	---	---	---	---	---
	6.5	09-KON-109-SB	39.6	4.03 JL	0.000881 JL	1.53 B	0.00430 JL	ND (0.0197)	40.9
	8	09-KON-110-SB	29.5	2.92 JL	0.00233 JL	1.04 B	0.00642 JL	ND (0.0260)	33.9
TP-6	3.5	09-KON-111-SB	14	13.4 JL	0.0612 JL	0.344 B	0.0617 JL	0.308	**1460**
	6	---	11.3	---	---	---	---	---	---
	7	09-KON-122-SB	8.2	0.633 JL	0.00787 JL	0.0757 B	ND (0.0643)	ND (0.0308)	24.5 J
TP-7	1.5	---	3.7	---	---	---	---	---	---
	3.5	---	8.3	---	---	---	---	---	---
	5.5	09-KON-118-SB	10.6	0.672 JL	0.00147 JL	0.0584 B	ND (0.00441)	ND (0.0211)	41.5
	6.5	---	8.5	---	---	---	---	---	---
	7	09-KON-119-SB	10.1	0.535 JL	0.00312 JL	0.0426 JB	ND (0.00543)	ND (0.0260)	50.7
TP-8	2.5	---	11.3	---	---	---	---	---	---
	3.5	09-KON-115-SB	37	3.98 JL	0.00163 JL	1.36 B	ND (0.00544)	ND (0.0261)	94.5
	4.5	---	28.5	---	---	---	---	---	---
	5.5	09-KON-117-SB	20.1	2.19 JL	0.00231 JL	0.637 B	ND (0.00692)	ND (0.0331)	149
TP-9	2.5	---	15.6	---	---	---	---	---	---
	4	09-KON-121-SB	15.6	0.869 JL	0.0163 JL	0.0693 B	0.00779 JL	ND (0.0206)	198
	5	---	15.4	---	---	---	---	---	---
	7	---	17.3	---	---	---	---	---	---
	7.5	09-KON-116-SB	17.4	0.888 JL	0.00129 JL	0.105 B	ND (0.00378)	ND (0.0181)	45.9
TP-10	2	09-KON-113-SB	59.1	13.6 JL	0.00624 JL	0.0419 JB	0.0171 JL	ND (0.0484)	**2730**
	2 (dup)	09-KON-114-SB	59.1	22.6 JL	**0.0866 JL**	0.108 JB	ND (0.0425)	ND (0.203)	**555**
	3.5	---	17.7	---	---	---	---	---	---
	5	---	17.2	---	---	---	---	---	---
	7	09-KON-112-SB	15.4	0.767 JL	0.00380 JL	0.0701 JB	ND (0.00634)	ND (0.0303)	59.4
SS-1	0.25	---	15	---	---	---	---	---	---
SS-2	0.5	---	13.7	---	---	---	---	---	---
		ADEC SCL	**---**	**300**	**0.025**	**6.5**	**6.9**	**63**	**250**

Notes:

Bolded value indicates result exceeds ADEC SCL.

Benzene, toluene, ethylbenzene, total xylenes were analyzed by EPA method 8021B.

All results for GRO, benzene, toluene, ethylbenzene, and xylenes are considered low-biased estimates because of gap between time of collection and time of bottling.

Key:

ADEC = Alaska Department of Environmental Conservation

B = Results with concentrations less than 10 times that in the trip blanks

DRO = Diesel-range organics (AK 102)

GRO = Gasoline-range organics (AK 101)

J = Result is estimated because it is below the method reporting limit, but above the method detection limit

L = Low bias

mg/kg = Milligrams per kilogram

ND = Not detected below limit listed in parentheses (Method Detection Limit in parentheses).

PID = Photo-ionization detector

ppmv = Parts per million by volume

SCL = Soil cleanup level (ADEC Method Two Migration to Groundwater)

TABLE 4
Selected Soil VOC and PAH Analytical Results
Former Kongiganak School Tank Farm

Analyses	Compound	Units	ADEC SCL	Submitted Soil Samples		
				TP-1 @ 6 ft	TP-4 @ 4 ft	TP-4 @ 4 ft (duplicate)
				09-KON-101-SB	09-KON-106-SB	09-KON-107-SB
Volatile Organic Compounds (EPA 8260B)						
	n-Butylbenzene	mg/kg	15	0.0289 JL	0.652 JL	0.514 JL
	sec-Butylbenzene	mg/kg	12	ND (0.0154)	0.289 JL	0.249 JL
	Ethylbenzene	mg/kg	6.9	0.0227 JL	0.594 JL	0.494 JL
	Isopropylbenzene	mg/kg	51	ND (0.0197)	0.260 JL	0.217 JL
	p-Isopropyltoluene	mg/kg	---	ND (0.0200)	0.283 JL	0.228 JL
	Napthalene	mg/kg	20	0.314 JL	0.627 JL	0.525 JL
	n-Propylbenzene	mg/kg	15	ND (0.0204)	0.667 JL	0.570 JL
	Toluene	mg/kg	6.5	**9.15 JL**	0.13 JL	0.113 JL
	1,2,4-Trimethylbenzene	mg/kg	23	0.0827 JL	4.77 JL	4.09 JL
	1,3,5-Trimethylbenzene	mg/kg	23	0.0331 JL	1.30 JL	1.10 JL
	o-Xylene	mg/kg	63	ND (0.0240)	1.57 JL	1.32 JL
	m,p-Xylene	mg/kg	63	0.0372 JL	2.46 JL	2.06 JL
Polynuclear Aromatic Compounds (EPA 8270M-SIM)						
	Fluoranthene	mg/kg	1400	ND (0.00597)	0.0083 J	0.0073 J
	Fluorene	mg/kg	220	ND (0.00597)	0.0213	0.0169 J
	Napthalene	mg/kg	20	ND (0.0242)	0.377	0.307
	Phenanthrene	mg/kg	3000	ND (0.00597)	0.021	0.0175 J
	Pyrene	mg/kg	1000	ND (0.00597)	0.00524 J	0.00503 J

Notes:

Bolded value indicates result exceeds ADEC SCL.

All VOC results are considered low-biased estimates because of gap between time of collection and time of bottling.

Key:

ADEC = Alaska Department of Environmental Conservation

EPA = U.S. Environmental Protection Agency

ft = Feet

J = Result is estimated because it is below the method reporting limit, but above the method detection limit

L = Low bias

mg/kg = Milligrams per kilogram

ND = Not detected at the limit listed in parentheses (Method Detection Limit in parentheses).

PAH = Polycyclic aromatic hydrocarbon

SCL = Soil cleanup level (ADEC Method Two Migration to Groundwater)

SIM = Selective Ion Mode

VOC = Volatile organic compound

TABLE 5
Non-Detect Compounds with MDL Greater than ADEC Cleanup Level
Former Kongiganak School Tank Farm

Analysis	Compound	Units	ADEC SCL	Submitted Soil Samples		
				TP-1 @ 6 ft	TP-4 @ 4 ft	TP-4 @ 4 ft (duplicate)
				09-KON-101-SB	09-KON-106-SB	09-KON-107-SB
Volatile Organic Compounds (EPA 8260B)						
	1,2-Dichloroethane	mg/kg	0.016	**ND (0.0232)**	ND (0.00964)	ND (0.00852)
	Methylene chloride	mg/kg	0.016	**ND (0.517)**	ND (0.00964)	**ND (0.190)**
	1,1,2,2-Tetrachloroethane	mg/kg	0.017	**ND (0.0436)**	**ND (0.0182)**	ND (0.0160)
	Tetrachloroethene (PCE)	mg/kg	0.024	**ND (0.0349)**	ND (0.0145)	ND (0.0129)
	1,1,2-Trichloroethane	mg/kg	0.018	**ND (0.0374)**	ND (0.0156)	ND (0.0138)
	Trichloroethene (TCE)	mg/kg	0.020	**ND (0.0248)**	ND (0.0103)	ND (0.00913)
	1,2,3-Trichloropropane	mg/kg	0.00053	**ND (0.102)**	**ND (0.0423)**	**ND (0.0374)**
	Vinyl chloride	mg/kg	0.0085	**ND (0.0119)**	ND (0.00494)	ND (0.00437)

Notes:

Bolded value indicates MDL exceeds ADEC SCL.

All VOC results are considered low-biased estimates because of gap between time of collection and time of bottling.

Key:

ADEC = Alaska Department of Environmental Conservation

EPA = U.S. Environmental Protection Agency

ft = Feet

J = Result is estimated because it is below the method reporting limit, but above the method detection limit

mg/kg = Milligrams per kilogram

ND = Not detected at the limit listed in parentheses (Method Detection Limit in parentheses).

PAH = Polycyclic aromatic hydrocarbon

SCL = Soil cleanup level (ADEC Method Two Migration to Groundwater)

VOC = Volatile organic compound

FIGURES

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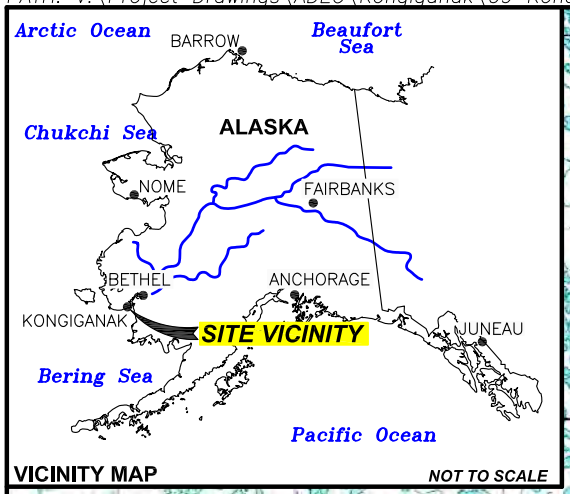


PROJECT LOCATION

KONGIGANAK RIVER

KUSKOKWIM BAY

NORTH

0 0.5 1

APPROX. SCALE IN MILES

SOURCE: NATIONAL GEOGRAPHIC TOPO SOFTWARE PROGRAM 2007.

oasis ENVIRONMENTAL

DATE: JUNE 2009
CHKD: A.W.
DRAWN: C.E.H
PROJ. No.: 14-157

825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

SITE LOCATION MAP

FORMER KONGIGANAK SCHOOL TANK FARM
SITE CHARACTERIZATION
Kongiganak, Alaska

FIGURE

1

PATH: V:\Project Drawings\ADEC\Kongiganak\09 Kong RPT FILE: 14-157-KON-RPT-F2.DWG PLOTTED: 6/25/09.

SOURCE: AEROMAP INC. AERIAL PHOTO KONG9-20-02.SID DATED 9/20/02.

oasis ENVIRONMENTAL

DATE: JUNE 2009
CHKD: A.W.
DRAWN: C.E.H
PROJ. No.: 14-157

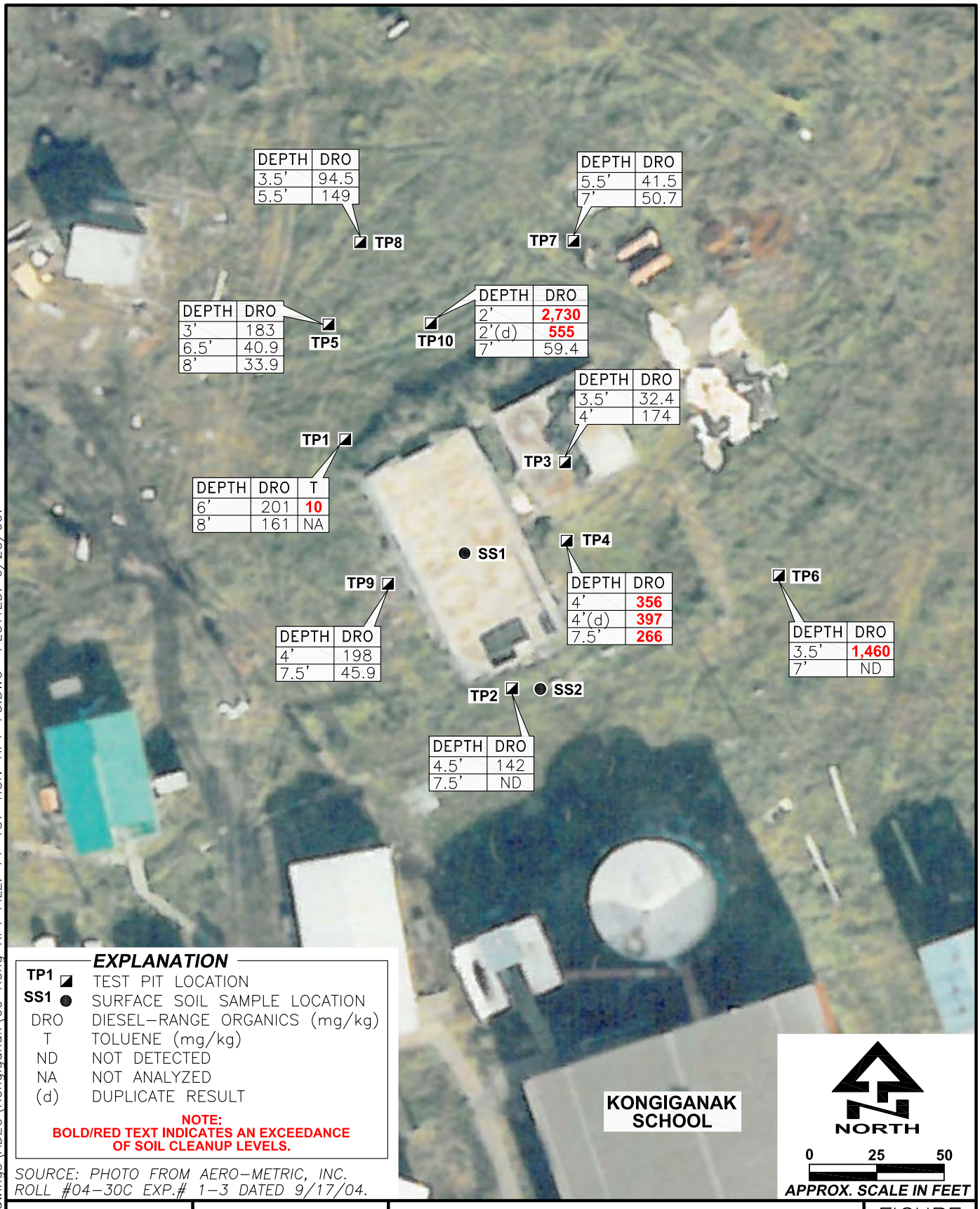
825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

SITE PLAN

FORMER KONGIGANAK SCHOOL TANK FARM
SITE CHARACTERIZATION
Kongiganak, Alaska

FIGURE

2



EXPLANATION

TP1 ◪	TEST PIT LOCATION
SS1 ●	SURFACE SOIL SAMPLE LOCATION
DRO	DIESEL-RANGE ORGANICS (mg/kg)
T	TOLUENE (mg/kg)
ND	NOT DETECTED
NA	NOT ANALYZED
(d)	DUPLICATE RESULT

NOTE:
BOLD/RED TEXT INDICATES AN EXCEEDANCE OF SOIL CLEANUP LEVELS.

SOURCE: PHOTO FROM AERO-METRIC, INC. ROLL #04-30C EXP.# 1-3 DATED 9/17/04.

NORTH

0 25 50

APPROX. SCALE IN FEET

oasis ENVIRONMENTAL

DATE: JUNE 2009
CHKD: A.W.
DRAWN: C.E.H.
PROJ. No.: 14-157

825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

SURFACE SOIL SAMPLE AND TEST PIT LOCATIONS WITH RESULTS

FORMER KONGIGANAK SCHOOL TANK FARM
SITE CHARACTERIZATION
Kongiganak, Alaska

FIGURE
3

PATH: V:\Project Drawings\ADEC\Kongiganak\09 Kong RPT FILE: 14-157-KON-RPT-F3.DWG PLOTTED: 6/25/09.

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APPENDIX A

Field Notes

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"Rite in the Rain"®

ALL-WEATHER

FIELD

No. 353N

Kongiginak

CONTENTS

PAGE	REFERENCE	DATE

5/26/09 L Nicholson; Andrew Weller

1030 Fly to Bethel - head wind.
Arrive Bethel at 1200.
Talk to agent at counter at 1210. Flight scheduled for 1230 is already full - even though they had confirmed seats for us, they gave them away when we didn't check in.
Agent says that we can fly out at 1730, but he will try to get an extra plane to get us out earlier

1730 Fly to Kongiganak. Arrive 1830. School and tribal office are closed. Go to washeteria (just below tribal office). Woman at washeteria calls the school secretary for us. (Margaret) Margaret calls Daryl Duggard and finds a key for us. Haul our gear into building.
End of day.

Lisa Nicholson

5/27/09 L. Nicholson; A. Weller.

0815 Meet Nicholas David in the gym at the school. He says he doesn't know much about spills by the old tank farm but gives us the names of the two previous maintenance guys.

Peter Daniel Sr. x5631

Frank Mute Sr. /

We show Nicholas the map - he says that this is an old map - everything has changed.

0850 Call Harvey -

Note: on 5/28/09, Marion from the tribal council called & left a message that we would be able to use the backhoe but we needed to call Harvey. I assumed Harvey was the backhoe operator. Tried to call several times but he was either not answering or busy each time

5/27/09 (cont'd)

It turns out that Harvey is the electric utility manager.

0850 - Call Harvey - wake him up, he tells me to call him after 10:00.

0930 Call Mary Nikolai at the tribal office. She tells me that Harvey has been using the backhoe at the wind turbine site and wanted to find out when we needed it.

Mary suggested that we come over at 1000, which is when Harvey starts work.

1000 Call Harvey from Tribal office. He says we are likely to hit frozen soil at about 1 foot below the surface. We would be better using a pick & shovel. The little backhoe that they have to

5/27/09 (cont'd)

Let us will not make it ~~beta~~ (in) into the frozen ground. We ask if we can borrow a pickaxe. He said he will send over a guy to look at the site with us

1030 Lisa and Andrew out to site to test depth to frozen ground It is frozen about 8" below the surface. Willy and Ralph for the electric utility arrive. They say that they sometimes dig a hole with a pick and shovel through the 3' of frozen gravel and then they can dig 10' ~~once they are through~~ with the bobcat backhoe.

1045 Lisa calls Ben at the office Voice mail.

1130 Ben calls back. He says to go ahead and dig one hole and see how it goes - then call him back.

Lisa Andrew

5/27/09 (cont'd)

1115 Willy and Ralph to pick up Bobcat backhoe

1200 Backhoe is ~~back~~ at site Start digging T1 north of tank farm platform. Note. wood platform is still here, will not be able dig test pit in middle of tank farm.

1245 Finish test pit T1. Willy and Ralph take lunch break until ~~2~~ 1400. Lisa calls Ben. Plan - go through with digging test pits. ~~Drive one~~ We are only able to dig to about 8 feet with small backhoe - only water coming into hole is coming from the surface. We will dig the remaining test pits to 8' and then backfill each one. We will drive the geoprobe through the back filled test pit to 10' and see if we get any water

Lisa Andrew

5/27/09 (cont'd)

1400 Willy and Ralph back. Backfill TP-1. Move to TP 2 on south side of tank farm plat form. Only able to dig to ~~10' on~~ (2) top 7.5' on this hole. Backfill TP-2.

1450 move backhoe to eastside of tank platform, between pilings for smaller platform Start digging TP-3. Very ~~frozen~~ here. ~~Only~~ (2) Liner about 6" below surface. Backhoe breaks thru liner. Only able to dig to 4'. Still frozen at 4'.

~1545 Move to TP ~~4~~ 4 in low spot on East side of tank platform and just south of smaller tank pilings Dig to 7.5'. Lisa catches up with PID measurements

Note: Find elevated PID at 6' & 8' in TP-1. Find very high PID reads at 4' & 6' in TP4

L. [illegible]

5/27/09 (cont'd)

PID readings

Test Pit	Depth	PID	Comments
TP 1	1'	15.3	
	2.5'	9.0	
	5'	14.0	
*	6'	82.3	
*	8'	53.1	
TP 2	2'	12.6	
	3'	14.1	
*	4.5'	20.0	highest PID
	6'	12.9	
	7'	13.1	
	7.5'	13.6	deepest possible depth (2)
~~TP3~~	~~1.5~~	~~11.0~~ (2)	
TP3	2.5	11.7	
*	3.5	16.3	
	4	12.5	deepest possible depth
swid TP4	2.5	68.7	
*	4	715	
*	6	376	
	7	44.5	
	7.5	43.4	deepest possible depth (2)
			(2)
			(8)

[illegible]

5/27/09 (cont'd)

1645 Move to TP-5 toward river (NE) of TP-1 - this location is at a lower elevation than TP-1 but not ~~exactly~~ directly toward the river. Able to drill to 8'.

