2050 PEGER ROAD
PARCEL ACCOUNT NUMBER 0483621
FAIRBANKS, ALASKA

2010 SITE REMEDIATION

DECEMBER 2010

Submitted to:

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ACRONYMS

AAC	-	Alaska Administrative Code
ADEC	-	Alaska Department of Environmental Conservation
AK	-	Alaska Method
ASR	-	Alaska Soil Recycling
AST	-	Above Ground Storage Tank
bg	-	Below Grade
BGES	-	Braunstein Geological and Environmental Services
BTEX	-	Benzene, Toluene, Ethylbenzene, & Total Xylenes
C	-	Celsius
CSM	-	Conceptual Site Model
cy	-	cubic yards
DRO	-	Diesel Range Organics
EPA	-	Environmental Protection Agency
ESA	-	Environmental Site Assessment
FedEx	-	Federal Express
GRO	-	Gasoline Range Organics
mg/Kg	-	Milligrams per Kilogram
MRLs	-	Method Reporting Limits
PAHs	-	Polynuclear Aromatic Hydrocarbons
PAN	-	Parcel Account Number
PCBs	-	Polychlorinated Biphenyls
PCE	-	Tetrachloroethene
PID	-	Photoionization Detector
ppm	-	Parts per Million
QC	-	Quality Control
RCRA	-	Resource Conservation and Recovery Act
RRO	-	Residual Range Organics
TCE	-	Trichlorethene
UST	-	Underground Storage Tank
VOCs	-	Volatile Organic Compounds

1.0 INTRODUCTION

BGES, Inc. (BGES) was retained by Kiewit Infrastructure West Co. to observe and document the remediation and assessment activities at 2050 Peger Road (Parcel Account Number [PAN] 0483621) in Fairbanks, Alaska, hereafter referred to as the "subject property", (Figure 1). These remediation activities included the excavation of contaminated soils from two separate areas within the northwestern portion of the subject property; the former used-oil aboveground storage tank (AST) and the fuel delivery line areas (Figure 2). In addition, BGES observed the excavation and removal of a septic tank and its contents, located near the western property boundary.

Field activities were accomplished during two separate site visits; August 10 and 11, 2010 and September 15 and 16, 2010. Prior to the August field activities, a work plan describing the activities stated above was submitted to the Alaska Department of Environmental Conservation (ADEC) in June of 2010; the ADEC Project Manager, Wesley Ghormley, provided approval of the work plan on July 9, 2010. Additionally, a request to transport soils from the former used-oil AST area was submitted to Mr. Ghormley on August 4, 2010; Mr. Ghormley approved the request on August 9, 2010. Based on field activities performed during August of 2010, an addendum (status update, dated September 9, 2010) to the previous workplan was prepared and submitted to the ADEC; authorization to proceed was provided by Janice Wiegers of the ADEC on September 10, 2010 and Mr. Ghormley on September 13, 2010. An additional request to transport soils from the fuel distribution line and former heating oil AST was also submitted to the ADEC on September 13, 2010; Mr. Ghormley approved the request on the following day.

2.0 BACKGROUND

The subject property is located at 2050 Peger Road (PAN 0483621) in Fairbanks, Alaska (Figure 1). BGES performed a Phase I Environmental Site Assessment (ESA) and a Limited Phase II ESA for this property in September of 2009. Based on the conditions observed during our site reconnaissance activities and research, recognized environmental conditions were identified in association with the subject property and adjacent properties during the preparation of the Phase I ESA. Specifically, the potential for contaminants to have been released to soils in the northwestern portion of the subject property and the potential for the historical and current usage of adjacent and nearby properties were identified in the Phase I ESA.

Contaminated sites in the vicinity of the subject property were evaluated during the performance of a Phase I ESA in September of 2009. Twenty-one contaminated sites were identified within one-half mile of the subject property. The contamination identified in soil and groundwater at these sites included petroleum contaminants, tetrachloroethene (PCE), and trichloroethene (TCE). Our Phase I ESA concluded that there is a potential for adverse environmental impact to the subject property stemming from contamination from four of these sites. These four sites include the MacCheyne Carpet Store, the Tesoro-Northstore #114, the Alaska Department of Transportation (ADOT) & Public Facilities (PF) – Maintenance & Operations, and the City of Fairbanks Public Works Department.

3.0 PREVIOUS SITE CHARACTERIZATION

As described above, BGES performed a limited Phase II ESA at the subject property in September of 2009. Results of the Limited Phase II ESA indicated the presence of elevated concentrations of diesel range organics (DRO) in subsurface soils located adjacent to the northwestern portion of the 4-Bay building, in the vicinity of a former used-oil AST (Figure 3). The DRO concentrations ranged from 2,000 milligrams per Kilogram (mg/Kg), to 6,200 mg/Kg, which exceed the ADEC cleanup criterion of 250 mg/Kg. The chromium concentration (36.1 mg/Kg) and arsenic concentration (4.19 mg/Kg) detected in soil sample SB1-0916 was in excess of the ADEC cleanup criteria; however, the concentrations of chromium and arsenic exhibited by the soil sample is considered to be within the naturally elevated background concentrations typical of Alaskan soils.

Additionally, during the limited Phase II ESA activities, a soil sample collected from beneath a buried fuel-delivery line that extended west from the southwest corner of the 4-Bay building exhibited an elevated concentration of arsenic (17.3 mg/Kg) which exceeds the ADEC cleanup criterion (Figure 4). Research performed during our Phase I ESA also indicated that the buried fuel delivery line may have potentially been associated with either a heating oil underground storage tank (UST) or AST that may have been located along the western boundary of the subject property.

Based on the results of the limited Phase II ESA, the following recommendations were provided: the excavation and removal of the contaminated soils located adjacent to the former used-oil AST, further characterization of the soils adjacent to the buried fuel delivery line, and evaluation of the presence of a potential UST, possibly located along the western boundary of the subject property. These areas are the focus of this remediation and assessment project and this report.

On October 16, 2009, Mr. David Collentine of Kiewit Infrastructure West Co., submitted an Oil and Hazardous Materials Incident Report to notify the ADEC of the discovery of a release adjacent to the former used-oil AST located at the subject property. A copy of the Oil and Hazardous Materials Incident Report was previously submitted to the ADEC as part of the Remedial Action and Assessment Activities Work Plan during June of 2010.

4.0 2010 FIELD ACTIVITIES

BGES observed the excavation of contaminated soils from the former used-oil AST and performed additional assessment along the former fuel delivery line and evaluated the area near the western property boundary for the potential presence of a former heating oil tank. Each area is discussed separately below. Prior to the commencement of field activities each day, a health and safety meeting occurred at the site and acknowledgement forms were completed by all personnel.

4.1 Modifications to the Workplan

The following minor modifications to the work plan occurred for various reasons, as described below:

- After the excavation and removal of the majority of the contaminated soils in the vicinity of the former used-oil AST, some contamination was left in place. The excavation was stopped at approximately 8 feet bg, which was assumed to be within 1 foot to 2 feet of groundwater at the request of Mr. Collentine. Additionally, contaminated soils were left in place along the eastern (beneath the 4-Bay building) and southern sidewalls of the excavation.

- During the advancement of the buried fuel delivery line test pits, a septic tank was discovered near the western boundary of the subject property; four additional soils samples were collected from the soils within the vicinity of the septic tank and were submitted for laboratory analysis to evaluate subsurface soil conditions in this area

4.2 Former Used-Oil AST Excavation

August Activities. BGES was onsite on August 10, 2010 to observe the removal of the contaminated soils located beneath the former used-oil AST, previously located adjacent to the northwestern portion of the 4-Bay building (Photographs 1 through 3 in Appendix A). Excavation activities were performed by R&D Environmental (RDE) of Fairbanks, Alaska.

Assessment and excavation of contamination is an iterative process that depends on actual subsurface conditions and the type and degree of contamination encountered. The excavation activities were initiated adjacent to the former used-oil tank (Figure 5). During excavation activities, soils were screened within the center of the excavator bucket and "grab" soil samples were collected from the base and sidewalls of the excavation to guide the removal of contaminated soils. Each field screening grab sample was screened with visual and olfactory senses and a photoionizaton detector (PID). Strong petroleum odors and stained soils were encountered throughout the excavation.

Adversely-impacted soils were removed to a depth of approximately 8 feet bg which was estimated to be approximately 1 foot to 2 feet above groundwater at the subject property. After excavation activities were stopped, stained soils were observed along the eastern sidewall of the excavation. It is noted that this portion of the excavation abuts the western foundation of the 4-Bay building and further lateral excavation of impacted soils to the east without jeopardizing the structural integrity of the building was impossible (Photograph 4 in Appendix A). A total of 103.8 cubic yards (cy) or 155.71 tons of impacted soils were removed from this excavation. Impacted soils removed from the excavation were placed directly into dump trucks and transported to Alaska Soil Recycling (ASR) in Anchorage, Alaska for thermal treatment and disposal (the quantity of contaminated soil received by ASR is included in Appendix B). The excavation measured approximately 31 feet in length and 15 feet in width, equaling approximately 465 square feet; the total perimeter of the excavation measured approximately 92 linear feet (field notes are included in Appendix C).

On August 11, 2010, in accordance with ADEC guidance, 12 soil-screening samples were collected from the base of the excavation and 9 soil-screening samples were collected from the sidewalls of the excavation. The field screening samples were placed into sealable plastic bags using clean, stainless steel spoons and each bag was labeled with a unique sample number and the time of collection. Soils in each plastic bag were screened with a PID that was calibrated prior to use with 100 parts per million (ppm) isobutylene calibration gas. The samples were at least 40 degrees Fahrenheit when they were screened with the PID. Then the plastic bags were agitated for approximately 15 seconds, within 1 hour of collection, at which point the probe of the PID was inserted into the bag and the maximum reading was recorded; PID readings ranged from 0 ppm to 211 ppm. In addition, three soil samples collected from the base of the excavation were screened with a Petroflag kit. The Petroflag result for a soil sample collected from the northern portion of the excavation was 0 ppm. The Petroflag results for two soil samples collected from the central and southern portions of the excavation indicated an error in the reading

because these samples contained elevated concentrations of contamination. Based on the elevated PID readings (up to 211 ppm) and the impacted material remaining in the excavation, it was determined that the excavation would be left open pending laboratory results. Prior to the departure from the subject property, the excavation was barricaded to prevent unauthorized access (Photograph 5 in Appendix A).

Based on the surface area of the excavation, three confirmation soil samples (CFS1-0811 through CFS3-0811) were collected from the base of the excavation and five confirmation soil samples (CFS4-0811 through CFS8-0811) were collected from the excavation's sidewalls (Figure 5). One duplicate sample (CFS9-0811) was also collected from the excavation, and submitted blindly to the laboratory to evaluate field sampling precision.

The soil samples collected from the excavation were numbered CFS1-0811, where the acronym CFS stands for confirmation sample and the adjoining number 1- indicates the numerical order the sample was collected in; and -0811 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, these samples are referred to as CFS1, with the date omitted.

Soil samples collected for laboratory analysis were placed in laboratory-supplied containers utilizing clean, stainless steel spoons. Sample portions scheduled to be analyzed for volatile compounds were collected first and preserved with methanol immediately after collection. The methanol provided by the laboratory was added to the sample in a manner that completely covered the samples. The samples were labeled, placed in ice-filled coolers, and prepared for shipment (custody seals were adhered to the outside of each cooler). The coolers were delivered to Federal Express (FedEx) in Fairbanks for shipment to Onsite Environmental Inc. (Onsite Environmental) of Redmond, Washington, an ADEC-approved laboratory.

September Activities. Analytical results obtained from the soil samples collected from the excavation exhibited concentrations of contaminants, in some cases, well above ADEC cleanup criteria (as described below in Section 5.1). Additional adversely-impacted soils were not excavated from the former used-oil AST excavation because of the presence of contaminated soils remaining beneath the building and the potential to encounter groundwater. Approval was obtained from the ADEC to install subsurface piping in the excavation to provide aeration of the soils and to assist with natural degradation of the petroleum contamination remaining in place.

BGES returned to the subject property on September 16, 2010 to observe the installation of the subsurface ventilation system and the backfilling and compaction of this excavation (Photographs 6 through 8 in Appendix A). The drainpipe placed into the excavation was 4 inches in diameter, with ½-inch diameter perforations, spaced approximately 3 inches apart on center. The perforations, which occur in two rows (approximately 45 degrees apart) on the piping, were placed face down so that excessive soil would not enter the drain tile during backfilling activities. When possible, any rocks that were present in the excavated soils were placed next to the perforations to further minimize the potential entry of soils into the pipe.

The drain pipes were laid in two parallel rows, approximately 5 feet apart from each other. Ten-foot segments of vertical solid-riser pipe were attached to each end of the horizontal piping; the vertical risers extended above grade to aid in the circulation of air within the excavation. The ends of the vertical risers were then capped, until passive wind turbines can be located to provide for aeration of the soils through the interconnected subsurface piping. Nutrients in the form of Arctic Gro® 16-16-16 (nitrogen:phosphorus:potash) fertilizer were then added to the base of the excavation to promote biological degradation of the contamination. The open excavation was backfilled with backfill material which was compacted during backfilling activities.

Prior to backfilling activities, an additional soil sample (AST-ID-0916) was collected from the obviously contaminated material remaining in the excavation. This soil sample was collected to establish a baseline identification for the contamination which was released from the former used-oil AST area of the subject property. The sample was prepared for shipment as described above in Section 4.2 and shipped to Zymax Forensics Laboratory (Zymax) of Escondido, CA for forensic analysis; the results provided by Zymax are included in Appendix D.

4.3 Buried Fuel Delivery Line Assessment and Excavation

August Activities. BGES was onsite on August 11, 2010 to advance four test pits adjacent to the buried fuel delivery line located west of the southwestern corner of the 4-Bay building (Figure 6). Soil samples were collected beneath the buried fuel delivery line (approximately 6 inches bg) at each test pit to evaluate the presence of possible contaminant constituents. Additionally, a fifth test pit was advanced to a depth of approximately 6 feet bg near the western boundary of the subject property to evaluate the presence of a potential heating oil UST associated with the buried fuel delivery line.

Prior to the commencement of excavation activities, the depth and termination point of the buried fuel delivery line was established so that the test pits could be advanced to appropriate depths at approximately equal distances along the length of the line. The buried fuel delivery line was located approximately 6 inches bg and extended approximately 40 feet from the southwestern corner of the 4-Bay building before terminating approximately 12 feet from the western property boundary (Photographs 9 and 10 in Appendix A). A separate electrical conduit was also observed parallel to the buried fuel delivery line. Once the entire length of the buried fuel delivery line had been exposed, four test pits were advanced utilizing a shovel to a depth of approximately one foot bg along the buried fuel delivery line. A field screening sample was collected from approximately 6 inches bg from each test pit in a similar manner as described above in Section 4.2. The PID readings increased with distance from the 4-Bay building; 0 ppm, 1 ppm, 31 ppm, and 178 ppm for test pits TP1, TP2, TP3, and TP4, respectively. In addition, soils located directly beneath the termination point of the buried fuel delivery line emitted a strong fuel odor.

During the excavation of the westernmost test pit, a septic tank was discovered. Details of the septic tank assessment are presented below in Section 4.4.

A confirmation soil sample was collected from each test pit as described above in Section 4.2 (Figure 6). The samples were then packed and shipped to Onsite Environmental for laboratory analysis.

The soil samples collected from beneath the buried fuel delivery line were labeled, for example, TP1-0811, where the acronym TP stands for test pit and the adjoining number 1- indicates the numerical order the sample was collected in; and -0811 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, these samples are referred to as TP1, with the date omitted.

Three additional soil samples were collected from the first test pit to evaluate the extent of arsenic contamination adjacent to the southwestern corner of the 4-Bay building. These samples were numbered TP1-2-0811, where the acronym TP stands for test pit and the adjoining number indicates which test pit the sample was collected from; -1- indicates the numerical order the sample was collected in; and -0811 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, these samples are referred to as TP1-2, with the date omitted.

Additionally, Soil Sample BKGD-0811 was collected from non-impacted soils at a location northwest of the 4-Bay building and west of the Shop building to provide a background arsenic concentration typical of the soils located at the subject property (Figure 2). This sample was numbered BKGD-0811, where the

acronym BKGD stands for background; and -0811 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, this sample is referred to as BKGD, with the date omitted.

September Activities. Analytical results obtained from the soil samples collected from beneath the buried fuel delivery line exhibited concentrations of contaminants, in some cases, well above ADEC cleanup criteria (as described below in Section 5.2). Based on these results, it was decided that the buried fuel delivery line would be removed and additional excavation activities in the vicinity of the line and the septic tank would be undertaken to remove contaminated soils. Approval was obtained from the ADEC to perform these activities.

BGES returned to the subject property on September 15, 2010 to observe the excavation of contaminated soils from the vicinity of the buried fuel delivery line and septic tank (Photographs 11 through 13 in Appendix A). The buried fuel delivery line was removed, decommissioned, loaded into a dump truck, and transported to the local landfill for disposal.

Prior to excavation activities, the stockpiled soils removed from the septic tank area during the August site activities, as described below in Section 4.4, were loaded into dump trucks and transported to ASR for thermal remediation.

As mentioned earlier, assessment and excavation of contamination is an iterative process that depends on actual subsurface conditions and the type and degree of contamination encountered. During excavation activities adjacent to the fuel delivery line, soils were field-screened as described above to guide the removal of contaminated soils. Strong petroleum odors and stained soils were encountered throughout the excavation.

A total of 103.7 cy (155.53 tons) of impacted soils were removed from the excavation and placed in dump trucks for transport to ASR in Anchorage, Alaska for thermal treatment (the quantity of contaminated soil received by ASR is included in Appendix B). The excavation was irregular in shape and the base of the excavation was approximately 725 square feet (Figure 7); the perimeter of the excavation measured approximately 123 linear feet (Photograph 14 in Appendix A).

In accordance with ADEC guidance, 16 soil-screening samples were collected from the base of the excavation and 13 soil-screening samples were collected from the sidewalls of the excavation; PID

readings ranged from 0 ppm to greater than 1,000 ppm. Field screening samples were collected as described above in Section 4.2. Based on the excavation's measurements, four confirmation soil samples (FDL-1-0915 through FDL-4-0915) were collected from the base of the excavation and seven soil samples (FDL-5-0915 through FDL-11-0915) were collected from the excavation's sidewalls (Figure 7). One duplicate sample (FDL-2A-0915) was also collected from the base of the excavation, and submitted blindly to the laboratory to evaluate field sampling precision. Confirmation soil samples were collected, packed, and shipped to Onsite Environmental for analysis, as described above in Section 4.2.

The soil samples collected from the excavation were numbered FDL-1-0915, where the acronym FDL stands for fuel delivery line; -1- indicates the numerical order the sample was collected in; and -0915 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, these samples are referred to as FDL-1, with the date omitted.

Prior to backfilling activities, an additional soil sample (SPT-ID-0916) was collected from the obviously contaminated material remaining in the excavation. This soil sample was collected to establish a baseline identification for the contamination which was released in the fuel delivery line area of the subject property. The sample was prepared for shipment as described above in Section 4.2 and submitted to Zymax for forensic analysis; the results provided by Zymax are included in Appendix D.

Excavation activities were ceased, as requested by the client, after the removal of approximately 115 cy of impacted material from this portion of the subject property. After stopping the excavation activities, the presence of adversely-impacted soils remained in the vicinity of this excavation; the soils were stained and emitted petroleum odors. To document conditions at the completion of the excavation activities, field screening and confirmation soil samples were collected as described above.

Additionally, two rows of perforated high-density polyethylene drain tile (drainpipe) were placed in the bottom of the excavation to provide for aeration of the soils (Photograph 15 in Appendix A). The drainpipe and solid risers were positioned in a similar manner as described above in Section 4.2.1. Prior to backfilling, nutrients in the form of Arctic Gro® 16-16-16 (nitrogen:phosphorus:potash) fertilizer were added to the base of the excavation to promote biological degradation of the contamination. Then, the excavation was backfilled and appropriately compacted (Photograph 16 in Appendix A).

4.4 Septic Tank

August Activities. A fifth test pit was excavated approximately 6 feet bg east of the western boundary and perpendicular to the buried fuel delivery line, to evaluate the presence of a potential heating oil UST (Figure 6). During excavation activities, a cleanout pipe was exposed at approximately 3 feet bg (Photograph 17 in Appendix A). Further investigation of the cleanout pipe revealed it was attached to a septic tank that measured approximately 4 feet in diameter and 10 feet in length; the bottom of the tank was located at approximately 6 feet bg (Photographs 17 and 19 in Appendix A). The septic tank extended from north to south, and was located approximately 6 feet from the subject property's western boundary. A wooden creosote covered pipe was observed extending east, from the southern portion of the tank towards the 4-Bay building. The septic tank appeared to be divided in half inside, and several long, linear cuts were observed on the top and in the central portion of tank; these cuts may have been created to allow the tank's liquid contents to drain from the top of the tank over time. Additionally, during excavation activities, soils removed from the vicinity of the septic tank emitted a strong petroleum fuel odor; PID readings from field screening samples collected from the soils in the vicinity of the septic tank ranged from 17 ppm to 204 ppm. Because of the strong odors and PID results, these soils were placed into two separate stockpiles atop visqueen (Photographs 20 and 21 in Appendix A); approximately 61 cy of potentially contaminated soils were placed in these two stockpiles for temporary storage. Visqueen was then used to cover each stockpile. Prior to the departure from the site, the septic tank excavation was properly barricaded to prevent unauthorized access (Photograph 22 in Appendix A).

Based on the elevated PID readings and olfactory evidence of contamination identified in the stockpiled soils, three soil samples were collected from the septic tank excavation to evaluate conditions of the subsurface soils in the vicinity of the septic tank. The samples were collected as described above in Section 4.2. Soil Samples, SP1 through SP4, were collected from the base of the excavation and adjacent to the north, south, and east sides of the septic tank; an additional soil sample was collected from the northern sidewall of the excavation at a depth of approximately one foot bg (Figure 5).

The soil samples collected from the septic tank excavation were numbered SP1-0811, where the acronym SP stands for septic tank and the adjoining number 1- indicates the numerical order the sample was collected in; and -0811 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, these samples are referred to as SP1, with the date omitted.

Analytical results obtained from the soil samples collected from the septic tank excavation exhibited concentrations of contaminants above ADEC cleanup criteria (as described below, in Section 5.2). The contaminated soils discovered in the vicinity of the septic tank excavation likely originated from releases from the buried fuel delivery line and associated former heating oil AST as suggested by the following:

- Contamination was identified in the soils above the septic tank.
- Previous research and the presence of the fuel delivery line indicated the potential for a heating oil UST or AST to have been located along the western property boundary in the vicinity of the septic tank.

Based on the client's request, the septic tank was excavated and decommissioned during September of 2010, as discussed below.

September Activities. BGES returned to the site on September 15, 2010 to observe the removal and decommissioning of the septic tank and its contents. The septic tank's contents were first pumped into an onsite holding tank (Photograph 27 in Appendix A). A water sample was collected using a clean, laboratory-supplied, unlabelled and unpreserved container as a "dipper"; the contents of the container were then transferred to the appropriate laboratory container. The sample scheduled to be analyzed for volatile compounds was collected first; the samples were then prepared for transport and delivered to Test America, Inc. of Anchorage, Alaska (Test America) under chain of custody protocol.

Upon completion of pumping liquids from the septic tank, it was observed that the remainder of the tank's contents were composed of a "sludge" material. A shallow trench was excavated to the south of the septic tank excavation and lined with 20-mil plastic sheeting (Photograph 23 in Appendix A); the sludge was placed within this shallow lined trench until it could be transferred to a tote for temporary storage. A sample was collected from the "sludge" for laboratory analysis utilizing a similar sampling methodology as described above in Section 4.2. At the time this report was written, the septic tank's contents (liquid and sludge) were currently awaiting disposal as a non-hazarous waste by Emerald Alaska, Inc. (Emerald).

After removal of its content's, the septic tank was removed from the ground, placed into a dump truck, and transported to the local landfill for disposal (Photograph 24 in Appendix A).

Adversely-impacted soils were excavated from the vicinity of the septic tank and confirmation soil samples were collected and submitted for analysis as described above in Section 4.3.

5.0 EVALUATION OF LABORATORY DATA

Laboratory analysis of the confirmation soil samples was performed by Onsite Environmental and analysis of the septic tank contents was provided by Test America. Analytical results are listed in Tables 1 and 2, and copies of the laboratory data are provided in Appendix E.

The soil sample results are compared to the ADEC Method 2 Cleanup Criteria listed in 18 AAC 75.341 – Tables B1 and B2 (under 40-inch zone) for soils, as revised on October 9, 2008. The cleanup concentrations were obtained from these tables listed in the "under 40-inch zone" for soils, from the migrations to groundwater values, except for residual range organics (RRO) which is based on the more stringent, under 40-inch Zone, Ingestion Pathway.

As a quality control measure, a trip blank sample accompanied all samples scheduled for volatile analyses during the entire sampling and handling process. In addition, a duplicate soil sample was collected at a rate of one duplicate sample per ten project samples after excavation of impacted soils.

The laboratory samples were analyzed at Onsite Environmental, an ADEC-approved laboratory, by the following methods: GRO by Alaska Method (AK) 101; DRO by AK 102; RRO by AK 103; polynuclear aromatic hydrocarbons (PAHs) by Environmental Protection Agency (EPA) 8270 SIM; VOCs by EPA 8260B; Resource Conservation and Recovery Act (RCRA) Metals by EPA 6010B; mercury by EPA 7471A; polychlorinated biphenyls (PCBs) by EPA 8082; and benzene, toluene, ethylbenzene, and total xylenes by EPA 8021B. Results of the laboratory analyses are discussed below.

5.1 Former Used Oil AST Excavation

Four soil samples, including a duplicate sample, were collected from the base of the former used-oil AST excavation and five soil samples were collected from the excavation's sidewalls (Figure 5). These soil samples (CFS1 through CFS9) were analyzed for GRO, DRO, RRO, VOCs, and RCRA metals by the methods described above; in addition, Soil Samples CFS1, CFS4, and CFS9 were also analyzed for PAHs by the method described above. Soil Sample CFS8 was analyzed for PCBs by EPA 8082.

Soil Samples CFS1, CFS2, CFS3, CFS4, CFS5, CFS8, and CFS9 (duplicate of CFS1) exhibited a range of DRO concentrations from 3,000 mg/Kg to 13,000 mg/Kg; all of which exceed the ADEC cleanup criterion of 250 mg/Kg. Soil Sample CFS8 also exhibited a concentration of RRO at 36,000 mg/Kg, which exceeds the ADEC cleanup criterion of 10,000 mg/Kg. Soil samples CFS1, CFS9, and CFS4

exhibited elevated concentrations of naphthalene, 2-methylnaphthalene, and/or 1-methylnaphthalene at concentrations above their respective ADEC cleanup criteria. Based on these results, the extent of petroleum contamination has not been defined vertically (CFS1, CFS2, and CFS3), to the east beneath the 4-Bay building (CFS4 and CFS8) and to the south (CFS5). The extent of petroleum contamination appears to have been defined to the west and the north (Figure 5).

Soil Samples CFS2, CFS5, CFS7, and CFS8 exhibited concentrations of arsenic at 5.6 mg/Kg, 7.3 mg/Kg, 5.9 mg/Kg, and 7.1 mg/Kg; all of which exceed the ADEC cleanup criterion for arsenic. The Soil Sample BKGD exhibited a concentration of arsenic at 4.0 mg/Kg; which also exceeds the ADEC cleanup criterion for arsenic. However, it is our opinion that these concentrations are representative of the naturally elevated background concentrations of arsenic typical of Alaskan soils.

All other analytes were exhibited at non-detectable concentrations below the laboratory's method reporting limits (MRLs) and/or below ADEC cleanup criteria (Table 1).

As mentioned above, one soil sample was collected to establish a baseline identification for the contamination which was released from the former used-oil AST area of the subject property. Analytical results indicated that the contamination present in the former used-oil AST area consisted of a petroleum product containing higher end carbon range components (likely lubricating oils and/or bunker oil).

5.2 Buried Fuel Delivery Line Test Pits

Eight soil samples, including a duplicate sample, were collected from four test pits advanced along the buried fuel delivery line that extended west from the southwestern corner of the 4-Bay building (Figure 6). Soil Samples TP1 through TP4 and TP1A (duplicate of TP1) were analyzed for GRO, DRO, RRO, BTEX, and arsenic by the methods described above. Soil Sample TP4 was also analyzed for PAHs by the method described above. Soil Samples TP1, TP1A, TP1-2, TP1-3, TP1-4 and BKGD were all analyzed for arsenic by the method described above.

Soil Samples TP1, TP3, and TP4 exhibited concentrations of DRO at 5,200 mg/Kg, 1,400 mg/Kg, and 13,000 mg/Kg; all of which exceed the ADEC cleanup criterion for DRO. Soil Sample TP1 also exhibited a concentration of RRO at 31,000 mg/Kg, which exceeds the ADEC cleanup criterion. Concentrations of 1-methylnaphthalene and 2-methylnaphthalene were exhibited by Soil Sample TP4 at 16 mg/Kg and 17 mg/Kg; respectively, which exceeded their respective ADEC cleanup criteria.

Soil Samples TP1, TP1-2, TP1-3, TP1-4, and BKGD all exhibited concentrations of arsenic above the ADEC cleanup criterion of 3.9 mg/Kg; at 7.3 mg/Kg, 7.2 mg/Kg, 7.4 mg/Kg, 6.7 mg/Kg, and 4 mg/Kg, respectively. However, it is our opinion that these concentrations are representative of the naturally elevated background concentrations of arsenic typical of Alaskan soils.

For the test pits along the fuel delivery line, all other analytes were exhibited at non-detectable concentrations below the laboratory's MRLs and/or below ADEC cleanup criteria (Table 2).

A septic tank was discovered at the western end of the fuel delivery line (Section 4.4, above). Four soil samples (SP1 through SP4) collected from the soils adjacent to the septic tank were analyzed for GRO, DRO, RRO, and BTEX by the methods described above. Soil Sample SP1 was also analyzed for VOCs by EPA 8260B. Soil Samples SP1, SP2, SP3, and SP4 exhibited DRO concentrations ranging between 510 mg/Kg, and 13,000 mg/Kg; all of which exceed the ADEC cleanup criterion for DRO. For the septic tank area, all other analytes were exhibited at non-detectable concentrations below the laboratory's MRLs and/or below ADEC cleanup criteria (Table 2).

Based on these results, excavation activities were conducted in the vicinity of the buried fuel delivery line and septic tank (Section 4.3.1).

5.3 Buried Fuel Delivery Line and Septic Tank Excavation

After the excavation of impacted soils, five confirmation soil samples, including a duplicate sample, were collected from the base of this excavation and seven soil samples were collected from the excavation's sidewalls (Figure 7). These soil samples (FDL-1 through FDL-11 and FDL-2A) were analyzed for DRO and RRO by the methods described above in Section 5.0. In addition, Soil Sample FDL-2 was analyzed for VOCs and PAHs by the methods described above in Section 5.0.

Soil Samples FDL-1 through FDL-11 and FDL-2A (duplicate of FDL-2) exhibited concentrations of DRO ranging between 660 mg/Kg to 17,000 mg/Kg; all of which exceed the ADEC cleanup criterion for DRO. Soil Sample FDL-2 also exhibited concentrations of 1-methylnaphthalene and 2-methylnaphthalene, above the ADEC cleanup criteria, at 23 mg/Kg and 14 mg/Kg, respectively.

All other analytes were exhibited at non-detectable concentrations below the laboratory's MRLs and/or below ADEC cleanup criteria (Table 2).

Based on these results, the lateral extent of contamination has not been defined to the north (FDL-5), south (FDL-9 and FDL-11), east (FDL-10) and west (FDL-6, FDL-7, and FDL-8) or vertically (Soil Samples FDL-1 through FDL-4) discussed above in Section (Figure 7).

As mentioned above, one soil sample was collected to establish a baseline identification for the contamination which was released from the former fuel delivery line and septic tank area of the subject property. Analytical results indicated that the contamination present in this area consisted of a petroleum product containing lower end carbon range components (likely heating fuel).