1745 move to TP-6 outside the bermed area as a step out for TP-4. Dig ~~Drill~~ to 7 feet. Unable to dig deeper

1850 End of digging for today. Willy and Ralph will return tomorrow at 0900.

1900 Dinner

2000 Call Ben to discuss todays findings and plans for additional sampling.

2030 Start collecting analytical samples from gallon Ziplocs saved on ice. Finish sampling - fill out COC.

2300 End of day

5/27/09 (cont'd) * possible analytical sample location

PID readings (cont'd)

Test Pit	Depth (ft)	PID	Comments
TP-5 saved	3	12.4	
	4	12.3 (12.3)	
	5.5	12.7	
	6.5	39.6	
saved	8	29.5	
TP6	3.5	14.0	
	6.0	11.3	
saved	7	8.2	Deepest possible
5/28/09			
TP7	1.5	3.7	
~40°F	3.5	8.3	
*	5.5	10.6	
	6.5	8.5	
*	7.0	10.1	
TP8	2.5	11.3	warmed on clothes dryer.
*	3.5	37.0	
	4.5	28.5	
*	5.5	20.1 frozen	deepest possible
TP9	2.5	15.6	
	4	15.6	
	5	15.4	
	7	17.3	
*	7.5	17.4	

5/27/09 (cont'd)

Analytical Samples

TP #	Depth (ft)	Sample ID		DRO	GRO BTEX	PAH	VOC	
1	6	09-KON-101-SB	82	X	X	X	X	
1	8	102	53	X	X			
2	4.5	103	20	X	X			
2	7.5	104	14	X	X	(MS/MSD)		
3	3.5	105	16	X	X			
4	4	106	715	X	X	X	X	
4	4	(Dup) 107	715	X	X	X	X	
4	7.5	108	43	X	X			
5	6.5	109	40	X	X			
5/27/09 5	8	110	30	X	X			
6	3.5	111	14	X	X			
5/28/09 10	7	112	15	X	X			
10	2	113	59	X	X			
10	2 (dup)	114	59	X	X			
8	3.5	115	37	X	X			
9	7.5	116	17	X	X			
8	5.5	117	20	X	X			
7	5.5	118	11	X	X			
7	7.0	119	10	X	X		5/28	
5	3	120	12	X	X		5/29	
9	4	121	16	X	X			
6	7'	122	8	X	X			
3	4'	123	13	X	X			

5/29/09

5/27/09 (cont'd)

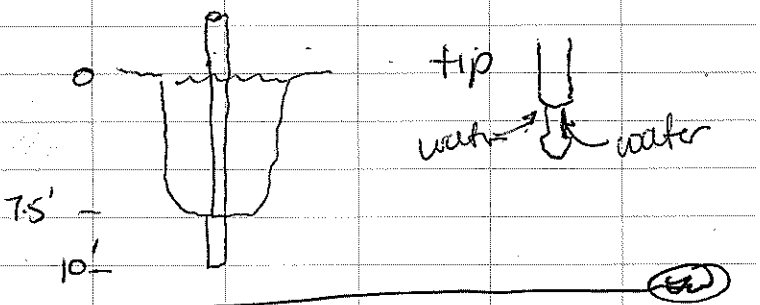
Sample ID	Time	Date	Comments
09-KON-101-SB	2230	5/27/09	
102	2235	5/27/09	
103	2135	5/27/09	
104	2210	5/27/09	
105	2215	5/27/09	wet (from above frozen gond)
106	2150	5/27/09	
107 (dup)	2155	5/27/09	
108	2145	5/27/09	
109	2205	5/27/09	
110	2200	5/27/09	
111	2125	5/27/09	Hi organics
112	1920	5/28/09	
113	1950	5/28/09	
114 (dup)	1955	5/28/09	
115	1925	5/28/09	moderate organics
116	1930	5/28/09	
117	1935	5/28/09	
118	1940	5/28/09	
119	1945	5/28/09	5/28/09
120	1525	5/29/09	5/29/09
121	1530	5/29/09	
122	1535	5/29/09	
123	1540	5/29/09	

5/29/09

5/28/09 L. Nicholson, A. Weller.

0800 Lisa and Andrew ~~put~~ get aquainted with geo probe equipment

0815 Out to site to drive geoprobe to 10' in backfilled TP-4. The probe can be pushed in by hand down to 7.5 feet. Drive from 7.5 - 10'. Back off probe about 3-4" to allow water to come into open tip (see illustration below).



Let probe sit to allow water to infiltrate into rod.

0900 Willy arrives. Doesn't have key to the backhoe - Goes back home to get it.

Lisa Nicholson

5/28/09

0930 Ralph arrives, Willy is back and has started backhoe. Set up to dig TP-7 next to abandoned tanks NE of the tank farm platforms. This is where the piping from the barge at the river would have come in, according to Willy.

1000 Finish digging TP-7 and backfill. Willy has been having trouble with the backhoe engine. Stop to check it out. He found ~~fuel~~ water in the fuel and a clog in the fuel line.

1030 Andrew and Lisa to TP-4 to drive GeoProbe to 12'. Pull it out first to clean out tip. Drive back down the same hole to 12'. Pull back about 4 inches. Let it set. No water comes in.

Lisa Nicholson

5/28/09 (cont'd)

1100 Andrew and Lisa decide to use level to determine relative elevations for each test pit. We realize that we don't have the tripod for the optical level. Call the office and find out we have shipped 14 pieces out here and only have 13 of them. Andrew goes back to airstrip and finds the tripod on the opposite side of the building from where the rest of the field gear was temporarily stored.

1200 Have tree Willy and Ralph take a lunch break until 1300. Andrew & Lisa also take lunch break

1230 Andrew calibrates PID. Measures PID samples from TP-7

1300 Willy and Ralph arrive. Start digging TP-8, approximately 40 feet Northeast of TP-5. Backhoe continues to have problems

(see page 16)

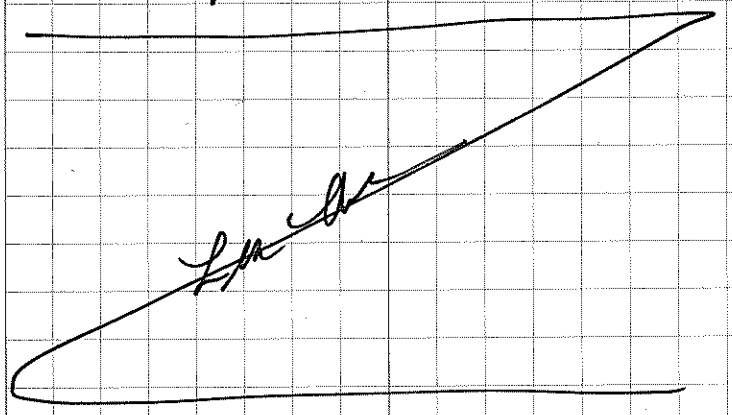
5/28/09 (cont'd)

PID readings

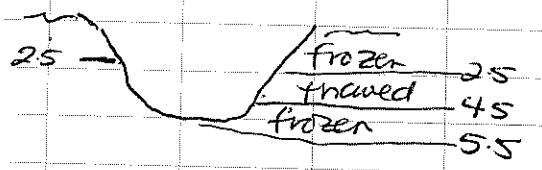
TP #	Depth (ft)	PID (ppmv)	Comment
TP1D	* 2'	59.1	
	3.5'	17.7	
	5'	17.2	
	* 7'	15.4	
SS-1	3"	15.0	beneath tank platform
SS-2	6"	13.7	beneath valve

Additional samples for analytical

1) ~~TP-5 3'~~ @ stet
2) TP-9 4'
3) TP-3 4'
5) TP-6 7'



5/28/09 (cont'd)
but Willy keeps it going
~~~1415 Move to~~ ⊘
Only able to dig to 5.5 feet in TP-8 as it was frozen from about 4.5 to 5.5.



Not to scale

~~~1430 Move to TP-9 on west side of tank platform. Dig to 7.5 feet and sample. Backfill
~1545 Take coffee break
~1615 Back to digging - move to TP 10 - in low spot downhill of TP1 and in front of (N of) tank platform. Dig to 7' and sample. Backfill. Many problems with backhoe. While digging and backfilling
1800 End of day for Willy and Ralph. Willie says he can fix backhoe tonight and dig tomorrow morning. He also wants to

5/28/09 (cont'd)
how he and Ralph are going to get paid. They are not hired through the tribal administration. They work for the electric utility.
1815 Lisa & Andrew break for dinner.
Note: Andrew took 2 near surface samples with a trowel/shovel. One was from beneath the center of the tank platform from about 3" below the surface. (SS-1) Second was from underneath a valve in piping located on south side of tank platform (just east of TP-2). (SS-2) See PID reading on page 15.
1900 Bring out gallon bags for jarring up analytical samples
2000 Finish jarring up samples & COC. End of day

5/28/09 (cont'd)
Photo Log.

100-0030 ~10" thick organic layer above frozen soil
100-0031 Measuring depth of test pit TP-1
100-0032 Bobcat backhoe used for this job
100-0033 Looking N from school at tank farm platform
100-0034 Day tank next to Conex's in front of school (looking S)
100-0035 Tank platform looking E
100-0036 South side of tank platform (looking E) - shows piping coming off platform - green valve near piping T.
100-0037 Digging TP-1 (looking E)
100-0038 Pilings for smaller tank platform on E side of large one (looking N) Kongiganak R. in background.
100-0039 Low lying area south of small tank platform with a large amount of wood & metal debris. Only partial berm surrounds this area on east sides

5/28/09 (cont'd)
Photo Log (cont'd)

100-0040 Same as 100-0038
100-0042 Liner material east of small platform pilings (looking E)
100-0043 Wind turbines - newly installed (looking NE)
100-0044 Backhoe digging TP-1
100-0045 Backhoe digging TP-6 outside the bermed area SE of small tank platform pilings (looking E)

5/27/09
5/28/09

101-0046 Backhoe digging TP-7 on NE side of small tank farm (looking SW
101-0047 Backhoe digging TP-8 north of tank platforms (step out from TP-5) looking SE.

5/28/09
5/29/09

102-0048 ~~Well~~ old drinking water well casing next to old water tank (looking NE)
102-0049 New tank south of old water tank. Well casing at very left (looking NE).

5/29/09 L. Nicholson, A. Weller

Weather: Low 30's - overcast - slight wind

0800 Call Ben Mantich to discuss invoicing for backhoe and operator and laborer. He asks me to discuss this with Mary Nikolai at Tribal Council office

0900 Try calling Willie on his cell phone - unable to get through.

0915 Go to Tribal office to talk to Mary. She says that we should have the ® Willie and Ralph get ® fill out Tribal council timesheets

1000 At Puvurak Power Co. office Willie would prefer to get paid by the power company so he doesn't have to fill out 2 W-4's

1100 Talk to Mary Nikolai again. She will work it out so that the tribal

Lisa Mark

5/29/09 (cont'd)

office pays the power company for the guys time and we then pay the tribal office for the backhoe and operator/laborer.

1115 Talk to Ben and tell him what we've worked out.

Backhoe 57.50/hour
Operator 20.00/hour
Laborer 15.00/hour.

1130 Pay Margaret (school secretary for our time staying at the school ($200)

~1200 Willie comes by and says he must go to Bethel to get his finger seen to. We will not dig any more holes.

1230 Lisa and Andrew use optical level to determine relative elevations between test pit locations.

1330 Pack up gear. Prepare to ship. Call Frontier Agent Ralph Kenneya Senior and let

(see page 25)

Lisa Mark

5/29/09 (cont'd)

Level notes

~~FP3 104.36'~~

~~TP4 107.04'~~

AW

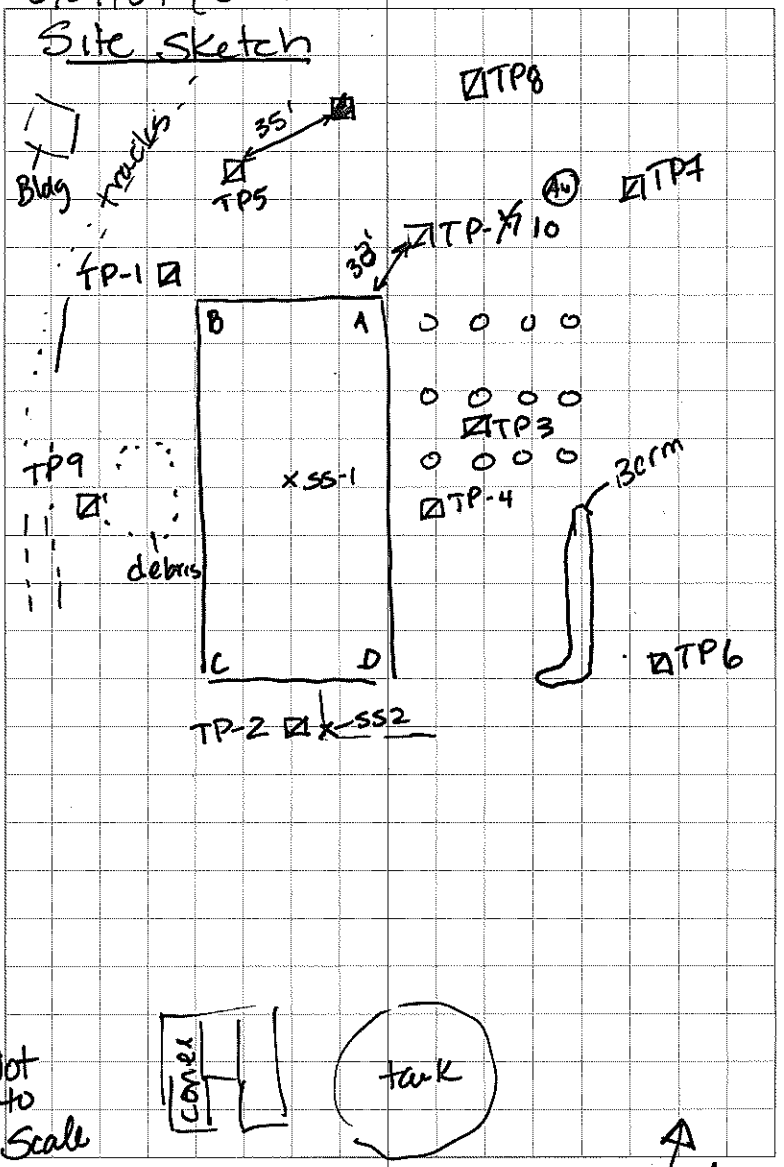
TP1 -4.64'
TP2 -3.92'
TP3 -4.36'
TP4 -7.04'
TP5 -6.64'
TP6 -9.34'
TP7 -9.82'
TP8 -6.88'
TP9 -3.24'
TP10 -8.86'

Soil type notes

Soil type in all test pits is well sorted silt to very fine sand. Color is generally olive gray but near surface soil is rusty colored.

5/29/09 (cont'd)

Site sketch



5/29/09 (cont'd)

Swing ties

T10 → A = 33

T10 → B = 49

T5 → A = 25

T5 - B = 26

T5 → T8 = 45

T8 → Power Pole = 39

TP7 → SW corner of platform on ground = 11'

TP7 → midde of W end of smaller diam tank = 12'

TP6 – 16' out from berm

– approx even w/ S end of platform

TP2 → SE corner platform = 23'

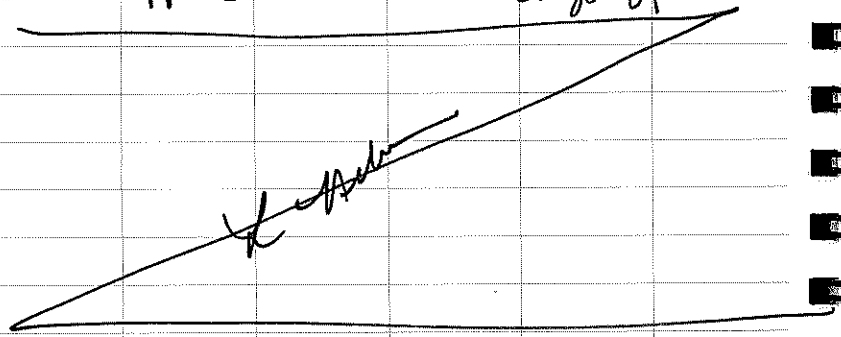
→ SW corner " = 13'

TP-9 → SW " " = 39'

→ NW " " = 33

TP-1 - NW " " = 12'

approx in line w/ W edge of platform



5/29/09 (cont'd)

him know we have gear to ship. He will send someone over to pick it up and take it to airstrip.

Call Frontier cargo in Bethel and let them know we have 11 pieces coming in and would like to charge it to our account.

Shipped

1 cooler	1 toolbox
1 action packer	1 peri pump
1 hand auger	1 slide hammer
1 tripod	1 set buckets
1 shovel/rod	1 handyman jack
1 geoprobe case	

~1500 Talk to Ben in office. We are not digging anymore holes but we have only taken 17 of possible 20 primary soil samples. We still have saved gallon ziplocs of soil Ben says to take as many samples as we can, since

5/29/09 (cont'd)

we didn't use the budget for ground water samples. We find that we have 4 more sets of jars. We add an additional 4 samples and jar them up. Fill out COC and re-ice samples.

~1600 Out to site to dump remain soil. Put Ziplocs in garbage bag to dispose of as trash.

~1700 Done with field work

NOTE: talked with several people about drinking water

1) Nicholas David.
There used to be a well in town but it couldn't be used because the water was too salty.
There is a new Village Safe Water treatment plant that's next to the washeteria.
People can buy water from the - there is a coin-operated filling point on the side of the building

5/29/09 (cont'd)

1) Nicholas David interview (cont'd)
The school gets its water from rainwater and ice melt and can buy water from VSW.
In the spring runoff, they get water from a pond on the north side of the runway - the pond runs clean at that time of year. People in town also get snow from along the bluff. He doesn't know of anyone in town who gets their water from any other source.
Village Safe Water gets it's water from Contractor Lake up on the hillside.

2) Margaret Active (school secretary)
She says that people get their water from catching rainwater and ice melt. Also take 4-wheeler out to snow piles to collect snow. She says this is the best tasting water. People only buy water as last

5/29/09 (cont'd)

resort. She also said there used to be a well in town, but it was too salty.

3) Trent Miller (school maintenance mechanic) - Ask Trent if he knows where the well used to be. There was a tall pipe next to where he was standing that looked like a well. This is not it. He says he thinks the well was near the Village Safe Water tank. There are several water and wastewater utility employees working on the VSW builds. We ask one of them if he knows where the old well was. He points to the area between the old water tank & the new water tank. We find the well & photograph it. It still has a monument, PVC casing and wiring for a pump, but no cover.

Lisa Weller

5/30/09 L. Nicholson; A. Weller

0800 Weather: cool (30's) and clearing.

0800 Price samples and pack remaining gear. Make sure gym is put back in order (Move table back to corner).

0900 Call Ralph Kiunya (Frontier agent) to make sure he knows we will be on the plane. Plane should be in about 1000 - he will call us in school office if it shows up early.

Andrew carries heavy gear to airstrip

1000 Place key in Nicholas David's box and close door to office. Make sure school is locked up & head to airstrip

1020 Fly to Bethel. Try to ship samples via Frontier. They will not have a flight until tomorrow. Go to Alaska Airlines. They will not

Lisa Weller

5/30/09 (cont'd)

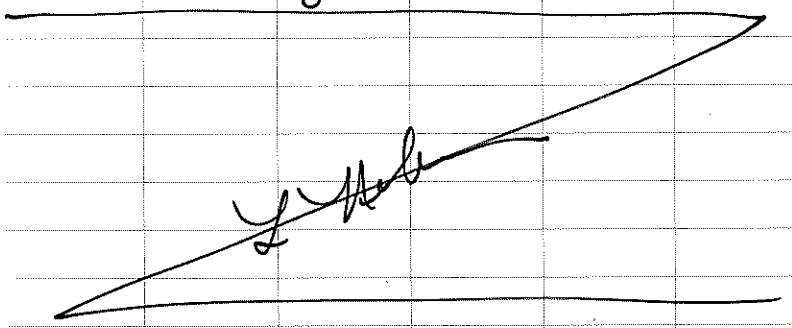
accept our samples because they have noone certified in dangerous goods shipping. Go to Lynden - they don't have a plane going until Tuesday. Take a cab to Events. They take our cooler & will fly it to Anchorage today, but the office will be closed when we get in. Must pick it up Monday.

1330 Arrive ~~at~~ @ Alaska Airlines to fly to Anchorage

1415 Fly to Anchorage

1600 Leave airport for home

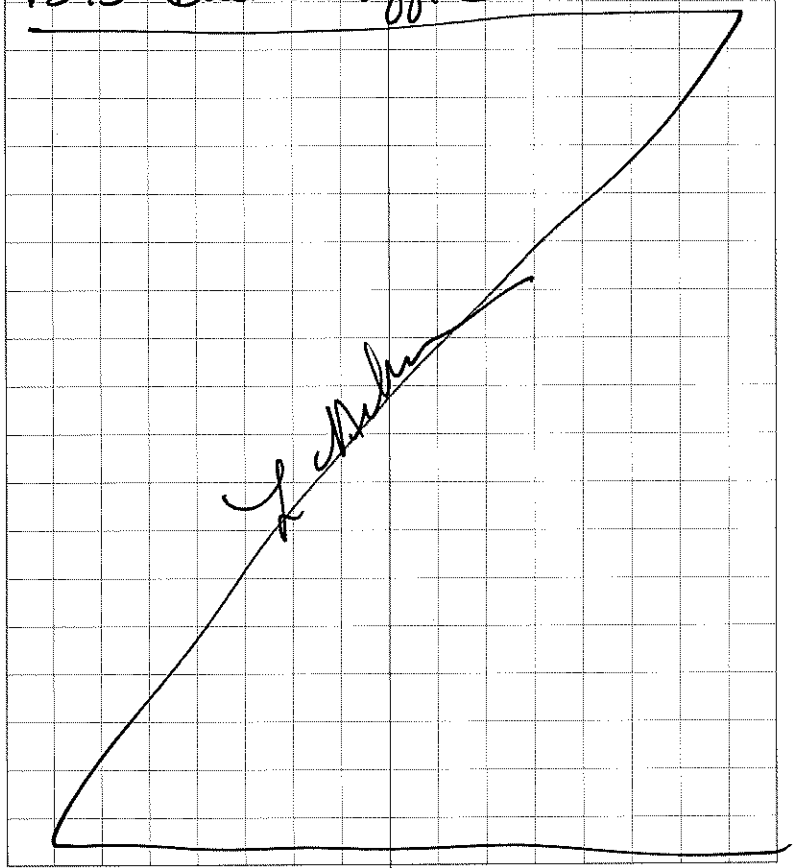
End of day



6/1/09 L. Nicholson

1300 To Events Air Cargo. Pick up cooler and transport to Test America. Ask Johanna to have invoice to us by end of June.

1345 Back at office.



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APPENDIX B

Photographic Log

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Appendix B
Photographic Log

PHOTO 1: BACKHOE, OPERATOR, AND LABORER REMOVING DEBRIS BEFORE DIGGING TEST PIT TP-1, VIEW TO THE NORTH

PHOTO 2: VIEW TO THE NORTH OF FORMER TANK FARM DECK

Appendix B
Photographic Log

PHOTO 3: FROZEN LAYER, 1 FOOT BELOW GROUND SURFACE

PHOTO 4: DEBRIS AND OLD TANK FARM DECK, VIEW TO THE NORTH FROM EAST SIDE OF SITE

PHOTO 5: VIEW TO NORTHEAST FROM SOUTHWEST CORNER OF SITE

PHOTO 6: PILINGS FROM SMALLER OLD TANK FARM DECK AT NORTH CORNER OF SITE, VIEW TO THE NORTHEAST, TEST PIT TP-3 LOCATED TO THE RIGHT OF THE PHOTO

PHOTO 7: DEBRIS AND BERM AT SOUTHEAST CORNER OF SITE, VIEW TO THE SOUTHEAST, TEST PIT TP-4 IS LOCATED AT THE PHOTOGRAPHER'S LOCATION, TEST PIT TP-6 IS LOCATED JUST OUTSIDE THE BERM

PHOTO 8: DIGGING TP-6 OUTSIDE OF BERM AT SOUTHEASTERN CORNER OF SITE; VIEW TO THE SOUTHEAST.

PHOTO 9: DIGGING TEST PIT TP-7, VIEW TO THE SOUTH FROM THE NORTHERN CORNER OF THE SITE

PHOTO 10: CASING IN CENTER OF PHOTO IS OLD WELL LOCATED NEAR WASHETERIA, APPROXIMATELY 350 FEET SOUTH OF THE FORMER SCHOOL TANK FARM, VIEW TO THE NORTH

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APPENDIX C

Laboratory Reports

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

June 24, 2009

Ben Martich
Oasis Environmental, Inc.
825 W 8th Ave, ste 200
Anchorage, AK/USA 99501-4427

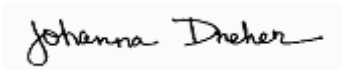
RE: Kongiginak

Enclosed are the results of analyses for samples received by the laboratory on 06/01/09 13:55. The following list is a summary of the Work Orders contained in this report, generated on 06/24/09 14:14.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
ASF0006	Kongiginak	14-157

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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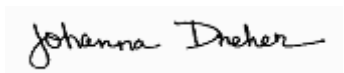
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
09-KON-101-SB	ASF0006-01	Soil	05/27/09 22:30	06/01/09 13:55
09-KON-102-SB	ASF0006-02	Soil	05/27/09 22:35	06/01/09 13:55
09-KON-103-SB	ASF0006-03	Soil	05/27/09 21:35	06/01/09 13:55
09-KON-104-SB	ASF0006-04	Soil	05/27/09 22:10	06/01/09 13:55
09-KON-105-SB	ASF0006-05	Soil	05/27/09 22:15	06/01/09 13:55
09-KON-106-SB	ASF0006-06	Soil	05/27/09 21:50	06/01/09 13:55
09-KON-107-SB	ASF0006-07	Soil	05/27/09 21:55	06/01/09 13:55
09-KON-108-SB	ASF0006-08	Soil	05/27/09 21:45	06/01/09 13:55
09-KON-109-SB	ASF0006-09	Soil	05/27/09 22:05	06/01/09 13:55
09-KON-110-SB	ASF0006-10	Soil	05/27/09 22:00	06/01/09 13:55
09-KON-111-SB	ASF0006-11	Soil	05/27/09 21:25	06/01/09 13:55
09-KON-112-SB	ASF0006-12	Soil	05/28/09 19:20	06/01/09 13:55
09-KON-113-SB	ASF0006-13	Soil	05/28/09 19:50	06/01/09 13:55
09-KON-114-SB	ASF0006-14	Soil	05/28/09 19:55	06/01/09 13:55
09-KON-115-SB	ASF0006-15	Soil	05/28/09 19:25	06/01/09 13:55
09-KON-116-SB	ASF0006-16	Soil	05/28/09 19:30	06/01/09 13:55
09-KON-117-SB	ASF0006-17	Soil	05/28/09 19:35	06/01/09 13:55
09-KON-118-SB	ASF0006-18	Soil	05/28/09 19:40	06/01/09 13:55
09-KON-119-SB	ASF0006-19	Soil	05/28/09 19:45	06/01/09 13:55
09-KON-120-SB	ASF0006-20	Soil	05/29/09 15:25	06/01/09 13:55
09-KON-121-SB	ASF0006-21	Soil	05/29/09 15:30	06/01/09 13:55
09-KON-122-SB	ASF0006-22	Soil	05/29/09 15:35	06/01/09 13:55
09-KON-123-SB	ASF0006-23	Soil	05/29/09 15:40	06/01/09 13:55
Trip Blank	ASF0006-24	Soil	05/27/09 22:00	06/01/09 13:55

TestAmerica Anchorage



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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Analytical Case Narrative

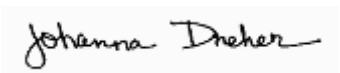
TestAmerica - Anchorage, AK

ASF0006

The Chain of Custody requested sample ASF0006 - 04 be used as the MS/MSD source for AK102 (DRO) and 8260 (GRO/BTEX). The requested sample was used for for the DRO run but not for the GRO/BTEX. Sample ASF0006-22 was used in one of the two GRO/BTEX batches.

The BTEX LCS Dup (9060016-BSD2) was not spiked due to laboratory error.

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-02 (09-KON-102-SB)			**Soil**			**Sampled: 05/27/09 22:35**					
Gasoline Range Organics	AK101 GRO/BTEX	**6.97**	*0.474*	4.92	mg/kg dry	0.751 x	9060016	06/04/09 15:19	06/05/09 22:28	DS	
Benzene	"	**0.00246**	*0.000296*	0.0246	"	"	"	"	"	DS	**J**
Toluene	"	**2.72**	*0.00735*	0.0492	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00574*	0.0492	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0275*	0.0738	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*78.4%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*80.1%*		*50 - 150 %*	"			"		
ASF0006-03 (09-KON-103-SB)			**Soil**			**Sampled: 05/27/09 21:35**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.843**	*0.482*	5.00	mg/kg dry	1x	9060016	06/04/09 15:19	06/05/09 23:01	DS	**J**
Benzene	"	**0.00180**	*0.000301*	0.0250	"	"	"	"	"	DS	**J**
Toluene	"	**0.0373**	*0.00748*	0.0500	"	"	"	"	"	DS	**J**
Ethylbenzene	"	**0.00731**	*0.00585*	0.0500	"	"	"	"	"	DS	**J**
Xylenes (total)	"	ND	*0.0280*	0.0751	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*93.9%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*96.6%*		*50 - 150 %*	"			"		
ASF0006-04 (09-KON-104-SB)			**Soil**			**Sampled: 05/27/09 22:10**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.594**	*0.392*	4.07	mg/kg dry	1x	9060016	06/04/09 15:19	06/05/09 23:29	DS	**J**
Benzene	"	**0.00272**	*0.000244*	0.0203	"	"	"	"	"	DS	**J**
Toluene	"	**0.0293**	*0.00608*	0.0407	"	"	"	"	"	DS	**J**
Ethylbenzene	"	ND	*0.00475*	0.0407	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0227*	0.0610	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*97.3%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*100%*		*50 - 150 %*	"			"		
ASF0006-05 (09-KON-105-SB)			**Soil**			**Sampled: 05/27/09 22:15**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.857**	*0.572*	5.94	mg/kg dry	2.25x	9060016	06/04/09 15:19	06/05/09 23:58	DS	**J**
Benzene	"	**0.00160**	*0.000357*	0.0297	"	"	"	"	"	DS	**J**
Toluene	"	**0.121**	*0.00888*	0.0594	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00694*	0.0594	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0332*	0.0891	"	"	"	"	"	DS	

TestAmerica Anchorage

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CS Approval Number: UST-067

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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-05 (09-KON-105-SB)			**Soil**			**Sampled: 05/27/09 22:15**					
Surrogate(s): a,a,a-TFT (FID)			*109%*		*50 - 150 %*	*2.25x*			*06/05/09 23:58*		
a,a,a-TFT (PID)			*109%*		*50 - 150 %*	"			"		
ASF0006-08 (09-KON-108-SB)			**Soil**			**Sampled: 05/27/09 21:45**					
Gasoline Range Organics	AK101 GRO/BTEX	**10.5**	*0.447*	4.64	mg/kg dry	0.751 x	9060016	06/04/09 15:19	06/06/09 01:54	DS	
Benzene	"	**0.00325**	*0.000279*	0.0232	"	"	"	"	"	DS	**J**
Toluene	"	**0.107**	*0.00693*	0.0464	"	"	"	"	"	DS	
Ethylbenzene	"	**0.0659**	*0.00542*	0.0464	"	"	"	"	"	DS	
Xylenes (total)	"	**0.496**	*0.0259*	0.0696	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*89.1%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*91.2%*		*50 - 150 %*	"			"		
ASF0006-09 (09-KON-109-SB)			**Soil**			**Sampled: 05/27/09 22:05**					
Gasoline Range Organics	AK101 GRO/BTEX	**4.03**	*0.340*	3.52	mg/kg dry	1x	9060016	06/04/09 15:19	06/06/09 02:28	DS	
Benzene	"	**0.000881**	*0.000212*	0.0176	"	"	"	"	"	DS	**J**
Toluene	"	**1.53**	*0.00527*	0.0352	"	"	"	"	"	DS	
Ethylbenzene	"	**0.00430**	*0.00411*	0.0352	"	"	"	"	"	DS	**J**
Xylenes (total)	"	ND	*0.0197*	0.0528	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*90.8%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*94.0%*		*50 - 150 %*	"			"		
ASF0006-10 (09-KON-110-SB)			**Soil**			**Sampled: 05/27/09 22:00**					
Gasoline Range Organics	AK101 GRO/BTEX	**2.92**	*0.449*	4.65	mg/kg dry	1.5x	9060016	06/04/09 15:19	06/06/09 02:54	DS	**J**
Benzene	"	**0.00233**	*0.000280*	0.0233	"	"	"	"	"	DS	**J**
Toluene	"	**1.04**	*0.00696*	0.0465	"	"	"	"	"	DS	
Ethylbenzene	"	**0.00642**	*0.00544*	0.0465	"	"	"	"	"	DS	**J**
Xylenes (total)	"	ND	*0.0260*	0.0698	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*90.3%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*90.9%*		*50 - 150 %*	"			"		

TestAmerica Anchorage

Johanna L Dreher, Client Services Manager

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-11 (09-KON-111-SB)			**Soil**			**Sampled: 05/27/09 21:25**					
Gasoline Range Organics	AK101 GRO/BTEX	**13.4**	*1.76*	18.3	mg/kg dry	0.751 x	9060016	06/04/09 15:19	06/06/09 03:23	DS	**J**
Benzene	"	**0.0612**	*0.00110*	0.0913	"	"	"	"	"	DS	**J**
Toluene	"	**0.344**	*0.0273*	0.183	"	"	"	"	"	DS	
Ethylbenzene	"	**0.0617**	*0.0213*	0.183	"	"	"	"	"	DS	**J**
Xylenes (total)	"	**0.308**	*0.102*	0.274	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*73.5%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*74.6%*		*50 - 150 %*	"			"		
ASF0006-12 (09-KON-112-SB)			**Soil**			**Sampled: 05/28/09 19:20**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.767**	*0.523*	5.43	mg/kg dry	1.5x	9060016	06/04/09 15:19	06/06/09 03:51	DS	**J**
Benzene	"	**0.00380**	*0.000326*	0.0271	"	"	"	"	"	DS	**J**
Toluene	"	**0.0701**	*0.00812*	0.0543	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00634*	0.0543	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0303*	0.0814	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*99.5%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*100%*		*50 - 150 %*	"			"		
ASF0006-13 (09-KON-113-SB)			**Soil**			**Sampled: 05/28/09 19:50**					
Gasoline Range Organics	AK101 GRO/BTEX	**13.6**	*0.835*	8.66	mg/kg dry	1x	9060016	06/04/09 15:19	06/06/09 04:18	DS	
Benzene	"	**0.00624**	*0.000520*	0.0433	"	"	"	"	"	DS	**J**
Toluene	"	**0.0419**	*0.0129*	0.0866	"	"	"	"	"	DS	**J**
Ethylbenzene	"	**0.0171**	*0.0101*	0.0866	"	"	"	"	"	DS	**J**
Xylenes (total)	"	ND	*0.0484*	0.130	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*94.3%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*96.6%*		*50 - 150 %*	"			"		
ASF0006-14 (09-KON-114-SB)			**Soil**			**Sampled: 05/28/09 19:55**					
Gasoline Range Organics	AK101 GRO/BTEX	**22.6**	*3.51*	36.4	mg/kg dry	3x	9060016	06/04/09 15:19	06/06/09 04:51	DS	**J**
Benzene	"	**0.0866**	*0.00219*	0.182	"	"	"	"	"	DS	**J**
Toluene	"	**0.108**	*0.0544*	0.364	"	"	"	"	"	DS	**J**
Ethylbenzene	"	ND	*0.0425*	0.364	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.203*	0.546	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*71.7%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*71.6%*		*50 - 150 %*	"			"		

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-15 (09-KON-115-SB)			**Soil**			**Sampled: 05/28/09 19:25**					
Gasoline Range Organics	AK101 GRO/BTEX	**3.98**	*0.449*	4.66	mg/kg dry	0.751 x	9060016	06/04/09 15:19	06/06/09 05:23	DS	**J**
Benzene	"	**0.00163**	*0.000280*	0.0233	"	"	"	"	"	DS	**J**
Toluene	"	**1.36**	*0.00697*	0.0466	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00544*	0.0466	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0261*	0.0699	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*89.4%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*91.7%*		*50 - 150 %*	"			"		
ASF0006-16 (09-KON-116-SB)			**Soil**			**Sampled: 05/28/09 19:30**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.888**	*0.312*	3.23	mg/kg dry	0.751 x	9060016	06/04/09 15:19	06/06/09 06:55	DS	**J**
Benzene	"	**0.00129**	*0.000194*	0.0162	"	"	"	"	"	DS	**J**
Toluene	"	**0.105**	*0.00484*	0.0323	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00378*	0.0323	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0181*	0.0485	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*85.6%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*88.2%*		*50 - 150 %*	"			"		
ASF0006-17 (09-KON-117-SB)			**Soil**			**Sampled: 05/28/09 19:35**					
Gasoline Range Organics	AK101 GRO/BTEX	**2.19**	*0.572*	5.93	mg/kg dry	1.5x	9060016	06/04/09 15:19	06/06/09 07:21	DS	**J**
Benzene	"	**0.00231**	*0.000356*	0.0296	"	"	"	"	"	DS	**J**
Toluene	"	**0.637**	*0.00886*	0.0593	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00692*	0.0593	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0331*	0.0889	"	"	"	"	"	DS	
Surrogate(s): *a,a,a-TFT (FID)*			*82.2%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*83.7%*		*50 - 150 %*	"			"		
ASF0006-18 (09-KON-118-SB)			**Soil**			**Sampled: 05/28/09 19:40**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.672**	*0.364*	3.77	mg/kg dry	1x	9060016	06/04/09 15:19	06/06/09 07:51	DS	**J**
Benzene	"	**0.00147**	*0.000227*	0.0189	"	"	"	"	"	DS	**J**
Toluene	"	**0.0584**	*0.00564*	0.0377	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00441*	0.0377	"	"	"	"	"	DS	

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CS Approval Number: UST-067

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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-18 (09-KON-118-SB)			**Soil**			**Sampled: 05/28/09 19:40**					
Xylenes (total)	AK101 GRO/BTEX	ND	*0.0211*	0.0566	mg/kg dry	1x	9060016	06/04/09 15:19	06/06/09 07:51	DS	
Surrogate(s): a,a,a-TFT (FID)			*101%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*103%*		*50 - 150 %*	"			"		
ASF0006-19 (09-KON-119-SB)			**Soil**			**Sampled: 05/28/09 19:45**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.535**	*0.448*	4.65	mg/kg dry	1.5x	9060018	06/04/09 13:41	06/06/09 10:40	DS	**J**
Benzene	"	**0.00312**	*0.000279*	0.0232	"	"	"	"	"	DS	**J**
Toluene	"	**0.0426**	*0.00695*	0.0465	"	"	"	"	"	DS	**J**
Ethylbenzene	"	ND	*0.00543*	0.0465	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0260*	0.0697	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*107%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*109%*		*50 - 150 %*	"			"		
ASF0006-20 (09-KON-120-SB)			**Soil**			**Sampled: 05/29/09 15:25**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.585**	*0.484*	5.02	mg/kg dry	1.5x	9060018	06/04/09 13:41	06/06/09 11:07	DS	**J**
Benzene	"	**0.00427**	*0.000302*	0.0251	"	"	"	"	"	DS	**J**
Toluene	"	**0.0238**	*0.00751*	0.0502	"	"	"	"	"	DS	**J**
Ethylbenzene	"	ND	*0.00587*	0.0502	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0281*	0.0754	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*106%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*107%*		*50 - 150 %*	"			"		
ASF0006-21 (09-KON-121-SB)			**Soil**			**Sampled: 05/29/09 15:30**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.869**	*0.356*	3.69	mg/kg dry	0.751 x	9060018	06/04/09 13:41	06/06/09 13:04	DS	**J**
Benzene	"	**0.0163**	*0.000222*	0.0185	"	"	"	"	"	DS	**J**
Toluene	"	**0.0693**	*0.00552*	0.0369	"	"	"	"	"	DS	
Ethylbenzene	"	**0.00779**	*0.00431*	0.0369	"	"	"	"	"	DS	**J**
Xylenes (total)	"	ND	*0.0206*	0.0554	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*87.5%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*90.4%*		*50 - 150 %*	"			"		

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Gasoline Range Organics (C6-C10) and BTEX per AK101

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-22 (09-KON-122-SB)			**Soil**			**Sampled: 05/29/09 15:35**					
Gasoline Range Organics	AK101 GRO/BTEX	**0.633**	*0.531*	5.51	mg/kg dry	1.5x	9060018	06/04/09 13:41	06/06/09 13:33	DS	**J**
Benzene	"	**0.00787**	*0.000331*	0.0275	"	"	"	"	"	DS	**J**
Toluene	"	**0.0757**	*0.00823*	0.0551	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00643*	0.0551	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0308*	0.0826	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*106%*		*50 - 150 %*	"				"	
a,a,a-TFT (PID)			*111%*		*50 - 150 %*	"				"	
ASF0006-23 (09-KON-123-SB)			**Soil**			**Sampled: 05/29/09 15:40**					
Gasoline Range Organics	AK101 GRO/BTEX	**1.39**	*0.524*	5.44	mg/kg dry	1x	9060018	06/04/09 13:41	06/06/09 15:25	DS	**J**
Benzene	"	**0.00343**	*0.000327*	0.0272	"	"	"	"	"	DS	**J**
Toluene	"	**0.268**	*0.00813*	0.0544	"	"	"	"	"	DS	
Ethylbenzene	"	ND	*0.00635*	0.0544	"	"	"	"	"	DS	
Xylenes (total)	"	ND	*0.0304*	0.0816	"	"	"	"	"	DS	
Surrogate(s): a,a,a-TFT (FID)			*73.8%*		*50 - 150 %*	"				"	
a,a,a-TFT (PID)			*75.3%*		*50 - 150 %*	"				"	

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Diesel Range Organics (C10-C25) per AK102

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)			**Soil**			**Sampled: 05/27/09 22:30**					
Diesel Range Organics	AK 102	**201**	*28.7*	174	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 19:37	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*108%*		*50 - 150 %*	"			"		
ASF0006-02 (09-KON-102-SB)			**Soil**			**Sampled: 05/27/09 22:35**					
Diesel Range Organics	AK 102	**161**	*20.7*	126	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 20:10	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*115%*		*50 - 150 %*	"			"		
ASF0006-03 (09-KON-103-SB)			**Soil**			**Sampled: 05/27/09 21:35**					
Diesel Range Organics	AK 102	**142**	*15.2*	92.4	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 20:10	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*95.8%*		*50 - 150 %*	"			"		
ASF0006-04 (09-KON-104-SB)			**Soil**			**Sampled: 05/27/09 22:10**					
Diesel Range Organics	AK 102	**21.8**	*4.50*	27.4	mg/kg dry	1x	9060015	06/04/09 08:38	06/08/09 17:14	JPN	**J**
Surrogate(s): 1-Chlorooctadecane			*96.7%*		*50 - 150 %*	"			"		
ASF0006-05 (09-KON-105-SB)			**Soil**			**Sampled: 05/27/09 22:15**					
Diesel Range Organics	AK 102	**32.4**	*4.25*	25.8	mg/kg dry	1x	9060015	06/04/09 08:38	06/06/09 00:31	JN	
Surrogate(s): 1-Chlorooctadecane			*87.6%*		*50 - 150 %*	"			"		
ASF0006-06 (09-KON-106-SB)			**Soil**			**Sampled: 05/27/09 21:50**					
Diesel Range Organics	AK 102	**356**	*4.53*	27.5	mg/kg dry	1x	9060015	06/04/09 08:38	06/05/09 23:59	JN	
Surrogate(s): 1-Chlorooctadecane			*95.8%*		*50 - 150 %*	"			"		
ASF0006-07 (09-KON-107-SB)			**Soil**			**Sampled: 05/27/09 21:55**					
Diesel Range Organics	AK 102	**397**	*4.44*	27.0	mg/kg dry	1x	9060015	06/04/09 08:38	06/06/09 01:04	JN	
Surrogate(s): 1-Chlorooctadecane			*101%*		*50 - 150 %*	"			"		
ASF0006-08 (09-KON-108-SB)			**Soil**			**Sampled: 05/27/09 21:45**					
Diesel Range Organics	AK 102	**266**	*36.6*	223	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 20:43	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*116%*		*50 - 150 %*	"			"		