6.0 LABORATORY DATA QUALITY REVIEW

Data quality was reviewed in accordance with ADEC guidance and standard industry practices. An ADEC laboratory data review checklist was completed for each of the two laboratory data reports for the confirmation soil samples, and are attached in Appendix F. Each checklist provides an overview of the quality of the laboratory data. The following is a discussion of our evaluation of sample conditions and laboratory procedures for the soil samples collected during the July of 2010 excavation and remediation activities.

6.1 Laboratory Samples

Sample analyses were provided by Onsite Environmental, an ADEC-approved laboratory. The samples were shipped from Fairbanks, Alaska to Onsite Environmental in Redmond, Washington under chain of custody protocol via FedEx.

Sample coolers were measured at the laboratory at the time of receipt to be within the acceptable range of 2° C to 6° C. The samples contained the proper preservatives for the requested analyses and no unusual sample conditions were noted by the laboratory. Trip blanks accompanied the volatile samples (VOCs and GRO) through the entirety of the sampling process and delivery to the laboratory. Case narratives were included with all of the laboratory data. Quality Control (QC) failures identified in the case narratives are separated by work order numbers and are described below.

Work Order 1008-095R

The case narrative for Work Order Number 1008-095R (samples collected on August 10-11, 2010) noted that there were no QC failures identified by Onsite Environmental.

The following VOCs reporting limits exceeded their applicable ADEC cleanup criteria for Field Samples CFS1 through CFS8: bromodichloromethane, carbon tetrachloride, 1,2-dibromoethane, 1,2-dichloroethane, 1,2-dichloropropane, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,1,2-trichloroethane, trichloroethene, 1,2,3-trichloropropane, and vinyl chloride. The reporting limits for dibromochloromethane and 1,1-dichloroethene also exceeded their ADEC cleanup criteria in Field Samples CFS1, CFS2, CFS3, CFS4, CFS5, CFS7, CFS8, and SP1; as such it cannot be determined if actual concentrations of the previously listed VOCs within the field samples exceed their respective ADEC cleanup criteria. Because all of the field samples contained concentrations of DRO that in some cases greatly exceeded the ADEC cleanup criterion, it is our opinion that the lack of information concerning the previously listed VOCs does not affect the interpretation of the data for their intended use.

The relative percent differences (RPDs) calculated utilizing the duplicate sample (CFS9) collected in association with Soil Sample CFS1 were below the ADEC recommended acceptable limit of 50 percent.

Work Order 1009-073

The case narrative for Work Order Number 1009-073 (samples collected September 15, 2010) noted that there were some QC failures identified by Onsite Environmental.

The percentage of recovery for the surrogate terphenyl-d14 was above acceptance limits (125 percent; acceptable limit range is 41 percent to 106 percent). However, because the remaining surrogate recovery percentages were all within their acceptance limits, it is our opinion that this QC failure does not affect the acceptability of the data for their intended use.

The following VOCs reporting limits exceeded their applicable ADEC cleanup criteria for Field Samples FDL-2 and FDL-2A: bromodichloromethane, carbon tetrachloride, dibromochloromethane, 1,2-dibromoethane, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloropropane, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,1,2-trichloroethane, trichloroethene, 1,2,3-trichloropropane, and vinyl chloride; as such it cannot be determined if actual concentrations of the previously listed VOCs within the field samples exceed their respective ADEC cleanup criteria. Because the field samples contained concentrations of DRO that greatly exceeded the ADEC cleanup criterion, it is our opinion that the lack of information concerning the previously listed VOCs does not affect the interpretation of the data for their intended use.

The RPDs calculated utilizing the duplicate sample (TP1A) collected in association with Soil Sample TP1 were below the ADEC recommended acceptable limit of 50 percent. Additionally, the RPDs calculated utilizing the duplicate sample (FDL-2A) collected in association with Soil Sample FDL-2 were below the ADEC recommended acceptable limit of 50 percent.

7.0 CONCEPTUAL SITE MODEL

Utilizing on-site observations and ADEC guidance documents, a conceptual site model (CSM) has been developed to depict contaminant exposure routes for human receptors identified or suspected for the subject property (Appendix G). Contamination at the subject property originated from the former used-oil AST located near the northwestern portion of the 4-Bay building and the former heating oil system located near the southwestern portion of the 4-Bay building as discussed above. Although some of the impacted soils were removed during these remediation and site assessment activities performed during August and September of 2010, subsurface soils still exhibit DRO, RRO, naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, and 1,2,4-trimethylbenzene concentrations exceeding the ADEC cleanup criteria in both areas. Arsenic was detected above the ADEC cleanup criterion of 3.9 mg/Kg in both excavation areas; however, it is our opinion that these concentrations are representative of the naturally elevated background concentrations of arsenic typical of Alaskan soils. Adversely-impacted soils are currently present at the base and the eastern and southern sidewalls of the former used-oil AST excavation and the base and all four sidewalls of the buried fuel delivery line excavation.

Based on the presence of elevated concentrations of DRO in both release areas, the potential transport mechanisms for the migration of contamination include the continuing migration to subsurface soil and groundwater, and volatilization. The potential exposure pathways for human receptors include the following: incidental soil ingestion and dermal absorption of contaminants from soil; ingestion of groundwater, dermal absorption of contaminants in groundwater, inhalation of volatile compounds from groundwater; and inhalation of outdoor air, indoor air, and fugitive dust. The potential receptors for the exposure include current and future commercial and construction workers and site visitors that may disturb surface and subsurface soils, and/or groundwater; and future commercial and/or construction workers that may disturb or use groundwater. DRO is considered to be a volatile compound. The subject property is located in an industrial area, therefore, the potential receptor for a resident is not included in this CSM. Complete and incomplete, current and future human pathways for exposures to these contaminants are described below.

As discussed above, impacted soils remaining at the base of the both excavations have been covered with backfill material providing a physical barrier of "clean" soils up to eight feet. However, due to the potential for impacted soils to extend laterally, human receptors potentially affected by the exposure pathways of incidental soil ingestion and dermal absorption of contaminants from soil include current and future commercial, industrial, and construction workers; and current and future site visitors.

Groundwater was not encountered to a depth of 8 feet bg during these remediation activities; however, based on information from surrounding properties, the depth to groundwater is assumed to be approximately 9 to 10 feet bg. Because confirmation soil samples exhibiting concentrations of DRO well above the ADEC cleanup criteria were collected from a depth of 8 feet bg, there is a potential that groundwater at the site has been impacted by one or both of the releases of petroleum contamination from the subject property. The subject property is currently connected to the Fairbanks municipal water system. However, it is possible that water supply wells are being utilized in the vicinity of the subject property. For these reasons, human receptors could be potentially affected through the exposure pathways of ingestion of groundwater, dermal absorption of contaminants in groundwater, and inhalation of volatile compounds in tap water include: current and future commercial, industrial, and construction workers.

Based on analytical results from these remediation activities, DRO contamination present in impacted soil at the site has the potential to volatilize. DRO-contaminated soils located at the base of the excavations have been capped with backfill material; therefore, the potential for soils remaining in the base of the excavations to adversely impact outdoor air is minimal. However, because the DRO-impacted soil remaining in the former used oil AST excavation may extend laterally to the east (beneath the 4-Bay building) and to the south; inhalation of outdoor air, inhalation of indoor air, and/or fugitive dust are considered to be potential exposure pathways. In addition, DRO-impacted soils remaining in the buried fuel delivery line excavation extend laterally in all directions and are also considered to be potential pathways. Human receptors potentially affected via these pathways include current and/or future commercial, industrial, and construction workers; and current and/or future site visitors and trespassers.

A copy of the graphical representation of the conceptual site model is included in Appendix G.

8.0 CONCLUSIONS AND RECOMMENDATIONS

BGES observed remediation activities associated with the former used oil AST (northwestern portion of the 4-Bay building) and the buried fuel delivery line (southwest corner of the 4-Bay building). BGES

also observed the removal and decommissioning of a septic tank and its contents, previously located near the western boundary of the subject property.

8.1 Former Used Oil AST Excavation

A total of 103.8 cy (155.71 tons) of contaminated material was excavated from this area and transported to ASR for thermal treatment and disposal. As stated above in Section 4.2, confirmation samples collected from the base (CFS1 through CFS3) and sidewalls (CFS4, CFS5 and CFS8) of the former used oil AST excavation exhibited concentrations of DRO from 3,000 mg/Kg to 13,000 mg/Kg; all of which exceed the ADEC cleanup criterion of 250 mg/Kg. Based on the locations from which the samples listed above were collected, the vertical extent of contamination has not been defined and the lateral extent of contamination has not been defined to the south and east beneath the building (Figure 4); further lateral excavation of impacted soils to the east was not possible without jeopardizing the structural stability of the building. The lateral extent of the contamination associated with the former used oil AST appears to be defined to the west and north (CFS6 and CFS7).

As discussed above, impacted soils remain in place in the vicinity of the former used oil AST excavation. For this reason, and because of assumed shallow depth to groundwater at the site (approximately 9 to 10 feet bg), it is recommended that the vertical and lateral extent of contamination be defined by advancing soil borings for the collection and analysis of soil samples surrounding this area. After the extent of the soil and/or groundwater contamination has been defined, potential options for remediation will be evaluated and proposed, if necessary (Figure 5).

8.2 Buried Fuel Delivery Line Excavation

Several soil samples (TP1, TP1-2, TP1-3, TP1-4) were collected from the soils in the vicinity of the buried fuel delivery line (the southwest corner of the 4-Bay building) in an attempt to determine if detected arsenic concentrations were within the naturally elevated background concentrations typical of Alaskan soils. The concentrations of arsenic exhibited by these soil samples listed above ranged from 6.7 mg/Kg to 7.4 mg/Kg. Additionally, Soil Sample BKGD was collected from an un-impacted area of the subject property to evaluate the background arsenic concentration in the soils at the subject property; the sample exhibited a concentration of arsenic at 4 mg/Kg, which exceeds the ADEC cleanup criterion. Based on the analytical results, as described above, it is our opinion that the arsenic concentrations exhibited by the soil samples collected from within the vicinity of the buried fuel delivery line are within

the naturally elevated background concentrations typical of Alaskan soils.

A total of 103.7 cy (155.53 tons) of contaminated material was excavated from this area and transported to ASR for thermal treatment and disposal. As discussed above, confirmation samples collected from the base and sidewalls of the fuel delivery excavation (FDL-1 through FDL-11) exhibited concentrations of DRO ranging from 660 mg/Kg to 17,000 mg/Kg; all of which exceed the ADEC cleanup criterion for DRO. Based on the locations from which the samples were collected, the extent of impacted soils has not been defined laterally or vertically away from this excavation (Figure 7).

Due to the presence of contamination at the base and in the sidewalls of the buried fuel delivery line excavation, it is recommended that the vertical and lateral extent of contamination be defined by advancing soil borings for the collection and analysis of soil samples surrounding this area. After the extent of the soil and/or groundwater contamination has been defined, potential options for remediation will be evaluated and proposed (Figure 7).

8.3 Septic Tank

As described above, a septic tank was discovered near the western boundary of the subject property. The septic tank appeared to have formerly serviced the 4-Bay building. The septic tank contents were removed and placed in containers for temporary storage until disposal can be arranged through Emerald as a non-hazardous waste. The septic tank was then removed and disposed of at the local landfill.

9.0 EXCLUSIONS AND CONSIDERATIONS

This report presents facts, observations, and inferences based on conditions observed during the period of our project activities, and only those conditions that were evaluated as part of our scope of work. Our conclusions are based solely on our observations made in the local vicinities of the excavations, which provide an indication of the overall environmental condition of the site. In addition, changes to site conditions may have occurred since we completed our project activities. These changes may be from the actions of man or nature. Changes in regulations may also impact the interpretation of site conditions. BGES will not disclose our findings to any parties other than our client as listed above, except as directed by our client, or as required by law.

This report was prepared by Sean Peterson, Environmental Scientist II of BGES and Qualified Person (QP) as defined by the ADEC. Mr. Peterson has conducted several site characterization and remedial

efforts throughout Alaska; the fieldwork was also conducted by Sean Peterson. This report was reviewed by Jayne Martin, Senior Environmental Scientist of BGES. Ms. Martin is a QP, as defined by the ADEC, and has more than 20 years of environmental consulting experience. Ms. Martin has conducted and managed numerous site characterization and remediation efforts throughout Alaska and the lower 48 states, which have included field activities such as the advancement of soil borings, performance of groundwater monitoring, excavation supervision and soil sampling, and the installation of monitoring wells. The report was approved by Robert N. Braunstein, C.P.G., Principal Geologist of BGES. Mr. Braunstein has more than 30 years of geological/environmental consulting experience and has conducted and managed thousands of environmental projects involving site characterization and remediation efforts, throughout Alaska and the lower 48 states.

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Reviewed By:

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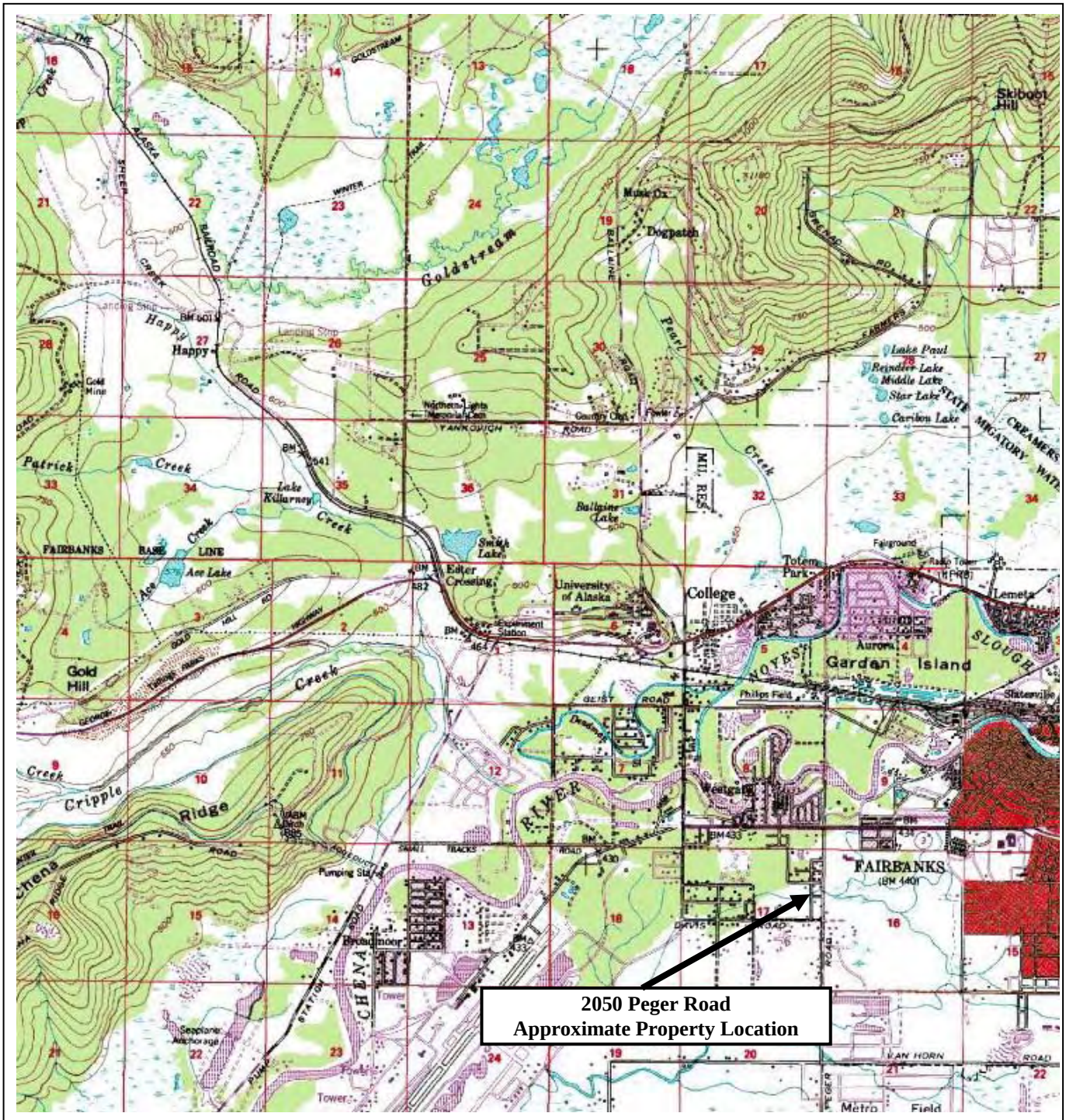


Source: USGS Map, Fairbanks, Alaska, United States, 7/1/1975

0 1

Approximate Scale (miles)

N

BGES

2050 Peger Road
Fairbanks, Alaska
Property Vicinity Map

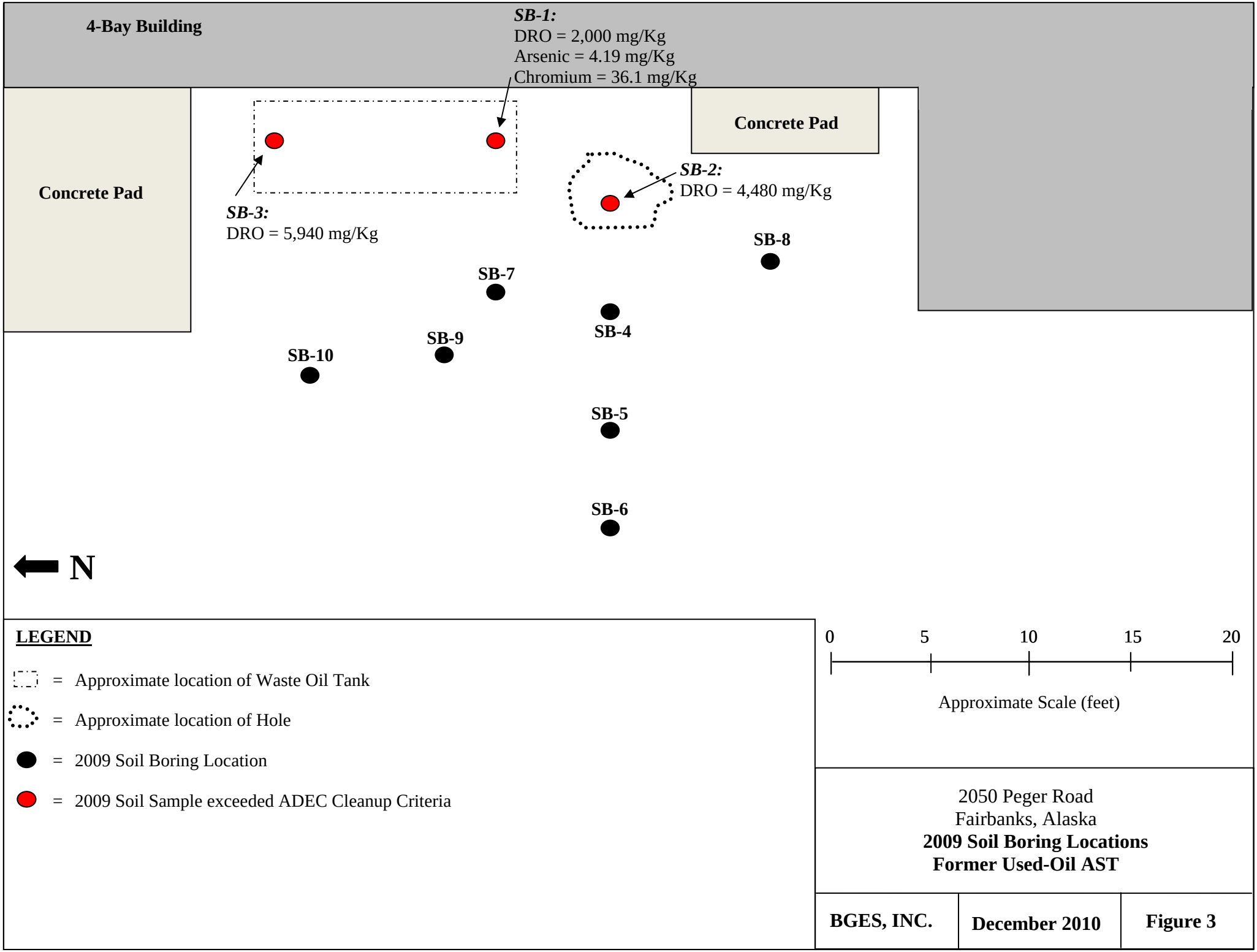
BGES, INC.	December 2010	Figure 1

Source: Google Earth Pro © 2009 Approximate Scale: 1inch = 50 feet

N

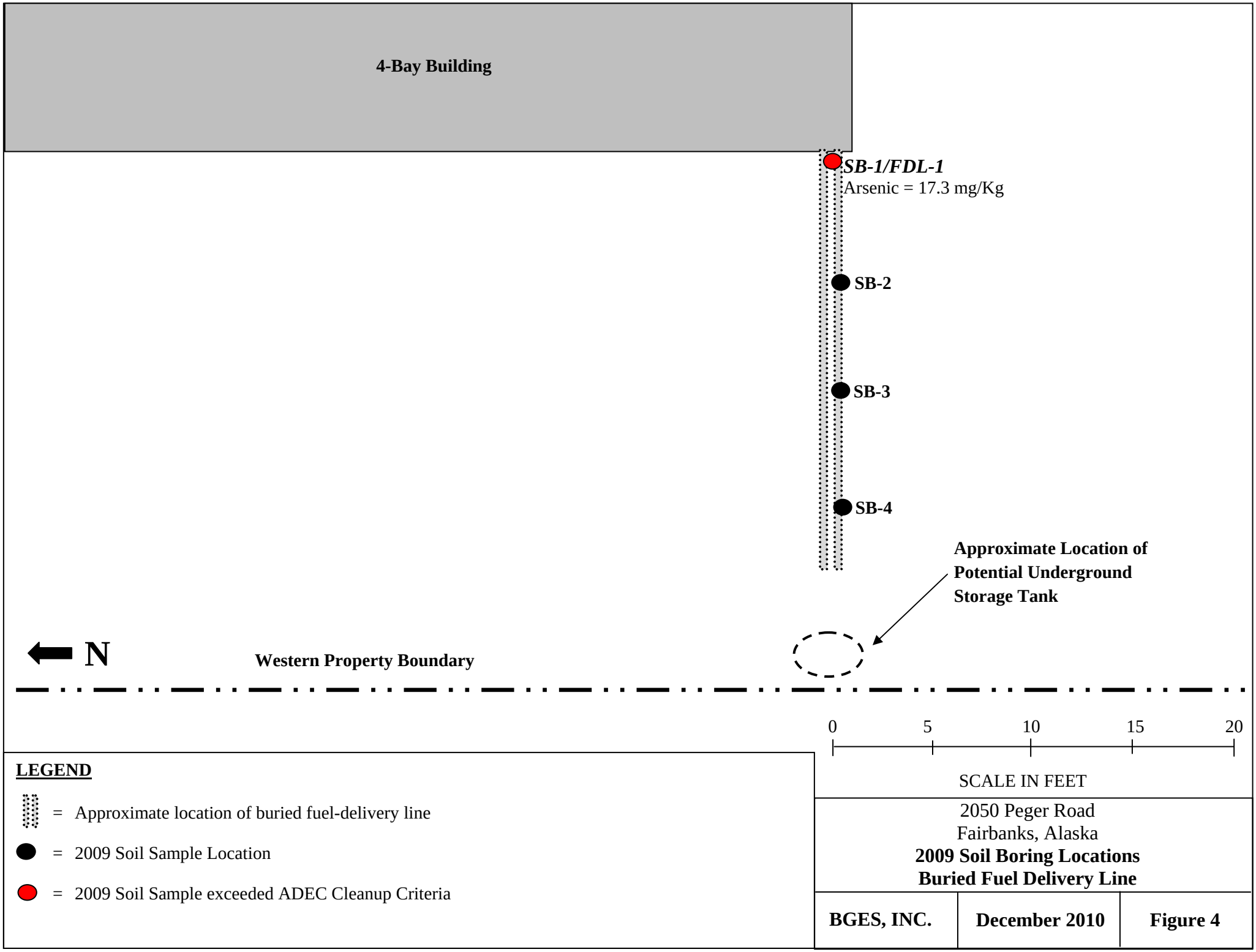
2050 Peger Road
Fairbanks, Alaska
June 21, 2007 Aerial Photograph

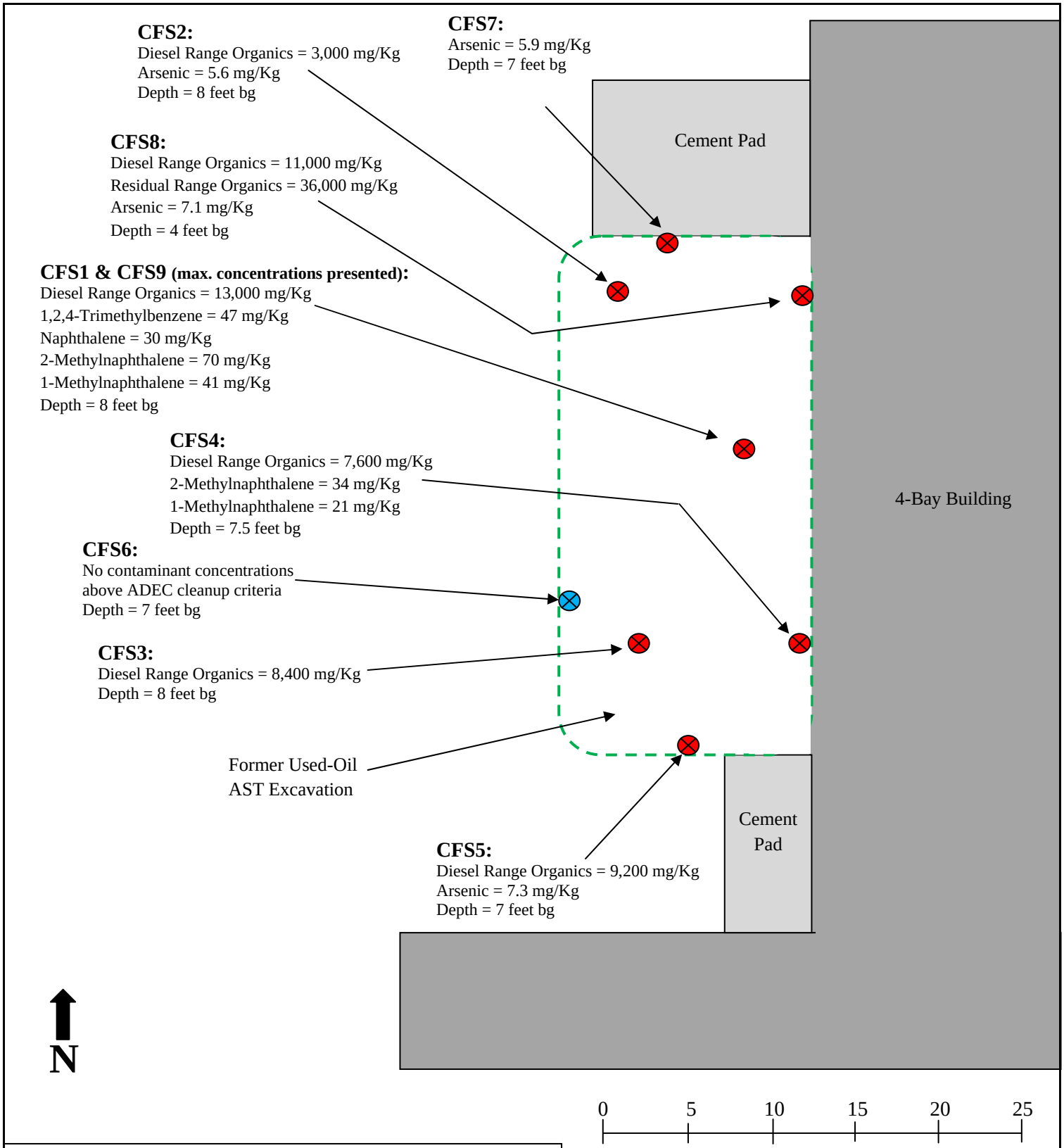
BGES, INC.	December 2010	Figure 2



2050 Peger Road
Fairbanks, Alaska
2009 Soil Boring Locations
Former Used-Oil AST

BGES, INC.	December 2010	Figure 3


4-Bay Building
SB-1/FDL-1
Arsenic = 17.3 mg/Kg
SB-2
SB-3
SB-4
Approximate Location of Potential Underground Storage Tank
N
Western Property Boundary
0
5
10
15
20
SCALE IN FEET
LEGEND
= Approximate location of buried fuel-delivery line
= 2009 Soil Sample Location
= 2009 Soil Sample exceeded ADEC Cleanup Criteria
2050 Peger Road
Fairbanks, Alaska
2009 Soil Boring Locations
Buried Fuel Delivery Line
BGES, INC.
December 2010
Figure 4