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Diesel Range Organics (C10-C25) per AK102

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-09 (09-KON-109-SB)			**Soil**				**Sampled: 05/27/09 22:05**				
Diesel Range Organics	AK 102	**40.9**	*3.92*	23.9	mg/kg dry	1x	9060015	06/04/09 08:38	06/06/09 01:04	JN	
Surrogate(s): 1-Chlorooctadecane			*102%*		*50 - 150 %*	"			"		
ASF0006-10 (09-KON-110-SB)			**Soil**				**Sampled: 05/27/09 22:00**				
Diesel Range Organics	AK 102	**33.9**	*4.15*	25.2	mg/kg dry	1x	9060015	06/04/09 08:38	06/06/09 00:31	JN	
Surrogate(s): 1-Chlorooctadecane			*107%*		*50 - 150 %*	"			"		
ASF0006-11 (09-KON-111-SB)			**Soil**				**Sampled: 05/27/09 21:25**				
Diesel Range Organics	AK 102	**1460**	*167*	1020	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 19:37	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*101%*		*50 - 150 %*	"			"		
ASF0006-12 (09-KON-112-SB)			**Soil**				**Sampled: 05/28/09 19:20**				
Diesel Range Organics	AK 102	**59.4**	*4.38*	26.6	mg/kg dry	1x	9060015	06/04/09 08:38	06/05/09 23:59	JN	
Surrogate(s): 1-Chlorooctadecane			*90.4%*		*50 - 150 %*	"			"		
ASF0006-13 (09-KON-113-SB)			**Soil**				**Sampled: 05/28/09 19:50**				
Diesel Range Organics	AK 102	**2730**	*35.1*	214	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 20:43	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*89.2%*		*50 - 150 %*	"			"		
ASF0006-14 (09-KON-114-SB)			**Soil**				**Sampled: 05/28/09 19:55**				
Diesel Range Organics	AK 102	**555**	*82.6*	502	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 21:16	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*89.2%*		*50 - 150 %*	"			"		
ASF0006-15 (09-KON-115-SB)			**Soil**				**Sampled: 05/28/09 19:25**				
Diesel Range Organics	AK 102	**94.5**	*13.0*	79.0	mg/kg dry	10x	9060015	06/04/09 08:38	06/10/09 21:16	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*96.4%*		*50 - 150 %*	"			"		
ASF0006-16 (09-KON-116-SB)			**Soil**				**Sampled: 05/28/09 19:30**				
Diesel Range Organics	AK 102	**45.9**	*4.17*	25.3	mg/kg dry	1x	9060015	06/04/09 08:38	06/11/09 14:52	JN	

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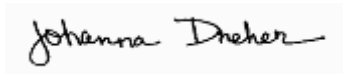

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ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Diesel Range Organics (C10-C25) per AK102

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-16 (09-KON-116-SB)			**Soil**			**Sampled: 05/28/09 19:30**					
Surrogate(s): 1-Chlorooctadecane			*117%*		*50 - 150 %*	*1x*			*06/11/09 14:52*		
ASF0006-17 (09-KON-117-SB)			**Soil**			**Sampled: 05/28/09 19:35**					
Diesel Range Organics	AK 102	**149**	*23.0*	140	mg/kg dry	10x	9060027	06/08/09 15:34	06/10/09 21:49	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*122%*		*50 - 150 %*	"			"		
ASF0006-18 (09-KON-118-SB)			**Soil**			**Sampled: 05/28/09 19:40**					
Diesel Range Organics	AK 102	**41.5**	*4.20*	25.5	mg/kg dry	1x	9060027	06/08/09 15:34	06/10/09 22:22	JN	
Surrogate(s): 1-Chlorooctadecane			*92.7%*		*50 - 150 %*	"			"		
ASF0006-19 (09-KON-119-SB)			**Soil**			**Sampled: 05/28/09 19:45**					
Diesel Range Organics	AK 102	**50.7**	*4.22*	25.7	mg/kg dry	1x	9060027	06/08/09 15:34	06/10/09 22:22	JN	
Surrogate(s): 1-Chlorooctadecane			*101%*		*50 - 150 %*	"			"		
ASF0006-20 (09-KON-120-SB)			**Soil**			**Sampled: 05/29/09 15:25**					
Diesel Range Organics	AK 102	**183**	*22.2*	135	mg/kg dry	10x	9060027	06/08/09 15:34	06/10/09 22:55	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*116%*		*50 - 150 %*	"			"		
ASF0006-21 (09-KON-121-SB)			**Soil**			**Sampled: 05/29/09 15:30**					
Diesel Range Organics	AK 102	**198**	*32.1*	195	mg/kg dry	10x	9060027	06/08/09 15:34	06/10/09 22:55	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*120%*		*50 - 150 %*	"			"		
ASF0006-22 (09-KON-122-SB)			**Soil**			**Sampled: 05/29/09 15:35**					
Diesel Range Organics	AK 102	**24.5**	*4.41*	26.8	mg/kg dry	1x	9060027	06/08/09 15:34	06/10/09 23:28	JN	**J**
Surrogate(s): 1-Chlorooctadecane			*94.5%*		*50 - 150 %*	"			"		
ASF0006-23 (09-KON-123-SB)			**Soil**			**Sampled: 05/29/09 15:40**					
Diesel Range Organics	AK 102	**174**	*26.7*	162	mg/kg dry	10x	9060027	06/08/09 15:34	06/10/09 23:28	JN	**RL1**
Surrogate(s): 1-Chlorooctadecane			*102%*		*50 - 150 %*	"			"		

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Physical Parameters by APHA/ASTM/EPA Methods

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)			**Soil**			**Sampled: 05/27/09 22:30**					
Dry Weight	TA-SOP	**56.9**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-02 (09-KON-102-SB)			**Soil**			**Sampled: 05/27/09 22:35**					
Dry Weight	TA-SOP	**60.9**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-03 (09-KON-103-SB)			**Soil**			**Sampled: 05/27/09 21:35**					
Dry Weight	TA-SOP	**64.7**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-04 (09-KON-104-SB)			**Soil**			**Sampled: 05/27/09 22:10**					
Dry Weight	TA-SOP	**72.6**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-05 (09-KON-105-SB)			**Soil**			**Sampled: 05/27/09 22:15**					
Dry Weight	TA-SOP	**76.1**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-06 (09-KON-106-SB)			**Soil**			**Sampled: 05/27/09 21:50**					
Dry Weight	TA-SOP	**72.6**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-07 (09-KON-107-SB)			**Soil**			**Sampled: 05/27/09 21:55**					
Dry Weight	TA-SOP	**72.7**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-08 (09-KON-108-SB)			**Soil**			**Sampled: 05/27/09 21:45**					
Dry Weight	TA-SOP	**63.9**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-09 (09-KON-109-SB)			**Soil**			**Sampled: 05/27/09 22:05**					
Dry Weight	TA-SOP	**78.1**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-10 (09-KON-110-SB)			**Soil**			**Sampled: 05/27/09 22:00**					
Dry Weight	TA-SOP	**77.5**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-11 (09-KON-111-SB)			**Soil**			**Sampled: 05/27/09 21:25**					
Dry Weight	TA-SOP	**27.6**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	

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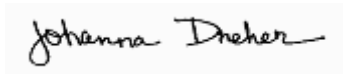

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CS Approval Number: UST-067

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825 W 8th Ave, ste 200	Project Number: 14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Ben Martich	06/24/09 14:14

Physical Parameters by APHA/ASTM/EPA Methods

TestAmerica Anchorage

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-12 (09-KON-112-SB)			**Soil**			**Sampled: 05/28/09 19:20**					
Dry Weight	TA-SOP	**73.4**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-13 (09-KON-113-SB)			**Soil**			**Sampled: 05/28/09 19:50**					
Dry Weight	TA-SOP	**46.0**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-14 (09-KON-114-SB)			**Soil**			**Sampled: 05/28/09 19:55**					
Dry Weight	TA-SOP	**39.8**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-15 (09-KON-115-SB)			**Soil**			**Sampled: 05/28/09 19:25**					
Dry Weight	TA-SOP	**70.9**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-16 (09-KON-116-SB)			**Soil**			**Sampled: 05/28/09 19:30**					
Dry Weight	TA-SOP	**77.0**	*1.00*	1.00	%	1x	9060017	06/04/09 10:48	06/05/09 10:50	JN	
ASF0006-17 (09-KON-117-SB)			**Soil**			**Sampled: 05/28/09 19:35**					
Dry Weight	TA-SOP	**70.8**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	
ASF0006-18 (09-KON-118-SB)			**Soil**			**Sampled: 05/28/09 19:40**					
Dry Weight	TA-SOP	**77.4**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	
ASF0006-19 (09-KON-119-SB)			**Soil**			**Sampled: 05/28/09 19:45**					
Dry Weight	TA-SOP	**76.4**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	
ASF0006-20 (09-KON-120-SB)			**Soil**			**Sampled: 05/29/09 15:25**					
Dry Weight	TA-SOP	**72.2**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	
ASF0006-21 (09-KON-121-SB)			**Soil**			**Sampled: 05/29/09 15:30**					
Dry Weight	TA-SOP	**76.3**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	
ASF0006-22 (09-KON-122-SB)			**Soil**			**Sampled: 05/29/09 15:35**					
Dry Weight	TA-SOP	**73.6**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	

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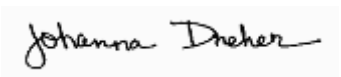

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Physical Parameters by APHA/ASTM/EPA Methods

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-23 (09-KON-123-SB)		**Soil**				**Sampled: 05/29/09 15:40**					
Dry Weight	TA-SOP	**60.5**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	
ASF0006-24 (Trip Blank)		**Soil**				**Sampled: 05/27/09 22:00**					
Dry Weight	TA-SOP	**100**	*1.00*	1.00	%	1x	9060028	06/08/09 15:41	06/09/09 11:35	JN	

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Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)		Soil				Sampled: 05/27/09 22:30					
Gasoline Range Organics	AK101/8021B	**22.4**	*2.40*	11.6	mg/kg dry	1x	9060271	06/08/09 13:15	06/08/09 22:38	SYB	**QP**
Surrogate(s): a,a,a-TFT (FID)			*81.2%*		*50 - 150 %*	"			"		
ASF0006-01RE1 (09-KON-101-SB)		Soil				Sampled: 05/27/09 22:30					
Benzene	AK101/8021B	ND	*0.0105*	0.0579	mg/kg dry	1x	9060271	06/08/09 13:15	06/09/09 15:32	SYB	
Toluene	"	**10.0**	*0.0128*	0.290	"	"	"	"	"	SYB	
Ethylbenzene	"	ND	*0.0143*	0.290	"	"	"	"	"	SYB	
Xylenes (total)	"	**0.0459**	*0.0391*	0.290	"	"	"	"	"	SYB	**J**
Surrogate(s): a,a,a-TFT (PID)			*74.1%*		*50 - 150 %*	"			"		
ASF0006-06 (09-KON-106-SB)		Soil				Sampled: 05/27/09 21:50					**S14**
Gasoline Range Organics	AK101/8021B	**55.8**	*1.04*	5.02	mg/kg dry	1x	9060271	06/08/09 13:15	06/08/09 23:33	SYB	
Surrogate(s): a,a,a-TFT (FID)			*95.0%*		*50 - 150 %*	"			"		
ASF0006-06RE1 (09-KON-106-SB)		Soil				Sampled: 05/27/09 21:50					**S14**
Benzene	AK101/8021B	**0.00571**	*0.00454*	0.0251	mg/kg dry	1x	9060271	06/08/09 13:15	06/09/09 13:34	SYB	**J**
Toluene	"	**0.181**	*0.00555*	0.125	"	"	"	"	"	SYB	
Ethylbenzene	"	**1.00**	*0.00619*	0.125	"	"	"	"	"	SYB	
Xylenes (total)	"	**5.57**	*0.0169*	0.125	"	"	"	"	"	SYB	
Surrogate(s): a,a,a-TFT (PID)			*94.2%*		*50 - 150 %*	"			"		
ASF0006-07RE1 (09-KON-107-SB)		Soil				Sampled: 05/27/09 21:55					**S14**
Gasoline Range Organics	AK101/8021B	**28.4**	*0.959*	4.62	mg/kg dry	1x	9060271	06/08/09 13:15	06/09/09 11:15	SYB	
Benzene	"	**0.00433**	*0.00418*	0.0231	"	"	"	"	"	SYB	**J**
Toluene	"	**0.150**	*0.00511*	0.116	"	"	"	"	"	SYB	
Ethylbenzene	"	**0.721**	*0.00569*	0.116	"	"	"	"	"	SYB	
Xylenes (total)	"	**4.82**	*0.0156*	0.116	"	"	"	"	"	SYB	
Surrogate(s): a,a,a-TFT (FID)			*54.4%*		*50 - 150 %*	"			"		
a,a,a-TFT (PID)			*56.5%*		*50 - 150 %*	"			"		

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Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-24 (Trip Blank)		**Soil**				**Sampled: 05/27/09 22:00**					
Gasoline Range Organics	AK101/8021B	**1.42**	*0.830*	4.00	mg/kg wet	1x	9060271	06/08/09 13:15	06/08/09 22:10	SYB	**J**
Surrogate(s): a,a,a-TFT (FID)			*107%*		*50 - 150 %*	"			"		
ASF0006-24RE1 (Trip Blank)		**Soil**				**Sampled: 05/27/09 22:00**					
Benzene	AK101/8021B	ND	*0.00362*	0.0200	mg/kg wet	1x	9060271	06/08/09 13:15	06/09/09 10:48	SYB	
Toluene	"	**0.314**	*0.00442*	0.100	"	"	"	"	"	SYB	**A-01**
Ethylbenzene	"	ND	*0.00493*	0.100	"	"	"	"	"	SYB	
Xylenes (total)	"	ND	*0.0135*	0.100	"	"	"	"	"	SYB	
Surrogate(s): a,a,a-TFT (PID)			*121%*		*50 - 150 %*	"			"		

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Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)		**Soil**				**Sampled: 05/27/09 22:30**					
Acetone	EPA 8260B	ND	*298*	5170	ug/kg dry	1x	9060183	06/04/09 11:00	06/04/09 17:36	TDB	
Benzene	"	ND	*9.18*	41.3	"	"	"	"	"	TDB	
Bromobenzene	"	ND	*25.2*	207	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	*33.9*	207	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	*21.1*	207	"	"	"	"	"	TDB	
Bromoform	"	ND	*32.7*	207	"	"	"	"	"	TDB	
Bromomethane	"	ND	*10.5*	1030	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	*306*	2070	"	"	"	"	"	TDB	
n-Butylbenzene	"	**28.9**	*23.4*	1030	"	"	"	"	"	TDB	**J**
sec-Butylbenzene	"	ND	*15.4*	207	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	*31.4*	207	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	*14.9*	2070	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	*15.8*	207	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	*16.7*	207	"	"	"	"	"	TDB	
Chloroethane	"	ND	*22.1*	207	"	"	"	"	"	TDB	
Chloroform	"	ND	*15.0*	207	"	"	"	"	"	TDB	
Chloromethane	"	ND	*13.9*	1030	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	*22.7*	207	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	*21.5*	207	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	*53.7*	1030	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	*23.2*	207	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	*24.0*	207	"	"	"	"	"	TDB	
Dibromomethane	"	ND	*30.4*	207	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	*29.8*	207	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	*12.1*	207	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	*30.8*	207	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	*24.4*	1030	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	*24.6*	207	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	*23.2*	207	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	*24.6*	207	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	*26.0*	207	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	*18.5*	207	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	*15.4*	207	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	*36.0*	207	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	*16.7*	207	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	*22.5*	207	"	"	"	"	"	TDB	

TestAmerica Anchorage

Johanna Dreher

Johanna L Dreher, Client Services Manager

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THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)		**Soil**				**Sampled: 05/27/09 22:30**					
cis-1,3-Dichloropropene	EPA 8260B	ND	*10.2*	207	ug/kg dry	1x	9060183	06/04/09 11:00	06/04/09 17:36	TDB	
trans-1,3-Dichloropropene	"	ND	*17.1*	207	"	"	"	"	"	TDB	
Ethylbenzene	"	**22.7**	*19.4*	207	"	"	"	"	"	TDB	**J**
Hexachlorobutadiene	"	ND	*143*	827	"	"	"	"	"	TDB	
2-Hexanone	"	ND	*118*	2070	"	"	"	"	"	TDB	
Isopropylbenzene	"	ND	*19.7*	413	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	ND	*20.0*	413	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	*242*	1030	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	*24.6*	207	"	"	"	"	"	TDB	
Methylene chloride	"	ND	*517*	1030	"	"	"	"	"	TDB	
Naphthalene	"	**314**	*29.1*	413	"	"	"	"	"	TDB	**J**
n-Propylbenzene	"	ND	*20.4*	207	"	"	"	"	"	TDB	
Styrene	"	ND	*18.4*	207	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	*19.1*	207	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	*43.6*	207	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	*34.9*	207	"	"	"	"	"	TDB	
Toluene	"	**9150**	*13.0*	207	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	*34.9*	207	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	*44.2*	207	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	*12.7*	207	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	*37.4*	207	"	"	"	"	"	TDB	
Trichloroethene	"	ND	*24.8*	207	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	*18.5*	207	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	*102*	207	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	**82.7**	*14.0*	207	"	"	"	"	"	TDB	**J**
1,3,5-Trimethylbenzene	"	**33.1**	*19.3*	207	"	"	"	"	"	TDB	**J**
Vinyl chloride	"	ND	*11.9*	207	"	"	"	"	"	TDB	
o-Xylene	"	ND	*24.0*	207	"	"	"	"	"	TDB	
m,p-Xylene	"	**37.2**	*23.6*	413	"	"	"	"	"	TDB	**J**

Surrogate(s):	*Dibromofluoromethane*	*97.4%*	*75 - 125 %*	*0.01x*	"
	1,2-DCA-d4	*97.6%*	*75 - 125 %*	"	"
	Toluene-d8	*101%*	*75 - 125 %*	"	"
	4-BFB	*101%*	*75 - 125 %*	"	"

TestAmerica Anchorage

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Johanna L Dreher, Client Services Manager

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ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-06 (09-KON-106-SB)		**Soil**				**Sampled: 05/27/09 21:50**					
Acetone	EPA 8260B	ND	*124*	2150	ug/kg dry	1x	9060183	06/04/09 11:00	06/04/09 17:09	TDB	
Benzene	"	ND	*3.82*	17.2	"	"	"	"	"	TDB	
Bromobenzene	"	ND	*10.5*	86.0	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	*14.1*	86.0	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	*8.77*	86.0	"	"	"	"	"	TDB	
Bromoform	"	ND	*13.6*	86.0	"	"	"	"	"	TDB	
Bromomethane	"	ND	*4.38*	430	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	*127*	860	"	"	"	"	"	TDB	
n-Butylbenzene	"	**652**	*9.72*	430	"	"	"	"	"	TDB	
sec-Butylbenzene	"	**289**	*6.41*	86.0	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	*13.1*	86.0	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	*6.19*	860	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	*6.57*	86.0	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	*6.96*	86.0	"	"	"	"	"	TDB	
Chloroethane	"	ND	*9.21*	86.0	"	"	"	"	"	TDB	
Chloroform	"	ND	*6.25*	86.0	"	"	"	"	"	TDB	
Chloromethane	"	ND	*5.78*	430	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	*9.46*	86.0	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	*8.95*	86.0	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	*22.4*	430	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	*9.64*	86.0	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	*9.98*	86.0	"	"	"	"	"	TDB	
Dibromomethane	"	ND	*12.6*	86.0	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	*12.4*	86.0	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	*5.04*	86.0	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	*12.8*	86.0	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	*10.2*	430	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	*10.2*	86.0	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	*9.64*	86.0	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	*10.2*	86.0	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	*10.8*	86.0	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	*7.72*	86.0	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	*6.41*	86.0	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	*15.0*	86.0	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	*6.96*	86.0	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	*9.38*	86.0	"	"	"	"	"	TDB	