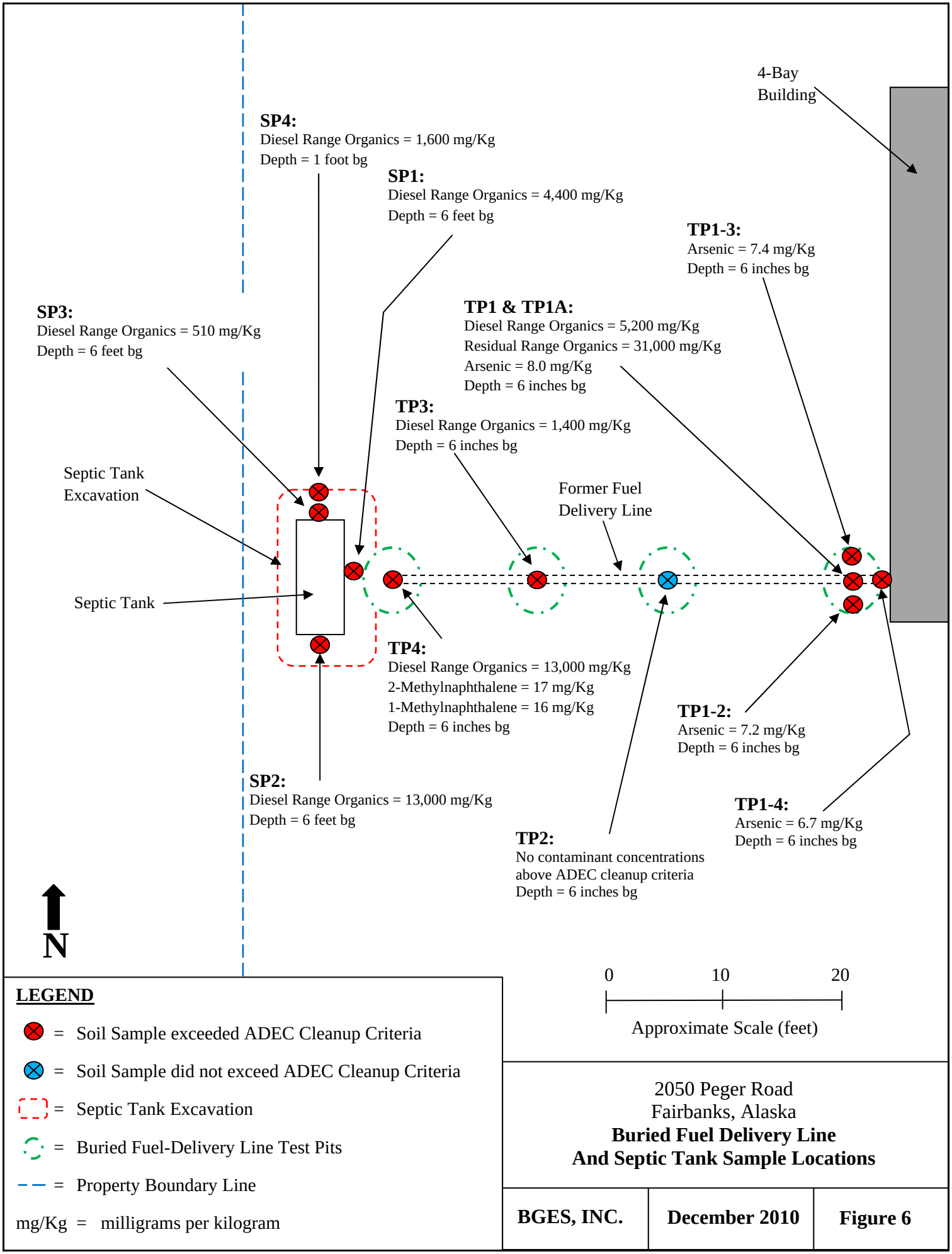
LEGEND

- ⊗ = Soil Sample exceeded ADEC Cleanup Criteria
- ⊗ = Soil Sample did not exceed ADEC Cleanup Criteria
- ▭ = Former Used-Oil AST Excavation

mg/Kg = milligrams per kilogram

2050 Peger Road
Fairbanks, Alaska
Former Used-Oil AST Excavation

BGES, INC.	December 2010	Figure 5



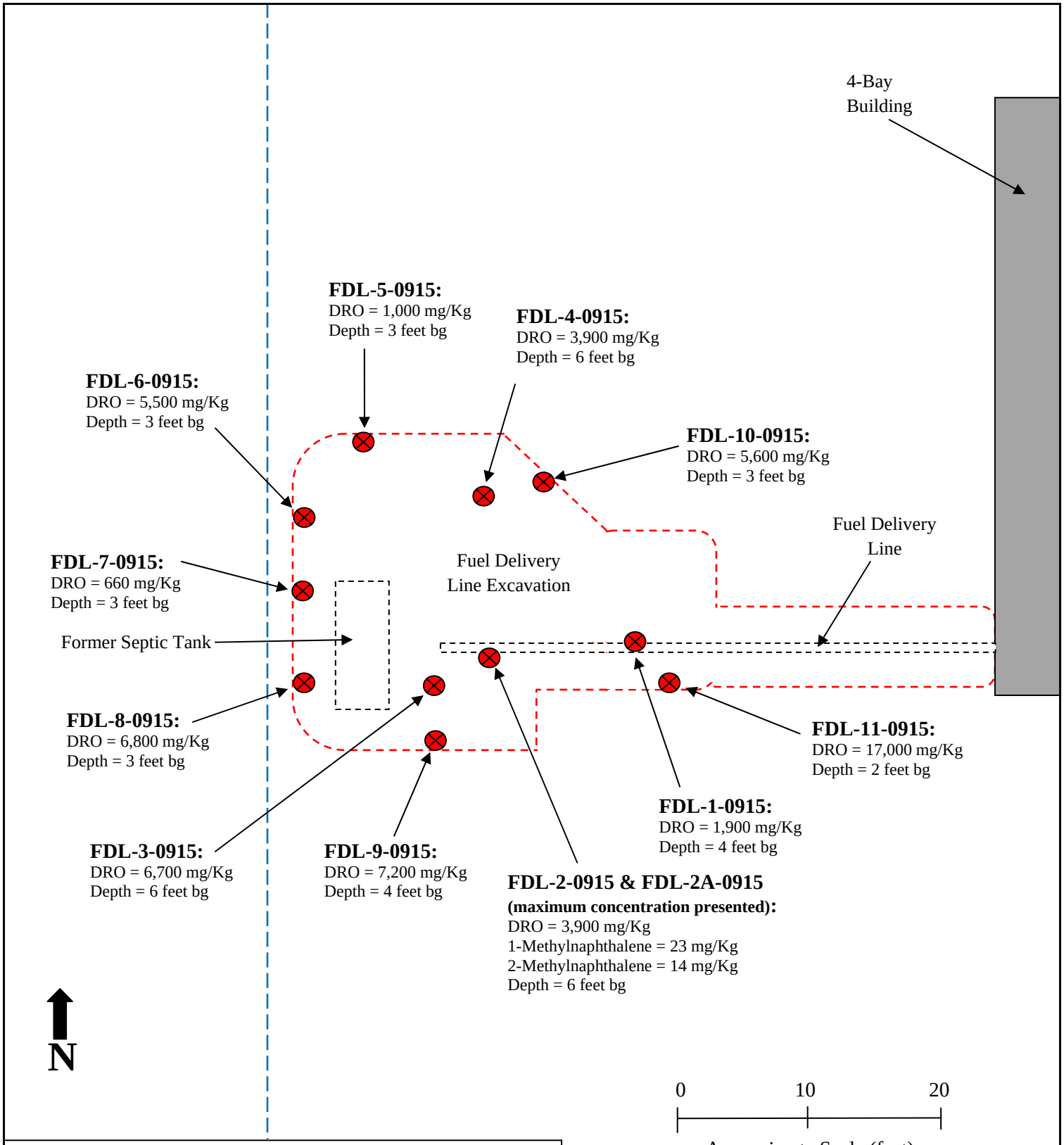
LEGEND

- = Soil Sample exceeded ADEC Cleanup Criteria
- = Soil Sample did not exceed ADEC Cleanup Criteria
- = Septic Tank Excavation
- = Buried Fuel-Delivery Line Test Pits
- = Property Boundary Line

mg/Kg = milligrams per kilogram

2050 Peger Road
Fairbanks, Alaska
Buried Fuel Delivery Line
And Septic Tank Sample Locations

BGES, INC.	December 2010	Figure 6



LEGEND

⊗ = Soil Sample exceeded ADEC Cleanup Criteria

= Septic Tank Excavation

= Property Boundary Line

mg/Kg = milligrams per kilogram

bg = below grade

2050 Peger Road
Fairbanks, Alaska
Buried Fuel Delivery Line Excavation

BGES, INC.	December 2010	Figure 7

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	33	300	AK101
	Diesel Range Organics	**11,000**	110	250	AK102
	Residual Range Organics	450	220	10,000	AK103
CFS1-0811	Ethylbenzene	1.4	0.15	6.9	EPA 8260B
(PID = 211 ppm)	Total Xylenes	7.4	0.15	63	EPA 8260B
Depth = 8 feet bg	Isopropylbenzene	1.2	0.15	51	EPA 8260B
	n-Propylbenzene	2.2	0.15	15	EPA 8260B
	1,3,5-Trimethylbenzene	10	0.15	23	EPA 8260B
	tert-Butylbenzene	0.17	0.15	12	EPA 8260B
	1,2,4-Trimethylbenzene	**28**	0.15	23	EPA 8260B
	sec-Butylbenzene	2.0	0.15	12	EPA 8260B
	p-Isopropyltoluene	4.0	0.15	NA	EPA 8260B
	Naphthalene	**21**	0.15	20	EPA 8260B
	Benzene	ND	*0.15*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.15*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.15*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.15*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.15*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.15*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.15*	0.030	EPA 8260B
	1,2-Dichloropropane	ND	*0.15*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.77*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.15*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.15*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.15*	0.018	EPA 8260B
	Trichloroethene	ND	*0.15*	0.020	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.15*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.15*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Naphthalene	**22**	0.72	20	EPA 8270SIM
	2-Methylnaphthalene	**67**	0.72	6.1	EPA 8270SIM
	1-Methylnaphthalene	**40**	0.72	6.2	EPA 8270SIM
	Acenaphthylene	0.80	0.072	180	EPA 8270SIM
	Acenaphthene	1.8	0.072	180	EPA 8270SIM
	Fluorene	6.9	0.072	220	EPA 8270SIM
	Phenanthrene	7.2	0.072	3000	EPA 8270SIM
	Anthracene	0.39	0.072	3000	EPA 8270SIM
	Fluoranthene	0.24	0.072	1400	EPA 8270SIM
	Pyrene	0.21	0.072	1000	EPA 8270SIM
	Chrysene	0.090	0.072	360	EPA 8270SIM
	All Other PAHs	ND	0.072	Varies	EPA 8270SIM
	Arsenic	ND	2.7	3.9	EPA 6020
	Barium	42	2.7	1,100	EPA 6010B
	Cadmium	ND	0.54	5	EPA 6010B
	Chromium	9.7	0.54	25	EPA 6010B
	Lead	ND	5.4	400	EPA 6010B
	Mercury	ND	0.27	1.4	EPA 7471A
	Selenium	ND	*11*	3.4	EPA 6010B
	Silver	ND	0.54	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
CFS9-0811					
Duplicate of CFS1-0811					
	Gasoline Range Organics	ND	31	300	AK101
RPD = 11.43%	Diesel Range Organics	**13,000**	110	250	AK102
RPD = 17.74%	Residual Range Organics	340	220	10,000	AK103
RPD = 32%	Ethylbenzene	2.2	0.17	6.9	EPA 8260B
RPD = 23.81%	Total Xylenes	10.4	0.17	63	EPA 8260B
RPD = 24.39%	Isopropylbenzene	1.7	0.17	51	EPA 8260B
RPD = 24%	n-Propylbenzene	3.1	0.17	15	EPA 8260B
RPD = 23.53%	1,3,5-Trimethylbenzene	14	0.17	23	EPA 8260B
RPD = 30%	tert-Butylbenzene	0.26	0.17	12	EPA 8260B
RPD = 36.89%	1,2,4-Trimethylbenzene	**47**	0.69	23	EPA 8260B
RPD = 20.90%	sec-Butylbenzene	2.7	0.17	12	EPA 8260B
	p-Isopropyltoluene	5.5	0.17	NA	EPA 8260B
	Naphthalene	**30**	0.17	20	EPA 8260B
	Benzene	ND	*0.17*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.17*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.17*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.17*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.17*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.17*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.17*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.17*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.86*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.17*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.17*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.17*	0.018	EPA 8260B
	Trichloroethene	ND	*0.17*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.17*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.17*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
RPD = 8.70%	Naphthalene	**25**	0.17	0.73	EPA 8270SIM
RPD = 2.94%	2-Methylnaphthalene	**70**	0.73	6.1	EPA 8270SIM
RPD = 1.65%	1-Methylnaphthalene	**41**	0.73	6.2	EPA 8270SIM
RPD = 0.83%	Acenaphthylene	0.79	0.73	180	EPA 8270SIM
RPD = 25%	Acenaphthene	1.2	0.036	180	EPA 8270SIM
RPD = 0.96%	Fluorene	7.0	0.73	220	EPA 8270SIM
RPD = 4.52%	Phenanthrene	7.7	0.73	3000	EPA 8270SIM
RPD = 34.04%	Anthracene	0.63	0.036	3000	EPA 8270SIM
RPD = 17.72%	Fluoranthene	0.31	0.036	1400	EPA 8270SIM
RPD = 20%	Pyrene	0.28	0.036	1000	EPA 8270SIM
	Benzo[a]anthracene	0.069	0.036	3.6	EPA 8270SIM
RPD = 13.79%	Chrysene	0.11	0.036	360	EPA 8270SIM
	Benzo[b]fluoranthene	0.036	0.036	4.0	EPA 8270SIM
	Benzo[a]pyrene	0.053	0.036	0.40	EPA 8270SIM
	All Other PAHs	ND	0.036	Varies	EPA 8270SIM
	Arsenic	2.8	2.7	3.9	EPA 6020
RPD = 0.00%	Barium	42	2.7	1,100	EPA 6010B
	Cadmium	ND	0.54	5	EPA 6010B
RPD = 8.55%	Chromium	11	0.54	25	EPA 6010B
	Lead	ND	5.4	400	EPA 6010B
	Mercury	ND	0.27	1.4	EPA 7471A
	Selenium	ND	*11*	3.4	EPA 6010B
	Silver	ND	0.54	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	38	300	AK101
	Diesel Range Organics	**3,000**	110	250	AK102
	Residual Range Organics	ND	210	10,000	AK103
CFS2-0811	Ethylbenzene	0.35	0.18	6.9	EPA 8260B
(PID = 30 ppm)	Total Xylenes	1.44	0.18	63	EPA 8260B
Depth = 7.5 feet bg	Isopropylbenzene	0.36	0.18	51	EPA 8260B
	n-Propylbenzene	0.54	0.18	15	EPA 8260B
	1,3,5-Trimethylbenzene	3.0	0.18	23	EPA 8260B
	1,2,4-Trimethylbenzene	9.0	0.18	23	EPA 8260B
	sec-Butylbenzene	0.58	0.18	12	EPA 8260B
	p-Isopropyltoluene	1.20	0.18	NA	EPA 8260B
	n-Butylbenzene	1.8	0.18	15	EPA 8260B
	Naphthalene	7.0	0.18	20	EPA 8260B
	Benzene	ND	*0.18*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.18*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.18*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.18*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.18*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.18*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.18*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.18*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.92*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.18*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.18*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.18*	0.018	EPA 8260B
	Trichloroethene	ND	*0.18*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.18*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.18*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Arsenic	**5.6**	5.3	3.9	EPA 6010B
	Barium	52	2.7	1,100	EPA 6010B
	Cadmium	ND	0.53	5	EPA 6010B
	Chromium	12	0.53	25	EPA 6010B
	Lead	ND	5.3	400	EPA 6010B
	Mercury	ND	0.27	1.4	EPA 7471A
	Selenium	ND	*11*	3.4	EPA 6010B
	Silver	ND	0.53	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	23	300	AK101
	Diesel Range Organics	**8,400**	110	250	AK102
	Residual Range Organics	ND	210	10,000	AK103
CFS3-0811	Ethylbenzene	0.17	0.13	6.9	EPA 8260B
(PID = 179 ppm)	Total Xylenes	2.96	0.13	63	EPA 8260B
Depth = 8 feet bg	Isopropylbenzene	0.17	0.13	51	EPA 8260B
	n-Propylbenzene	0.21	0.13	15	EPA 8260B
	1,3,5-Trimethylbenzene	4.8	0.13	23	EPA 8260B
	1,2,4-Trimethylbenzene	14	0.13	23	EPA 8260B
	sec-Butylbenzene	0.38	0.13	12	EPA 8260B
	p-Isopropyltoluene	1.5	0.13	NA	EPA 8260B
	Naphthalene	8.5	0.13	20	EPA 8260B
	n-Butylbenzene	0.81	0.13	15	EPA 8260B
	Benzene	ND	*0.13*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.13*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.13*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.13*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.13*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.13*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.13*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.13*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.63*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.13*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.13*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.13*	0.018	EPA 8260B
	Trichloroethene	ND	*0.13*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.13*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.13*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Arsenic	3.3	2.6	3.9	EPA 6020
	Barium	46	2.6	1,100	EPA 6010B
	Cadmium	ND	0.52	5	EPA 6010B
	Chromium	11	0.52	25	EPA 6010B
	Lead	ND	5.2	400	EPA 6010B
	Mercury	ND	0.26	1.4	EPA 7471A
	Selenium	ND	*10*	3.4	EPA 6010B
	Silver	ND	0.52	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	27	300	AK101
	Diesel Range Organics	**7,600**	100	250	AK102
	Residual Range Organics	ND	210	10,000	AK103
CFS4-0811	Total Xylenes	1.36	0.15	63	EPA 8260B
(PID = 139 ppm)	1,3,5-Trimethylbenzene	5.6	0.15	23	EPA 8260B
Depth = 7.5 feet bg	1,2,4-Trimethylbenzene	13	0.15	23	EPA 8260B
	p-Isopropyltoluene	2	0.15	NA	EPA 8260B
	Naphthalene	12	0.15	20	EPA 8260B
	Benzene	ND	*0.15*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.15*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.15*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.15*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.15*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.15*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.15*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.15*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.76*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.15*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.15*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.15*	0.018	EPA 8260B
	Trichloroethene	ND	*0.15*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.15*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.15*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Naphthalene	11	0.34	20	EPA 8270SIM
	2-Methylnaphthalene	**34**	0.34	6.1	EPA 8270SIM
	1-Methylnaphthalene	**21**	0.34	6.2	EPA 8270SIM
	Acenaphthylene	0.39	0.034	180	EPA 8270SIM
	Acenaphthene	1.1	0.034	180	EPA 8270SIM
	Fluorene	3.6	0.034	220	EPA 8270SIM
	Phenanthrene	3.7	0.034	3000	EPA 8270SIM
	Anthracene	0.17	0.034	3000	EPA 8270SIM
	Fluoranthene	0.10	0.034	1400	EPA 8270SIM
	Pyrene	0.095	0.034	1000	EPA 8270SIM
	Chrysene	0.034	0.034	360	EPA 8270SIM
	All Other PAHs	ND	0.034	Varies	EPA 8270SIM
	Arsenic	3.4	2.6	3.9	EPA 6020
	Barium	37	2.6	1,100	EPA 6010B
	Cadmium	ND	0.51	5	EPA 6010B
	Chromium	9.0	0.51	25	EPA 6010B
	Lead	ND	5.1	400	EPA 6010B
	Mercury	ND	0.26	1.4	EPA 7471A
	Selenium	ND	*10*	3.4	EPA 6010B
	Silver	ND	0.51	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	43	300	AK101
	Diesel Range Organics	**9,200**	110	250	AK102
	Residual Range Organics	ND	230	10,000	AK103
CFS5-0811	Ethylbenzene	0.59	0.17	6.9	EPA 8260B
(PID = 100 ppm)	Total Xylenes	2.45	0.17	63	EPA 8260B
Depth = 7 feet bg	Isopropylbenzene	0.53	0.17	51	EPA 8260B
	n-Propylbenzene	0.87	0.17	15	EPA 8260B
	1,3,5-Trimethylbenzene	5.4	0.17	23	EPA 8260B
	1,2,4-Trimethylbenzene	16	0.17	23	EPA 8260B
	sec-Butylbenzene	1.3	0.17	12	EPA 8260B
	p-Isopropyltoluene	2.6	0.17	NA	EPA 8260B
	Naphthalene	16	0.17	20	EPA 8260B
	Benzene	ND	*0.17*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.17*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.17*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.17*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.17*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.17*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.17*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.17*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.87*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.17*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.17*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.17*	0.018	EPA 8260B
	Trichloroethene	ND	*0.17*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.17*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.17*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Arsenic	**7.3**	5.7	3.9	EPA 6010B
	Barium	58	2.9	1,100	EPA 6010B
	Cadmium	ND	0.57	5	EPA 6010B
	Chromium	13	0.57	25	EPA 6010B
	Lead	ND	5.7	400	EPA 6010B
	Mercury	ND	0.29	1.4	EPA 7471A
	Selenium	ND	*11*	3.4	EPA 6010B
	Silver	ND	0.57	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	3.4	300	AK101
	Diesel Range Organics	ND	10	250	AK102
	Residual Range Organics	ND	21	10,000	AK103
CFS6-0811	1,2,4-Trimethylbenzene	0.058	0.028	23	EPA 8260B
(PID = 0 ppm)	Naphthalene	0.11	0.028	20	EPA 8260B
Depth = 7 feet bg	Benzene	ND	*0.028*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.028*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.028*	0.023	EPA 8260B
	1,2-Dibromoethane	ND	*0.028*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.028*	0.016	EPA 8260B
	1,2-Dichloropropane	ND	*0.028*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.14*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.028*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.028*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.028*	0.018	EPA 8260B
	Trichloroethene	ND	*0.028*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.028*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.028*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Arsenic	3.2	2.6	3.9	EPA 6020
	Barium	40	2.6	1,100	EPA 6010B
	Cadmium	ND	0.52	5	EPA 6010B
	Chromium	9.4	0.52	25	EPA 6010B
	Lead	ND	5.2	400	EPA 6010B
	Mercury	ND	0.26	1.4	EPA 7471A
	Selenium	ND	*10*	3.4	EPA 6010B
	Silver	ND	0.52	11.2	EPA 6010B
	Gasoline Range Organics	ND	3.5	300	AK101
	Diesel Range Organics	ND	11	250	AK102
	Residual Range Organics	ND	22	10,000	AK103
CFS7-0811	Naphthalene	0.037	0.034	20	EPA 8260B
(PID = 0 ppm)	Benzene	ND	*0.034*	0.025	EPA 8260B
Depth = 7 feet bg	Carbon Tetrachloride	ND	*0.034*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.034*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.034*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.034*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.034*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.034*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.17*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.034*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.034*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.034*	0.018	EPA 8260B
	Trichloroethene	ND	*0.034*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.034*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.034*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Arsenic	**5.9**	5.4	3.9	EPA 6010B
	Barium	44	2.7	1,100	EPA 6010B
	Cadmium	ND	0.54	5	EPA 6010B
	Chromium	11	0.54	25	EPA 6010B
	Lead	ND	5.4	400	EPA 6010B
	Mercury	ND	0.27	1.4	EPA 7471A
	Selenium	ND	*11*	3.4	EPA 6010B
	Silver	ND	0.54	11.2	EPA 6010B

TABLE 1
FORMER USED-OIL AST EXCAVATION ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)	PQL (mg/Kg)	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	24	300	AK101
	Diesel Range Organics	**11,000**	1,100	250	AK102
	Residual Range Organics	**36,000**	2,200	10,000	AK103
CFS8-0811	Total Xylenes	0.39	0.040	63	EPA 8260B
(PID = 75 ppm)	1,3,5-Trimethylbenzene	1.8	0.040	23	EPA 8260B
Depth = 4 feet bg	tert-Butylbenzene	0.055	0.040	23	EPA 8260B
	1,2,4-Trimethylbenzene	0.086	0.040	23	EPA 8260B
	p-Isopropyltoluene	0.086	0.040	NA	EPA 8260B
	Naphthalene	0.38	0.040	20	EPA 8260B
	Benzene	ND	*0.040*	0.025	EPA 8260B
	Carbon Tetrachloride	ND	*0.040*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.040*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.040*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.040*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.040*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.040*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.20*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.040*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.040*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.040*	0.018	EPA 8260B
	Trichloroethene	ND	*0.040*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.040*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.040*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	All PCBs	ND	0.055	1	EPA 8082
	Arsenic	**7.1**	5.5	3.9	EPA 6010B
	Barium	95	2.8	1,100	EPA 6010B
	Cadmium	ND	0.55	5	EPA 6010B
	Chromium	15	0.55	25	EPA 6010B
	Lead	27	5.5	400	EPA 6010B
	Mercury	ND	0.28	1.4	EPA 7471A
	Selenium	ND	*11*	3.4	EPA 6010B
	Silver	ND	0.55	11.2	EPA 6010B

[1] Soil cleanup criteria from ADEC 18AAC 75.341, Tables B1 and B2, Method 2, Under 40-Inch Zone, Migration to Groundwater, except for RRO, which is based on the more stringent Ingestion Pathway; and for PCBs, which is based on the Direct Contact Pathway.

PQL = practical quanitation limit; mg/Kg = milligrams per kilogram; VOCs = volatile organic compounds; PID = photoionization detector

PCBs= polychlorinated biphenyls; J = estimated value; PAHs = polynuclear aromatic hydrocarbons

ppm = parts per million; bg = below grade

Italic = The MRL exceeds the applicable ADEC cleanup criterion.

Bold results = Concentration exceeds the corresponding ADEC Method 2 cleanup criterion for under 40-inch zone, migration to groundwater.

TABLE 2
BURIED FUEL DELIVERY LINE EXCAVATION AND TEST PITS ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)*	PQL (mg/Kg)*	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	3.7	300	AK101
	Diesel Range Organics	**5,200**	1,200	250	AK102
	Residual Range Organics	**31,000**	2,300	10,000	AK103
TP1-0811	Benzene	ND	0.020	0.025	EPA 8021B
(PID = 0 ppm)	Toluene	ND	0.037	6.5	EPA 8021B
Depth = 6 inches bg	Ethylbenzene	0.037	0.037	6.9	EPA 8021B
	Total Xylenes	0.11	0.037	63	EPA 8021B
	Arsenic	**8.0**	5.8	3.9	EPA 6010B
TP1A-0811					
Duplicate of TP1-0811					
	Gasoline Range Organics	ND	4.1	300	AK101
RPD = 21.28%	Diesel Range Organics	**3,700**	1,200	250	AK102
RPD = 24.09%	Residual Range Organics	**21,000**	2,300	10,000	AK103
	Benzene	ND	0.020	0.025	EPA 8021B
	Toluene	ND	0.041	6.5	EPA 8021B
RPD = 11.87%	Ethylbenzene	0.044	0.041	6.9	EPA 8021B
RPD = 11.43%	Total Xylenes	0.13	0.041	63	EPA 8021B
RPD = 6.00%	Arsenic	**7.3**	5.7	3.9	EPA 6010B
TP1-2-0811	Arsenic	**7.2**	5.6	3.9	EPA 6010B
TP1-3-0811	Arsenic	**7.4**	5.5	3.9	EPA 6010B
TP1-4-0811	Arsenic	**6.7**	5.6	3.9	EPA 6010B
BKGD-0811	Arsenic	**4.0**	2.6	3.9	EPA 6020
	Gasoline Range Organics	ND	4.1	300	AK101
	Diesel Range Organics	130	10	250	AK102
TP2-0811	Residual Range Organics	570	21	10,000	AK103
(PID = 1 ppm)	Benzene	ND	0.020	0.025	EPA 8021B
Depth = 6 inches bg	Toluene	ND	0.041	6.5	EPA 8021B
	Ethylbenzene	ND	0.041	6.9	EPA 8021B
	Total Xylenes	0.072	0.041	63	EPA 8021B
	Gasoline Range Organics	ND	3.1	300	AK101
	Diesel Range Organics	**1,400**	11	250	AK102
TP3-0811	Residual Range Organics	150	21	10,000	AK103
(PID = 31 ppm)	Benzene	ND	0.0062	0.025	EPA 8021B
Depth = 6 inches bg	Toluene	0.034	0.031	6.5	EPA 8021B
	Ethylbenzene	0.058	0.031	6.9	EPA 8021B
	Total Xylenes	0.32	0.16	63	EPA 8021B
	Gasoline Range Organics	ND	8.1	300	AK101
	Diesel Range Organics	**13,000**	110	250	AK102
	Residual Range Organics	990	220	10,000	AK103
TP4-0811	Naphthalene	6.2	0.15	20	EPA 8270SIM
(PID = 178 ppm)	2-Methylnaphthalene	**17**	0.15	6.1	EPA 8270SIM
Depth = 6 inches bg	1-Methylnaphthalene	**16**	0.15	6.2	EPA 8270SIM
	Acenaphthylene	0.34	0.036	180	EPA 8270SIM
	Acenaphthene	0.53	0.036	180	EPA 8270SIM
	Fluorene	1.4	0.036	220	EPA 8270SIM
	Phenanthrene	0.60	0.036	3,000	EPA 8270SIM
	Anthracene	0.049	0.036	3,000	EPA 8270SIM
	Fluoranthene	0.18	0.036	1,400	EPA 8270SIM
	Pyrene	0.19	0.036	1,000	EPA 8270SIM
	Chrysene	0.062	0.036	360	EPA 8270SIM
	Benzo[b]fluoranthene	0.048	0.036	4.0	EPA 8270SIM
	Benzo[k]fluoranthene	0.040	0.036	40	EPA 8270SIM
	Benzo[a]pyrene	0.037	0.036	0.40	EPA 8270SIM
	All Other PAHs	ND	0.036	Varies	EPA 8270SIM
	Benzene	ND	0.020	0.025	EPA 8021B
	Toluene	0.20	0.081	6.5	EPA 8021B
	Ethylbenzene	1.8	0.081	6.9	EPA 8021B
	Total Xylenes	16.3	0.081	63	EPA 8021B

TABLE 2
BURIED FUEL DELIVERY LINE EXCAVATION AND TEST PITS ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)*	PQL (mg/Kg)*	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
	Gasoline Range Organics	ND	11.0	300	AK101
	Diesel Range Organics	**4,400**	100	250	AK102
SP1-0811	Residual Range Organics	250	210	10,000	AK103
(PID = 203 ppm)	Total Xylenes	3.5	0.098	63	EPA 8021B
Depth = 6 feet bg	1,3,5-Trimethylbenzene	9.2	0.098	23	EPA 8260B
	1,2,4-Trimethylbenzene	1.7	0.098	23	EPA 8260B
	Naphthalene	0.91	0.098	20	EPA 8260B
	Benzene	ND	*0.098*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.098*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.098*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.098*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.098*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.098*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.098*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.098*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.49*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.098*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.098*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.098*	0.018	EPA 8260B
	Trichloroethene	ND	*0.098*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.098*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.098*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Gasoline Range Organics	ND	5.1	300	AK101
	Diesel Range Organics	**13,000**	130	250	AK102
SP2-0811	Residual Range Organics	910	250	10,000	AK103
(PID = 204 ppm)	Benzene	ND	0.020	0.025	EPA 8021B
Depth = 6 feet bg	Toluene	ND	0.051	6.5	EPA 8021B
	Ethylbenzene	ND	0.051	6.9	EPA 8021B
	Total Xylenes	4.0	0.051	63	EPA 8021B
	Gasoline Range Organics	ND	3.8	300	AK101
	Diesel Range Organics	**510**	11	250	AK102
SP3-0811	Residual Range Organics	220	23	10,000	AK103
(PID = 17 ppm)	Benzene	ND	0.020	0.025	EPA 8021B
Depth = 6 feet bg	Toluene	ND	0.038	6.5	EPA 8021B
	Ethylbenzene	ND	0.038	6.9	EPA 8021B
	Total Xylenes	0.092	0.038	63	EPA 8021B
	Gasoline Range Organics	ND	5.6	300	AK101
	Diesel Range Organics	**1,600**	13	250	AK102
SP4-0811	Residual Range Organics	410	26	10,000	AK103
(PID = 150 ppm)	Benzene	ND	0.020	0.025	EPA 8021B
Depth = 1 foot bg	Toluene	ND	0.056	6.5	EPA 8021B
	Ethylbenzene	0.13	0.056	6.9	EPA 8021B
	Total Xylenes	0.34	0.056	63	EPA 8021B

TABLE 2
BURIED FUEL DELIVERY LINE EXCAVATION AND TEST PITS ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)*	PQL (mg/Kg)*	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
FDL-1-0915	Diesel Range Organics	**1,900**	12	250	AK102
(PID = 877 ppm)	Residual Range Organics	49	23	10,000	AK103
Depth = 4 feet bg					
	Diesel Range Organics	**3,900**	100	250	AK102
	Residual Range Organics	ND	210	10,000	AK103
	Ethylbenzene	0.18	0.11	6.9	EPA 8260B
	Total Xylenes	12.4	0.11	63	EPA 8260B
	Isopropylbenzene	0.14	0.11	51	EPA 8260B
	n-Propylbenzene	0.23	0.11	15	EPA 8260B
	1,3,5-Trimethylbenzene	17	0.11	23	EPA 8260B
	tert-Butylbenzene	0.19	0.11	12	EPA 8260B
FDL-2-0915	1,2,4-Trimethylbenzene	20	0.11	23	EPA 8260B
(PID = 1000+ ppm)	sec-Butylbenzene	0.24	0.11	12	EPA 8260B
Depth = 6 feet bg	p-Isopropyltoluene	0.57	0.11	N/A	EPA 8260B
	Naphthalene	4.0	0.11	20	EPA 8260B
	Benzene	ND	*0.11*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.11*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.11*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.11*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.11*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.11*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.11*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.11*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.53*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.11*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.11*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.11*	0.018	EPA 8260B
	Trichloroethene	ND	*0.11*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.11*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.11*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
	Naphthalene	0.98	0.69	20	EPA 8270SIM
	2-Methylnaphthalene	**14**	0.69	6.1	EPA 8270SIM
	1-Methylnaphthalene	**23**	0.69	6.2	EPA 8270SIM
	Acenaphthylene	0.050	0.0069	180	EPA 8270SIM
	Acenaphthene	0.26	0.0069	180	EPA 8270SIM
	Fluorene	0.52	0.0069	220	EPA 8270SIM
	Phenanthrene	0.52	0.0069	3,000	EPA 8270SIM
	Anthracene	0.045	0.0069	3,000	EPA 8270SIM
	Fluoranthene	0.051	0.0069	1,400	EPA 8270SIM
	Pyrene	0.051	0.0069	1,000	EPA 8270SIM
	Benzo(a)anthracene	0.0078	0.0069	3.6	EPA 8270SIM
	Chrysene	0.0080	0.0069	360	EPA 8270SIM
	All Other PAHs	ND	0.0069	Varies	EPA 8270SIM

TABLE 2
BURIED FUEL DELIVERY LINE EXCAVATION AND TEST PITS ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)*	PQL (mg/Kg)*	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
FDL-2A-0915					
(Duplicate of FDL-2-0915)					
RPD = 12.73%	Diesel Range Organics	**3,200**	110	250	AK102
	Residual Range Organics	ND	210	10,000	AK103
RPD = 7.69%	Ethylbenzene	0.16	0.11	6.9	EPA 8260B
RPD = 18.18%	Total Xylenes	9.3	0.11	63	EPA 8260B
RPD = 4.88%	Isopropylbenzene	0.13	0.11	51	EPA 8260B
RPD = 2.86%	n-Propylbenzene	0.24	0.11	15	EPA 8260B
RPD = 12.50%	1,3,5-Trimethylbenzene	14	0.11	23	EPA 8260B
RPD = 11.11%	tert-Butylbenzene	0.16	0.11	12	EPA 8260B
RPD = 6.90%	1,2,4-Trimethylbenzene	18	0.11	23	EPA 8260B
RPD = 0.00%	sec-Butylbenzene	0.24	0.11	12	EPA 8260B
RPD = 9.82%	p-Isopropyltoluene	0.49	0.11	N/A	EPA 8260B
RPD = 5.13%	Naphthalene	3.7	0.11	20	EPA 8260B
	Benzene	ND	*0.11*	0.025	EPA 8260B
	Bromodichloromethane	ND	*0.11*	0.044	EPA 8260B
	Carbon Tetrachloride	ND	*0.11*	0.023	EPA 8260B
	Dibromochloromethane	ND	*0.11*	0.032	EPA 8260B
	1,2-Dibromoethane	ND	*0.11*	0.00016	EPA 8260B
	1,2-Dichloroethane	ND	*0.11*	0.016	EPA 8260B
	1,1-Dichloroethene	ND	*0.11*	0.03	EPA 8260B
	1,2-Dichloropropane	ND	*0.11*	0.018	EPA 8260B
	Methylene Chloride	ND	*0.55*	0.016	EPA 8260B
	1,1,2,2-Tetrachloroethane	ND	*0.11*	0.017	EPA 8260B
	Tetrachloroethane	ND	*0.11*	0.024	EPA 8260B
	1,1,2-Trichloroethane	ND	*0.11*	0.018	EPA 8260B
	Trichloroethene	ND	*0.11*	0.02	EPA 8260B
	1,2,3-Trichloropropane	ND	*0.11*	0.00053	EPA 8260B
	Vinyl Chloride	ND	*0.11*	0.0085	EPA 8260B
	All Other VOCs	ND	Varies	Varies	EPA 8260B
RPD = 35.96%	2-Methylnaphthalene	**7.6**	0.70	6.1	EPA 8270SIM
RPD = 19.05%	1-Methylnaphthalene	**17**	0.70	6.2	EPA 8270SIM
RPD = 15.83%	Acenaphthylene	0.039	0.0070	180	EPA 8270SIM
RPD = 0.00%	Acenaphthene	0.26	0.0070	180	EPA 8270SIM
RPD = 9.40%	Fluorene	0.45	0.0070	220	EPA 8270SIM
RPD = 8.00%	Phenanthrene	0.46	0.0070	3,000	EPA 8270SIM
RPD = 4.55%	Anthracene	0.042	0.0070	3,000	EPA 8270SIM
RPD = 7.55%	Fluoranthene	0.057	0.0070	1,400	EPA 8270SIM
RPD = 15.49%	Pyrene	0.040	0.0070	1,000	EPA 8270SIM
RPD = 6.61%	Benzo(a)anthracene	0.0086	0.0070	3.6	EPA 8270SIM
RPD = 0.84%	Chysene	0.0079	0.0070	360	EPA 8270SIM
	All Other PAHs	ND	Varies	Varies	EPA 8270SIM

TABLE 2
BURIED FUEL DELIVERY LINE EXCAVATION AND TEST PITS ANALYTICAL RESULTS - SOILS
2050 PEGER ROAD, FAIRBANKS, ALASKA

Soil Sample No.	Parameter	Results (mg/Kg)*	PQL (mg/Kg)*	ADEC Soil Cleanup Criterion (mg/Kg)[1]	Analytical Method
FDL-3-0915	Diesel Range Organics	**6,700**	110	250	AK102
(PID = 847 ppm)	Residual Range Organics	250	210	10,000	AK103
Depth = 6 feet bg					
FDL-4-0915	Diesel Range Organics	**3,900**	100	250	AK102
(PID = 817 ppm)	Residual Range Organics	ND	210	10,000	AK103
Depth = 6 feet bg					
FDL-5-0915	Diesel Range Organics	**1,000**	10	250	AK102
(PID = 672 ppm)	Residual Range Organics	ND	20	10,000	AK103
Depth = 3 feet bg					
FDL-6-0915	Diesel Range Organics	**5,500**	110	250	AK102
(PID = 415 ppm)	Residual Range Organics	ND	220	10,000	AK103
Depth = 3 feet bg					
FDL-7-0915	Diesel Range Organics	**660**	12	250	AK102
(PID = 163 ppm)	Residual Range Organics	150	24	10,000	AK103
Depth = 3 feet bg					
FDL-8-0915	Diesel Range Organics	**6,800**	120	250	AK102
(PID = 567 ppm)	Residual Range Organics	290	240	10,000	AK103
Depth = 3 feet bg					
FDL-9-0915	Diesel Range Organics	**7,200**	110	250	AK102
(PID = 696 ppm)	Residual Range Organics	ND	220	10,000	AK103
Depth = 4 feet bg					
FDL-10-0915	Diesel Range Organics	**5,600**	110	250	AK102
(PID = 833 ppm)	Residual Range Organics	ND	230	10,000	AK103
Depth = 3 feet bg					
FDL-11-0915	Diesel Range Organics	**17,000**	120	250	AK102
(PID = 334 ppm)	Residual Range Organics	450	240	10,000	AK103
Depth = 2 feet bg					

[1] Soil cleanup criteria from ADEC 18AAC 75.341, Tables B1 and B2, Method 2, Under 40-Inch Zone, Migration to Groundwater, except for RRO, which is based on the more stringent Ingestion Pathway; and for PCBs, which is based on the Direct Contact Pathway.

PQL = practical quanitation limit; mg/Kg = milligrams per kilogram; VOCs = volatile organic compounds; PID = photoionization detector

PCBs= polychlorinated biphenyls; RCRA = Resource Conservation & Recovery Act; J = estimated value

PAHs = polynuclear aromatic hydrocarbons; ppm = parts per million; bg = below grade

Italic = The MRL exceeds the applicable ADEC cleanup criterion.

Bold results = Concentration exceeds the corresponding ADEC Method 2 cleanup criterion for under 40-inch zone, migration to groundwater.

APPENDIX A
SITE PHOTOGRAPHS

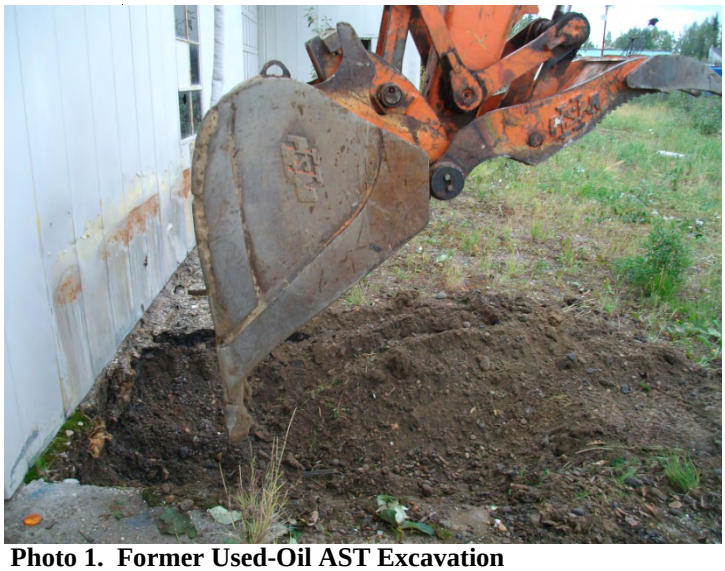


Photo 1. Former Used-Oil AST Excavation

Photo 2. Former Used-Oil AST Excavation

Photo 3. Former Used-Oil AST Excavation

Photo 4. Contaminated Soils Beneath 4-Bay Building

Photo 5. Barricaded Former Used-Oil AST Excavation

Photo 6. Drain Tile & Solid Risers in Former Used-Oil Excavation

2050 Peger Road Fairbanks, Alaska **Site Photographs**		
BGES, INC.	**December 2010**	**Figure A-1**

Photo 7. Compaction of Former Used-Oil AST Excavation

Photo 8. Former Used-Oil AST Excavation

Photo 9. Fuel Delivery Line and Electrical Conduit

Photo 10. Fuel Delivery Line

Photo 11. Fuel Delivery Line Excavation

Photo 12. Former Septic Tank Excavation

2050 Peger Road Fairbanks, Alaska **Site Photographs**		
BGES, INC.	**December 2010**	**Figure A-2**

Photo 13. Fuel Delivery Line Excavation

Photo 14. Fuel Delivery Line Excavation

Photo 15. Drain Tile & Solid Risers in Fuel Line Excavation

Photo 16. Backfilled Fuel Delivery Line Excavation

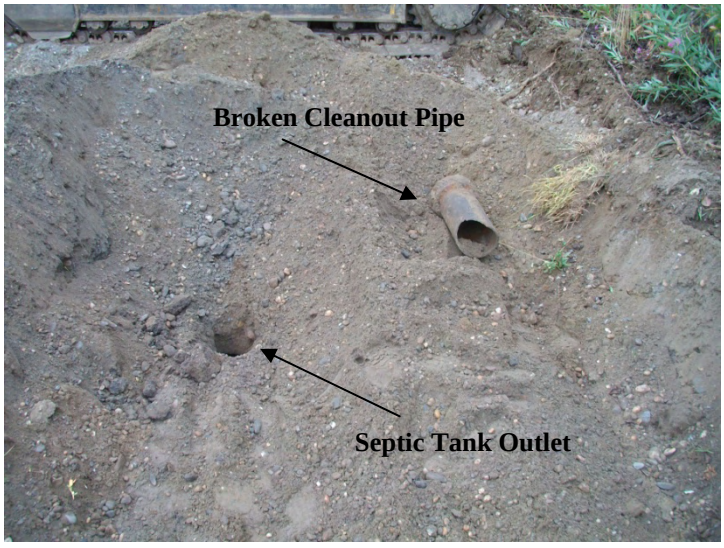


Photo 17. Septic Tank Cleanout Pipe

Photo 18. Septic Tank

2050 Peger Road Fairbanks, Alaska **Site Photographs**		
BGES, INC.	**December 2010**	**Figure A-3**

Photo 19. Septic Tank

Photo 20. Stockpiled Soils From Septic Tank Area

Photo 21. Stockpiled Soils From Septic Tank Area

Photo 22. Barricaded Septic Tank Excavation

Photo 23. Shallow Containment Trench for Sludge

Photo 24. Removal of the Septic Tank

2050 Peger Road Fairbanks, Alaska **Site Photographs**		
BGES, INC.	**December 2010**	**Figure A-4**

APPENDIX B
DISPOSAL DOCUMENTATION

ASR ALASKA SOIL RECYCLING A division of Anchorage Sand & Gravel Co., Inc.

1040 O'Malley Road, Anchorage, Alaska 99515
Phone (907) 349-3333 Fax (907) 344-2844 www.anchsand.com

September 28, 2010

Mr. Wesley Ghormley
State of Alaska
Department of Environmental Conservation
610 University Ave.
Fairbanks, AK 99709-3643

Via Email:
Wesley.ghormley@alaska.gov

Re: Soil disposal from 2050 Peger Rd., Fairbanks, Alaska. – **Former AST for used oil**

Dear Mr. Ghormley:

On August 10 & 11, 2010, Alaska Soil Recycling (ASR), a division of Anchorage Sand & Gravel Co. Inc. (AS&G) received155.71 tons of petroleum impacted soil from the above referenced site at ASR's facility located at 2301 Spar Ave., Anchorage, Alaska.

In accordance with ASR's approved facility operations plan:
1. These soils are to be co-mingled with other soils unless otherwise indicated,
2. These soils are covered by the bonding requirements of the 18 AAC 75.365; and,
3. There is no further remedial action required by the responsible party for these soils.

Please contact me should you require additional information or have any questions; otherwise, please acknowledge receipt of this information by signing below and forward to my attention by fax or email.

Sincerely,

ALASKA SOIL RECYCLING

Brad E Quade

Brad E. Quade
Manager

Acknowledged By: Tom DeRuyter Date: 10/1/10

Printed ADEC Representative Name and Title: Tom DeRuyter SOSC
For Wes Ghormley

Attachment: ADEC approval to transport
Cc: Mr. David Collentine, Kiewit Infrastructure Group
Mr. Robert Braunstein, BGES, Inc
Mr. Robert Weimer, ADEC

ASR ALASKA SOIL RECYCLING
A division of Anchorage Sand & Gravel Co., Inc.

1040 O'Malley Road, Anchorage, Alaska 99515
Phone (907) 349-3333 Fax (907) 344-2844 www.ancheand.com

September 29, 2010

Mr. Wesley Ghormley
State of Alaska
Department of Environmental Conservation
610 University Ave.
Fairbanks, AK 99709-3643

Via Email:
Wesley.ghormley@alaska.gov

Re: Soil disposal from 2050 Peger Rd., Fairbanks, Alaska. – **Former heating oil AST**

Dear Mr. Ghormley:

On September 15 & 22, Alaska Soil Recycling (ASR), a division of Anchorage Sand & Gravel Co. Inc. (AS&G) received155.53 tons of petroleum impacted soil from the above referenced site at ASR's facility located at 2301 Spar Ave., Anchorage, Alaska.

In accordance with ASR's approved facility operations plan:
1. These soils are to be co-mingled with other soils unless otherwise indicated,
2. These soils are covered by the bonding requirements of the 18 AAC 75.365; and,
3. There is no further remedial action required by the responsible party for these soils.

Please contact me should you require additional information or have any questions; otherwise, please acknowledge receipt of this information by signing below and forward to my attention by fax or email.

Sincerely,

ALASKA SOIL RECYCLING

Brad E. Quade

Brad E. Quade
Manager

Acknowledged By: Tom DeRuyter Date: 10/1/10

Printed ADEC Representative Name and Title: Tom DeRuyter SOSC
For Wes Ghormley

Attachment: ADEC approval to transport
Cc: Mr. David Collentine, Kiewit Infrastructure Group
Mr. Robert Braunstein, BGES, Inc
Mr. Robert Weimer, ADEC

ASR

ALASKA SOIL RECYCLING
A Division of Anchorage Sand & Gravel Co. Inc.
1040 O'Malley Road, Anchorage, Alaska 99515
Phone (907) 349-3333, Fax (907) 344-2844

ASR Received Material Total

Customer: Kiewit Pacific Co.

Project: Fairbanks - 2050 Peger Rd.

Account #: 441263

Date	Truck #	Trailer #	Ticket # (Tare)	Tare (lbs)	Ticket # (Gross)	Gross lbs	Net (lbs)	Tons	Daily Total
8/10/10	TK 8		5149	45,800	5149	101,120	55,320	27.66	
8/10/10	683	5438 SM	1209	38,120	1209	75,340	37,220	18.61	
									46.27
8/11/10	208	2663SK	1211	37,260	1211	85,780	48,520	24.26	
8/11/10	308	14056	1208	40,440	1208	87,280	46,840	23.42	
8/11/10	307	1127SJ	1212	38,720	1212	82,940	44,220	22.11	
8/11/10	21	2530SK	1210	42,720	1210	85,060	42,340	21.17	
8/11/10	344	2677SK	1207	44,740	1207	81,700	36,960	18.48	
									109.44
9/15/10	265	106SK	2161	45,640	2161	99,720	54,080	27.04	
9/15/10	296	1127SJ	2163	45,720	2163	88,880	43,160	21.58	
9/15/10	299		1297	41,580	1297	96,600	55,020	27.51	
9/15/10	313		1305	35,220	1305	82,720	47,500	23.75	
9/15/10	21		2162	42,900	2162	99,420	56,520	28.26	
									128.14
9/22/10	296		1306	36,640	1306	91,420	54,780	27.39	
									27.39

Total lbs	622,480		
Total tons		**311.24**	

12/20/2010

APPENDIX C
FIELD NOTES

CONTENTS

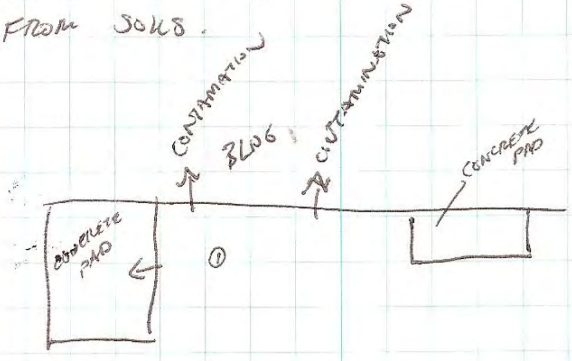
REFERENCE DATE

8/10/10 S. PEDERSON 0850 PEGER ROAD

BGES ONSITE AT 0739; DAVID COLLENTINE FROM KIEWIT ALREADY ONSITE.

B&D ENVT'L (BLACK GOLD) ONSITE AT 0823.

BEGAN EXCAVATION OF IMPACTED SOILS ALONG SOURCE AREA. STRONG ODOR (FUEL) EMITTING FROM SOILS.



PID ① APPROX 4'BG = 134 ppm

8/10/10 S. PETERSON 2050 PEGER RD.

DURING REMOVAL OF SOILS A STRONG VOLATILE ODOR (SWEET) POSSIBLY ASSOCIATED W/ SOLVENTS WAS NOTICED. A CALL WAS PLACED TO ASR TO DETERMINE IF THEY WERE WILLING TO ACCEPT SOILS W/O FURTHER CHARACTERIZATION. IN ACCORDANCE WITH THE CLIENT'S REQUEST NO ADD'L SAMPLING TO ENSURE ADDITIONAL CONTAMINANTS WERE ~~AND~~ PRESENT IN THE SOILS WAS UNDERTAKEN.

CONTINUED EXCAVATION OF SOILS TO APPROX 8' BG. OBVIOUSLY CONTAMINATED SOILS REMAINED AT THE BASE OF THE EXCAVATION AND IN THE EASTERN SIDEWALLS. IN ACCORDANCE WITH THE CLIENT'S REQUEST NO FURTHER SOILS WERE REMOVED. ~~& SAMPLING WAS STARTED~~

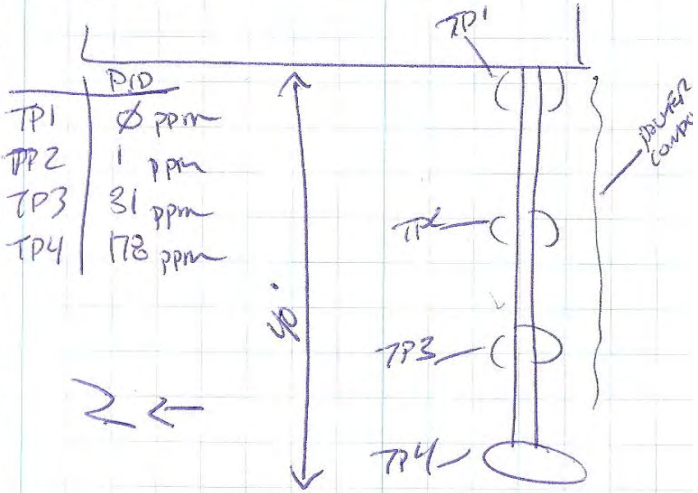
BGES OFFSITE AT 1803

8/11/10 S. PETERSON 2050 PEGER RD.

BGES (BLACK GOLD) / KIEWIT ONSITE AT 0730

BLACK GOLD PERSONNEL EXPOSED BURIED FUEL DELIVERY LINE (FDL) & FOUND TERMINATION POINT. 4 TEST PITS WERE DUG ALONG FDL & PID SAMPLES WERE COLLECTED FROM EACH TEST PIT.

	PID
TP1	0 ppm
TP2	1 ppm
TP3	31 ppm
TP4	178 ppm



SOME FUEL LEFT IN FDL. A BUCKET & ABSORBENT PADS WERE USED TO COLLECT EXCESS FUEL AT TERMINATION POINT. (TP4

8/11/10 S. PETERSON 2050 PEGLER RD

COLLECTED ANALYTICAL SAMPLES FROM EACH TEST PIT ; DIRECTLY BENEATH THE FDL.

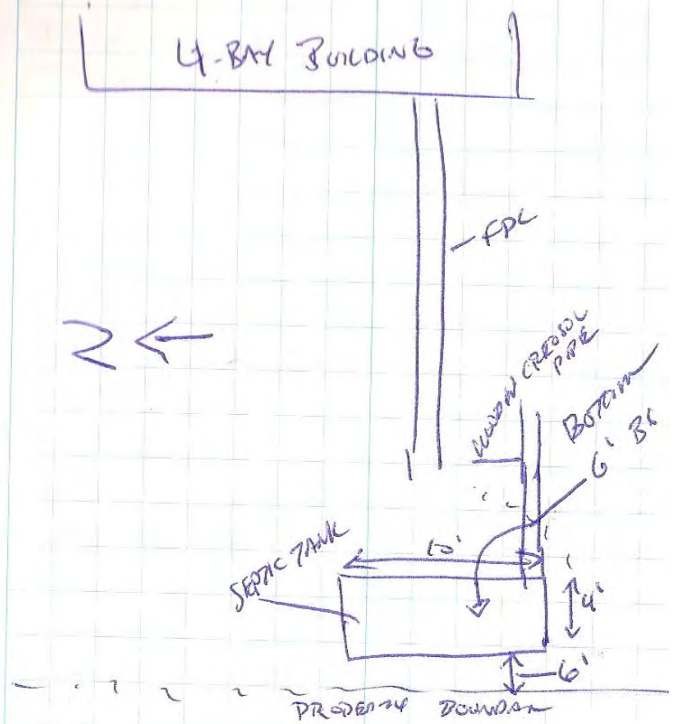
i.e. TP1-0811

3 ADD'L SAMPLES COLLECTED FROM 1ST TEST PIT FOR ANALYSIS OF ARSENIC.

i.e. TP1-2-0811

A 5TH TEST PIT WAS ADVANCED ALONG THE WESTERN PROPERTY BOUNDARY TO SEE IF A UST ASSOCIATED WITH THE FIDL WAS PRESENT. DURING ADVANCEMENT OF THE TEST PIT A RISER PIPE WAS EXPOSED. FURTHER INVESTIGATION REVEALED A SEPTIC TANK. SOILS ABOVE TANK FROM APPROX 3" → TO BASE OF TANK FEATURED STRONG FUEL ODOR.

8/11/10 S. PETERSON 2050 PEGLER RD



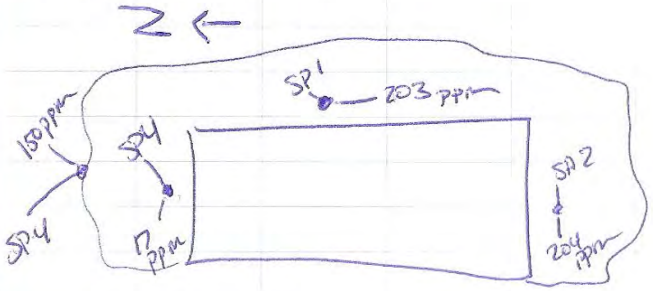
SEVERAL GASHES IN TANK (HOMEMADE DRAIN FIELD) ALLOWED TANK CONTENTS TO SEEP OUT OVER TIME. A WOODEN CREOSOL PIPE EXTENDED FROM TANK TOWARDS 4-BAY BUILDING

8/11/10 S. PETERSON 2050 PEGER RD

TWO POTENTIALLY CONTAMINATED SOILS IDENTIFIED DURING INVESTIGATION INTO SEPTIC TANK WERE PLACED ON LINERS FOR LATER DISPOSAL.

A POTTED SP

FIELD SCREENING AND ANALYTICAL SAMPLES WERE COLLECTED FROM THE SOILS AT THE BASE OF THE SEPTIC TANK & THE EXCAVATIONS NORTHERN SIDEWALL.



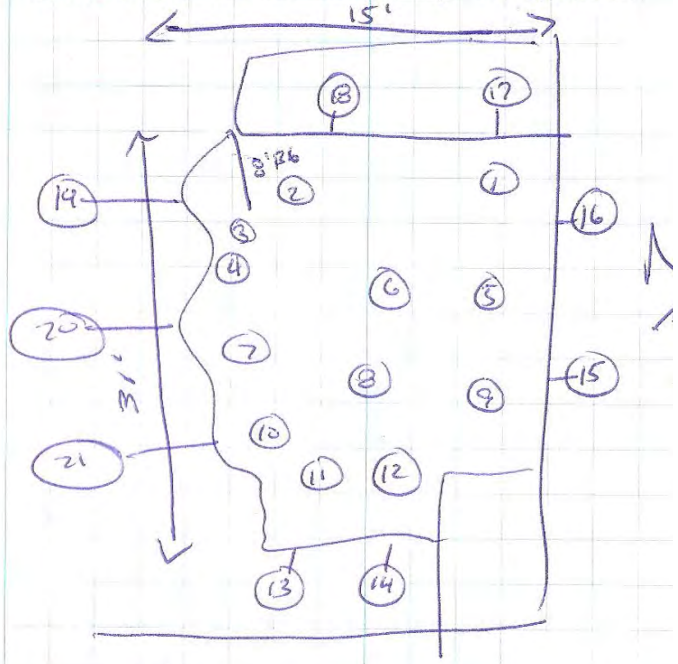
EXAMPLE
SAMPLE ID # SP1-0811

THE EDC 'TEST' PITS WERE BACKFILLED & THE SEPTIC TANK EXCAVATION WAS BARRICADED.

8/11/10 S. PETERSON 2050 PEGER RD

UPON COMPLETION OF THE SEPTIC TANK INVESTIGATION SAMPLING OF THE FORMER USED OIL AS EXCAVATION WAS UNDERTAKEN.

COLLECTED 21 FIELD SCREENING SAMPLES. FROM BASE & SIDEWALLS.



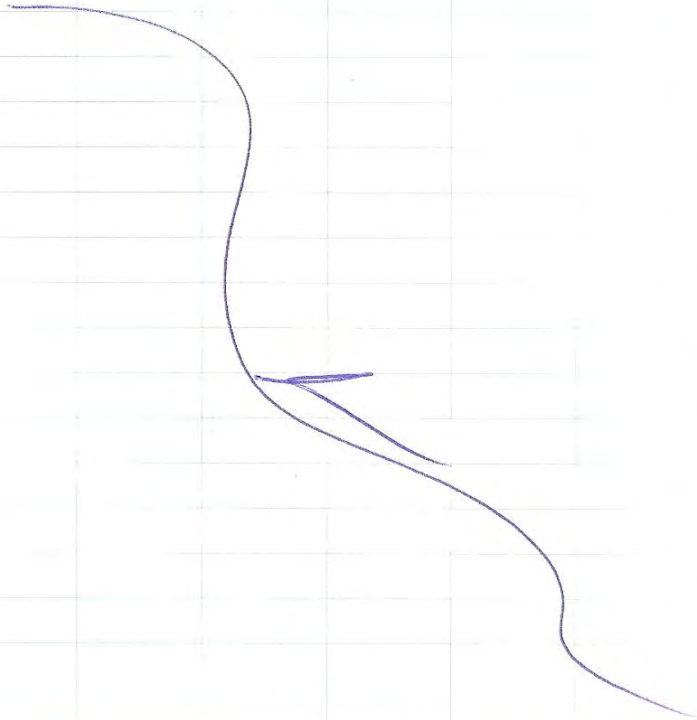
PID RESULTS - SEE TABLE ON PAGE 8

10 (ST)

8/11/10 S. PETERSON 2058 PEGEL ROAD

ALL SAMPLES WERE LABELED & PREPPED FOR SHIPMENT TO ONSITE ENV'L. EXCAVATION WAS BARRICADED.

BGES OFFSITE AT 1715.
BLACK GOLD & KLEINFELTER STILL ONSITE.



9/15/10 S. PETERSON 2050 PEGEL RD

BGES/BLACK GOLD ONSITE AT 0830

BEGAN BY PUMPING OUT LIQUID CONTENTS OF TANK INTO A HOLDING TANK. A PORTION OF THE LIQUID WAS DUMPED INTO A 5-GALLON BUCKET FOR SAMPLING.

SAMPLES COLLECTED FOR DISPOSAL

THE TANK WAS THEN REMOVED FROM THE GROUND AND THE "SLUDGE" WAS ALLOWED TO DRAIN INTO A LINED CONTAMINATION TRENCH. A SAMPLE FROM THE TRENCH "SLUDGE" WAS ALSO COLLECTED FOR DISPOSAL. THE TANK WAS PLACED INTO A DUMP TRUCK FOR DISPOSAL AT LOCAL LANDFILL BY BLACK GOLD.

(12) STP

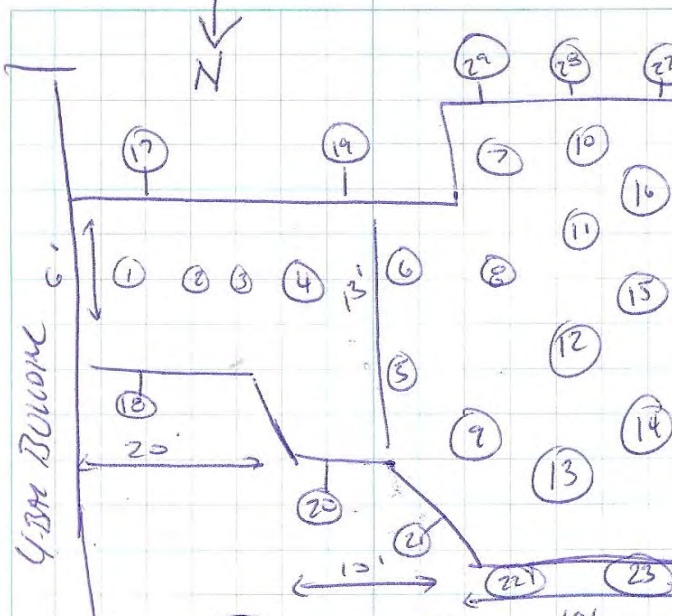
9/15/10 S. PETERSON 2050 PEGER RD

PREVIOUSLY IDENTIFIED CONTAMINATED SOILS WERE THEN REMOVED FROM GROUND (INCLUDING THE TWO STOCKPILES FROM LAST SITE ACTIVITIES) AND PUT IN DUMP TRUCKS FOR DISPOSAL AT ASR IN ANCHORAGE 6 TRUCK LOADS WERE HAULED OUT.

THE BOILER FDL WAS ALSO DECOMMISSIONED AND HAULED OFF TO LOCAL LANDFILL FOR DISPOSAL.

OBVIOUSLY CONTAMINATED SOILS REMAINED IN EXCAVATION (BASE + ALL SIDEWALLS) HOWEVER ONLY 6 TRUCK LOADS WERE APPROVED BY THE CLIENT.