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Johanna Dreher

Johanna L Dreher, Client Services Manager

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ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-06 (09-KON-106-SB)		**Soil**				**Sampled: 05/27/09 21:50**					
cis-1,3-Dichloropropene	EPA 8260B	ND	*4.26*	86.0	ug/kg dry	1x	9060183	06/04/09 11:00	06/04/09 17:09	TDB	
trans-1,3-Dichloropropene	"	ND	*7.13*	86.0	"	"	"	"	"	TDB	
Ethylbenzene	"	**594**	*8.09*	86.0	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	*59.7*	344	"	"	"	"	"	TDB	
2-Hexanone	"	ND	*49.2*	860	"	"	"	"	"	TDB	
Isopropylbenzene	"	**260**	*8.22*	172	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	**283**	*8.33*	172	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	*101*	430	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	*10.2*	86.0	"	"	"	"	"	TDB	
Methylene chloride	"	ND	*215*	430	"	"	"	"	"	TDB	
Naphthalene	"	**627**	*12.1*	172	"	"	"	"	"	TDB	
n-Propylbenzene	"	**667**	*8.51*	86.0	"	"	"	"	"	TDB	
Styrene	"	ND	*7.65*	86.0	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	*7.96*	86.0	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	*18.2*	86.0	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	*14.5*	86.0	"	"	"	"	"	TDB	
Toluene	"	**130**	*5.41*	86.0	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	*14.5*	86.0	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	*18.4*	86.0	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	*5.27*	86.0	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	*15.6*	86.0	"	"	"	"	"	TDB	
Trichloroethene	"	ND	*10.3*	86.0	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	*7.72*	86.0	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	*42.3*	86.0	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	**4770**	*5.81*	86.0	"	"	"	"	"	TDB	
1,3,5-Trimethylbenzene	"	**1300**	*8.03*	86.0	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	*4.94*	86.0	"	"	"	"	"	TDB	
o-Xylene	"	**1570**	*9.98*	86.0	"	"	"	"	"	TDB	
m,p-Xylene	"	**2460**	*9.81*	172	"	"	"	"	"	TDB	
Surrogate(s): *Dibromofluoromethane*			*102%*		*75 - 125 %*	*0.01x*			"		
1,2-DCA-d4			*103%*		*75 - 125 %*	"			"		
Toluene-d8			*106%*		*75 - 125 %*	"			"		
4-BFB			*107%*		*75 - 125 %*	"			"		

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ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-07 (09-KON-107-SB)		**Soil**				**Sampled: 05/27/09 21:55**					
Acetone	EPA 8260B	ND	*110*	1900	ug/kg dry	1x	9060183	06/04/09 11:00	06/04/09 16:14	TDB	
Benzene	"	ND	*3.38*	15.2	"	"	"	"	"	TDB	
Bromobenzene	"	ND	*9.28*	76.0	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	*12.5*	76.0	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	*7.76*	76.0	"	"	"	"	"	TDB	
Bromoform	"	ND	*12.0*	76.0	"	"	"	"	"	TDB	
Bromomethane	"	ND	*3.87*	380	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	*113*	760	"	"	"	"	"	TDB	
n-Butylbenzene	"	**514**	*8.59*	380	"	"	"	"	"	TDB	
sec-Butylbenzene	"	**249**	*5.67*	76.0	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	*11.6*	76.0	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	*5.47*	760	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	*5.81*	76.0	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	*6.15*	76.0	"	"	"	"	"	TDB	
Chloroethane	"	ND	*8.14*	76.0	"	"	"	"	"	TDB	
Chloroform	"	ND	*5.52*	76.0	"	"	"	"	"	TDB	
Chloromethane	"	ND	*5.11*	380	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	*8.37*	76.0	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	*7.91*	76.0	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	*19.8*	380	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	*8.52*	76.0	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	*8.82*	76.0	"	"	"	"	"	TDB	
Dibromomethane	"	ND	*11.2*	76.0	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	*11.0*	76.0	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	*4.46*	76.0	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	*11.3*	76.0	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	*8.97*	380	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	*9.05*	76.0	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	*8.52*	76.0	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	*9.05*	76.0	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	*9.58*	76.0	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	*6.82*	76.0	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	*5.67*	76.0	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	*13.2*	76.0	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	*6.15*	76.0	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	*8.29*	76.0	"	"	"	"	"	TDB	

TestAmerica Anchorage

Johanna Dreher

Johanna L Dreher, Client Services Manager

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-07 (09-KON-107-SB)		**Soil**				**Sampled: 05/27/09 21:55**					
cis-1,3-Dichloropropene	EPA 8260B	ND	*3.76*	76.0	ug/kg dry	1x	9060183	06/04/09 11:00	06/04/09 16:14	TDB	
trans-1,3-Dichloropropene	"	ND	*6.30*	76.0	"	"	"	"	"	TDB	
Ethylbenzene	"	**494**	*7.15*	76.0	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	*52.8*	304	"	"	"	"	"	TDB	
2-Hexanone	"	ND	*43.5*	760	"	"	"	"	"	TDB	
Isopropylbenzene	"	**217**	*7.26*	152	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	**228**	*7.36*	152	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	*89.0*	380	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	*9.05*	76.0	"	"	"	"	"	TDB	
Methylene chloride	"	ND	*190*	380	"	"	"	"	"	TDB	
Naphthalene	"	**525**	*10.7*	152	"	"	"	"	"	TDB	
n-Propylbenzene	"	**570**	*7.52*	76.0	"	"	"	"	"	TDB	
Styrene	"	ND	*6.76*	76.0	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	*7.03*	76.0	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	*16.0*	76.0	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	*12.9*	76.0	"	"	"	"	"	TDB	
Toluene	"	**113**	*4.78*	76.0	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	*12.9*	76.0	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	*16.3*	76.0	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	*4.66*	76.0	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	*13.8*	76.0	"	"	"	"	"	TDB	
Trichloroethene	"	ND	*9.13*	76.0	"	"	"	"	"	TDB	
Trichlorofluoromethane	"	ND	*6.82*	76.0	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	*37.4*	76.0	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	**4090**	*5.13*	76.0	"	"	"	"	"	TDB	
1,3,5-Trimethylbenzene	"	**1100**	*7.10*	76.0	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	*4.37*	76.0	"	"	"	"	"	TDB	
o-Xylene	"	**1320**	*8.82*	76.0	"	"	"	"	"	TDB	
m,p-Xylene	"	**2060**	*8.67*	152	"	"	"	"	"	TDB	
Surrogate(s):	*Dibromofluoromethane*		*95.5%*		*75 - 125 %*	*0.01x*			*"*		
	1,2-DCA-d4		*96.8%*		*75 - 125 %*	*"*			*"*		
	Toluene-d8		*99.9%*		*75 - 125 %*	*"*			*"*		
	4-BFB		*99.8%*		*75 - 125 %*	*"*			*"*		

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THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-24 (Trip Blank)		**Soil**			**Sampled: 05/27/09 22:00**						
Acetone	EPA 8260B	ND	*144*	2500	ug/kg wet	1x	9060183	06/04/09 11:00	06/04/09 15:46	TDB	
Benzene	"	ND	*4.44*	20.0	"	"	"	"	"	TDB	
Bromobenzene	"	ND	*12.2*	100	"	"	"	"	"	TDB	
Bromochloromethane	"	ND	*16.4*	100	"	"	"	"	"	TDB	
Bromodichloromethane	"	ND	*10.2*	100	"	"	"	"	"	TDB	
Bromoform	"	ND	*15.8*	100	"	"	"	"	"	TDB	
Bromomethane	"	ND	*5.09*	500	"	"	"	"	"	TDB	
2-Butanone (MEK)	"	ND	*148*	1000	"	"	"	"	"	TDB	
n-Butylbenzene	"	ND	*11.3*	500	"	"	"	"	"	TDB	
sec-Butylbenzene	"	ND	*7.45*	100	"	"	"	"	"	TDB	
tert-Butylbenzene	"	ND	*15.2*	100	"	"	"	"	"	TDB	
Carbon disulfide	"	ND	*7.19*	1000	"	"	"	"	"	TDB	
Carbon tetrachloride	"	ND	*7.64*	100	"	"	"	"	"	TDB	
Chlorobenzene	"	ND	*8.09*	100	"	"	"	"	"	TDB	
Chloroethane	"	ND	*10.7*	100	"	"	"	"	"	TDB	
Chloroform	"	ND	*7.26*	100	"	"	"	"	"	TDB	
Chloromethane	"	ND	*6.72*	500	"	"	"	"	"	TDB	
2-Chlorotoluene	"	ND	*11.0*	100	"	"	"	"	"	TDB	
4-Chlorotoluene	"	ND	*10.4*	100	"	"	"	"	"	TDB	
1,2-Dibromo-3-chloropropane	"	ND	*26.0*	500	"	"	"	"	"	TDB	
Dibromochloromethane	"	ND	*11.2*	100	"	"	"	"	"	TDB	
1,2-Dibromoethane	"	ND	*11.6*	100	"	"	"	"	"	TDB	
Dibromomethane	"	ND	*14.7*	100	"	"	"	"	"	TDB	
1,2-Dichlorobenzene	"	ND	*14.4*	100	"	"	"	"	"	TDB	
1,3-Dichlorobenzene	"	ND	*5.86*	100	"	"	"	"	"	TDB	
1,4-Dichlorobenzene	"	ND	*14.9*	100	"	"	"	"	"	TDB	
Dichlorodifluoromethane	"	ND	*11.8*	500	"	"	"	"	"	TDB	
1,1-Dichloroethane	"	ND	*11.9*	100	"	"	"	"	"	TDB	
1,2-Dichloroethane	"	ND	*11.2*	100	"	"	"	"	"	TDB	
1,1-Dichloroethene	"	ND	*11.9*	100	"	"	"	"	"	TDB	
cis-1,2-Dichloroethene	"	ND	*12.6*	100	"	"	"	"	"	TDB	
trans-1,2-Dichloroethene	"	ND	*8.97*	100	"	"	"	"	"	TDB	
1,2-Dichloropropane	"	ND	*7.45*	100	"	"	"	"	"	TDB	
1,3-Dichloropropane	"	ND	*17.4*	100	"	"	"	"	"	TDB	
2,2-Dichloropropane	"	ND	*8.09*	100	"	"	"	"	"	TDB	
1,1-Dichloropropene	"	ND	*10.9*	100	"	"	"	"	"	TDB	

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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-24 (Trip Blank)		**Soil**				**Sampled: 05/27/09 22:00**					
cis-1,3-Dichloropropene	EPA 8260B	ND	*4.95*	100	ug/kg wet	1x	9060183	06/04/09 11:00	06/04/09 15:46	TDB	
trans-1,3-Dichloropropene	"	ND	*8.29*	100	"	"	"	"	"	TDB	
Ethylbenzene	"	ND	*9.40*	100	"	"	"	"	"	TDB	
Hexachlorobutadiene	"	ND	*69.4*	400	"	"	"	"	"	TDB	
2-Hexanone	"	ND	*57.2*	1000	"	"	"	"	"	TDB	
Isopropylbenzene	"	ND	*9.55*	200	"	"	"	"	"	TDB	
p-Isopropyltoluene	"	ND	*9.68*	200	"	"	"	"	"	TDB	
4-Methyl-2-pentanone	"	ND	*117*	500	"	"	"	"	"	TDB	
Methyl tert-butyl ether	"	ND	*11.9*	100	"	"	"	"	"	TDB	
Methylene chloride	"	ND	*250*	500	"	"	"	"	"	TDB	
Naphthalene	"	ND	*14.1*	200	"	"	"	"	"	TDB	
n-Propylbenzene	"	ND	*9.89*	100	"	"	"	"	"	TDB	
Styrene	"	ND	*8.89*	100	"	"	"	"	"	TDB	
1,1,1,2-Tetrachloroethane	"	ND	*9.25*	100	"	"	"	"	"	TDB	
1,1,2,2-Tetrachloroethane	"	ND	*21.1*	100	"	"	"	"	"	TDB	
Tetrachloroethene	"	ND	*16.9*	100	"	"	"	"	"	TDB	
Toluene	"	**288**	*6.29*	100	"	"	"	"	"	TDB	
1,2,3-Trichlorobenzene	"	ND	*16.9*	100	"	"	"	"	"	TDB	
1,2,4-Trichlorobenzene	"	ND	*21.4*	100	"	"	"	"	"	TDB	
1,1,1-Trichloroethane	"	ND	*6.13*	100	"	"	"	"	"	TDB	
1,1,2-Trichloroethane	"	ND	*18.1*	100	"	"	"	"	"	TDB	
Trichloroethene	"	**25.0**	*12.0*	100	"	"	"	"	"	TDB	**J**
Trichlorofluoromethane	"	ND	*8.97*	100	"	"	"	"	"	TDB	
1,2,3-Trichloropropane	"	ND	*49.2*	100	"	"	"	"	"	TDB	
1,2,4-Trimethylbenzene	"	ND	*6.75*	100	"	"	"	"	"	TDB	
1,3,5-Trimethylbenzene	"	ND	*9.33*	100	"	"	"	"	"	TDB	
Vinyl chloride	"	ND	*5.74*	100	"	"	"	"	"	TDB	
o-Xylene	"	ND	*11.6*	100	"	"	"	"	"	TDB	
m,p-Xylene	"	ND	*11.4*	200	"	"	"	"	"	TDB	

Surrogate(s):	*Dibromofluoromethane*	*94.2%*	*75 - 125 %*	*0.01x*	"
	1,2-DCA-d4	*94.7%*	*75 - 125 %*	"	"
	Toluene-d8	*97.2%*	*75 - 125 %*	"	"
	4-BFB	*98.2%*	*75 - 125 %*	"	"

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Johanna Dreher

Johanna L Dreher, Client Services Manager

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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)		**Soil**				**Sampled: 05/27/09 22:30**					
Acenaphthene	EPA 8270m	ND	*5.97*	24.2	ug/kg dry	1x	9060214	06/05/09 18:00	06/09/09 13:48	NAF	
Acenaphthylene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Anthracene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Benzo (a) anthracene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Benzo (a) pyrene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Benzo (b) fluoranthene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Benzo (ghi) perylene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Benzo (k) fluoranthene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Chrysene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Dibenzo (a,h) anthracene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Fluoranthene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Fluorene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Indeno (1,2,3-cd) pyrene	"	ND	*24.2*	24.2	"	"	"	"	"	NAF	
Naphthalene	"	ND	*24.2*	24.2	"	"	"	"	"	NAF	
Phenanthrene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Pyrene	"	ND	*5.97*	24.2	"	"	"	"	"	NAF	
Surrogate(s): *Fluorene-d10*			*72.3%*		*24 - 125 %*	"			"		
Pyrene-d10			*59.0%*		*41 - 141 %*	"			"		
Benzo (a) pyrene-d12			*68.6%*		*38 - 143 %*	"			"		
ASF0006-06 (09-KON-106-SB)		**Soil**				**Sampled: 05/27/09 21:50**					
Acenaphthene	EPA 8270m	ND	*18.7*	18.7	ug/kg dry	1x	9060214	06/05/09 18:00	06/09/09 14:19	NAF	
Acenaphthylene	"	ND	*18.7*	18.7	"	"	"	"	"	NAF	
Anthracene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Benzo (a) anthracene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Benzo (a) pyrene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Benzo (b) fluoranthene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Benzo (ghi) perylene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Benzo (k) fluoranthene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Chrysene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Dibenzo (a,h) anthracene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Fluoranthene	"	**8.30**	*4.60*	18.7	"	"	"	"	"	NAF	**J**
Fluorene	"	**21.3**	*4.60*	18.7	"	"	"	"	"	NAF	
Indeno (1,2,3-cd) pyrene	"	ND	*4.60*	18.7	"	"	"	"	"	NAF	
Naphthalene	"	**377**	*4.60*	18.7	"	"	"	"	"	NAF	
Phenanthrene	"	**21.1**	*4.60*	18.7	"	"	"	"	"	NAF	

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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Polynuclear Aromatic Compounds per EPA 8270M-SIM

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-06 (09-KON-106-SB)		**Soil**				**Sampled: 05/27/09 21:50**					
Pyrene	EPA 8270m	**5.24**	*4.60*	18.7	ug/kg dry	1x	9060214	06/05/09 18:00	06/09/09 14:19	NAF	**J**
Surrogate(s): Fluorene-d10			*76.9%*		*24 - 125 %*	"			"		
Pyrene-d10			*70.4%*		*41 - 141 %*	"			"		
Benzo (a) pyrene-d12			*77.3%*		*38 - 143 %*	"			"		
ASF0006-07 (09-KON-107-SB)		**Soil**				**Sampled: 05/27/09 21:55**					
Acenaphthene	EPA 8270m	ND	*18.6*	18.6	ug/kg dry	1x	9060214	06/05/09 18:00	06/09/09 14:50	NAF	
Acenaphthylene	"	ND	*18.6*	18.6	"	"	"	"	"	NAF	
Anthracene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Benzo (a) anthracene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Benzo (a) pyrene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Benzo (b) fluoranthene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Benzo (ghi) perylene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Benzo (k) fluoranthene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Chrysene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Dibenzo (a,h) anthracene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Fluoranthene	"	**7.30**	*4.57*	18.6	"	"	"	"	"	NAF	**J**
Fluorene	"	**16.9**	*4.57*	18.6	"	"	"	"	"	NAF	**J**
Indeno (1,2,3-cd) pyrene	"	ND	*4.57*	18.6	"	"	"	"	"	NAF	
Naphthalene	"	**307**	*4.57*	18.6	"	"	"	"	"	NAF	
Phenanthrene	"	**17.5**	*4.57*	18.6	"	"	"	"	"	NAF	**J**
Pyrene	"	**5.03**	*4.57*	18.6	"	"	"	"	"	NAF	**J**
Surrogate(s): Fluorene-d10			*63.4%*		*24 - 125 %*	"			"		
Pyrene-d10			*55.3%*		*41 - 141 %*	"			"		
Benzo (a) pyrene-d12			*54.9%*		*38 - 143 %*	"			"		

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Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Analyst	Notes
ASF0006-01 (09-KON-101-SB)		**Soil**				**Sampled: 05/27/09 22:30**					
% Solids	NCA SOP	**54.7**	*0.0100*	0.0100	% by Weight	1x	9060146	06/03/09 14:29	06/03/09 14:29	JJM	
ASF0006-06 (09-KON-106-SB)		**Soil**				**Sampled: 05/27/09 21:50**					
% Solids	NCA SOP	**71.7**	*0.0100*	0.0100	% by Weight	1x	9060146	06/03/09 14:29	06/03/09 14:29	JJM	
ASF0006-07 (09-KON-107-SB)		**Soil**				**Sampled: 05/27/09 21:55**					
% Solids	NCA SOP	**71.7**	*0.0100*	0.0100	% by Weight	1x	9060146	06/03/09 14:29	06/03/09 14:29	JJM	

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Gasoline Range Organics (C6-C10) and BTEX per AK101 - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060016 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060016-BLK1)							**Extracted: 06/04/09 15:19**							
Gasoline Range Organics	AK101 GRO/BTEX	0.510	0.321	3.33	mg/kg wet	1x	--	--	--	--	--	--	06/05/09 14:40	J
Benzene	"	0.00286	0.000200	0.0166	"	"	--	--	--	--	--	--	"	J
Toluene	"	0.00819	0.00498	0.0333	"	"	--	--	--	--	--	--	"	J
Ethylbenzene	"	0.00769	0.00389	0.0333	"	"	--	--	--	--	--	--	"	J
Xylenes (total)	"	ND	0.0186	0.0500	"	"	--	--	--	--	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 94.7%*			*Limits: 50-150%*	"							*06/05/09 14:40*	
a,a,a-TFT (PID)		*96.7%*			*50-150%*	"							"	
LCS (9060016-BS1)							**Extracted: 06/04/09 15:19**							
Gasoline Range Organics	AK101 GRO/BTEX	23.1	0.321	3.33	mg/kg wet	1x	--	22.0	105%	(60-120)	--	--	06/05/09 15:06	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 128%*			*Limits: 60-120%*	"							*06/05/09 15:06*	*Z1*
a,a,a-TFT (PID)		*112%*			*60-120%*	"							"	
LCS (9060016-BS2)							**Extracted: 06/04/09 15:19**							
Benzene	AK101 GRO/BTEX	0.713	0.000200	0.0166	mg/kg wet	1x	--	0.800	89.1%	(70-130)	--	--	06/05/09 16:12	
Toluene	"	0.742	0.00498	0.0333	"	"	--	"	92.8%	"	--	--	"	
Ethylbenzene	"	0.730	0.00389	0.0333	"	"	--	"	91.3%	"	--	--	"	
Xylenes (total)	"	2.22	0.0186	0.0500	"	"	--	2.40	92.5%	"	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 101%*			*Limits: 60-120%*	"							*06/05/09 16:12*	
a,a,a-TFT (PID)		*102%*			*60-120%*	"							"	
LCS Dup (9060016-BSD1)							**Extracted: 06/04/09 15:19**							
Gasoline Range Organics	AK101 GRO/BTEX	22.5	0.321	3.33	mg/kg wet	1x	--	22.0	102%	(60-120)	2.63%	(20)	06/05/09 15:44	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 123%*			*Limits: 60-120%*	"							*06/05/09 15:44*	*Z1*
a,a,a-TFT (PID)		*104%*			*60-120%*	"							"	
LCS Dup (9060016-BSD2)							**Extracted: 06/04/09 15:19**							
Benzene	AK101 GRO/BTEX	0.00183	0.000200	0.0166	mg/kg wet	1x	--	0.800	0.229%	(70-130)	199%	(20)	06/05/09 16:38	L2, J
Toluene	"	ND	0.00498	0.0333	"	"	--	"	NR	"	--	"	"	L2
Ethylbenzene	"	ND	0.00389	0.0333	"	"	--	"	NR	"	--	"	"	L2
Xylenes (total)	"	ND	0.0186	0.0500	"	"	--	2.40	NR	"	--	"	"	L2
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 0.175%*			*Limits: 60-120%*	"							*06/05/09 16:38*	*Z6, L2*
a,a,a-TFT (PID)		*NR*			*60-120%*	"							"	*L2*