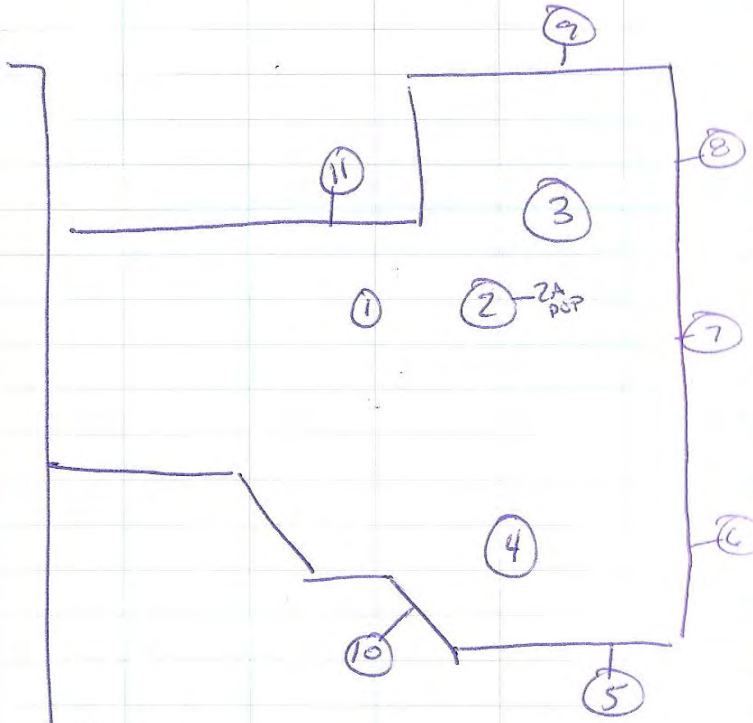
9/15/10 S. PETERSON 2050 PEGER RD



	PPM PID		PPM PID		PPM PID
1	0	10	668	19	334
2	0	11	847	20	567
3	0	12	815	21	833
4	0	13	817	22	622
5	633	14	506	23	672
6	877	15	463	24	415
7	850	16	573	25	163
8	1000+	17	0	26	567
9	632	18	0	27	681
				28	696
				29	410

14 9/15/10 S. PETERSON 2050 PEGENRD

ANALYTICAL SAMPLES WERE THEN COLLECTED BASED ON PID SAMPLE LOCATIONS



NUMBER COLLECTED = SAMPLE ID

I.E. 1 = FDL-1-~~0CH~~ 0915

9/15/10 S. PETERSON 2050 PEGENRD

FDL-1-~~0CH~~ 0915 (PID # 6 ; 4' bg)
FDL-2-~~0CH~~ 0915 (PID # 8 ; 6' bg)
FDL-3-~~0CH~~ 0915 (PID # 11 ; 6' bg)
FDL-4-~~0CH~~ 0915 (PID # 13 ; 6' bg)
FDL-5-~~0CH~~ 0915 (PID # 23 ; 3' bg)
FDL-6-~~0CH~~ 0915 (PID # 24 ; 3' bg)
FDL-7-~~0CH~~ 0915 (PID # 25 ; 3' bg)
FDL-8-~~0CH~~ 0915 (PID # 26 ; 3' bg)
FDL-9-~~0CH~~ 0915 (PID # 22 ; 4' bg)
FDL-10-~~0CH~~ 0915 (PID # 21 ; 3' bg)
FDL-11-~~0CH~~ 0915 (PID # 19 ; 2' bg)

SAMPLES WERE THEN LABELLED & PREPARED FOR SHIPMENT.

BLACK GOLD OFFSITE AT 1701.

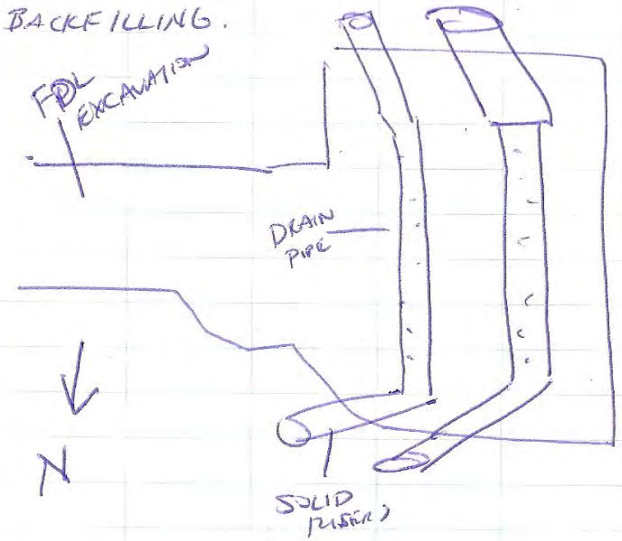
BGES OFFSITE AT 1849.

160

9/16/10 S. PETERSEN 2050 PEGGY RD

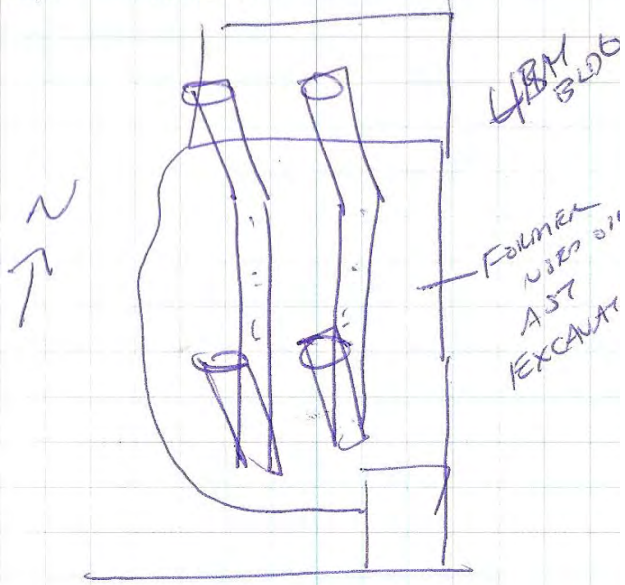
BGES & BLACK GOLD ONSITE AT 0800.

IN ACCORDANCE WITH CLIENT'S REQUEST DRAINTILE & SOLID RISERS FOR SOIL AERATION ARE TO BE PLACED IN BOTH EXCAVATIONS PRIOR TO BACKFILLING.



BGES OBSERVED PROPER BACKFILLING & COMPACTION OF EXCAVATION

9/16/10 S. PETERSEN 2050 PEGGY RD



BGES OBSERVED PROPER BACKFILLING & COMPACTION OF EXCAVATION

BGES OFFSITE AT 1704.
BLACK GOLD STILL ONSITE.

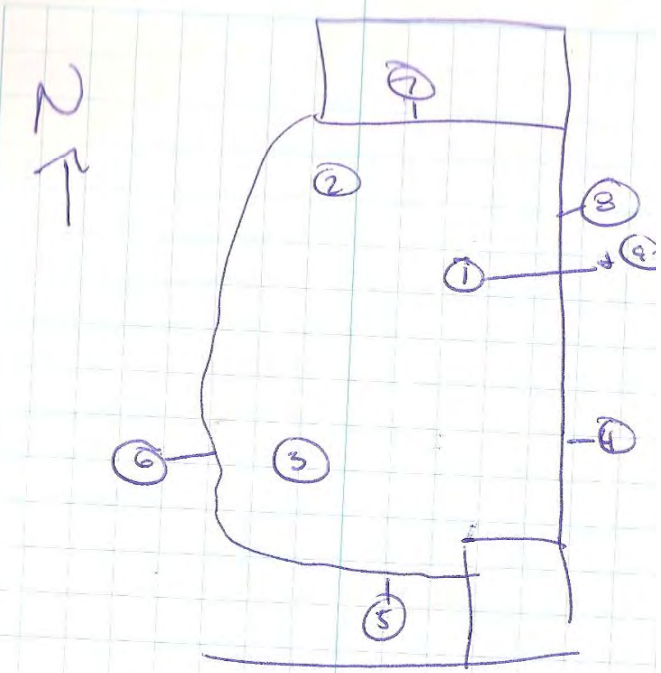
1	17		11	111
2	30	EEEE	12	185
3	12		13	88
4	81		14	100
5	211		15	139
6	51		16	75
7	123		17	Ø
8	204		18	Ø
9	204		19	Ø
10	179	EEEE	20	Ø
			21	Ø

EEEE = UNREADABLE DUE TO HIGH CONCENTRATIONS OF CONTAMINANTS.

BASED ON FIELD SCREENING LOCATIONS ~~SAMPLES~~ & TO ENSURE THE EXTENT OF THE CONTAMINATION REMAINING IN PLACE WAS CHARACTERIZED THE LOCATIONS (AS SEEN ON PAGE 9) WERE CHOSEN.

8/11/10 S. PETERSON

2850 REGER RD.



NUMBER CORRESPONDS TO SAMPLER ID (IE 1 = CFS1-

CFS1 & 9-0811 (PID # 5 ; 8' BG)
CFS2-0811 (PID # 2 ; 7.5' BG)
CFS3-0811 (PID # 10 ; 8' BG)
CFS4-0811 (PID # 15 ; 7.5' BG)
CFS5-0811 (PID # 14 ; 7' BG)
CFS6-0811 (PID # 20 ; 7' BG)
CFS7-0811 (PID # 18 ; 7' BG)
CFS8-0811 (PID # 16 ; 4' BG)

APPENDIX D
FORENSIC ANALYSIS RESULTS

ZymaX
600 S Andreasen Dr. Ste. B
Escondido, California 92029
tel 760.781.3338
fax 760.781.3339

CLIENT EDD ☐ LUFT EDF ☐ DW EDT ☐

CHAIN of CUSTODY

report to Sean Peterson/Jayne Martin	tel (907) 644-2900	fax 907-644-2901	
company BGES, Inc	proj 2050 Peger Road		
address 1042 East 6th Avenue, Anchorage, AK	proj #		
	sampler Sean Peterson		

ANALYSIS REQUESTED

Turnaround Time: ASAP ☐ 48 hr ☐ 12 hr ☐ 72 hr ☐ 24 hr ☐ std ☐

ZymaX use only	SAMPLE DESCRIPTION	Date Sampled	Time	Matrix	Preserve	Full Scan by GC/MS	# of containers	Remarks
41972-1	AST-ID-0916	09/16/10	1310	S	N/A	✓	1	
-2	SPT-ID-0916	09/16/10	1315	S	N/A	✓	1	

Bill To: Same as Above ☑ OR
Company:
Address:

Sample integrity upon receipt:
- Samples received intact ☐
- Samples received cold ☐
- Custody seals ☐
- Correct container types ☐

PO#: _____
Quote yes ☐ no ☐

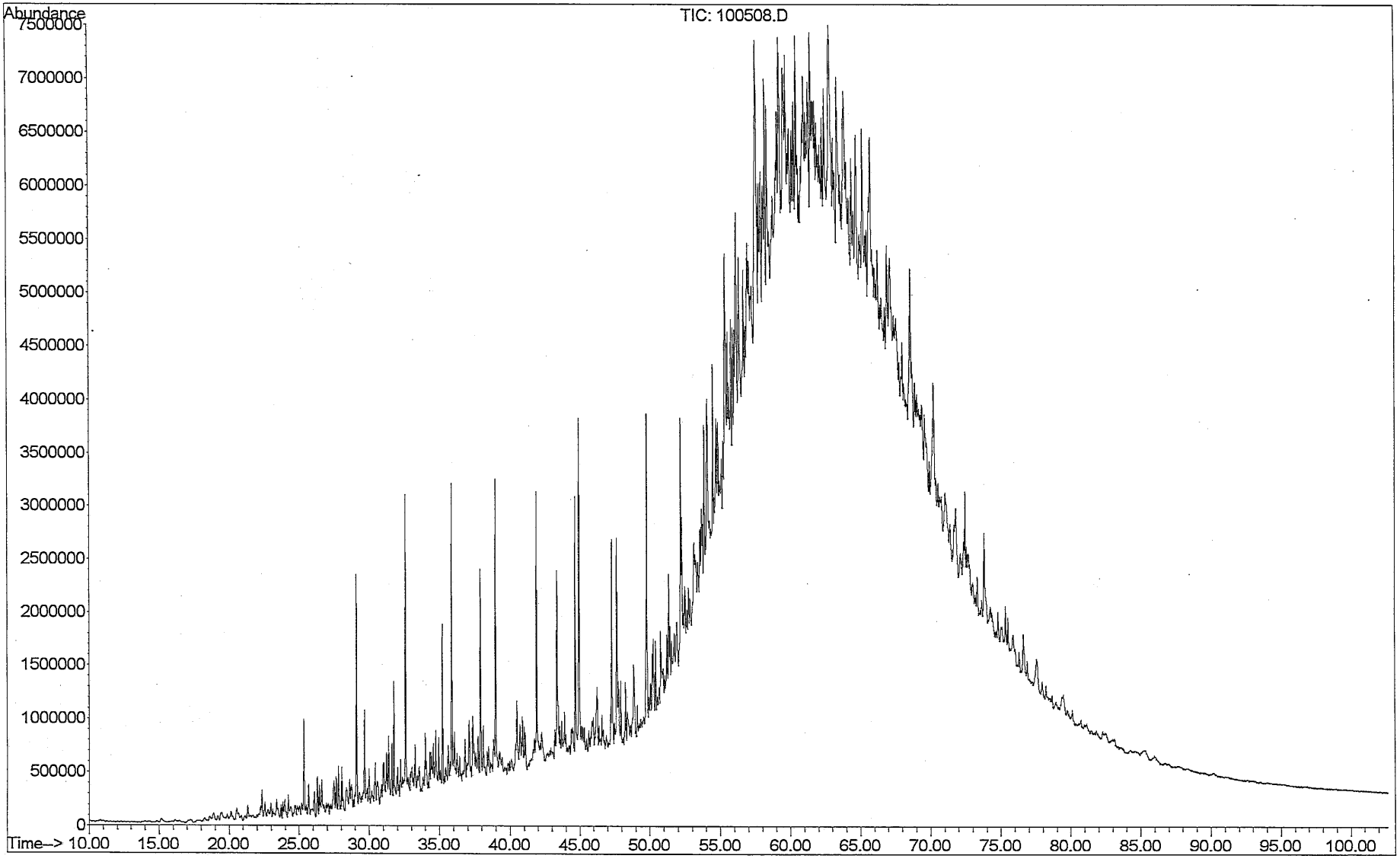
Relinquished by:
Signature
Print Sean Peterson
Company BGES, Inc
Date 9/22/2010 Time 1601

Received by:
Signature
Print
Company
Date Time

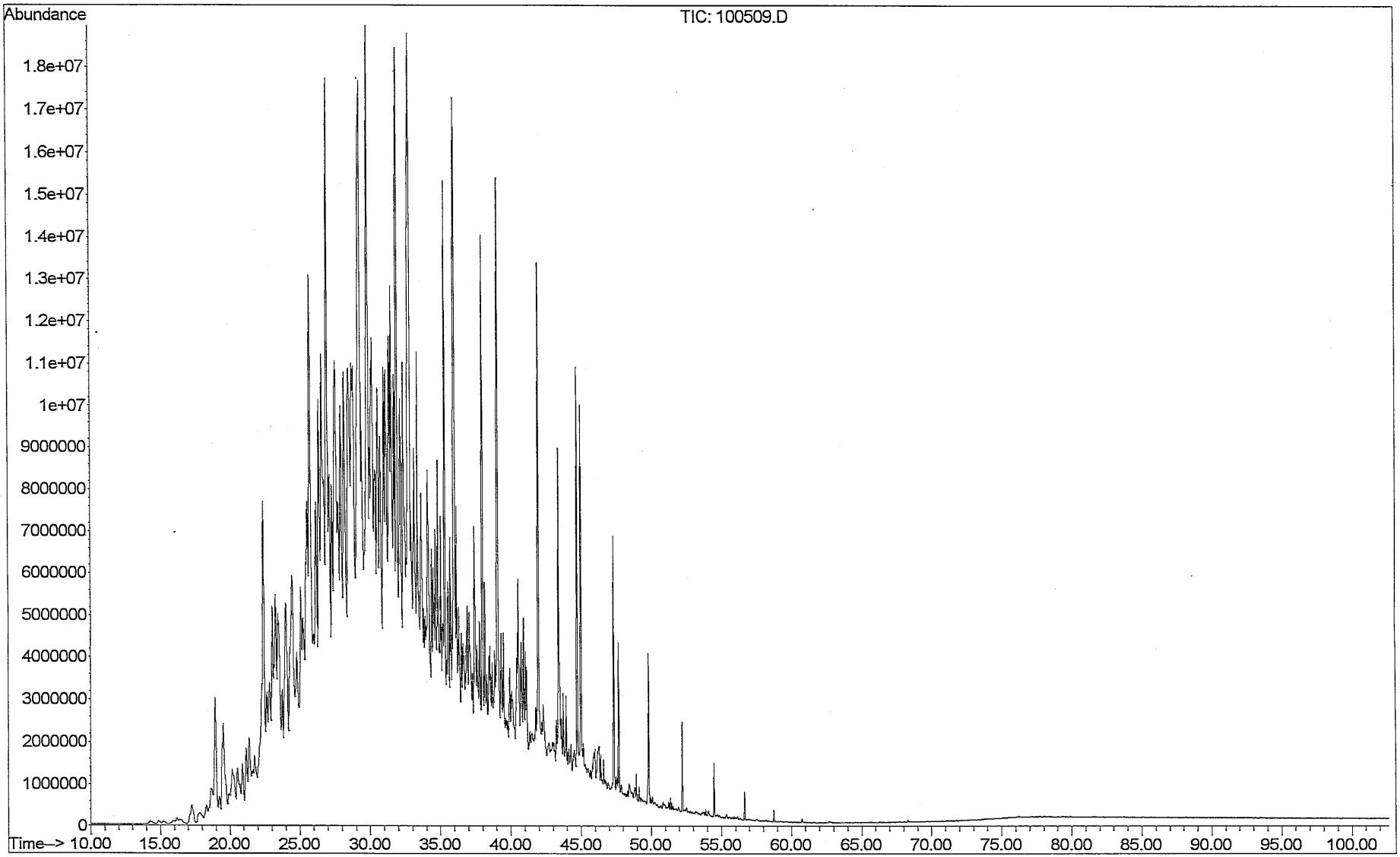
Relinquished by:
Signature
Print
Company
Date Time

Received by ZymaX:
Signature
Print
Company ZymaX
Date 9/24/10 Time 13:00

Sample Name: AST-ID-0916 (41972-1) soil extract
Misc Info : Vf=30ml, 25g, BGES



Sample Name: SPT-ID-0916 (41972-2) soil extract
Misc Info : Vf=2ml, 25g, BGES

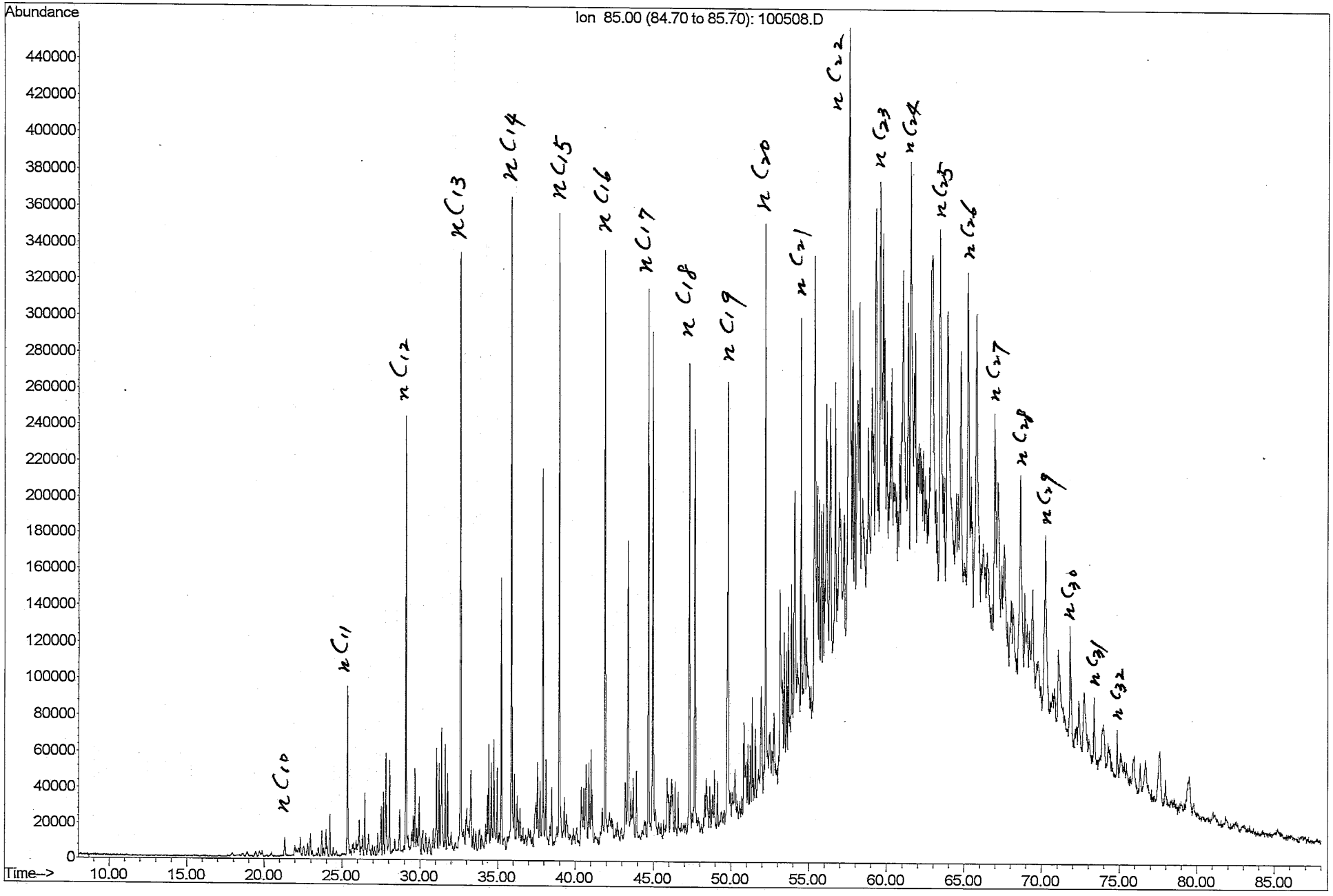


Table

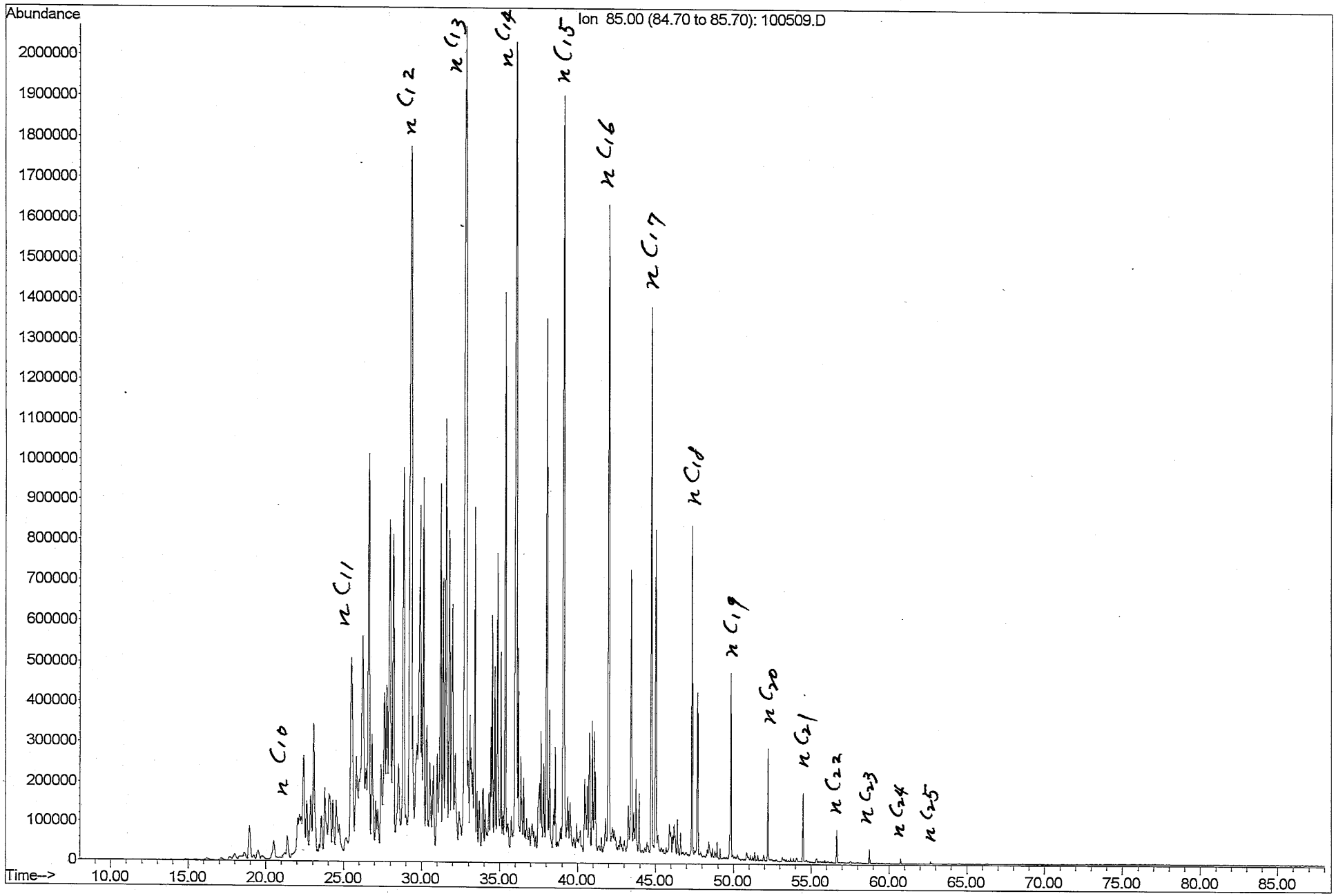
Key to Chromatogram Symbol Identification for m/z 85 and m/z 113 Paraffins and Isoparaffins

Symbol	Detail
i-10	Iso-alkane with 10 carbon atoms
i-15	Farnesane (isoprenoid with 15 carbon atoms)
i-16	Isoprenoid with 16 carbon atoms
Pr	Pristane (isoprenoid with 19 carbon atoms)
Ph	Phytane (isoprenoid with 20 carbon atoms)
nC_8	n-C_8 normal alkane
nC_{15}	n-C_{15} normal alkane
i-8	2,5-(2,4)-Dimethylhexane
i-8'	2,3,4-Trimethylpentane
i-8"	2,3-Dimethylhexane
CH-*n*	Alkylcyclohexane (where *n* indicates number of carbon atoms in the side chain)

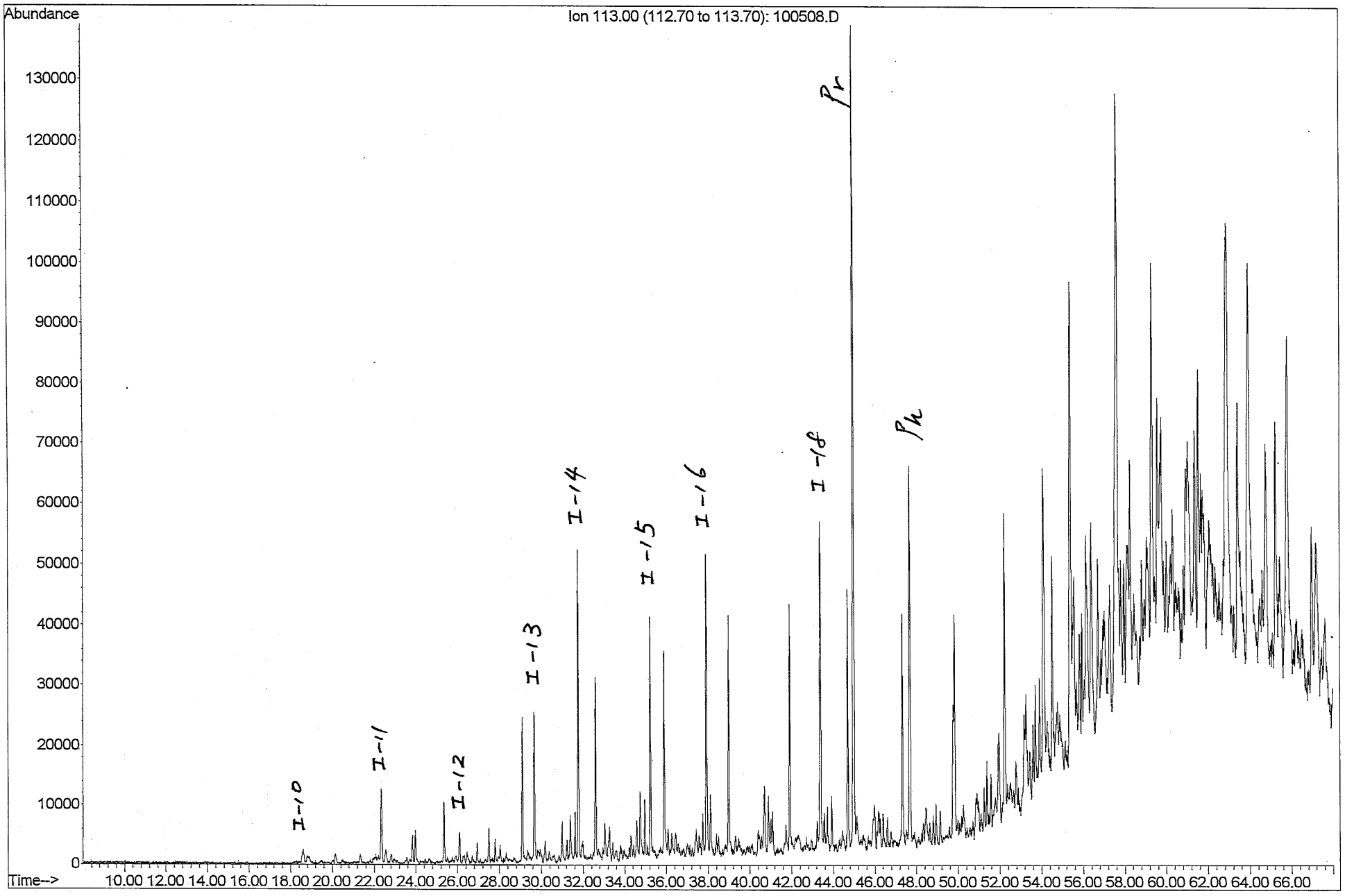
AST-ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES



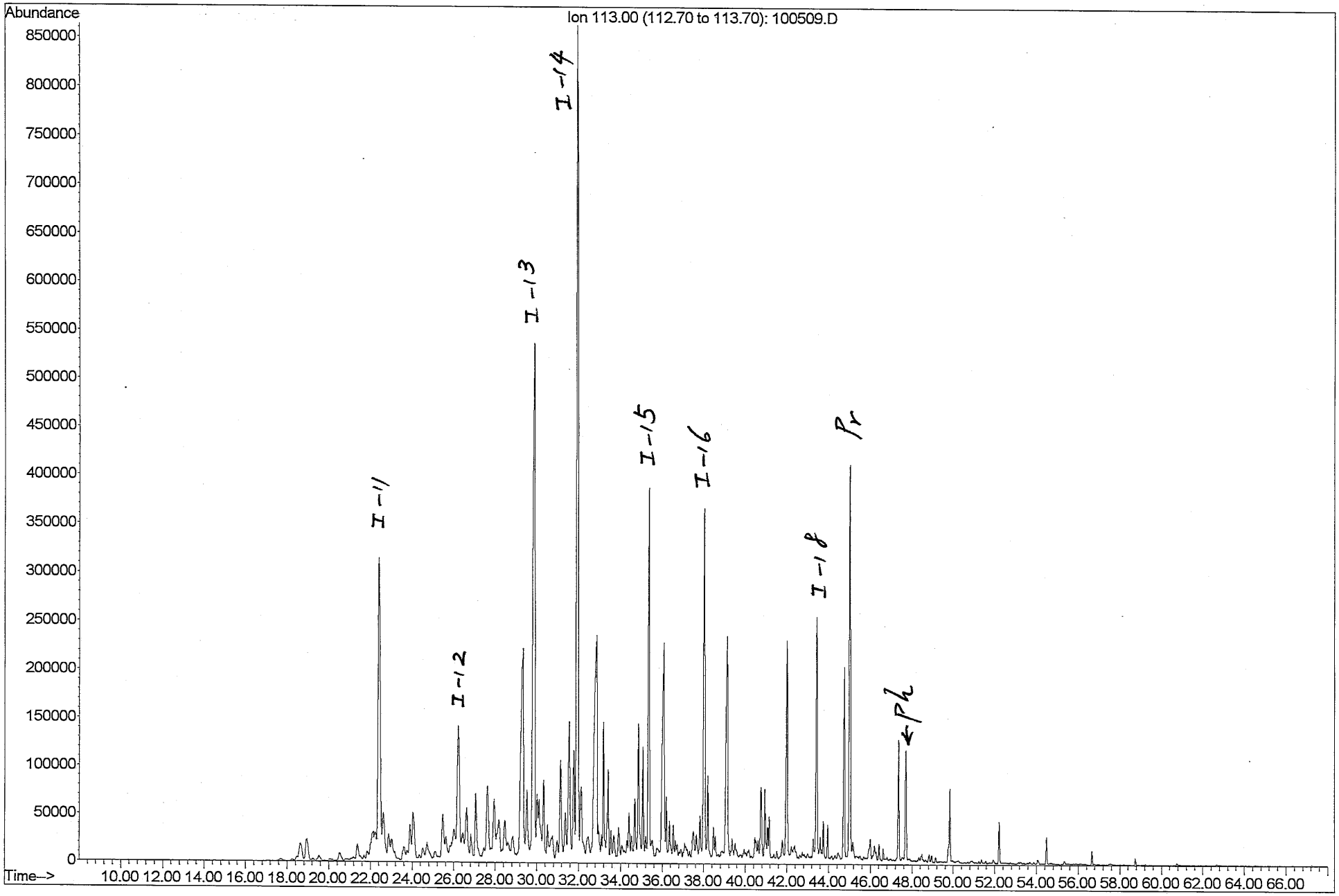
SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES



AST-ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES



SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES



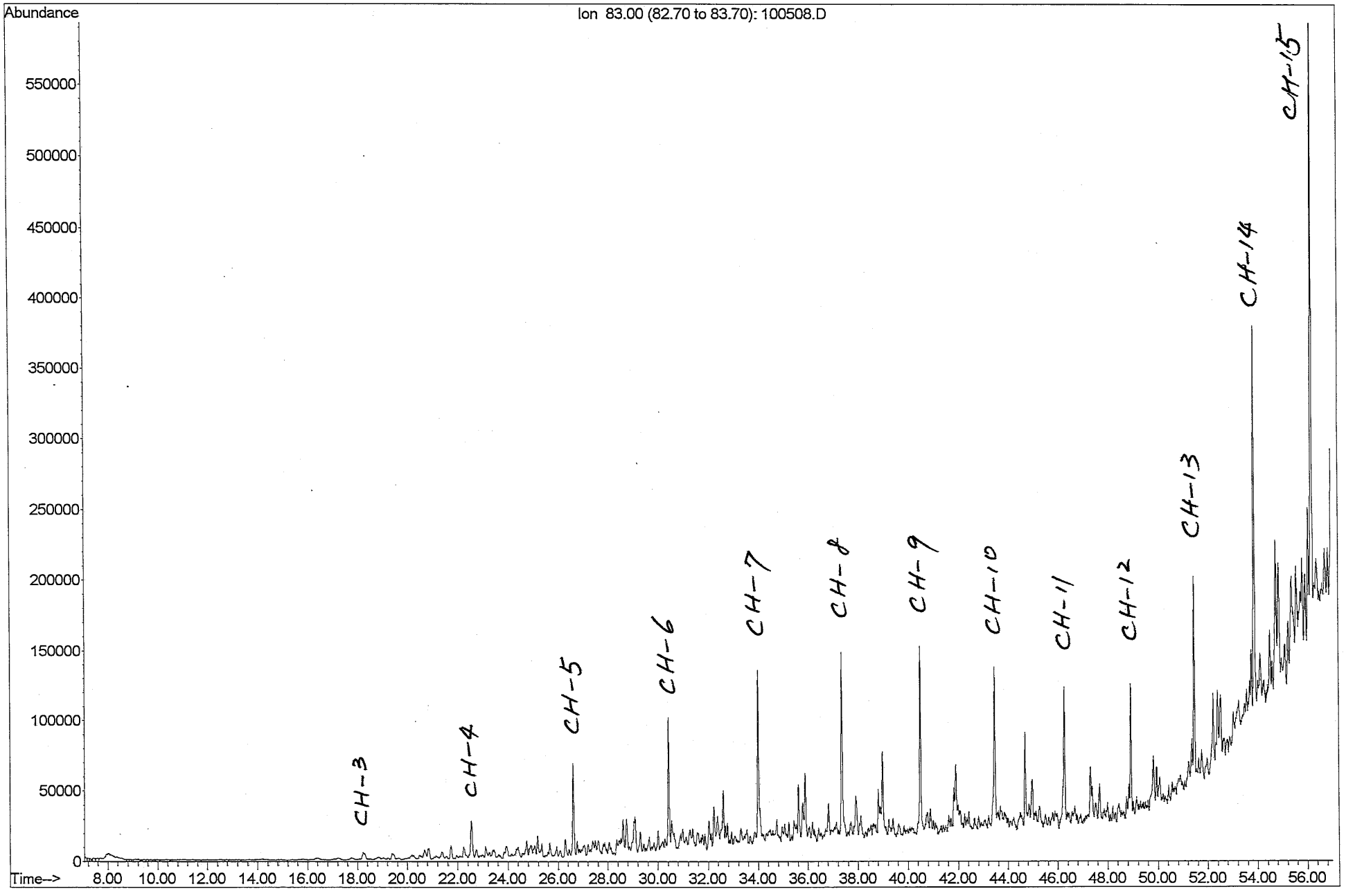
Table

Key for Alkylcyclohexanes at m/z 83

Symbol	Detail
CH-1:	Methylcyclohexane
CH-2:	Ethylcyclohexane
CH-3:	Propylcylohexane
CH-4:	Butylcyclohexane
CH-5:	Pentylcyclohexane
CH-6:	Hexylcyclohexane
CH-7:	Heptylcyclohexane
CH-8:	Octylcyclohexane
CH-9:	Nonylcyclohexane
CH-10:	Decylcyclohexane
CH-11:	Undecylcyclohexane
CH-12:	Dodecylcyclohexane
CH-13:	Tridecylcyclohexane
CH-14:	Tetradecylcyclohexane

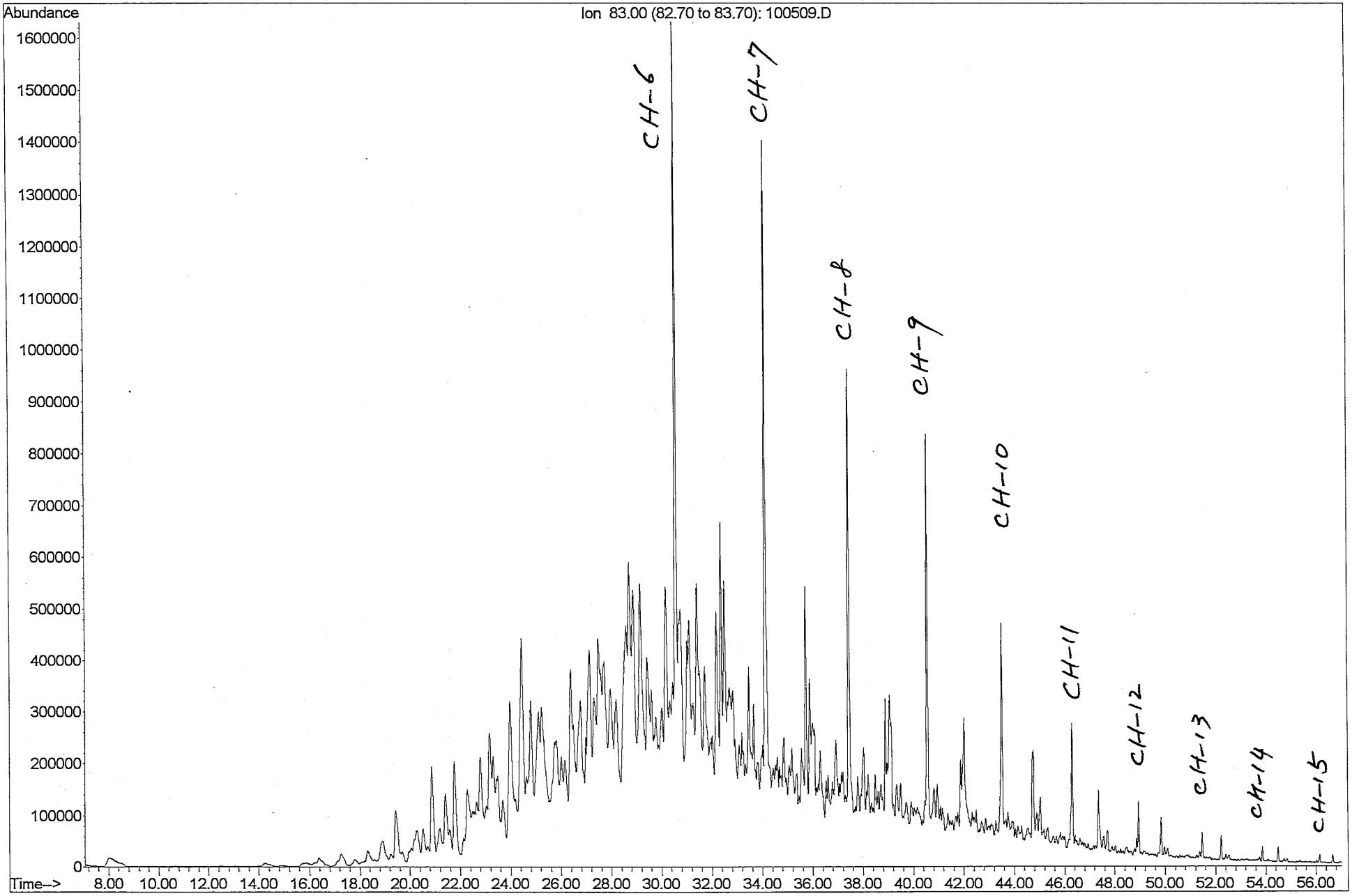
AST-ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES

ZymaX FORENSICS



SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES

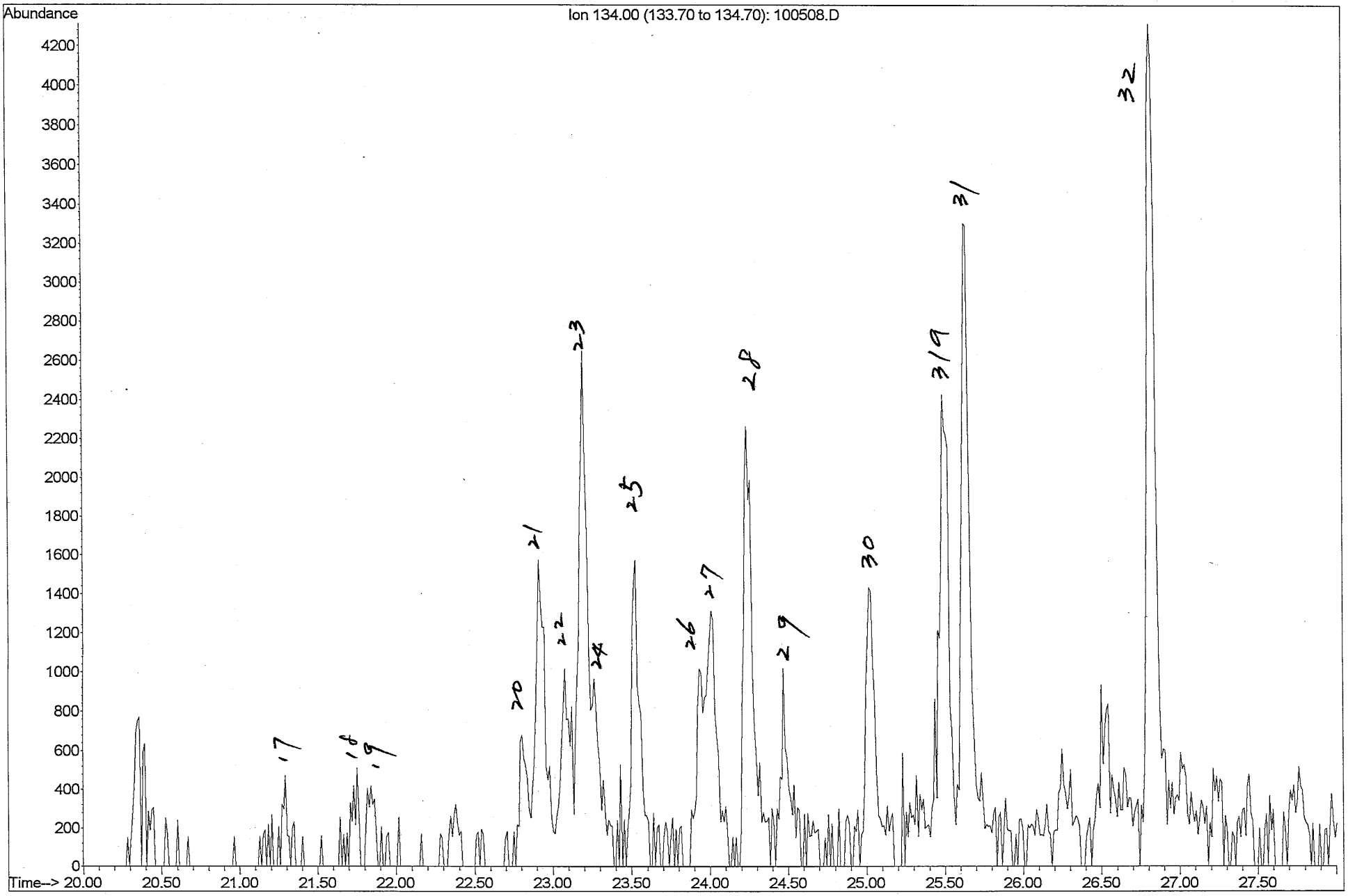
ZymaX FORENSICS



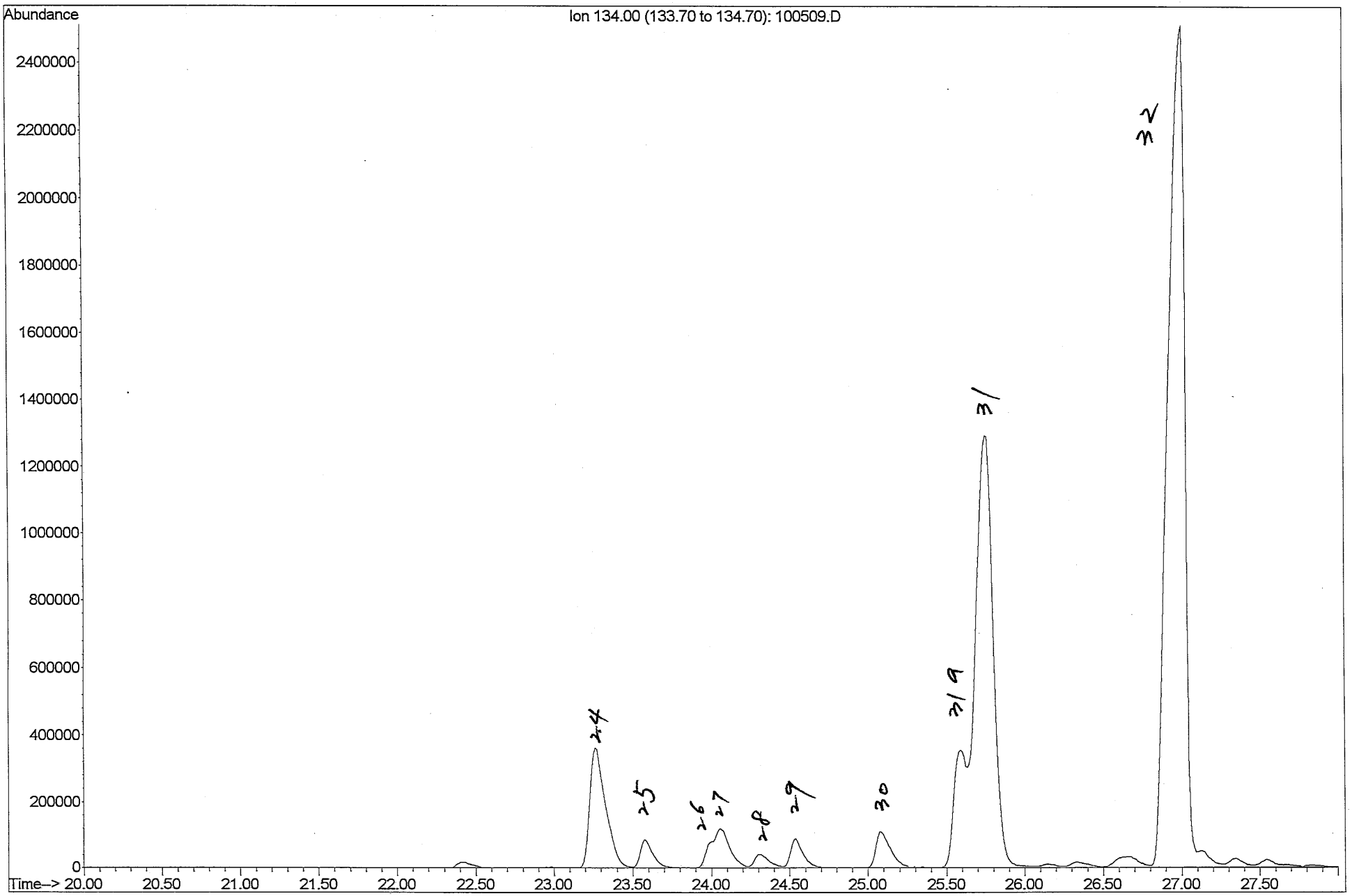
Key for C_4-Alkylbenzenes (m/z 134 mass chromatograms)

#	Compound
16	Sec-Butylbenzene
17	1-Methyl-3-Isopropylbenzene
18	1-Methyl-4-Isopropylbenzene
19	1-Methyl-2-Isopropylbenzene
20	1,3-Diethylbenzene
21	1-Methyl-3-Propylbenzene
22	Butylbenzene
23	1,3-Dimethyl-5-Ethylbenzene
24	1,2-Diethylbenzene
25	1-Methyl-2-Propylbenzene
26	1,4-Dimethyl-2-Ethylbenzene
27	1,3-Dimethyl-4-Ethylbenzene
28	1,2-Dimethyl-4-Ethylbenzene
29	1,3-Dimethyl-2-Ethylbenzene
30	1,2-Dimethyl-3-Ethylbenzene
31a	1,2,4,5-Tetramethylbenzene
31	1,2,3,5-Tetramethylbenzene
32	1,2,3,4-Tetramethylbenzene

AST-ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES



SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES

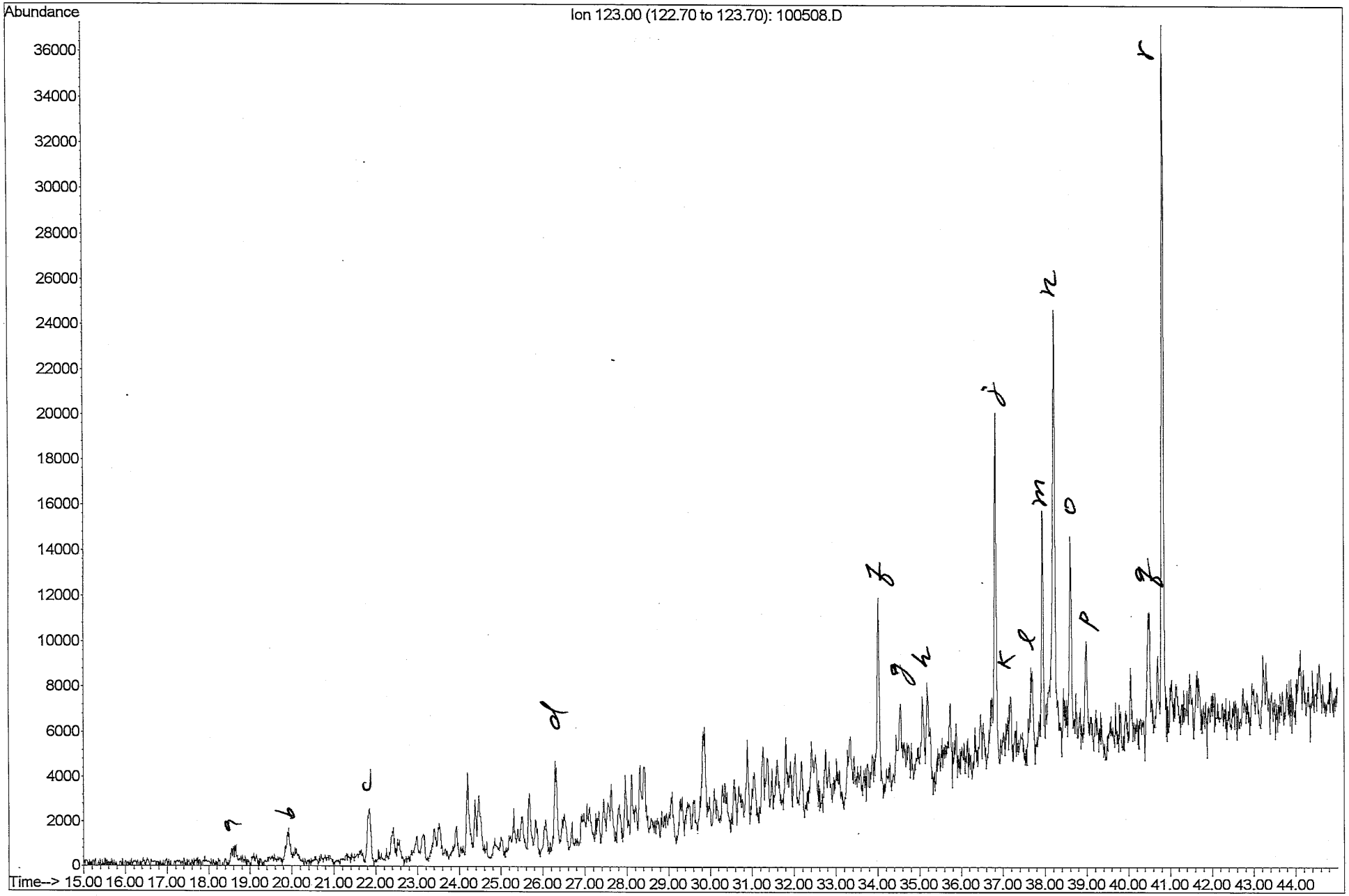


Table

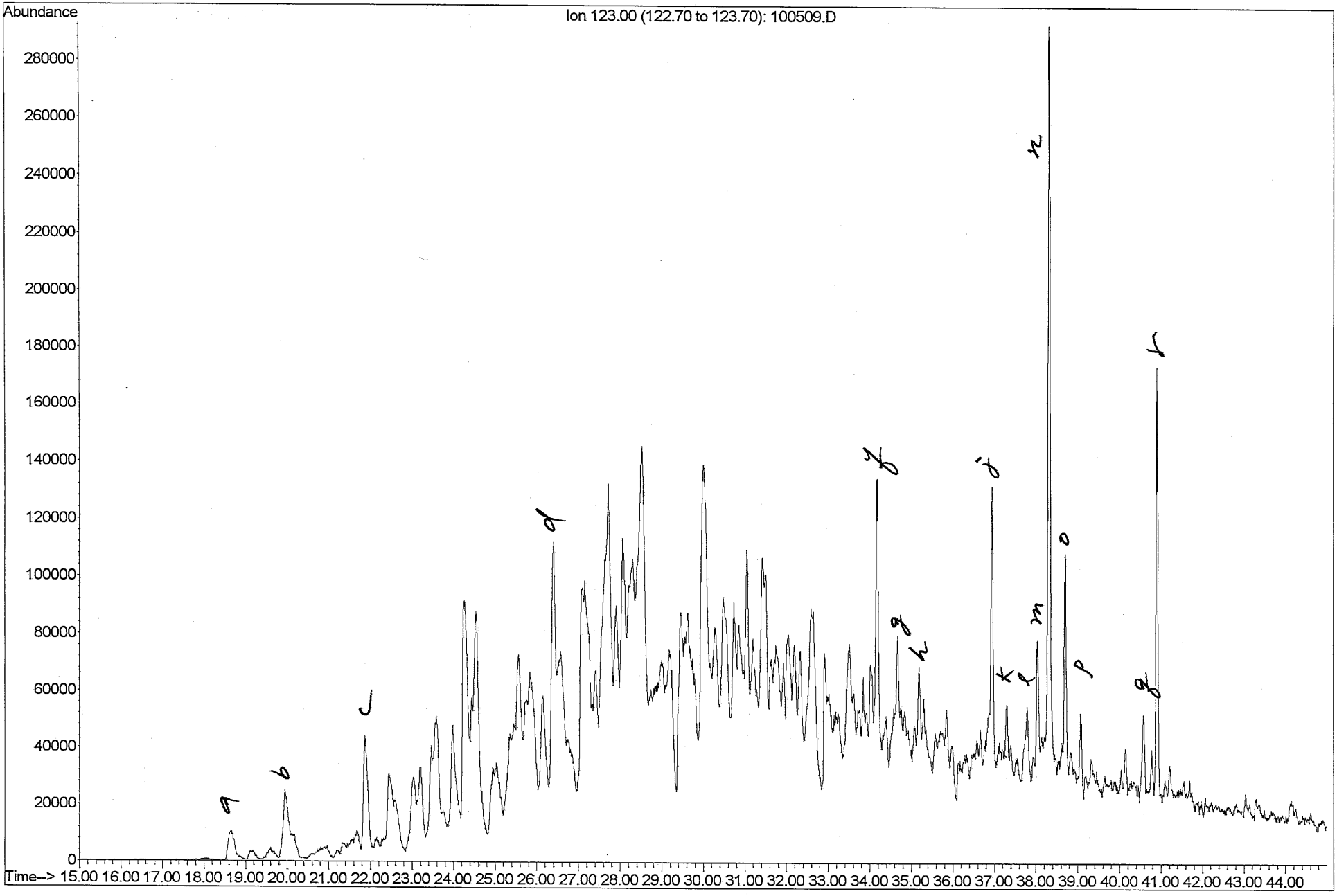
Key for identification of the Bicyclanes (m/z 123 mass chromatograms)

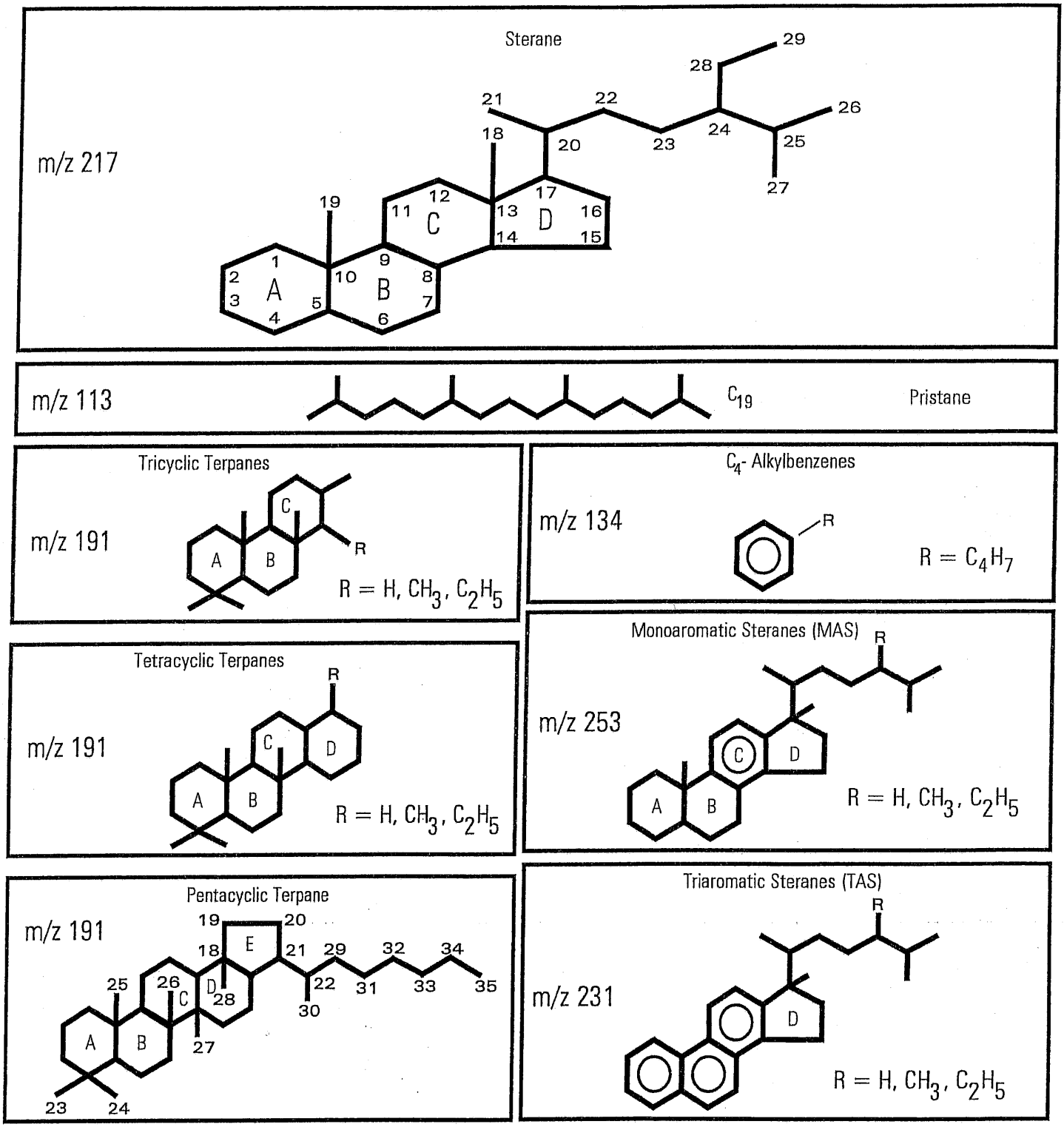
Peak No.	Identity	Formula	M.W.
a	2,2,3-Trimethylbicyloheptane	$C_{10}H_{18}$	138
b	C_{10} bicycloalkane	$C_{10}H_{18}$	138
c	3,3,7-Trimethylbicycloheptane	$C_{10}H_{18}$	138
d	C_{11} decalin	$C_{11}H_{20}$	152
f	Nordrimane	$C_{14}H_{26}$	194
g	Nordrimane	$C_{14}H_{26}$	194
h	Rearranged drimane	$C_{15}H_{28}$	208
j	Rearranged drimane	$C_{15}H_{28}$	208
k	Isomer of eudesmane	$C_{15}H_{28}$	208
l	4β(H) Eudesmane	$C_{15}H_{28}$	208
m	C_{15} bicyclic sesquiterpane	$C_{15}H_{28}$	208
n	8β(H) Drimane	$C_{15}H_{28}$	208
o	C_{15} bicyclic sesquiterpane	$C_{15}H_{28}$	208
p	C_{16} bicyclic sesquiterpane	$C_{16}H_{30}$	222
q	C_{16} bicyclic sesquiterpane	$C_{16}H_{30}$	222
r	8β(H) Homodrimane	$C_{16}H_{30}$	222

AST-ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES



SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES





The compound structures of pristane, C_4-alkylbenzenes, sterane; terpanes; monoaromatic and triaromatic steranes