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ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name: **Kongiginak**	
825 W 8th Ave, ste 200	Project Number: 14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101 - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060016 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9060016-DUP1)					**QC Source: ASF0009-28**				**Extracted: 06/04/09 15:19**					
Gasoline Range Organics	AK101 GRO/BTEX	0.431	0.303	3.14	mg/kg dry	1.5x	0.523	--	--	--	19.3%	(35)	06/05/09 18:23	J
Benzene	"	0.000408	0.000189	0.0157	"	"	0.00970	--	--	--	184%	(200)	"	J
Toluene	"	ND	0.00469	0.0314	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	0.00367	0.0314	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	0.0176	0.0471	"	"	ND	--	--	--	NR	"	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 99.7%*			*Limits: 50-150%*	"							*06/05/09 18:23*	
a,a,a-TFT (PID)		*102%*			*50-150%*	"							"	
Matrix Spike (9060016-MS1)					**QC Source: ASF0009-28**				**Extracted: 06/04/09 15:19**					
Benzene	AK101 GRO/BTEX	0.458	0.000189	0.0157	mg/kg dry	1.5x	0.00970	0.585	76.6%	(60-140)	--	--	06/05/09 19:55	
Toluene	"	0.477	0.00469	0.0314	"	"	ND	"	81.6%	"	--	--	"	
Ethylbenzene	"	0.464	0.00367	0.0314	"	"	ND	"	79.2%	"	--	--	"	
Xylenes (total)	"	1.39	0.0176	0.0471	"	"	ND	1.76	79.2%	"	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 96.7%*			*Limits: 50-150%*	"							*06/05/09 19:55*	
a,a,a-TFT (PID)		*98.9%*			*50-150%*	"							"	
Matrix Spike Dup (9060016-MSD1)					**QC Source: ASF0009-28**				**Extracted: 06/04/09 15:19**					
Benzene	AK101 GRO/BTEX	0.538	0.000189	0.0157	mg/kg dry	1.5x	0.00970	0.585	90.3%	(60-140)	16.1%	(30)	06/05/09 20:27	
Toluene	"	0.555	0.00469	0.0314	"	"	ND	"	94.8%	"	14.9%	"	"	
Ethylbenzene	"	0.547	0.00367	0.0314	"	"	ND	"	93.5%	"	16.5%	"	"	
Xylenes (total)	"	1.66	0.0176	0.0471	"	"	ND	1.76	94.5%	"	17.6%	"	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 97.2%*			*Limits: 50-150%*	"							*06/05/09 20:27*	
a,a,a-TFT (PID)		*99.3%*			*50-150%*	"							"	

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name: **Kongiginak**	
825 W 8th Ave, ste 200	Project Number: 14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101 - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060018 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060018-BLK1)							**Extracted: 06/04/09 13:41**							
Gasoline Range Organics	AK101 GRO/BTEX	0.442	0.321	3.33	mg/kg wet	1x	--	--	--	--	--	--	06/06/09 10:14	J
Benzene	"	0.00336	0.000200	0.0166	"	"	--	--	--	--	--	--	"	J
Toluene	"	0.00879	0.00498	0.0333	"	"	--	--	--	--	--	--	"	J
Ethylbenzene	"	0.00403	0.00389	0.0333	"	"	--	--	--	--	--	--	"	J
Xylenes (total)	"	ND	0.0186	0.0500	"	"	--	--	--	--	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 95.3%*			*Limits: 50-150%*	"							*06/06/09 10:14*	
a,a,a-TFT (PID)		*97.8%*			*50-150%*	"							"	
LCS (9060018-BS1)							**Extracted: 06/04/09 13:41**							
Gasoline Range Organics	AK101 GRO/BTEX	19.0	0.321	3.33	mg/kg wet	1x	--	22.0	86.2%	(60-120)	--	--	06/06/09 08:19	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 111%*			*Limits: 60-120%*	"							*06/06/09 08:19*	
a,a,a-TFT (PID)		*97.3%*			*60-120%*	"							"	
LCS (9060018-BS2)							**Extracted: 06/04/09 13:41**							
Benzene	AK101 GRO/BTEX	0.696	0.000200	0.0166	mg/kg wet	1x	--	0.800	87.0%	(70-130)	--	--	06/06/09 09:18	
Toluene	"	0.728	0.00498	0.0333	"	"	--	"	91.0%	"	--	--	"	
Ethylbenzene	"	0.718	0.00389	0.0333	"	"	--	"	89.8%	"	--	--	"	
Xylenes (total)	"	2.16	0.0186	0.0500	"	"	--	2.40	89.9%	"	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 96.7%*			*Limits: 60-120%*	"							*06/06/09 09:18*	
a,a,a-TFT (PID)		*99.1%*			*60-120%*	"							"	
LCS Dup (9060018-BSD1)							**Extracted: 06/04/09 13:41**							
Gasoline Range Organics	AK101 GRO/BTEX	19.5	0.321	3.33	mg/kg wet	1x	--	22.0	88.8%	(60-120)	2.89%	(20)	06/06/09 08:46	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 115%*			*Limits: 60-120%*	"							*06/06/09 08:46*	
a,a,a-TFT (PID)		*100%*			*60-120%*	"							"	
LCS Dup (9060018-BSD2)							**Extracted: 06/04/09 13:41**							
Benzene	AK101 GRO/BTEX	0.714	0.000200	0.0166	mg/kg wet	1x	--	0.800	89.2%	(70-130)	2.55%	(20)	06/06/09 09:44	
Toluene	"	0.744	0.00498	0.0333	"	"	--	"	93.1%	"	2.19%	"	"	
Ethylbenzene	"	0.725	0.00389	0.0333	"	"	--	"	90.6%	"	0.882%	"	"	
Xylenes (total)	"	2.18	0.0186	0.0500	"	"	--	2.40	90.8%	"	0.909%	"	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 94.8%*			*Limits: 60-120%*	"							*06/06/09 09:44*	
a,a,a-TFT (PID)		*97.9%*			*60-120%*	"							"	

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101 - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060018 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9060018-DUP1)					**QC Source: ASF0006-22**				**Extracted: 06/04/09 13:41**					
Gasoline Range Organics	AK101 GRO/BTEX	0.662	0.531	5.51	mg/kg dry	1.5x	0.633	--	--	--	4.39%	(35)	06/06/09 14:00	J
Benzene	"	0.00341	0.000331	0.0275	"	"	0.00787	--	--	--	79.0%	(200)	"	J
Toluene	"	0.0769	0.00823	0.0551	"	"	0.0757	--	--	--	1.52%	"	"	
Ethylbenzene	"	0.00798	0.00643	0.0551	"	"	ND	--	--	--		"	"	J
Xylenes (total)	"	ND	0.0308	0.0826	"	"	ND	--	--	--	NR	"	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 93.7%*			*Limits: 50-150%*	"							*06/06/09 14:00*	
a,a,a-TFT (PID)		*96.4%*			*50-150%*	"							"	
Matrix Spike (9060018-MS1)					**QC Source: ASF0006-22**				**Extracted: 06/04/09 13:41**					
Benzene	AK101 GRO/BTEX	0.987	0.000331	0.0275	mg/kg dry	1.5x	0.00787	0.741	132%	(60-140)	--	--	06/06/09 14:26	
Toluene	"	1.08	0.00823	0.0551	"	"	0.0757	"	136%	"	--	--	"	
Ethylbenzene	"	0.988	0.00643	0.0551	"	"	ND	"	133%	"	--	--	"	
Xylenes (total)	"	2.98	0.0308	0.0826	"	"	ND	2.22	134%	"	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 99.8%*			*Limits: 50-150%*	"							*06/06/09 14:26*	
a,a,a-TFT (PID)		*102%*			*50-150%*	"							"	
Matrix Spike Dup (9060018-MSD1)					**QC Source: ASF0006-22**				**Extracted: 06/04/09 13:41**					
Benzene	AK101 GRO/BTEX	0.773	0.000331	0.0275	mg/kg dry	1.5x	0.00787	0.741	103%	(60-140)	24.4%	(30)	06/06/09 14:53	
Toluene	"	0.870	0.00823	0.0551	"	"	0.0757	"	107%	"	21.6%	"	"	
Ethylbenzene	"	0.780	0.00643	0.0551	"	"	ND	"	105%	"	23.6%	"	"	
Xylenes (total)	"	2.34	0.0308	0.0826	"	"	ND	2.22	105%	"	24.3%	"	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 96.0%*			*Limits: 50-150%*	"							*06/06/09 14:53*	
a,a,a-TFT (PID)		*99.4%*			*50-150%*	"							"	

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060015 **Soil Preparation Method: EPA 3545**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060015-BLK1)								**Extracted: 06/04/09 08:38**						
Diesel Range Organics	AK 102	4.50	3.29	20.0	mg/kg wet	1x	--	--	--	--	--	--	06/05/09 19:40	J
Surrogate(s): 1-Chlorooctadecane		*Recovery: 83.3%*			*Limits: 50-150%*	"							*06/05/09 19:40*	
LCS (9060015-BS1)								**Extracted: 06/04/09 08:38**						
Diesel Range Organics	AK 102	131	3.29	20.0	mg/kg wet	1x	--	132	98.8%	(75-125)	--	--	06/05/09 21:18	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 84.3%*			*Limits: 60-120%*	"							*06/05/09 21:18*	
LCS Dup (9060015-BSD1)								**Extracted: 06/04/09 08:38**						
Diesel Range Organics	AK 102	137	3.29	20.0	mg/kg wet	1x	--	132	103%	(75-125)	4.25%	(20)	06/05/09 20:13	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 85.0%*			*Limits: 60-120%*	"							*06/05/09 20:13*	
Duplicate (9060015-DUP1)							**QC Source: ASF0006-04**	**Extracted: 06/04/09 08:38**						
Diesel Range Organics	AK 102	94.0	4.50	27.4	mg/kg dry	1x	21.8	--	--	--	125%	(20)	06/08/09 16:41	R2
Surrogate(s): 1-Chlorooctadecane		*Recovery: 102%*			*Limits: 50-150%*	"							*06/08/09 16:41*	
Matrix Spike (9060015-MS1)							**QC Source: ASF0006-04**	**Extracted: 06/04/09 08:38**						
Diesel Range Organics	AK 102	186	4.48	27.2	mg/kg dry	1x	21.8	180	90.8%	(75-125)	--	--	06/08/09 19:24	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 103%*			*Limits: 50-150%*	"							*06/08/09 19:24*	
Matrix Spike Dup (9060015-MSD1)							**QC Source: ASF0006-04**	**Extracted: 06/04/09 08:38**						
Diesel Range Organics	AK 102	191	4.44	27.0	mg/kg dry	1x	21.8	179	94.5%	(75-125)	2.68%	(25)	06/08/09 19:57	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 107%*			*Limits: 50-150%*	"							*06/08/09 19:57*	

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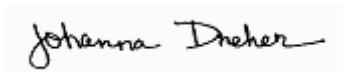

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060027 **Soil Preparation Method: *** DEFAULT PREP**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060027-BLK1)									**Extracted: 06/08/09 15:34**					
Diesel Range Organics	AK 102	7.28	3.29	20.0	mg/kg wet	1x	--	--	--	--	--	--	06/09/09 12:35	J
Surrogate(s): 1-Chlorooctadecane		*Recovery: 95.0%*			*Limits: 50-150%*	"							*06/09/09 12:35*	
LCS (9060027-BS1)									**Extracted: 06/08/09 15:34**					
Diesel Range Organics	AK 102	144	3.29	20.0	mg/kg wet	1x	--	132	108%	(75-125)	--	--	06/09/09 13:07	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 103%*			*Limits: 60-120%*	"							*06/09/09 13:07*	
LCS Dup (9060027-BSD1)									**Extracted: 06/08/09 15:34**					
Diesel Range Organics	AK 102	138	3.29	20.0	mg/kg wet	1x	--	132	104%	(75-125)	3.84%	(20)	06/09/09 13:40	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 100%*			*Limits: 60-120%*	"							*06/09/09 13:40*	
Duplicate (9060027-DUP1)							**QC Source: ASE0065-01RE1**		**Extracted: 06/08/09 15:34**					
Diesel Range Organics	AK 102	1340	3.26	19.8	mg/kg wet	1x	1070	--	--	--	22.5%	(20)	06/09/09 11:30	R2
Surrogate(s): 1-Chlorooctadecane		*Recovery: 110%*			*Limits: 50-150%*	"							*06/09/09 11:30*	
Matrix Spike (9060027-MS1)							**QC Source: ASE0065-01RE1**		**Extracted: 06/08/09 15:34**					
Diesel Range Organics	AK 102	1330	3.24	19.7	mg/kg wet	1x	1070	130	201%	(75-125)	--	--	06/09/09 12:35	M8
Surrogate(s): 1-Chlorooctadecane		*Recovery: 106%*			*Limits: 50-150%*	"							*06/09/09 12:35*	
Matrix Spike Dup (9060027-MSD1)							**QC Source: ASE0065-01RE1**		**Extracted: 06/08/09 15:34**					
Diesel Range Organics	AK 102	212	3.24	19.7	mg/kg wet	1x	1070	130	-655%	(75-125)	145%	(25)	06/09/09 13:07	M8, R2
Surrogate(s): 1-Chlorooctadecane		*Recovery: 2.05%*			*Limits: 50-150%*	"							*06/09/09 13:07*	*Z6*

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results

TestAmerica Anchorage

QC Batch: 9060017 **Soil Preparation Method: *** DEFAULT PREP**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9060017-DUP1)					**QC Source: ASF0006-02**				**Extracted: 06/04/09 10:48**					
Dry Weight	TA-SOP	60.0	1.00	1.00	%	1x	60.9	--	--	--	1.39%	(25)	06/05/09 10:50	

QC Batch: 9060028 **Soil Preparation Method: *** DEFAULT PREP**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9060028-DUP1)					**QC Source: ASF0006-17**				**Extracted: 06/08/09 15:41**					
Dry Weight	TA-SOP	65.6	1.00	1.00	%	1x	70.8	--	--	--	7.57%	(25)	06/09/09 11:35	

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Johanna Dreher

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Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060271 **Soil Preparation Method: EPA 5035 Modified**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060271-BLK1)								**Extracted: 06/08/09 13:15**						
Gasoline Range Organics	AK101/8021 B	ND	0.810	3.90	mg/kg wet	1x	--	--	--	--	--	--	06/08/09 21:43	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 116%*			*Limits: 50-150%*	"							*06/08/09 21:43*	
Blank (9060271-BLK2)								**Extracted: 06/08/09 13:15**						
Benzene	AK101/8021 B	ND	0.00353	0.0195	mg/kg wet	1x	--	--	--	--	--	--	06/09/09 10:06	
Toluene	"	ND	0.00432	0.0976	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	0.00481	0.0976	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	0.0132	0.0976	"	"	--	--	--	--	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 126%*			*Limits: 50-150%*	"							*06/09/09 10:06*	
LCS (9060271-BS2)								**Extracted: 06/08/09 13:15**						
Gasoline Range Organics	AK101/8021 B	23.1	0.809	3.90	mg/kg wet	1x	--	24.4	94.7%	(60-120)	--	--	06/08/09 20:47	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 119%*			*Limits: 50-150%*	"							*06/08/09 20:47*	
LCS (9060271-BS3)								**Extracted: 06/08/09 13:15**						
Benzene	AK101/8021 B	1.04	0.00351	0.0194	mg/kg wet	1x	--	0.969	107%	(70-130)	--	--	06/09/09 09:11	
Toluene	"	1.11	0.00429	0.0969	"	"	--	"	114%	"	--	--	"	
Ethylbenzene	"	1.13	0.00478	0.0969	"	"	--	"	117%	"	--	--	"	
Xylenes (total)	"	3.42	0.0131	0.0969	"	"	--	2.91	118%	"	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 136%*			*Limits: 50-150%*	"							*06/09/09 09:11*	
LCS Dup (9060271-BSD2)								**Extracted: 06/08/09 13:15**						
Gasoline Range Organics	AK101/8021 B	24.6	0.825	3.97	mg/kg wet	1x	--	24.8	99.1%	(60-120)	6.50%	(20)	06/08/09 21:15	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 121%*			*Limits: 50-150%*	"							*06/08/09 21:15*	
LCS Dup (9060271-BSD3)								**Extracted: 06/08/09 13:15**						
Benzene	AK101/8021 B	1.03	0.00358	0.0198	mg/kg wet	1x	--	0.990	104%	(70-130)	0.343%	(20)	06/09/09 09:39	
Toluene	"	1.08	0.00438	0.0990	"	"	--	"	109%	"	2.33%	"	"	
Ethylbenzene	"	1.08	0.00488	0.0990	"	"	--	"	110%	"	4.26%	"	"	
Xylenes (total)	"	3.28	0.0134	0.0990	"	"	--	2.97	111%	"	4.05%	"	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 132%*			*Limits: 50-150%*	"							*06/09/09 09:39*	
Duplicate (9060271-DUP1)							**QC Source: ASF0006-06**						**Extracted: 06/08/09 13:15**	S14
Gasoline Range Organics	AK101/8021 B	55.7	1.04	5.02	mg/kg dry	1x	55.8	--	--	--	0.248%	(50)	06/08/09 23:06	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 95.2%*			*Limits: 50-150%*	"							*06/08/09 23:06*	

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Johanna L Dreher, Client Services Manager

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ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Gasoline Range Organics (C6-C10) and BTEX per AK101/8021B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060271 **Soil Preparation Method: EPA 5035 Modified**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (9060271-MS2)					**QC Source: ASF0006-07**				**Extracted: 06/08/09 13:15**					S14
Benzene	AK101/8021 B	1.06	0.00418	0.0231	mg/kg dry	1x	0.00433	0.760	139%	(50-150)	--	--	06/09/09 11:43	
Toluene	"	1.29	0.00511	0.116	"	"	0.150	"	150%	"	--	--	"	
Ethylbenzene	"	1.83	0.00569	0.116	"	"	0.721	"	146%	"	--	--	"	
Xylenes (total)	"	8.04	0.0156	0.116	"	"	4.82	2.28	141%	"	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 50.4%*			*Limits: 50-150%*	"							*06/09/09 11:43*	
Matrix Spike Dup (9060271-MSD2)					**QC Source: ASF0006-07**				**Extracted: 06/08/09 13:15**					S14
Benzene	AK101/8021 B	1.06	0.00418	0.0231	mg/kg dry	1x	0.00433	0.760	138%	(50-150)	0.360%	(20)	06/09/09 12:11	
Toluene	"	1.31	0.00511	0.116	"	"	0.150	"	152%	"	1.10%	"	"	M1
Ethylbenzene	"	1.87	0.00569	0.116	"	"	0.721	"	151%	"	2.05%	"	"	M1
Xylenes (total)	"	8.27	0.0156	0.116	"	"	4.82	2.28	151%	"	2.76%	"	"	M1
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 52.8%*			*Limits: 50-150%*	"							*06/09/09 12:11*	

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Johanna L Dreher, Client Services Manager

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060183 **Soil Preparation Method: EPA 5035A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060183-BLK1)									Extracted: 06/04/09 10:00					
Acetone	EPA 8260B	ND	143	2490	ug/kg wet	1x	--	--	--	--	--	--	06/04/09 15:14	
Benzene	"	ND	4.42	19.9	"	"	--	--	--	--	--	--	"	
Bromobenzene	"	ND	12.1	99.5	"	"	--	--	--	--	--	--	"	
Bromochloromethane	"	ND	16.3	99.5	"	"	--	--	--	--	--	--	"	
Bromodichloromethane	"	ND	10.1	99.5	"	"	--	--	--	--	--	--	"	
Bromoform	"	ND	15.7	99.5	"	"	--	--	--	--	--	--	"	
Bromomethane	"	ND	5.06	498	"	"	--	--	--	--	--	--	"	
2-Butanone (MEK)	"	ND	147	995	"	"	--	--	--	--	--	--	"	
n-Butylbenzene	"	ND	11.2	498	"	"	--	--	--	--	--	--	"	
sec-Butylbenzene	"	ND	7.41	99.5	"	"	--	--	--	--	--	--	"	
tert-Butylbenzene	"	ND	15.1	99.5	"	"	--	--	--	--	--	--	"	
Carbon disulfide	"	ND	7.15	995	"	"	--	--	--	--	--	--	"	
Carbon tetrachloride	"	ND	7.60	99.5	"	"	--	--	--	--	--	--	"	
Chlorobenzene	"	ND	8.05	99.5	"	"	--	--	--	--	--	--	"	
Chloroethane	"	ND	10.6	99.5	"	"	--	--	--	--	--	--	"	
Chloroform	"	ND	7.22	99.5	"	"	--	--	--	--	--	--	"	
Chloromethane	"	ND	6.69	498	"	"	--	--	--	--	--	--	"	
2-Chlorotoluene	"	ND	10.9	99.5	"	"	--	--	--	--	--	--	"	
4-Chlorotoluene	"	ND	10.3	99.5	"	"	--	--	--	--	--	--	"	
1,2-Dibromo-3-chloropropane	"	ND	25.9	498	"	"	--	--	--	--	--	--	"	
Dibromochloromethane	"	ND	11.1	99.5	"	"	--	--	--	--	--	--	"	
1,2-Dibromoethane	"	ND	11.5	99.5	"	"	--	--	--	--	--	--	"	
Dibromomethane	"	ND	14.6	99.5	"	"	--	--	--	--	--	--	"	
1,2-Dichlorobenzene	"	ND	14.3	99.5	"	"	--	--	--	--	--	--	"	
1,3-Dichlorobenzene	"	ND	5.83	99.5	"	"	--	--	--	--	--	--	"	
1,4-Dichlorobenzene	"	ND	14.8	99.5	"	"	--	--	--	--	--	--	"	
Dichlorodifluoromethane	"	ND	11.7	498	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethane	"	ND	11.8	99.5	"	"	--	--	--	--	--	--	"	
1,2-Dichloroethane	"	ND	11.1	99.5	"	"	--	--	--	--	--	--	"	
1,1-Dichloroethene	"	ND	11.8	99.5	"	"	--	--	--	--	--	--	"	
cis-1,2-Dichloroethene	"	ND	12.5	99.5	"	"	--	--	--	--	--	--	"	
trans-1,2-Dichloroethene	"	ND	8.93	99.5	"	"	--	--	--	--	--	--	"	
1,2-Dichloropropane	"	ND	7.41	99.5	"	"	--	--	--	--	--	--	"	
1,3-Dichloropropane	"	ND	17.3	99.5	"	"	--	--	--	--	--	--	"	
2,2-Dichloropropane	"	ND	8.05	99.5	"	"	--	--	--	--	--	--	"	
1,1-Dichloropropene	"	ND	10.8	99.5	"	"	--	--	--	--	--	--	"	
cis-1,3-Dichloropropene	"	ND	4.93	99.5	"	"	--	--	--	--	--	--	"	
trans-1,3-Dichloropropene	"	ND	8.25	99.5	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	9.35	99.5	"	"	--	--	--	--	--	--	"	