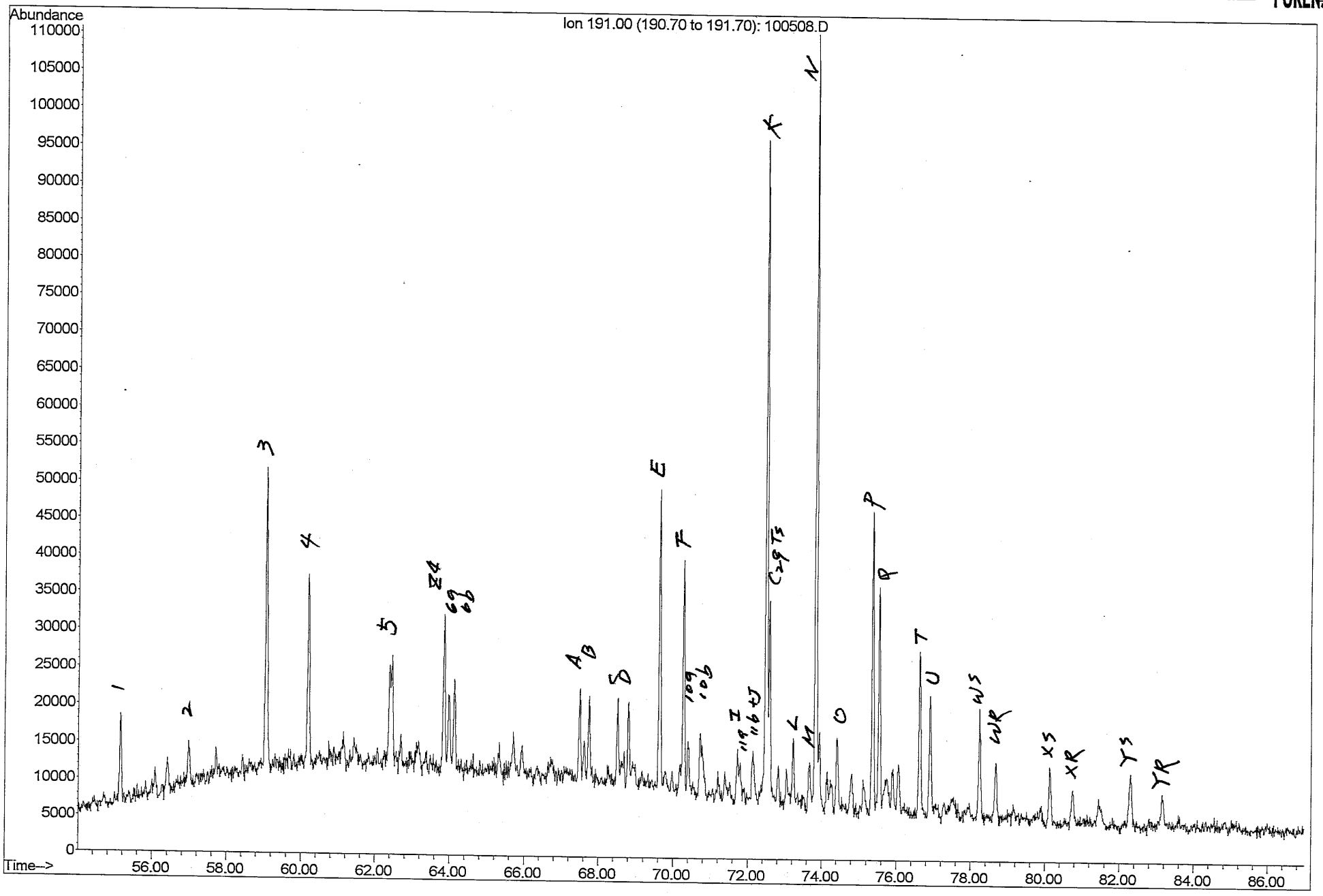
Table

ZymaX FORENSICS

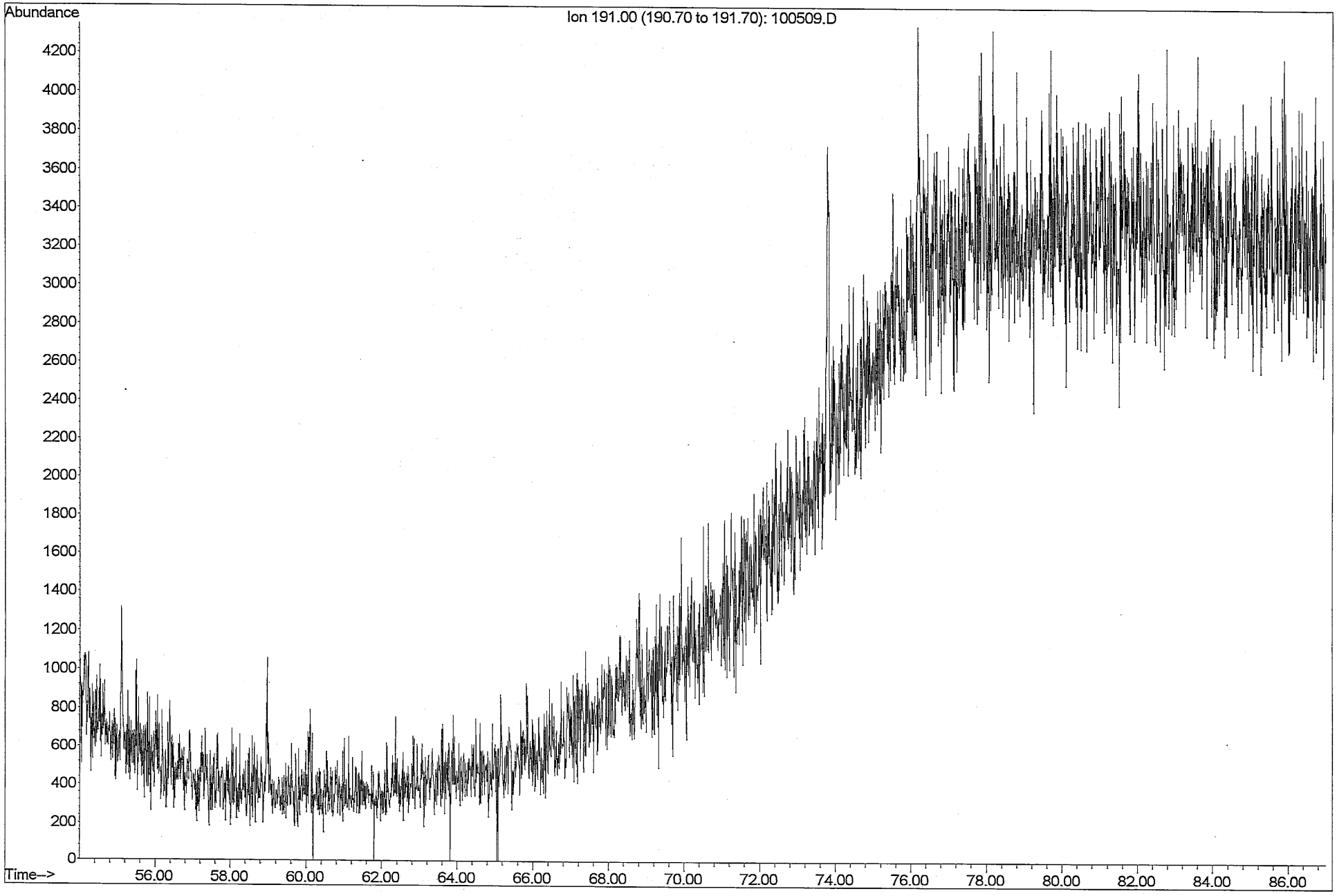
Key for Tricyclic, Tetracyclic, and Pentacyclic Terpanes Identification (m/z 191 mass chromatograms)

Code	Identity	Carbon #
0	C_{20}-Tricyclic Terpane	20
1	C_{21}-Tricyclic Terpane	21
2	C_{22}-Tricyclic Terpane	22
3	C_{23}-Tricyclic Terpane	23
4	C_{24}-Tricyclic Terpane	24
5	C_{25}-Tricyclic Terpane	25
Z4	C_{24}-Tetracyclic Terpane	24
6a	C_{26}-Tricyclic Terpane	26
6b	C_{26}-Tricyclic Terpane	26
7	C_{27}-Tricyclic Terpane	27
A	C_{28}-Tricyclic Terpane #1	28
B	C_{28}-Tricyclic Terpane #2	28
C	C_{29}-Tricyclic Terpane #1	29
D	C_{29}-Tricyclic Terpane #2	29
E	18α-22,29,30-Trisnorneohopane (Ts)	27
F	17α-22,29,30-Trisnorhopane (Tm)	27
G	17ß-22,29-30-Trisnorhopane	27
H	17α-23,28-Bisnorlupane	28
10a	C_{30}-Tricyclic Terpane #1	30
10b	C_{30}-Tricyclic Terpane #2	30
I	17α-28,30-Bisnorhopane	28
11a	C_{31}-Tricyclic Terpane #1	31
J	17α-25-Norhopane	29
11b	C_{31}-Tricyclic Terpane #2	31
K	17α,21ß-30-Norhopane	29
C_{29}Ts	18α-30-Norneohopane	29
C_{30}*	17α-Diahopane	30
L	17ß-21α-30-Normoretane	29
Ma	18α-Oleanane	30
Mb	18ß-Oleanane	30
N	17α,21ß-Hopane	30
O	17ß,21α-Moretane	30
13a	C_{33}-Tricyclic Terpane #1	33
13b	C_{33}-Tricyclic Terpane #2	33
P	22S-17α,21ß-30-Homohopane	31
Q	22R-17α,21ß-30-Homohopane	31
R	Gammacerane	30
14a	C_{34}-Tricyclic Terpane #1	34
S	17ß,21α-Homomoretane	31
14b	C_{34}-Tricyclic Terpane #2	34
T	22S-17α,21ß-30-Bishomohopane	32
U	22R-17α,21ß-30-Bishomohopane	32
15a	C_{35}-Tricyclic Terpane #1	35
15b	C_{35}-Tricyclic Terpane #2	35
V	17ß,21α-C_{32}-Bishomomoretane	32
WS	22S-17α,21ß-30,31,32-Trishomohopane	33
WR	22R-17α,21ß-30,31,32-Trishomohopane	33
16a	C_{36}-Tricyclic Terpane #1	36
16b	C_{36}-Tricyclic Terpane #2	36
XS	22S-17α,21ß-30,31,32,33-Tetrahomohopane	34
XR	22R-17α,21ß-30,31,32,33-Tetrahomohopane	34
YS	22S-17α,21ß-30,31,32,33,34-Pentahomohopane	35
YR	22R-17α,21ß-30,31,32,33,34-Pentahomohopane	35

AST=ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES



SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES

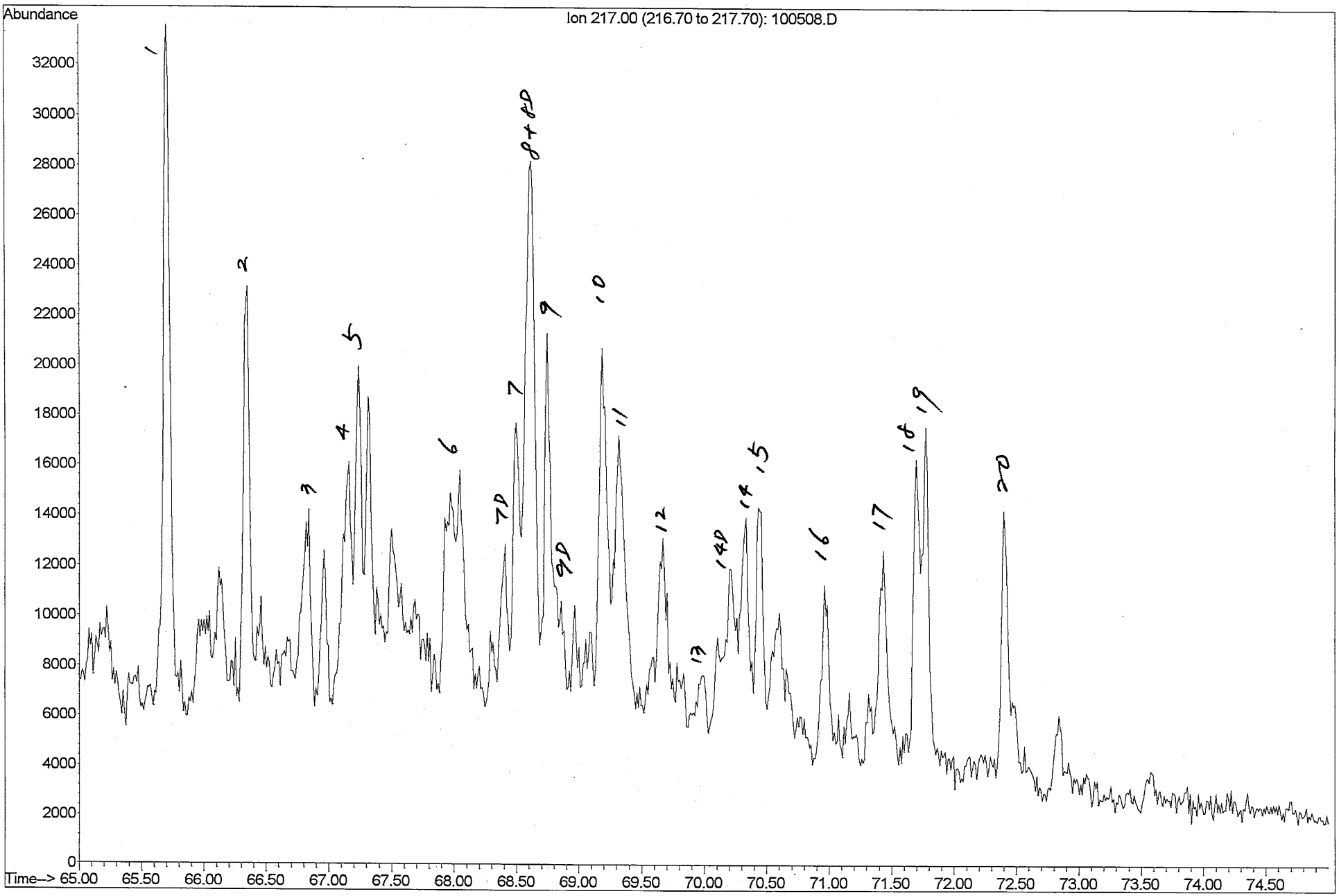


Table

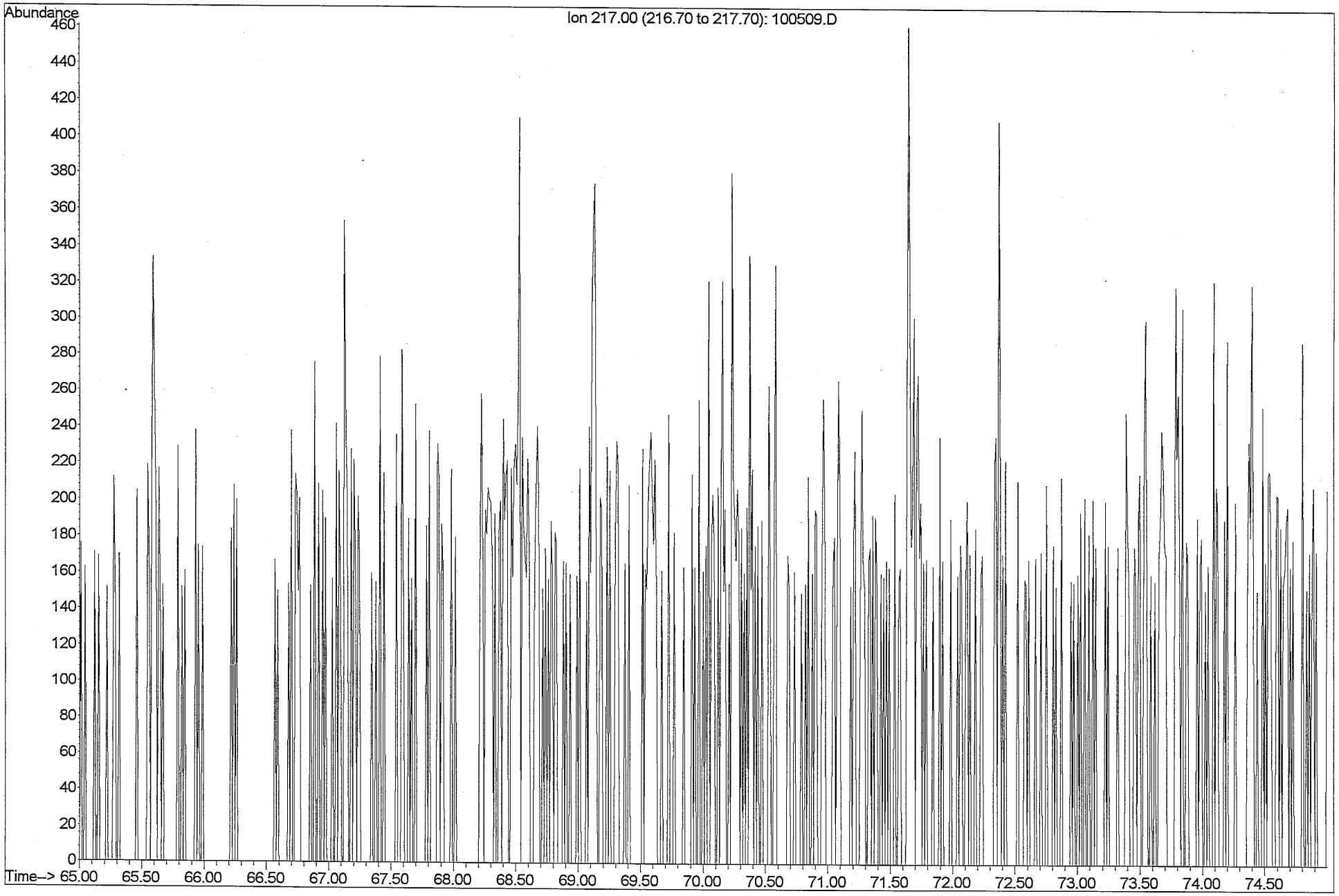
Key for Steranes Identification (m/z 217 Mass Chromatogram)

Code	Identity	Carbon #
1	13ß,17α-diacholestane (20S)	27
2	13ß,17α-diacholestane (20R)	27
3	13α,17ß-diacholestane (20S)	27
4	13α,17ß-diacholestane (20R)	27
5	24-methyl-13ß,17α-diacholestane (20S)	28
6	24-methyl-13ß,17α-diacholestane (20R)	28
7D	24-methyl-13α,17ß-diacholestane (20S)	28
7	14α,17α-cholestane (20S)	27
8D	24-ethyl-13ß,17α-diacholestane (20S)	29
8	14ß,17ß-cholestane (20R)	27
9	14ß,17ß-cholestane (20S)	27
9D	24-methyl-13α,17ß-diacholestane (20R)	28
10	14α,17α-cholestane (20R)	27
11	24-ethyl-13ß,17α-diacholestane (20R)	29
12	24-ethyl-13α,17ß-diacholestane (20S)	29
13	24-methyl-14α,17α-cholestane (20S)	28
14D	24-ethyl-13α,17ß-diacholestane (20R)	29
14	24-methyl-14ß,17ß-cholestane (20R)	28
15	24-methyl-14ß,17ß-cholestane (20S)	28
16	24-methyl-14α,17α-cholestane (20R)	28
17	24-ethyl-14α-cholestane (20S)	29
18	24-ethyl-14ß,17ß-cholestane (20R)	29
19	24-ethyl-14ß,17ß-cholestane (20S)	29
20	24-ethyl-14α,17α-cholestane (20R)	29
21A	24-n-Propylcholestane (20S)	30
21B	4-methyl-24-ethylcholestane (20S)	30
22A	4α-methyl-24-ethyl-14β,17β-cholestane(20S)	30
22B	24-n-propyl-14β,17β-cholestane (20S)	30
23A	4α-methyl-24-ethyl-14β,17β-cholestane(20R)	30
23B	24-n-propyl-14β,17β-cholestane (20R)	30
24A	4α-methyl-24-ethylcholestane(20R)	30
24B	24-n-propylcholestane (20R)	30

AST-ID-0916 (41972-1) soil extract
Vf=30ml, 25g, BGES



SPT-ID-0916 (41972-2) soil extract
Vf=2ml, 25g, BGES



Table

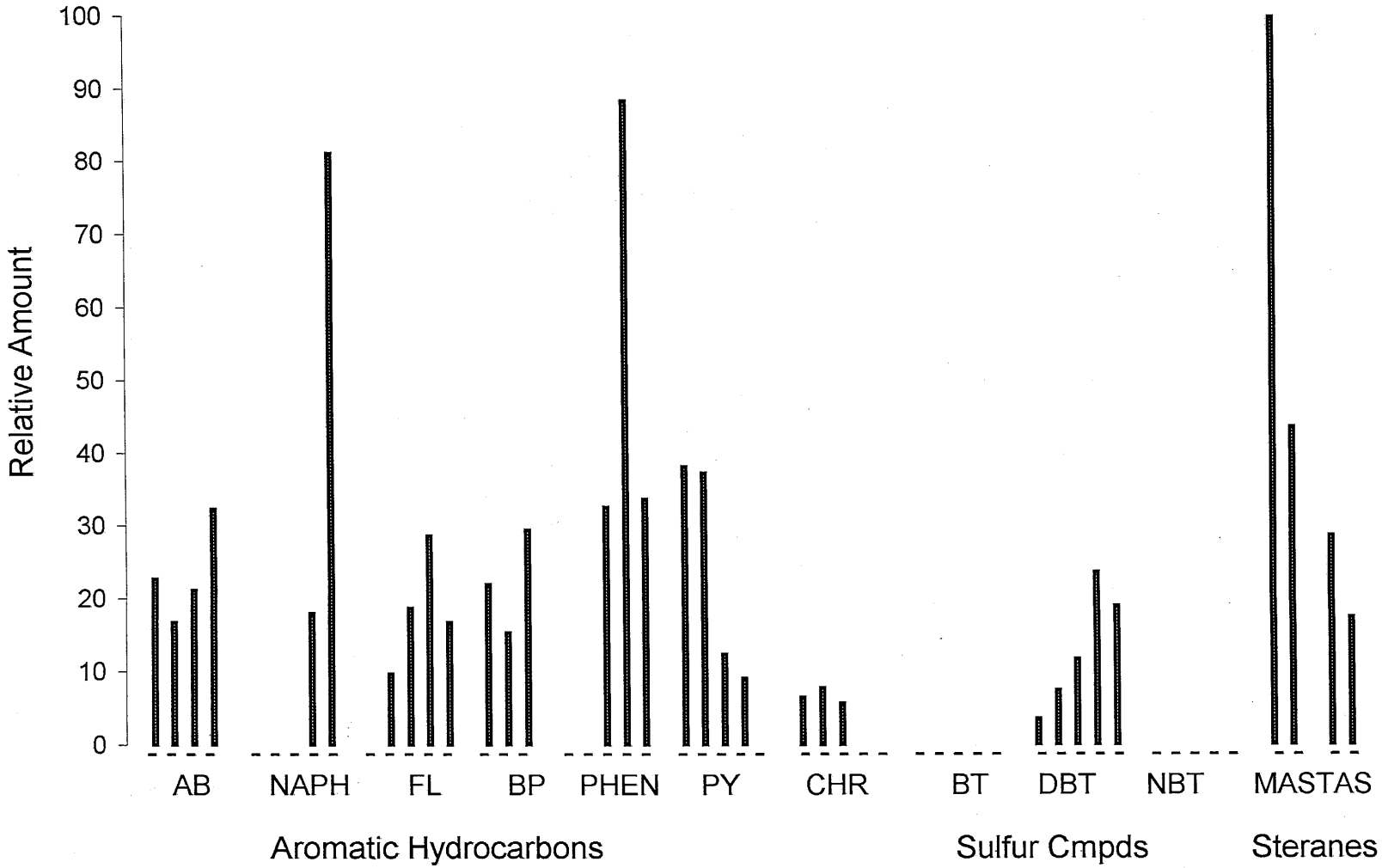
Key for Identifying Aromatic Hydrocarbons

No.	m/z	Abbreviation	Compound
1	120	AB	C_3-alkylbenzenes
2	134		C_4-alkylbenzenes
3	148		C_5-alkylbenzenes
4	162		C_6-alkylbenzenes
5	128	NAPH	C_0-naphthalene
6	142		C_1-naphthalenes
7	156		C_2-naphthalenes
8	170		C_3-naphthalenes
9	184		C_4-naphthalenes
10	166	FL	C_0-fluorene
11	180		C_1-fluorenes
12	194		C_2-fluorenes
13	208		C_3-fluorenes
14	222		C_4-fluorenes
15	154	BP	C_0-biphenyl
16	168		C_1-biphenyls + dibenzofuran
17	182		C_2-biphenyls + C_1-dibenzofuran
18	178	PHEN	C_0-phenanthrene
19	192		C_1-phenanthrenes
20	206		C_2-phenanthrenes
21	220		C_3-phenanthrenes
22	234		C_4-phenanthrenes
23	202	PY	C_0-pyrene/fluoranthene
24	216		C_1-pyrenes/fluoranthenes
25	230		C_2-pyrenes/fluoranthenes
26	244		C_3-pyrenes/fluoranthenes
27	258		C_4-pyrenes/fluoranthenes
28	228	CHR	C_0-chrysene
29	242		C_1-chrysenes
30	256		C_2-chrysenes
31	270		C_3-chrysenes
32	284		C_4-chrysenes
33	148	BT	C_1-benzothiophenes
34	162		C_2-benzothiophenes
35	176		C_3-benzothiophenes
36	190		C_4-benzothiophenes
37	204		C_5-benzothiophenes
28	184	DBT	C_0-dibenzothiophene
39	198		C_1-dibenzothiophenes
40	212		C_2-dibenzothiophenes
41	226		C_3-dibenzothiophenes
42	240		C_4-dibenzothiophenes
43	234	NBT	C_0-naphthobenzothiophene
44	248		C_1-naphthobenzothiophenes
45	262		C_2-naphthobenzothiophenes
46	276		C_3-naphthobenzothiophenes
47	290		C_4-naphthobenzothiophenes
48	253	MAS	Monoaromatic steranes
49	267		Monoaromatic steranes
50	239		Monoaromatic steranes
51	231	TAS	Triaromatic steranes
52	245		Triaromatic steranes

ZymaX FORENSICS

Aromatic Hydrocarbon Distribution

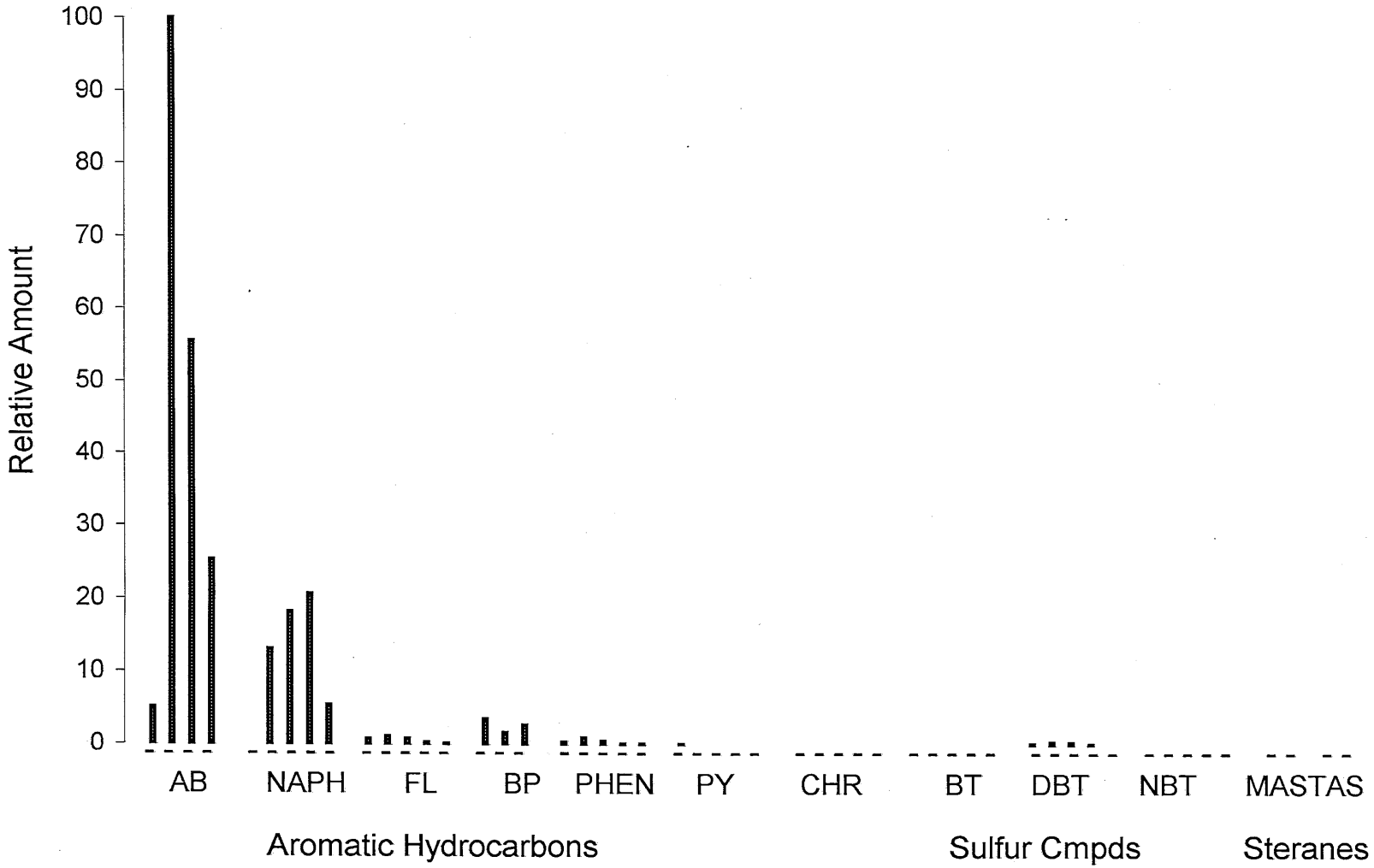
AST-ID-0916



ZymaX FORENSICS

Aromatic Hydrocarbon Distribution

SPT-ID-0916



APPENDIX E
LABORATORY ANALYTICAL DATA

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 13, 2010

David Collentine
Kiewit infrastructure West Co.
2200 Columbia House Blvd.
Vancouver, WA 98661

Re: Analytical Data for Project Kiewit/BGES
Laboratory Reference No. 1008-095

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on August 13, 2010.

Please note that pages 56-63, 65, and 67 are revised, and replace the same pages in the original report dated August 25, 2010.