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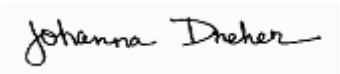

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060183 **Soil Preparation Method: EPA 5035A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060183-BLK1)							**Extracted: 06/04/09 10:00**							
Hexachlorobutadiene	EPA 8260B	ND	69.1	398	ug/kg wet	1x	--	--	--	--	--	--	06/04/09 15:14	
2-Hexanone	"	ND	56.9	995	"	"	--	--	--	--	--	--	"	
Isopropylbenzene	"	ND	9.50	199	"	"	--	--	--	--	--	--	"	
p-Isopropyltoluene	"	ND	9.63	199	"	"	--	--	--	--	--	--	"	
4-Methyl-2-pentanone	"	ND	116	498	"	"	--	--	--	--	--	--	"	
Methyl tert-butyl ether	"	ND	11.8	99.5	"	"	--	--	--	--	--	--	"	
Methylene chloride	"	ND	249	498	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	14.0	199	"	"	--	--	--	--	--	--	"	
n-Propylbenzene	"	ND	9.84	99.5	"	"	--	--	--	--	--	--	"	
Styrene	"	ND	8.85	99.5	"	"	--	--	--	--	--	--	"	
1,1,1,2-Tetrachloroethane	"	ND	9.20	99.5	"	"	--	--	--	--	--	--	"	
1,1,2,2-Tetrachloroethane	"	ND	21.0	99.5	"	"	--	--	--	--	--	--	"	
Tetrachloroethene	"	ND	16.8	99.5	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	6.26	99.5	"	"	--	--	--	--	--	--	"	
1,2,3-Trichlorobenzene	"	ND	16.8	99.5	"	"	--	--	--	--	--	--	"	
1,2,4-Trichlorobenzene	"	ND	21.3	99.5	"	"	--	--	--	--	--	--	"	
1,1,1-Trichloroethane	"	ND	6.10	99.5	"	"	--	--	--	--	--	--	"	
1,1,2-Trichloroethane	"	ND	18.0	99.5	"	"	--	--	--	--	--	--	"	
Trichloroethene	"	ND	11.9	99.5	"	"	--	--	--	--	--	--	"	
Trichlorofluoromethane	"	ND	8.93	99.5	"	"	--	--	--	--	--	--	"	
1,2,3-Trichloropropane	"	ND	49.0	99.5	"	"	--	--	--	--	--	--	"	
1,2,4-Trimethylbenzene	"	ND	6.72	99.5	"	"	--	--	--	--	--	--	"	
1,3,5-Trimethylbenzene	"	ND	9.28	99.5	"	"	--	--	--	--	--	--	"	
Vinyl chloride	"	ND	5.71	99.5	"	"	--	--	--	--	--	--	"	
o-Xylene	"	ND	11.5	99.5	"	"	--	--	--	--	--	--	"	
m,p-Xylene	"	ND	11.3	199	"	"	--	--	--	--	--	--	"	
Surrogate(s): Dibromofluoromethane		*Recovery: 101%*			*Limits: 75-125%*	*0.01x*							*06/04/09 15:14*	
1,2-DCA-d4		*102%*			*75-125%*	*"*							*"*	
Toluene-d8		*104%*			*75-125%*	*"*							*"*	
4-BFB		*103%*			*75-125%*	*"*							*"*	

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name: **Kongiginak**	
825 W 8th Ave, ste 200	Project Number: 14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Ben Martich	06/24/09 14:14

Volatile Organic Compounds per EPA Method 8260B - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060183 **Soil Preparation Method: EPA 5035A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
LCS (9060183-BS1)							**Extracted: 06/04/09 10:00**							
Benzene	EPA 8260B	2170	4.44	20.0	ug/kg wet	1x	--	2000	108%	(81.9-125)	--	--	06/04/09 11:33	
Chlorobenzene	"	2160	8.09	100	"	"	--	"	108%	(79.2-125)	--	--	"	
1,1-Dichloroethene	"	2160	11.9	100	"	"	--	"	108%	(66.1-125)	--	--	"	
Toluene	"	2140	6.29	100	"	"	--	"	107%	(80-125)	--	--	"	
Trichloroethene	"	2210	12.0	100	"	"	--	"	111%	(76-125)	--	--	"	
Surrogate(s): Dibromofluoromethane		*Recovery: 103%*			*Limits: 75-125%*	*0.01x*							*06/04/09 11:33*	
1,2-DCA-d4		*101%*			*75-125%*	"							"	
Toluene-d8		*101%*			*75-125%*	"							"	
4-BFB		*101%*			*75-125%*	"							"	
Matrix Spike (9060183-MS1)					**QC Source: ASF0006-07**		**Extracted: 06/04/09 11:00**							
Benzene	EPA 8260B	1730	3.38	15.2	ug/kg dry	1x	ND	608	284%	(68.5-125)	--	--	06/04/09 12:14	M7
Chlorobenzene	"	1730	6.15	76.0	"	"	ND	"	285%	(65.9-125)	--	--	"	M7
1,1-Dichloroethene	"	1730	9.05	76.0	"	"	ND	"	284%	(55.8-125)	--	--	"	M7
Toluene	"	1840	4.78	76.0	"	"	113	"	284%	(70.3-125)	--	--	"	M7
Trichloroethene	"	1760	9.13	76.0	"	"	ND	"	290%	(65.5-125)	--	--	"	M7
Surrogate(s): Dibromofluoromethane		*Recovery: 102%*			*Limits: 75-125%*	*0.01x*							*06/04/09 12:14*	
1,2-DCA-d4		*99.4%*			*75-125%*	"							"	
Toluene-d8		*101%*			*75-125%*	"							"	
4-BFB		*101%*			*75-125%*	"							"	
Matrix Spike Dup (9060183-MSD1)					**QC Source: ASF0006-07**		**Extracted: 06/04/09 11:00**							
Benzene	EPA 8260B	1670	3.38	15.2	ug/kg dry	1x	ND	608	275%	(68.5-125)	3.27%	(25)	06/04/09 12:43	M7
Chlorobenzene	"	1690	6.15	76.0	"	"	ND	"	278%	(65.9-125)	2.35%	"	"	M7
1,1-Dichloroethene	"	1610	9.05	76.0	"	"	ND	"	264%	(55.8-125)	7.29%	"	"	M7
Toluene	"	1780	4.78	76.0	"	"	113	"	274%	(70.3-125)	3.57%	"	"	M7
Trichloroethene	"	1680	9.13	76.0	"	"	ND	"	276%	(65.5-125)	4.91%	"	"	M7
Surrogate(s): Dibromofluoromethane		*Recovery: 98.5%*			*Limits: 75-125%*	*0.01x*							*06/04/09 12:43*	
1,2-DCA-d4		*97.0%*			*75-125%*	"							"	
Toluene-d8		*98.9%*			*75-125%*	"							"	
4-BFB		*99.6%*			*75-125%*	"							"	

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CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name: **Kongiginak**	
825 W 8th Ave, ste 200	Project Number: 14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Ben Martich	06/24/09 14:14

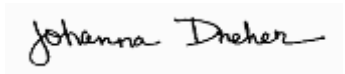
Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060214 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (9060214-BLK1)							**Extracted: 06/05/09 18:00**							
Benzo (e) pyrene	EPA 8270m	ND	3.30	13.4	ug/kg wet	1x	--	--	--	--	--	--	06/08/09 15:12	ID5
Acenaphthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Acenaphthylene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	ID4
Chrysene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
2-Methylnaphthalene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 54.2%*			*Limits: 24-125%*	"							*06/08/09 15:12*	
Pyrene-d10		*68.1%*			*41-141%*	"							"	
Benzo (a) pyrene-d12		*79.4%*			*38-143%*	"							"	
LCS (9060214-BS1)							**Extracted: 06/05/09 18:00**							
Acenaphthene	EPA 8270m	156	3.27	13.3	ug/kg wet	1x	--	165	94.7%	(33-139)	--	--	06/08/09 16:45	
Benzo (a) pyrene	"	155	3.27	13.3	"	"	--	"	93.6%	(45-149)	--	--	"	
Pyrene	"	130	3.27	13.3	"	"	--	"	78.5%	(39-138)	--	--	"	
Surrogate(s): Fluorene-d10		*Recovery: 46.0%*			*Limits: 24-125%*	"							*06/08/09 16:45*	
Pyrene-d10		*64.5%*			*41-141%*	"							"	
Benzo (a) pyrene-d12		*76.8%*			*38-143%*	"							"	

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210
CS Approval Number: UST-067

Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060214 **Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (9060214-MS1)					**QC Source: PSE0857-02**				**Extracted: 06/05/09 18:00**					
Acenaphthene	EPA 8270m	348	200	812	ug/kg dry	10x	ND	404	86.0%	(33-139)	--	--	06/08/09 20:23	J
Benzo (a) pyrene	"	342	200	812	"	"	ND	"	84.6%	(45-149)	--	--	"	J
Pyrene	"	376	200	812	"	"	119	"	63.6%	(39-138)	--	--	"	J
Surrogate(s): Fluorene-d10		*Recovery: 85.6%*			*Limits: 24-125%*	"							*06/08/09 20:23*	*Z3*
Pyrene-d10		*60.0%*			*41-141%*	"							"	*Z3*
Benzo (a) pyrene-d12		*70.0%*			*38-143%*	"							"	*Z3*
Matrix Spike Dup (9060214-MSD1)					**QC Source: PSE0857-02**				**Extracted: 06/05/09 18:00**					
Acenaphthene	EPA 8270m	350	200	813	ug/kg dry	10x	ND	404	86.5%	(33-139)	0.565%	(60)	06/08/09 20:54	J
Benzo (a) pyrene	"	365	200	813	"	"	ND	"	90.3%	(45-149)	6.58%	"	"	J
Pyrene	"	387	200	813	"	"	119	"	66.2%	(39-138)	2.76%	"	"	J
Surrogate(s): Fluorene-d10		*Recovery: 87.1%*			*Limits: 24-125%*	"							*06/08/09 20:54*	*Z3*
Pyrene-d10		*65.5%*			*41-141%*	"							"	*Z3*
Benzo (a) pyrene-d12		*81.6%*			*38-143%*	"							"	*Z3*

TestAmerica Anchorage

Johanna Dreher

Johanna L Dreher, Client Services Manager

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Oasis Environmental, Inc.	Project Name:	**Kongiginak**	
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 9060146 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (9060146-DUP1)					**QC Source: PSF0127-01**				**Extracted: 06/03/09 14:29**					
% Solids	NCA SOP	90.3	0.0100	0.0100	% by Weight	1x	90.7	--	--	--	0.442%	(20)	06/03/09 14:29	

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Johanna Dreher

Johanna L Dreher, Client Services Manager

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825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Notes and Definitions

Report Specific Notes:

A-01	-	This Toluene hit was confirmed and is present in the trip blank.
ID4	-	Benzo(j)fluoranthene coelutes with Benzo(k)fluoranthene. The reported result is a summation of the isomers and the concentration is based on the response factor of Benzo(k)fluoranthene.
ID5	-	Benzo(e)pyrene concentration is based on the response factor of Benzo(a)pyrene, and has not been calibrated independently.
J	-	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
L2	-	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was below acceptance limits.
M1	-	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M7	-	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
M8	-	The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).
QP	-	Hydrocarbon result partly due to individual peak(s) in quantitation range.
R2	-	The RPD exceeded the acceptance limit.
RL1	-	Reporting limit raised due to sample matrix effects.
S14	-	The weight of the sample relative to the volume of methanol exceeds the method maximum 1:1 ratio.
Z1	-	Surrogate recovery was above acceptance limits.
Z3	-	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
Z6	-	Surrogate recovery was below acceptance limits.

Laboratory Reporting Conventions:

DET	-	Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
ND	-	Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
NR/NA	-	Not Reported / Not Available
dry	-	Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
wet	-	Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
RPD	-	RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
MRL	-	METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
MDL*	-	METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
Dil	-	Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
Reporting Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

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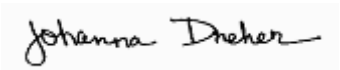

Johanna L Dreher, Client Services Manager

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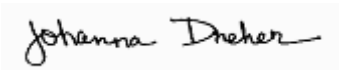
825 W 8th Ave, ste 200	Project Number:	14-157	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Ben Martich	06/24/09 14:14

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Anchorage



Johanna L Dreher, Client Services Manager

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THE LEADER IN ENVIRONMENTAL TESTING

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11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210 ☒

CHAIN OF CUSTODY REPORT

Work Order #: ASF0006

CLIENT: OASIS Environmental

REPORT TO: Ben Martich
ADDRESS: 825 W. 8th Ave
Anchorage AK 99501
PHONE: 907-258-4880 FAX: 907-258-4033

INVOICE TO: Same

P.O. NUMBER:

PROJECT NAME: Kongiganak
PROJECT NUMBER: 14-157
SAMPLED BY: Lisa Nicholson

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ☒ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: ☒ STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE: None	MeOH	None	MeOH	REQUESTED ANALYSES: DRO AK102	GRO BTEX 8021B Key/8260	PAH SIM 8270 SIM	VOCs 8260B	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	09-KON-101-SB	5/27/09 / 2230					X	X	X	X	S	2		01
2	09-KON-102-SB	2235					X	X				2		02
3	09-KON-103-SB	2135					X	X				2		03
4	09-KON-104-SB	2210					X	X				6	Extra volume MS/MSD	04
5	09-KON-105-SB	2215					X	X				2		05
6	09-KON-106-SB	2150					X	X	X	X		2		06
7	09-KON-107-SB	2155					X	X	X	X		2		07
8	09-KON-108-SB	2145					X	X				2		08
9	09-KON-109-SB	2205					X	X				2		09
10	09-KON-110-SB	2200					X	X				2		10

RELEASED BY: Lisa Nicholson	DATE: 5/30/09	RECEIVED BY:	DATE: 6/1/09
PRINT NAME: Lisa Nicholson FIRM: OASIS	TIME: 1000	PRINT NAME: Anastasia Gumulia FIRM: Anchorage	TIME: 13:55
RELEASED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

TEMP: 2.4

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210 ☒

CHAIN OF CUSTODY REPORT

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CLIENT: OASIS Environmental

REPORT TO: Ben Martich
ADDRESS: 825 W. 8th Ave
Anchorage AK
PHONE: 907-258-4880 FAX: 907-258-4033

INVOICE TO: Same

P.O. NUMBER:

PROJECT NAME: Kongiganak
PROJECT NUMBER: 14-157
SAMPLED BY: Lisa Nicholson

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ☒ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: ☒ STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE: None	MeOH	None	MeOH	REQUESTED ANALYSES: DRO AK102	GRO/BTEX AK101/8021B	PAH 8270D SIM	VOCs 8260B	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	09-KON-111-SB	5/27/09 / 2125					X	X			S	2		11
2	09-KON-112-SB	5/28/09 / 1920					X	X						12
3	09-KON-113-SB	5/28/09 / 1950					X	X						13
4	09-KON-114-SB	5/28/09 / 1955					X	X						14
5	09-KON-115-SB	5/28/09 / 1925					X	X						15
6	09-KON-116-SB	5/28/09 / 1930					X	X						16
7	09-KON-117-SB	5/28/09 / 1935					X	X						17
8	09-KON-118-SB	5/28/09 / 1940					X	X						18
9	09-KON-119-SB	5/28/09 / 1945					X	X						19
10	09-KON-120-SB	5/29/09 / 1525					X	X						20

RELEASED BY: Lisa Nicholson	DATE: 5/30/09	RECEIVED BY:	DATE: 6/1/09
PRINT NAME: Lisa Nicholson FIRM: OASIS	TIME: 1000	PRINT NAME: Anastasia Gumula FIRM: Anchorage	TIME: 13:55
RELEASED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

TEMP: 2.4

TAL-1000(0408)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: ASF0006

CLIENT: OASIS Environmental

REPORT TO: Ben Martich
ADDRESS: 825 W. 8th Ave.
Anchorage, AK, 99501
PHONE: 907-258-4880 FAX: 907-258-4033

INVOICE TO: Same

P.O. NUMBER:

PROJECT NAME: Kongiganak
PROJECT NUMBER: 14-157
SAMPLED BY: Lisa Nicholson

TURNAROUND REQUEST *in Business Days **

Organic & Inorganic Analyses: [X] STD. [7] [5] [4] [3] [2] [1] [<1]

Petroleum Hydrocarbon Analyses: [X] STD. [4] [3] [2] [1] [<1]

[OTHER] Specify:

* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: DRO AK102	GRO/BTEX AK101/EPA 8021B	VOCs 8260B	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	09-KON-121-SB	5/29/09 / 1530		X	X		S	2		21
2	09-KON-122-SB	5/29/09 / 1535		X	X		S	2		22
3	09-KON-123-SB	5/29/09 / 1540		X	X		S	2		23
4	~~Trip blank~~	~~5/29/0~~								~~20~~
5	Trip blank	5/27/09 / 2200			X	X	Meth. HO	1		24
6										
7										
8										
9										
10										

RELEASED BY: Lisa Nicholson DATE: 5/30/09
PRINT NAME: Lisa Nicholson FIRM: OASIS TIME: 1000

RECEIVED BY: DATE: 6/1/09
PRINT NAME: Anastasia Gumulia FIRM: Anchorage TIME: 13:55

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

TEMP: 2.4

TAL-1000(0408)

Test America Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # ASF0006 **CLIENT:** OASIS **PROJECT:** Konginak

Date /Time Cooler Arrived 06 / 01 / 09 13 : 55 Cooler signed for by: Anastasia Gumulia
(Print name)

Preliminary Examination Phase:

Date cooler opened: ☑ same as date received *or* ____/____/____

Cooler opened by (print) Anastasia Gumulia (sign) Anastasia

1. Delivered by ☐ ALASKA AIRLINES ☐ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☑ CLIENT ☐ Other: Hand

Shipment Tracking # if applicable ∅ (include copy of shipping papers in file)

2. Number of Custody Seals 2 Signed by ____ Date ____/____/____

Were custody seals unbroken and intact on arrival? ☑ Yes ☐ No

3. Were custody papers sealed in a plastic bag? ☑ Yes ☐ No

4. Were custody papers filled out properly (ink, signed, etc.)? ☑ Yes ☐ No

5. Did you sign the custody papers in the appropriate place? ☑ Yes ☐ No

6. Was ice used? ☑ Yes ☐ No Type of ice: ☐ blue ice ☑ gel ice ☐ real ice ☐ dry ice Condition of Ice: Frozen

Temperature by Digi-Thermo Probe 2.4 °C Thermometer # Rac #3
Acceptance Criteria: 0 - 6°C

7. Packing in Cooler: ☑ bubble wrap ☐ styrofoam ☑ cardboard ☐ Other: ____

8. Did samples arrive in plastic bags? ☑ Yes ☐ No

9. Did all bottles arrive unbroken, and with labels in good condition? ☑ Yes ☐ No

10. Are all bottle labels complete (ID, date, time, etc.) ☑ Yes ☐ No

11. Do bottle labels and Chain of Custody agree? ☐ Yes ☑ No 09-KON-125-SB is methanol kit for 09-KON-121-SB

12. Are the containers and preservatives correct for the tests indicated? ☑ Yes ☐ No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2? ☐ Yes ☐ No ☑ N/A

14. Is there adequate volume for the tests requested? ☑ Yes ☐ No

15. Were VOA vials free of bubbles? ☑ N/A ☐ Yes ☐ No

If "NO" which containers contained "head space" or bubbles? ____

Log-in Phase:

Date of sample log-in 06 / 01 / 09

Samples logged in by (print) Anastasia Gumulia (sign) Anastasia

1. Was project identifiable from custody papers? ☑ Yes ☐ No
2. Do Turn Around Times and Due Dates agree? ☑ Yes ☐ No
3. Was the Project Manager notified of status? ☑ Yes ☐ No
4. Was the Lab notified of status? ☑ Yes ☐ No
5. Was the COC scanned and copied? ☑ Yes ☐ No

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
362454

Custody Seal

DATE 5/30/09 1000

SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
362454

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
362455

Custody Seal

DATE 5/30/09 1000

SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
362455

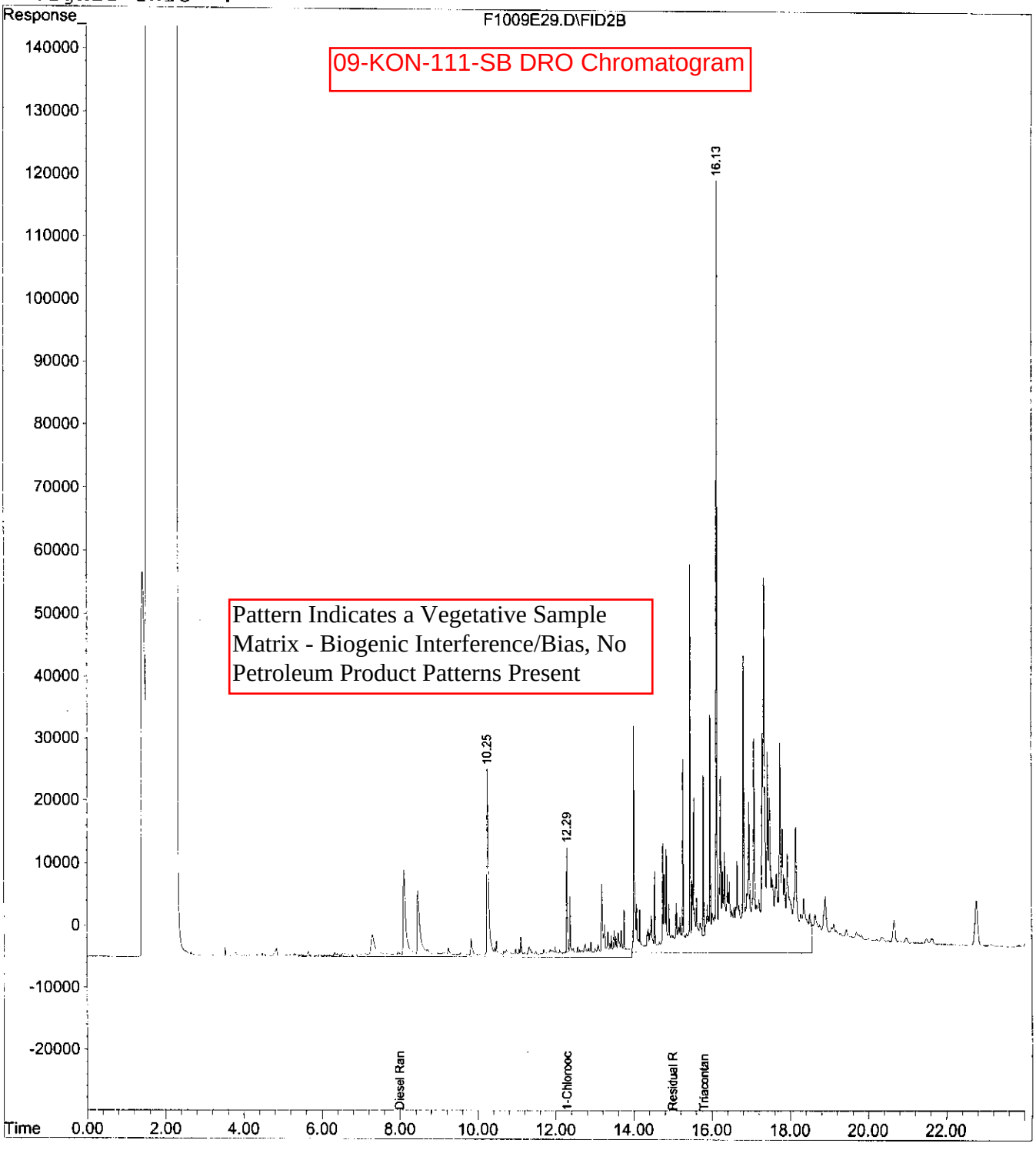
ASF 0006

Quantitation Report

Data File : X:\ANC-EWOK\HPCHEM\1\DATA\061009E.SEC\F1009E29.D Vial: 31
Acq On : 10 Jun 2009 7:37 pm Operator: JN
Sample : ASF0006-11 Inst : Ewok
Misc : 10X Multiplr: 1.00
IntFile : SURR.E
Quant Time: Jun 11 11:33 2009 Quant Results File: EF0509B.RES

Quant Method : X:\ANC-EWOK\HPCHEM\1\METHODS\EF0509B.M (Chemstation Integrat
Title : TPH-D Rear Method
Last Update : Thu Jun 11 11:32:58 2009
Response via : Single Level Calibration
DataAcq Meth : EG1508F.M

Volume Inj. :
Signal Phase :
Signal Info :



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APPENDIX D

Laboratory Review Checklist

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Laboratory Data Review Checklist

Completed by: Lisa Nicholson

Title: Geologist

Date: June 23, 2009

CS Report Name: Former Kongiganak School Tank Farm Site Characterization Report

Report Date: June 30, 2009

Consultant Firm: OASIS Environmental, Inc.

Laboratory Name: Test America

Laboratory Report Number: ASF0006

ADEC File Number: 2454.38.004

ADEC RecKey Number:

1. Laboratory

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

   ☒ Yes ☐ No Comments:

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

   ☒ Yes ☐ No Comments:

2. Chain of Custody (COC)

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

   ☒ Yes ☐ No Comments:

b. Correct analyses requested?

☑ Yes ☐ No Comments:

3. Laboratory Sample Receipt Documentation

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No 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.?

☑ Yes ☐ No Comments:

One sample was mislabeled, but was corrected after lab's discussion with field lead.

e. Data quality or usability affected? Explain.

Comments:

Data quality not affected.

4. Case Narrative

a. Present and understandable?

☑ Yes ☐ No Comments:

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

☑ Yes ☐ No Comments:

c. Were all corrective actions documented?

☐ Yes ☒ No Comments:

None needed

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

Comments:

No effect on data quality.

5. Samples Results

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

☒ Yes ☐ No Comments:

b. All applicable holding times met?

☒ Yes ☐ No Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No Comments:

Except trip blank.

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

☐ Yes ☒ No Comments:

The results are reported to the MDL rather than the MRL (or PQL). Several MDLs are still above the Cleanup Levels, including 1,2-dichloroethene, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, trichloroethene, and 1,2,3-trichloropropane.

e. Data quality or usability affected? Explain.

Comments:

The above compounds are not considered contaminants of concern for the site and are not expected to be present. The data quality and usability should not be affected.

6. QC Samples

a. Method Blank

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

☑ Yes ☐ No Comments:

ii. All method blank results less than PQL?

☑ Yes ☐ No Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

☐ Yes ☐ No Comments:

N/A

v. Data quality or usability affected? Explain.

Comments:

Data quality has not been affected.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples?

☑ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

N/A

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)

The percent recoveries for one of the BTEX LCSDs were below acceptance limits, with recoveries of less than 0.3 percent. The laboratory stated that the analyst forgot to spike the LCSD.

☐ Yes ☒ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☐ Yes ☐ No Comments:

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

Comments:

Samples 09-KON-102SB through -105SB, and -108SB through-118SB

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

☒ Yes ☐ No Comments:

vii. Data quality or usability affected? Explain.

Comments:

The corresponding LCS, MS, MSD, and MS/MSD RPDs are all within control limits and the data should not be affected by the lack of LCSD result.

c. Surrogates – Organics Only

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

☒ Yes ☐ No Comments:

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

☐ Yes ☒ No Comments:

The GRO LCS and LCSD surrogate recoveries were biased high.The BTEX LCSD surrogate recovery was biased very low (0.175%). The DRO MSD surrogate recovery was biased high, but the MS, the LCS, and the LCSD DRO surrogates were within control limits.

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

☒ Yes ☐ No Comments:

iv. Data quality or usability affected? Explain.

Comments:

BTEX results associated with the LCSD

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

i. One trip blank reported per matrix, analysis and cooler?

☑ Yes ☐ No Comments:

ii. All results less than PQL?

☐ Yes ☑ No Comments:

Toluene and trichloroethene were above the MDL in the trip blank.

iii. If above PQL, what samples are affected?

Comments:

All samples with detected toluene or trichloroethene results less than 10 times the result in the trip blank.

iv. Data quality or usability affected? Explain.

Comments:

Samples mentioned above should be flagged "B" for blank contamination

e. Field Duplicate

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

☑ Yes ☐ No Comments:

ii. Submitted blind to lab?

☑ Yes ☐ No 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 ☒ No Comments:

The GRO RPD was 65% for the 09-KON-106SB/-107SB sample pair. The DRO RPD was 132% for the 09-KON-113SB/-114SB sample pair.

iv. Data quality or usability affected? Explain.

Comments:

The sample data has not been qualified based on the high RPDs due to the inherent heterogeneity of soil.

f. Decontamination or Equipment Blank (if applicable)

☐ Yes ☐ No ☒ Not Applicable

i. All results less than PQL?

☐ Yes ☐ No Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? Explain.

Comments:

N/A

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

a. Defined and appropriate?

☐ Yes ☒ No Comments:

APPENDIX E

CSM Scoping Form and Human Health CSM

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HUMAN HEALTH CONCEPTUAL SITE MODEL

Site: Former Kongiganak School Tank Farm

Completed By: A Weller - OASIS Environmental

Date Completed: 6/26/09

Follow the directions below. Do not consider engineering or land use controls when describing pathways.

(1)
Check the media that could be directly affected by the release.

(2)
For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Briefly list other mechanisms or reference the report for details.

(3)
Check exposure media identified in (2).

(4)
Check exposure pathways that are complete or need further evaluation. The pathways identified must agree with Sections 2 and 3 of the CSM Scoping Form.

(5)
Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, or "C/F" for both current and future receptors.

Media	Transport Mechanisms	Exposure Media	Exposure Pathways	Current & Future Receptors: Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ Surface Soil (0-2 ft bgs)	☑ Direct release to surface soil — check soil	☑ soil	☑ Incidental Soil Ingestion	C	C	C	F	C	C	
	☑ Migration or leaching to subsurface — check soil		☐ Dermal Absorption of Contaminants from Soil							
	☑ Migration or leaching to groundwater — check groundwater									
	☐ Volatilization — check air									
	☐ Runoff or erosion — check surface water									
	☑ Uptake by plants or animals — check biota									
	☐ Other (*list*):									
☐ Subsurface Soil (2-15 ft bgs)	☐ Direct release to subsurface soil — check soil	☑ groundwater	☑ Ingestion of Groundwater	C	C	C	F	C	C	
	☑ *Migration to groundwater* — check groundwater		☑ Dermal Absorption of Contaminants in Groundwater	C	C	C	F	C	C	
	☐ *Volatilization* — check air		☐ Inhalation of Volatile Compounds in Tap Water							
	☐ *Other (list):*									
☐ Ground-water	☐ Direct release to groundwater — check groundwater	☐ air	☐ Inhalation of Outdoor Air							
	☐ *Volatilization* — check air		☐ Inhalation of Indoor Air							
	☐ *Flow to surface water body* — check surface water		☐ Inhalation of Fugitive Dust							
	☐ *Flow to sediment* — check sediment									
	☑ *Uptake by plants or animals* — check biota									
	☐ *Other (list):*									
☐ Surface Water	☐ Direct release to surface water — check surface water	☐ surface water	☐ Ingestion of Surface Water							
	☐ *Volatilization* — check air		☐ Dermal Absorption of Contaminants in Surface Water							
	☐ *Sedimentation* — check sediment		☐ Inhalation of Volatile Compounds in Tap Water							
	☐ *Uptake by plants or animals* — check biota									
	☐ *Other (list):*									
☐ Sediment	☐ Direct release to sediment — check sediment	☐ sediment	☐ Direct Contact with Sediment							
	☐ *Resuspension, runoff, or erosion* — check surface water									
	☐ *Uptake by plants or animals* — check biota	☑ biota	☐ Ingestion of Wild Foods							
	☐ *Other (list):*									

Revised 3/21/06

Human Health Conceptual Site Model
Scoping Form

Site Name: _____

File Number: _____

Completed by: _____

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, a CSM graphic and text must be submitted with the site characterization work plan.

General Instructions: Follow the italicized instructions in each section below.

1. *General Information:*

Sources *(check potential sources at the site)*

- ☐ USTs
- ☐ ASTs
- ☐ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☐ Other: _____

Release Mechanisms *(check potential release mechanisms at the site)*

- ☑ Spills
- ☐ Leaks
- ☐ Direct discharge
- ☐ Burning
- ☐ Other: _____

Impacted Media *(check potentially-impacted media at the site)*

- ☐ Surface soil (0-2 feet bgs*)
- ☐ Subsurface Soil (>2 feet bgs)
- ☐ Air
- ☐ Groundwater
- ☐ Surface water
- ☐ Other: _____

Receptors (*check receptors that could be affected by contamination at the site)*

- ☐ Residents (adult or child)
- ☐ Commercial or industrial worker
- ☐ Construction worker
- ☐ Subsistence harvester (i.e., gathers wild foods)
- ☐ Subsistence consumer (i.e., eats wild foods)
- ☑ Site visitor
- ☐ Trespasser
- ☐ Recreational user
- ☐ Farmer
- ☐ Other: _____

* bgs – below ground surface

2. *Exposure Pathways:* *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact –

1 Incidental Soil Ingestion

Is soil contaminated anywhere between 0 and 15 feet bgs? ☑

Do people use the site or is there a chance they will use the site in the future? ☑

If both boxes are checked, label this pathway complete: complete

2 Dermal Absorption of Contaminants from Soil

Is soil contaminated anywhere between 0 and 15 feet bgs? ☑

Do people use the site or is there a chance they will use the site in the future? ☑

Can the soil contaminants permeate the skin? (Contaminants listed below, or within the groups listed below, should be evaluated for dermal absorption). ☐

Arsenic	Lindane
Cadmium	PAHs
Chlordane	Pentachlorophenol
2,4-dichlorophenoxyacetic acid	PCBs
Dioxins	SVOCs
DDT	

If all of the boxes are checked, label this pathway complete: _____

b) Ingestion –

1 Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, OR are contaminants expected to migrate to groundwater in the future? ☑

Could the potentially affected groundwater be used as a current or future drinking water source? *Please note, only leave the box unchecked if ADEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.* ☑

If both the boxes are checked, label this pathway complete: complete

2 Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water OR are contaminants expected to migrate to surface water in the future? ☐

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? *Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).* ☐

If both boxes are checked, label this pathway complete: _____

3 Ingestion of Wild Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild food? ☑

Do the site contaminants have the potential to bioaccumulate (*see* Appendix A)? ☐

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. the top 6 feet of soil, in groundwater that **could be** connected to surface water, etc.) ☑

If all of the boxes are checked, label this pathway complete: _____

c) Inhalation

1 Inhalation of Outdoor Air

Is soil contaminated anywhere between 0 and 15 feet bgs? ☑

Do people use the site or is there a chance they will use the site in the future? ☑

Are the contaminants in soil volatile (*See Appendix B*)? ☐

If all of the boxes are checked, label this pathway complete: _____

2 Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be placed on the site in an area that could be affected by contaminant vapors? (i.e., within 100 feet, horizontally or vertically, of the contaminated soil or groundwater, <u>or</u> subject to "preferential pathways" that promote easy airflow, like utility conduits or rock fractures) ☐

Are volatile compounds present in soil or groundwater (*See Appendix C*)? ☑

If both boxes are checked, label this pathway complete: _____

3. Additional Exposure Pathways: *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Exposure from this pathway may need to be assessed only in cases where DEC water-quality or drinking-water standards are not being applied as cleanup levels. Examples of conditions that may warrant further investigation include:

- Climate permits recreational use of waters for swimming,
- Climate permits exposure to groundwater during activities, such as construction, without protective clothing, or
- Groundwater or surface water is used for household purposes.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Inhalation of Volatile Compounds in Household Water

Exposure from this pathway may need to be assessed only in cases where DEC water-quality or drinking-water standards are not being applied as cleanup levels. Examples of conditions that may warrant further investigation include:

- The contaminated water is used for household purposes such as showering, laundering, and dish washing, and
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix B)

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Inhalation of Fugitive Dust

Generally DEC soil ingestion cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway, although this is not true in the case of chromium. Examples of conditions that may warrant further investigation include:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers. This size can be inhaled and would be of concern for determining if this pathway is complete.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during recreational or some types of subsistence activities. People then incidentally **ingest** sediment from normal hand-to-mouth activities. In addition, **dermal absorption of contaminants** may be of concern if people come in contact with sediment and the contaminants are able to permeate the skin (see dermal exposure to soil section). This type of exposure is rare but it should be investigated if:

- Climate permits recreational activities around sediment, and/or
- Community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

ADEC soil ingestion cleanup levels are protective of direct contact with sediment. If they are determined to be over-protective for sediment exposure at a particular site, other screening levels could be adopted or developed.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

4. Other Comments (*Provide other comments as necessary to support the information provided in this form.)*

APPENDIX A

BIOACCUMULATIVE COMPOUNDS

Table A-1: List of Compounds of Potential Concern for Bioaccumulation

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table X of 18 AAC 75.345 that are bioaccumulative, based on the definition above, are listed below.

Aldrin	DDT	Lead
Arsenic	Dibenzo(a,h)anthracene	Mercury
Benzo(a)anthracene	Dieldrin	Methoxychlor
Benzo(a)pyrene	Dioxin	Nickel
Benzo(b)fluoranthene	Endrin	PCBs
Benzo(k)fluoranthene	Fluoranthene	
Cadmium	Heptachlor	Pyrene
Chlordane	Heptachlor epoxide	Selenium
Chrysene	Hexachlorobenzene	Silver
Copper	Hexachlorocyclopentadiene	Toxaphene
DDD	Indeno(1,2,3-c,d)pyrene	Zinc
DDE		

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greater than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at http://www.pbtprofiler.net/. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX B

VOLATILE COMPOUNDS

Table B-1: List of Volatile Compounds of Potential Concern
Common volatile contaminants of concern at contaminated sites. A chemical is defined as volatile if the Henry's Law constant is 1 x 10^{-5} atm-m^3/mol or greater and the molecular weight less than 200 g/mole (g/mole; EPA 2004a). Those compounds in Table X of 18 AAC 75.345 that are volatile, based on the definition above, are listed below.

Acenaphthene	1,4-dichlorobenzene	Pyrene
Acetone	1,1-dichloroethane	Styrene
Anthracene	1,2-dichloroethane	1,1,2,2-tetrachloroethane
Benzene	1,1-dichloroethylene	Tetrachloroethylene
Bis(2-chlorethyl)ether	Cis-1,2-dichloroethylene	Toluene
Bromodichloromethane	Trans-1,2-dichloroethylene	1,2,4-trichlorobenzene
Carbon disulfide	1,2-dichloropropane	1,1,1-trichloroethane
Carbon tetrachloride	1,3-dichloropropane	1,1,2-trichloroethane
Chlorobenzene	Ethylbenzene	Trichloroethylene
Chlorodibromomethane	Fluorene	Vinyl acetate
Chloroform	Methyl bromide	Vinyl chloride
2-chlorophenol	Methylene chloride	Xylenes
Cyanide	Naphthalene	GRO
1,2-dichlorobenzene	Nitrobenzene	DRO

APPENDIX C

COMPOUNDS OF CONCERN FOR VAPOR MIGRATION

Table C-1: List of Compounds of Potential Concern for the Vapor Migration

A chemical is considered sufficiently toxic if the vapor concentration of the pure component poses an incremental lifetime cancer risk greater than 10-6 or a non-cancer hazard index greater than 1. A chemical is considered sufficiently volatile if it's Henry's Law constant is 1 x 10^{-5} atm-m^3/mol or greater.

Acenaphthene	Dibenzofuran	Hexachlorobenzene
Acetaldehyde	1,2-Dibromo-3-chloropropane	Hexachlorocyclopentadiene
Acetone	1,2-Dibromoethane (EDB)	Hexachloroethane
Acetonitrile	1,3-Dichlorobenzene	Hexane
Acetophenone	1,2-Dichlorobenzene	Hydrogen cyanide
Acrolein	1,4-Dichlorobenzene	Isobutanol
Acrylonitrile	2-Nitropropane	Mercury (elemental)
Aldrin	N-Nitroso-di-n-butylamine	Methacrylonitrile
alpha-HCH (alpha-BHC)	n-Propylbenzene	Methoxychlor
Benzaldehyde	o-Nitrotoluene	Methyl acetate
Benzene	o-Xylene	Methyl acrylate
Benzo(b)fluoranthene	p-Xylene	Methyl bromide
Benzylchloride	Pyrene	Methyl chloride chloromethane)
beta-Chloronaphthalene	sec-Butylbenzene	Methylcyclohexane
Biphenyl	Styrene	Methylene bromide
Bis(2-chloroethyl)ether	tert-Butylbenzene	Methylene chloride
Bis(2-chloroisopropyl)ether	1,1,1,2-Tetrachloroethane	Methylethylketone (2-butanone)
Bis(chloromethyl)ether	1,1,2,2-Tetrachloroethane	Methylisobutylketone
Bromodichloromethane	Tetrachloroethylene	Methylmethacrylate
Bromoform	Dichlorodifluoromethane	2-Methylnaphthalene
1,3-Butadiene	1,1-Dichloroethane	MTBE
Carbon disulfide	1,2-Dichloroethane	m-Xylene
Carbon tetrachloride	1,1-Dichloroethylene	Naphthalene
Chlordane	1,2-Dichloropropane	n-Butylbenzene
2-Chloro-1,3-butadiene (chloroprene)	1,3-Dichloropropene	Nitrobenzene
Chlorobenzene	Dieldrin	Toluene
1-Chlorobutane	Endosulfan	trans-1,2-Dichloroethylene
Chlorodibromomethane	Epichlorohydrin	1,1,2-Trichloro-1,2,2-trifluoroethane
Chlorodifluoromethane	Ethyl ether	1,2,4-Trichlorobenzene
Chloroethane (ethyl chloride)	Ethylacetate	1,1,2-Trichloroethane
Chloroform	Ethylbenzene	1,1,1-Trichloroethane
2-Chlorophenol	Ethylene oxide	Trichloroethylene
2-Chloropropane	Ethylmethacrylate	Trichlorofluoromethane
Chrysene	Fluorene	1,2,3-Trichloropropane
cis-1,2-Dichloroethylene	Furan	1,2,4-Trimethylbenzene
Crotonaldehyde (2-butenal)	Gamma-HCH (Lindane)	1,3,5-Trimethylbenzene
Cumene	Heptachlor	Vinyl acetate
DDE	Hexachloro-1,3-butadiene	Vinyl chloride (chloroethene)

Source: EPA 2002.