CS Laboratory Approval Number: UST-039.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

Case Narrative

Samples were collected on August 11, 2010 and received by the laboratory on August 13, 2010. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260B and GRO/BTEX AK101/EPA 8021B Analysis

Please note that the samples for Volatiles and GRO AK101 were received in pre-weighed 4 ounce jars with Septa lids preserved with 25 millileters of Methanol.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: August 23, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

Analyst's Signature

POR
Stacey Duran, Volatiles Chemist — 8-25-10 Date

Analyst's Signature

Erika Maestas, GC Semivolatiles Chemist — 8/25/10 Date

Analyst's Signature

Eileen Merk, Gas/BTEX Chemist — 8/25/10 Date

Analyst's Signature

Zeus Thornton, Diesels Chemist — 8/25/10 Date

Analyst's Signature

William Kelsch, Inorganics Chemist — 8-25-10 Date

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	8-11-10
Date Analyzed:	8-16-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	08-095-09
Client ID:	**SP1-0811**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.098
Chloromethane	ND		0.49
Vinyl Chloride	ND		0.098
Bromomethane	ND		0.098
Chloroethane	ND		0.49
Trichlorofluoromethane	ND		0.098
1,1-Dichloroethene	ND		0.098
Acetone	ND		0.49
Iodomethane	ND		0.49
Carbon Disulfide	ND		0.098
Methylene Chloride	ND		0.49
(trans) 1,2-Dichloroethene	ND		0.098
Methyl t-Butyl Ether	ND		0.098
1,1-Dichloroethane	ND		0.098
Vinyl Acetate	ND		0.49
2,2-Dichloropropane	ND		0.098
(cis) 1,2-Dichloroethene	ND		0.098
2-Butanone	ND		0.49
Bromochloromethane	ND		0.098
Chloroform	ND		0.098
1,1,1-Trichloroethane	ND		0.098
Carbon Tetrachloride	ND		0.098
1,1-Dichloropropene	ND		0.098
Benzene	ND		0.098
1,2-Dichloroethane	ND		0.098
Trichloroethene	ND		0.098
1,2-Dichloropropane	ND		0.098
Dibromomethane	ND		0.098
Bromodichloromethane	ND		0.098
2-Chloroethyl Vinyl Ether	ND		0.49
(cis) 1,3-Dichloropropene	ND		0.098
Methyl Isobutyl Ketone	ND		0.49
Toluene	ND		0.49
(trans) 1,3-Dichloropropene	ND		0.098

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-095-09
Client ID: SP1-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.098
Tetrachloroethene	ND		0.098
1,3-Dichloropropane	ND		0.098
2-Hexanone	ND		0.49
Dibromochloromethane	ND		0.098
1,2-Dibromoethane	ND		0.098
Chlorobenzene	ND		0.098
1,1,1,2-Tetrachloroethane	ND		0.098
Ethylbenzene	ND		0.098
m,p-Xylene	0.30		0.20
o-Xylene	3.2		0.098
Styrene	ND		0.098
Bromoform	ND		0.098
Isopropylbenzene	ND		0.098
Bromobenzene	ND		0.098
1,1,2,2-Tetrachloroethane	ND		0.098
1,2,3-Trichloropropane	ND		0.098
n-Propylbenzene	ND		0.098
2-Chlorotoluene	ND		0.098
4-Chlorotoluene	ND		0.098
1,3,5-Trimethylbenzene	9.2		0.098
tert-Butylbenzene	ND		0.098
1,2,4-Trimethylbenzene	1.7		0.098
sec-Butylbenzene	ND		0.098
1,3-Dichlorobenzene	ND		0.098
p-Isopropyltoluene	ND		0.098
1,4-Dichlorobenzene	ND		0.098
1,2-Dichlorobenzene	ND		0.098
n-Butylbenzene	ND		0.098
1,2-Dibromo-3-chloropropane	ND		0.49
1,2,4-Trichlorobenzene	ND		0.098
Hexachlorobutadiene	ND		0.49
Naphthalene	0.91		0.098
1,2,3-Trichlorobenzene	ND		0.098

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	83	66-128
Toluene-d8	96	68-126
4-Bromofluorobenzene	95	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	8-11-10
Date Analyzed:	8-16-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	08-095-13
Client ID:	**CFS1-0811**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.15
Chloromethane	ND		0.77
Vinyl Chloride	ND		0.15
Bromomethane	ND		0.15
Chloroethane	ND		0.77
Trichlorofluoromethane	ND		0.15
1,1-Dichloroethene	ND		0.15
Acetone	ND		0.77
Iodomethane	ND		0.77
Carbon Disulfide	ND		0.15
Methylene Chloride	ND		0.77
(trans) 1,2-Dichloroethene	ND		0.15
Methyl t-Butyl Ether	ND		0.15
1,1-Dichloroethane	ND		0.15
Vinyl Acetate	ND		0.77
2,2-Dichloropropane	ND		0.15
(cis) 1,2-Dichloroethene	ND		0.15
2-Butanone	ND		0.77
Bromochloromethane	ND		0.15
Chloroform	ND		0.15
1,1,1-Trichloroethane	ND		0.15
Carbon Tetrachloride	ND		0.15
1,1-Dichloropropene	ND		0.15
Benzene	ND		0.15
1,2-Dichloroethane	ND		0.15
Trichloroethene	ND		0.15
1,2-Dichloropropane	ND		0.15
Dibromomethane	ND		0.15
Bromodichloromethane	ND		0.15
2-Chloroethyl Vinyl Ether	ND		0.77
(cis) 1,3-Dichloropropene	ND		0.15
Methyl Isobutyl Ketone	ND		0.77
Toluene	ND		0.77
(trans) 1,3-Dichloropropene	ND		0.15

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-095-13
Client ID: CFS1-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.15
Tetrachloroethene	ND		0.15
1,3-Dichloropropane	ND		0.15
2-Hexanone	ND		0.77
Dibromochloromethane	ND		0.15
1,2-Dibromoethane	ND		0.15
Chlorobenzene	ND		0.15
1,1,1,2-Tetrachloroethane	ND		0.15
Ethylbenzene	1.4		0.15
m,p-Xylene	4.8		0.31
o-Xylene	2.6		0.15
Styrene	ND		0.15
Bromoform	ND		0.15
Isopropylbenzene	1.2		0.15
Bromobenzene	ND		0.15
1,1,2,2-Tetrachloroethane	ND		0.15
1,2,3-Trichloropropane	ND		0.15
n-Propylbenzene	2.2		0.15
2-Chlorotoluene	ND		0.15
4-Chlorotoluene	ND		0.15
1,3,5-Trimethylbenzene	10		0.15
tert-Butylbenzene	0.17		0.15
1,2,4-Trimethylbenzene	28		0.15
sec-Butylbenzene	2.0		0.15
1,3-Dichlorobenzene	ND		0.15
p-Isopropyltoluene	4.0		0.15
1,4-Dichlorobenzene	ND		0.15
1,2-Dichlorobenzene	ND		0.15
n-Butylbenzene	ND		0.15
1,2-Dibromo-3-chloropropane	ND		0.77
1,2,4-Trichlorobenzene	ND		0.15
Hexachlorobutadiene	ND		0.77
Naphthalene	21		0.15
1,2,3-Trichlorobenzene	ND		0.15

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	92	66-128
Toluene-d8	97	68-126
4-Bromofluorobenzene	93	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	8-11-10
Date Analyzed:	8-16&17-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	08-095-14
Client ID:	**CFS9-0811**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.17
Chloromethane	ND		0.86
Vinyl Chloride	ND		0.17
Bromomethane	ND		0.17
Chloroethane	ND		0.86
Trichlorofluoromethane	ND		0.17
1,1-Dichloroethene	ND		0.17
Acetone	ND		0.86
Iodomethane	ND		0.86
Carbon Disulfide	ND		0.17
Methylene Chloride	ND		0.86
(trans) 1,2-Dichloroethene	ND		0.17
Methyl t-Butyl Ether	ND		0.17
1,1-Dichloroethane	ND		0.17
Vinyl Acetate	ND		0.86
2,2-Dichloropropane	ND		0.17
(cis) 1,2-Dichloroethene	ND		0.17
2-Butanone	ND		0.86
Bromochloromethane	ND		0.17
Chloroform	ND		0.17
1,1,1-Trichloroethane	ND		0.17
Carbon Tetrachloride	ND		0.17
1,1-Dichloropropene	ND		0.17
Benzene	ND		0.17
1,2-Dichloroethane	ND		0.17
Trichloroethene	ND		0.17
1,2-Dichloropropane	ND		0.17
Dibromomethane	ND		0.17
Bromodichloromethane	ND		0.17
2-Chloroethyl Vinyl Ether	ND		0.86
(cis) 1,3-Dichloropropene	ND		0.17
Methyl Isobutyl Ketone	ND		0.86
Toluene	ND		0.86
(trans) 1,3-Dichloropropene	ND		0.17

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 08-095-14
Client ID: CFS9-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.17
Tetrachloroethene	ND		0.17
1,3-Dichloropropane	ND		0.17
2-Hexanone	ND		0.86
Dibromochloromethane	ND		0.17
1,2-Dibromoethane	ND		0.17
Chlorobenzene	ND		0.17
1,1,1,2-Tetrachloroethane	ND		0.17
Ethylbenzene	2.2		0.17
m,p-Xylene	6.9		0.34
o-Xylene	3.5		0.17
Styrene	ND		0.17
Bromoform	ND		0.17
Isopropylbenzene	1.7		0.17
Bromobenzene	ND		0.17
1,1,2,2-Tetrachloroethane	ND		0.17
1,2,3-Trichloropropane	ND		0.17
n-Propylbenzene	3.1		0.17
2-Chlorotoluene	ND		0.17
4-Chlorotoluene	ND		0.17
1,3,5-Trimethylbenzene	14		0.17
tert-Butylbenzene	0.26		0.17
1,2,4-Trimethylbenzene	47		0.69
sec-Butylbenzene	2.7		0.17
1,3-Dichlorobenzene	ND		0.17
p-Isopropyltoluene	5.5		0.17
1,4-Dichlorobenzene	ND		0.17
1,2-Dichlorobenzene	ND		0.17
n-Butylbenzene	ND		0.17
1,2-Dibromo-3-chloropropane	ND		0.86
1,2,4-Trichlorobenzene	ND		0.17
Hexachlorobutadiene	ND		0.86
Naphthalene	30		0.17
1,2,3-Trichlorobenzene	ND		0.17

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	96	66-128
Toluene-d8	98	68-126
4-Bromofluorobenzene	91	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 8-11-10
Date Analyzed: 8-16-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-15
Client ID: CFS2-0811

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.18
Chloromethane	ND		0.92
Vinyl Chloride	ND		0.18
Bromomethane	ND		0.18
Chloroethane	ND		0.92
Trichlorofluoromethane	ND		0.18
1,1-Dichloroethene	ND		0.18
Acetone	ND		0.92
Iodomethane	ND		0.92
Carbon Disulfide	ND		0.18
Methylene Chloride	ND		0.92
(trans) 1,2-Dichloroethene	ND		0.18
Methyl t-Butyl Ether	ND		0.18
1,1-Dichloroethane	ND		0.18
Vinyl Acetate	ND		0.92
2,2-Dichloropropane	ND		0.18
(cis) 1,2-Dichloroethene	ND		0.18
2-Butanone	ND		0.92
Bromochloromethane	ND		0.18
Chloroform	ND		0.18
1,1,1-Trichloroethane	ND		0.18
Carbon Tetrachloride	ND		0.18
1,1-Dichloropropene	ND		0.18
Benzene	ND		0.18
1,2-Dichloroethane	ND		0.18
Trichloroethene	ND		0.18
1,2-Dichloropropane	ND		0.18
Dibromomethane	ND		0.18
Bromodichloromethane	ND		0.18
2-Chloroethyl Vinyl Ether	ND		0.92
(cis) 1,3-Dichloropropene	ND		0.18
Methyl Isobutyl Ketone	ND		0.92
Toluene	ND		0.92
(trans) 1,3-Dichloropropene	ND		0.18

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Lab ID: 08-095-15
Client ID: CFS2-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.18
Tetrachloroethene	ND		0.18
1,3-Dichloropropane	ND		0.18
2-Hexanone	ND		0.92
Dibromochloromethane	ND		0.18
1,2-Dibromoethane	ND		0.18
Chlorobenzene	ND		0.18
1,1,1,2-Tetrachloroethane	ND		0.18
Ethylbenzene	0.35		0.18
m,p-Xylene	0.96		0.37
o-Xylene	0.48		0.18
Styrene	ND		0.18
Bromoform	ND		0.18
Isopropylbenzene	0.36		0.18
Bromobenzene	ND		0.18
1,1,2,2-Tetrachloroethane	ND		0.18
1,2,3-Trichloropropane	ND		0.18
n-Propylbenzene	0.54		0.18
2-Chlorotoluene	ND		0.18
4-Chlorotoluene	ND		0.18
1,3,5-Trimethylbenzene	3.0		0.18
tert-Butylbenzene	ND		0.18
1,2,4-Trimethylbenzene	9.0		0.18
sec-Butylbenzene	0.58		0.18
1,3-Dichlorobenzene	ND		0.18
p-Isopropyltoluene	1.2		0.18
1,4-Dichlorobenzene	ND		0.18
1,2-Dichlorobenzene	ND		0.18
n-Butylbenzene	1.8		0.18
1,2-Dibromo-3-chloropropane	ND		0.92
1,2,4-Trichlorobenzene	ND		0.18
Hexachlorobutadiene	ND		0.92
Naphthalene	7.0		0.18
1,2,3-Trichlorobenzene	ND		0.18

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	83	66-128
Toluene-d8	92	68-126
4-Bromofluorobenzene	101	53-134

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Date Extracted:	8-11-10
Date Analyzed:	8-16-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	08-095-16
Client ID:	**CFS3-0811**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.13
Chloromethane	ND		0.63
Vinyl Chloride	ND		0.13
Bromomethane	ND		0.13
Chloroethane	ND		0.63
Trichlorofluoromethane	ND		0.13
1,1-Dichloroethene	ND		0.13
Acetone	ND		0.63
Iodomethane	ND		0.63
Carbon Disulfide	ND		0.13
Methylene Chloride	ND		0.63
(trans) 1,2-Dichloroethene	ND		0.13
Methyl t-Butyl Ether	ND		0.13
1,1-Dichloroethane	ND		0.13
Vinyl Acetate	ND		0.63
2,2-Dichloropropane	ND		0.13
(cis) 1,2-Dichloroethene	ND		0.13
2-Butanone	ND		0.63
Bromochloromethane	ND		0.13
Chloroform	ND		0.13
1,1,1-Trichloroethane	ND		0.13
Carbon Tetrachloride	ND		0.13
1,1-Dichloropropene	ND		0.13
Benzene	ND		0.13
1,2-Dichloroethane	ND		0.13
Trichloroethene	ND		0.13
1,2-Dichloropropane	ND		0.13
Dibromomethane	ND		0.13
Bromodichloromethane	ND		0.13
2-Chloroethyl Vinyl Ether	ND		0.63
(cis) 1,3-Dichloropropene	ND		0.13
Methyl Isobutyl Ketone	ND		0.63
Toluene	ND		0.63
(trans) 1,3-Dichloropropene	ND		0.13

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Lab ID: 08-095-16
Client ID: CFS3-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.13
Tetrachloroethene	ND		0.13
1,3-Dichloropropane	ND		0.13
2-Hexanone	ND		0.63
Dibromochloromethane	ND		0.13
1,2-Dibromoethane	ND		0.13
Chlorobenzene	ND		0.13
1,1,1,2-Tetrachloroethane	ND		0.13
Ethylbenzene	0.17		0.13
m,p-Xylene	2.2		0.25
o-Xylene	0.76		0.13
Styrene	ND		0.13
Bromoform	ND		0.13
Isopropylbenzene	0.17		0.13
Bromobenzene	ND		0.13
1,1,2,2-Tetrachloroethane	ND		0.13
1,2,3-Trichloropropane	ND		0.13
n-Propylbenzene	0.21		0.13
2-Chlorotoluene	ND		0.13
4-Chlorotoluene	ND		0.13
1,3,5-Trimethylbenzene	4.8		0.13
tert-Butylbenzene	ND		0.13
1,2,4-Trimethylbenzene	14		0.13
sec-Butylbenzene	0.38		0.13
1,3-Dichlorobenzene	ND		0.13
p-Isopropyltoluene	1.5		0.13
1,4-Dichlorobenzene	ND		0.13
1,2-Dichlorobenzene	ND		0.13
n-Butylbenzene	0.81		0.13
1,2-Dibromo-3-chloropropane	ND		0.63
1,2,4-Trichlorobenzene	ND		0.13
Hexachlorobutadiene	ND		0.63
Naphthalene	8.5		0.13
1,2,3-Trichlorobenzene	ND		0.13

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	80	66-128
Toluene-d8	94	68-126
4-Bromofluorobenzene	95	53-134

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Date Extracted: 8-11-10
Date Analyzed: 8-16-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-17
Client ID: CFS4-0811

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.15
Chloromethane	ND		0.76
Vinyl Chloride	ND		0.15
Bromomethane	ND		0.15
Chloroethane	ND		0.76
Trichlorofluoromethane	ND		0.15
1,1-Dichloroethene	ND		0.15
Acetone	ND		0.76
Iodomethane	ND		0.76
Carbon Disulfide	ND		0.15
Methylene Chloride	ND		0.76
(trans) 1,2-Dichloroethene	ND		0.15
Methyl t-Butyl Ether	ND		0.15
1,1-Dichloroethane	ND		0.15
Vinyl Acetate	ND		0.76
2,2-Dichloropropane	ND		0.15
(cis) 1,2-Dichloroethene	ND		0.15
2-Butanone	ND		0.76
Bromochloromethane	ND		0.15
Chloroform	ND		0.15
1,1,1-Trichloroethane	ND		0.15
Carbon Tetrachloride	ND		0.15
1,1-Dichloropropene	ND		0.15
Benzene	ND		0.15
1,2-Dichloroethane	ND		0.15
Trichloroethene	ND		0.15
1,2-Dichloropropane	ND		0.15
Dibromomethane	ND		0.15
Bromodichloromethane	ND		0.15
2-Chloroethyl Vinyl Ether	ND		0.76
(cis) 1,3-Dichloropropene	ND		0.15
Methyl Isobutyl Ketone	ND		0.76
Toluene	ND		0.76
(trans) 1,3-Dichloropropene	ND		0.15

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Lab ID: 08-095-17
Client ID: CFS4-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.15
Tetrachloroethene	ND		0.15
1,3-Dichloropropane	ND		0.15
2-Hexanone	ND		0.76
Dibromochloromethane	ND		0.15
1,2-Dibromoethane	ND		0.15
Chlorobenzene	ND		0.15
1,1,1,2-Tetrachloroethane	ND		0.15
Ethylbenzene	ND		0.15
m,p-Xylene	1.2		0.31
o-Xylene	0.16		0.15
Styrene	ND		0.15
Bromoform	ND		0.15
Isopropylbenzene	ND		0.15
Bromobenzene	ND		0.15
1,1,2,2-Tetrachloroethane	ND		0.15
1,2,3-Trichloropropane	ND		0.15
n-Propylbenzene	ND		0.15
2-Chlorotoluene	ND		0.15
4-Chlorotoluene	ND		0.15
1,3,5-Trimethylbenzene	5.6		0.15
tert-Butylbenzene	ND		0.15
1,2,4-Trimethylbenzene	13		0.15
sec-Butylbenzene	ND		0.15
1,3-Dichlorobenzene	ND		0.15
p-Isopropyltoluene	1.5		0.15
1,4-Dichlorobenzene	ND		0.15
1,2-Dichlorobenzene	ND		0.15
n-Butylbenzene	ND		0.15
1,2-Dibromo-3-chloropropane	ND		0.76
1,2,4-Trichlorobenzene	ND		0.15
Hexachlorobutadiene	ND		0.76
Naphthalene	12		0.15
1,2,3-Trichlorobenzene	ND		0.15

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	88	66-128
Toluene-d8	93	68-126
4-Bromofluorobenzene	91	53-134

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Samples Submitted: August 13, 2010
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Date Extracted: 8-11-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-18
Client ID: CFS5-0811

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.17
Chloromethane	ND		0.87
Vinyl Chloride	ND		0.17
Bromomethane	ND		0.17
Chloroethane	ND		0.87
Trichlorofluoromethane	ND		0.17
1,1-Dichloroethene	ND		0.17
Acetone	ND		0.87
Iodomethane	ND		0.87
Carbon Disulfide	ND		0.17
Methylene Chloride	ND		0.87
(trans) 1,2-Dichloroethene	ND		0.17
Methyl t-Butyl Ether	ND		0.17
1,1-Dichloroethane	ND		0.17
Vinyl Acetate	ND		0.87
2,2-Dichloropropane	ND		0.17
(cis) 1,2-Dichloroethene	ND		0.17
2-Butanone	ND		0.87
Bromochloromethane	ND		0.17
Chloroform	ND		0.17
1,1,1-Trichloroethane	ND		0.17
Carbon Tetrachloride	ND		0.17
1,1-Dichloropropene	ND		0.17
Benzene	ND		0.17
1,2-Dichloroethane	ND		0.17
Trichloroethene	ND		0.17
1,2-Dichloropropane	ND		0.17
Dibromomethane	ND		0.17
Bromodichloromethane	ND		0.17
2-Chloroethyl Vinyl Ether	ND		0.87
(cis) 1,3-Dichloropropene	ND		0.17
Methyl Isobutyl Ketone	ND		0.87
Toluene	ND		0.87
(trans) 1,3-Dichloropropene	ND		0.17

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Lab ID: 08-095-18
Client ID: CFS5-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.17
Tetrachloroethene	ND		0.17
1,3-Dichloropropane	ND		0.17
2-Hexanone	ND		0.87
Dibromochloromethane	ND		0.17
1,2-Dibromoethane	ND		0.17
Chlorobenzene	ND		0.17
1,1,1,2-Tetrachloroethane	ND		0.17
Ethylbenzene	0.59		0.17
m,p-Xylene	1.8		0.35
o-Xylene	0.65		0.17
Styrene	ND		0.17
Bromoform	ND		0.17
Isopropylbenzene	0.53		0.17
Bromobenzene	ND		0.17
1,1,2,2-Tetrachloroethane	ND		0.17
1,2,3-Trichloropropane	ND		0.17
n-Propylbenzene	0.87		0.17
2-Chlorotoluene	ND		0.17
4-Chlorotoluene	ND		0.17
1,3,5-Trimethylbenzene	5.4		0.17
tert-Butylbenzene	ND		0.17
1,2,4-Trimethylbenzene	16		0.17
sec-Butylbenzene	1.3		0.17
1,3-Dichlorobenzene	ND		0.17
p-Isopropyltoluene	2.6		0.17
1,4-Dichlorobenzene	ND		0.17
1,2-Dichlorobenzene	ND		0.17
n-Butylbenzene	ND		0.17
1,2-Dibromo-3-chloropropane	ND		0.87
1,2,4-Trichlorobenzene	ND		0.17
Hexachlorobutadiene	ND		0.87
Naphthalene	16		0.17
1,2,3-Trichlorobenzene	ND		0.17

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	100	66-128
Toluene-d8	103	68-126
4-Bromofluorobenzene	93	53-134

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Date Extracted:	8-11-10
Date Analyzed:	8-16-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	08-095-19
Client ID:	**CFS6-0811**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.028
Chloromethane	ND		0.14
Vinyl Chloride	ND		0.028
Bromomethane	ND		0.028
Chloroethane	ND		0.14
Trichlorofluoromethane	ND		0.028
1,1-Dichloroethene	ND		0.028
Acetone	ND		0.14
Iodomethane	ND		0.14
Carbon Disulfide	ND		0.028
Methylene Chloride	ND		0.14
(trans) 1,2-Dichloroethene	ND		0.028
Methyl t-Butyl Ether	ND		0.028
1,1-Dichloroethane	ND		0.028
Vinyl Acetate	ND		0.14
2,2-Dichloropropane	ND		0.028
(cis) 1,2-Dichloroethene	ND		0.028
2-Butanone	ND		0.14
Bromochloromethane	ND		0.028
Chloroform	ND		0.028
1,1,1-Trichloroethane	ND		0.028
Carbon Tetrachloride	ND		0.028
1,1-Dichloropropene	ND		0.028
Benzene	ND		0.028
1,2-Dichloroethane	ND		0.028
Trichloroethene	ND		0.028
1,2-Dichloropropane	ND		0.028
Dibromomethane	ND		0.028
Bromodichloromethane	ND		0.028
2-Chloroethyl Vinyl Ether	ND		0.14
(cis) 1,3-Dichloropropene	ND		0.028
Methyl Isobutyl Ketone	ND		0.14
Toluene	ND		0.14
(trans) 1,3-Dichloropropene	ND		0.028

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Lab ID: 08-095-19
Client ID: CFS6-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.028
Tetrachloroethene	ND		0.028
1,3-Dichloropropane	ND		0.028
2-Hexanone	ND		0.14
Dibromochloromethane	ND		0.028
1,2-Dibromoethane	ND		0.028
Chlorobenzene	ND		0.028
1,1,1,2-Tetrachloroethane	ND		0.028
Ethylbenzene	ND		0.028
m,p-Xylene	ND		0.056
o-Xylene	ND		0.028
Styrene	ND		0.028
Bromoform	ND		0.028
Isopropylbenzene	ND		0.028
Bromobenzene	ND		0.028
1,1,2,2-Tetrachloroethane	ND		0.028
1,2,3-Trichloropropane	ND		0.028
n-Propylbenzene	ND		0.028
2-Chlorotoluene	ND		0.028
4-Chlorotoluene	ND		0.028
1,3,5-Trimethylbenzene	ND		0.028
tert-Butylbenzene	ND		0.028
1,2,4-Trimethylbenzene	0.058		0.028
sec-Butylbenzene	ND		0.028
1,3-Dichlorobenzene	ND		0.028
p-Isopropyltoluene	ND		0.028
1,4-Dichlorobenzene	ND		0.028
1,2-Dichlorobenzene	ND		0.028
n-Butylbenzene	ND		0.028
1,2-Dibromo-3-chloropropane	ND		0.14
1,2,4-Trichlorobenzene	ND		0.028
Hexachlorobutadiene	ND		0.14
Naphthalene	0.11		0.028
1,2,3-Trichlorobenzene	ND		0.028

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	99	66-128
Toluene-d8	103	68-126
4-Bromofluorobenzene	93	53-134

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Date Extracted: 8-11-10
Date Analyzed: 8-16-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-20
Client ID: CFS7-0811

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.034
Chloromethane	ND		0.17
Vinyl Chloride	ND		0.034
Bromomethane	ND		0.034
Chloroethane	ND		0.17
Trichlorofluoromethane	ND		0.034
1,1-Dichloroethene	ND		0.034
Acetone	ND		0.17
Iodomethane	ND		0.17
Carbon Disulfide	ND		0.034
Methylene Chloride	ND		0.17
(trans) 1,2-Dichloroethene	ND		0.034
Methyl t-Butyl Ether	ND		0.034
1,1-Dichloroethane	ND		0.034
Vinyl Acetate	ND		0.17
2,2-Dichloropropane	ND		0.034
(cis) 1,2-Dichloroethene	ND		0.034
2-Butanone	ND		0.17
Bromochloromethane	ND		0.034
Chloroform	ND		0.034
1,1,1-Trichloroethane	ND		0.034
Carbon Tetrachloride	ND		0.034
1,1-Dichloropropene	ND		0.034
Benzene	ND		0.034
1,2-Dichloroethane	ND		0.034
Trichloroethene	ND		0.034
1,2-Dichloropropane	ND		0.034
Dibromomethane	ND		0.034
Bromodichloromethane	ND		0.034
2-Chloroethyl Vinyl Ether	ND		0.17
(cis) 1,3-Dichloropropene	ND		0.034
Methyl Isobutyl Ketone	ND		0.17
Toluene	ND		0.17
(trans) 1,3-Dichloropropene	ND		0.034

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Lab ID: 08-095-20
Client ID: CFS7-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.034
Tetrachloroethene	ND		0.034
1,3-Dichloropropane	ND		0.034
2-Hexanone	ND		0.17
Dibromochloromethane	ND		0.034
1,2-Dibromoethane	ND		0.034
Chlorobenzene	ND		0.034
1,1,1,2-Tetrachloroethane	ND		0.034
Ethylbenzene	ND		0.034
m,p-Xylene	ND		0.067
o-Xylene	ND		0.034
Styrene	ND		0.034
Bromoform	ND		0.034
Isopropylbenzene	ND		0.034
Bromobenzene	ND		0.034
1,1,2,2-Tetrachloroethane	ND		0.034
1,2,3-Trichloropropane	ND		0.034
n-Propylbenzene	ND		0.034
2-Chlorotoluene	ND		0.034
4-Chlorotoluene	ND		0.034
1,3,5-Trimethylbenzene	ND		0.034
tert-Butylbenzene	ND		0.034
1,2,4-Trimethylbenzene	ND		0.034
sec-Butylbenzene	ND		0.034
1,3-Dichlorobenzene	ND		0.034
p-Isopropyltoluene	ND		0.034
1,4-Dichlorobenzene	ND		0.034
1,2-Dichlorobenzene	ND		0.034
n-Butylbenzene	ND		0.034
1,2-Dibromo-3-chloropropane	ND		0.17
1,2,4-Trichlorobenzene	ND		0.034
Hexachlorobutadiene	ND		0.17
Naphthalene	0.037		0.034
1,2,3-Trichlorobenzene	ND		0.034

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	85	66-128
Toluene-d8	93	68-126
4-Bromofluorobenzene	93	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
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Date Extracted: 8-11-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-21
Client ID: CFS8-0811

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.040
Chloromethane	ND		0.20
Vinyl Chloride	ND		0.040
Bromomethane	ND		0.040
Chloroethane	ND		0.20
Trichlorofluoromethane	ND		0.040
1,1-Dichloroethene	ND		0.040
Acetone	ND		0.20
Iodomethane	ND		0.20
Carbon Disulfide	ND		0.040
Methylene Chloride	ND		0.20
(trans) 1,2-Dichloroethene	ND		0.040
Methyl t-Butyl Ether	ND		0.040
1,1-Dichloroethane	ND		0.040
Vinyl Acetate	ND		0.20
2,2-Dichloropropane	ND		0.040
(cis) 1,2-Dichloroethene	ND		0.040
2-Butanone	ND		0.20
Bromochloromethane	ND		0.040
Chloroform	ND		0.040
1,1,1-Trichloroethane	ND		0.040
Carbon Tetrachloride	ND		0.040
1,1-Dichloropropene	ND		0.040
Benzene	ND		0.040
1,2-Dichloroethane	ND		0.040
Trichloroethene	ND		0.040
1,2-Dichloropropane	ND		0.040
Dibromomethane	ND		0.040
Bromodichloromethane	ND		0.040
2-Chloroethyl Vinyl Ether	ND		0.20
(cis) 1,3-Dichloropropene	ND		0.040
Methyl Isobutyl Ketone	ND		0.20
Toluene	ND		0.20
(trans) 1,3-Dichloropropene	ND		0.040

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

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Lab ID: 08-095-21
Client ID: CFS8-0811

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.040
Tetrachloroethene	ND		0.040
1,3-Dichloropropane	ND		0.040
2-Hexanone	ND		0.20
Dibromochloromethane	ND		0.040
1,2-Dibromoethane	ND		0.040
Chlorobenzene	ND		0.040
1,1,1,2-Tetrachloroethane	ND		0.040
Ethylbenzene	ND		0.040
m,p-Xylene	ND		0.080
o-Xylene	0.39		0.040
Styrene	ND		0.040
Bromoform	ND		0.040
Isopropylbenzene	ND		0.040
Bromobenzene	ND		0.040
1,1,2,2-Tetrachloroethane	ND		0.040
1,2,3-Trichloropropane	ND		0.040
n-Propylbenzene	ND		0.040
2-Chlorotoluene	ND		0.040
4-Chlorotoluene	ND		0.040
1,3,5-Trimethylbenzene	1.8		0.040
tert-Butylbenzene	0.055		0.040
1,2,4-Trimethylbenzene	0.086		0.040
sec-Butylbenzene	ND		0.040
1,3-Dichlorobenzene	ND		0.040
p-Isopropyltoluene	0.086		0.040
1,4-Dichlorobenzene	ND		0.040
1,2-Dichlorobenzene	ND		0.040
n-Butylbenzene	ND		0.040
1,2-Dibromo-3-chloropropane	ND		0.20
1,2,4-Trichlorobenzene	ND		0.040
Hexachlorobutadiene	ND		0.20
Naphthalene	0.38		0.040
1,2,3-Trichlorobenzene	ND		0.040

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	100	66-128
Toluene-d8	109	68-126
4-Bromofluorobenzene	98	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
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Date Extracted:	8-11-10
Date Analyzed:	8-16-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	08-095-22
Client ID:	**TRIP BLANK**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.050
Chloromethane	ND		0.25
Vinyl Chloride	ND		0.050
Bromomethane	ND		0.050
Chloroethane	ND		0.25
Trichlorofluoromethane	ND		0.050
1,1-Dichloroethene	ND		0.050
Acetone	ND		0.25
Iodomethane	ND		0.25
Carbon Disulfide	ND		0.050
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.050
Methyl t-Butyl Ether	ND		0.050
1,1-Dichloroethane	ND		0.050
Vinyl Acetate	ND		0.25
2,2-Dichloropropane	ND		0.050
(cis) 1,2-Dichloroethene	ND		0.050
2-Butanone	ND		0.25
Bromochloromethane	ND		0.050
Chloroform	ND		0.050
1,1,1-Trichloroethane	ND		0.050
Carbon Tetrachloride	ND		0.050
1,1-Dichloropropene	ND		0.050
Benzene	ND		0.050
1,2-Dichloroethane	ND		0.050
Trichloroethene	ND		0.050
1,2-Dichloropropane	ND		0.050
Dibromomethane	ND		0.050
Bromodichloromethane	ND		0.050
2-Chloroethyl Vinyl Ether	ND		0.25
(cis) 1,3-Dichloropropene	ND		0.050
Methyl Isobutyl Ketone	ND		0.25
Toluene	ND		0.25
(trans) 1,3-Dichloropropene	ND		0.050

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
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Lab ID: 08-095-22
Client ID: TRIP BLANK

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.050
Tetrachloroethene	ND		0.050
1,3-Dichloropropane	ND		0.050
2-Hexanone	ND		0.25
Dibromochloromethane	ND		0.050
1,2-Dibromoethane	ND		0.050
Chlorobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
Ethylbenzene	ND		0.050
m,p-Xylene	ND		0.10
o-Xylene	ND		0.050
Styrene	ND		0.050
Bromoform	ND		0.050
Isopropylbenzene	ND		0.050
Bromobenzene	ND		0.050
1,1,2,2-Tetrachloroethane	ND		0.050
1,2,3-Trichloropropane	ND		0.050
n-Propylbenzene	ND		0.050
2-Chlorotoluene	ND		0.050
4-Chlorotoluene	ND		0.050
1,3,5-Trimethylbenzene	ND		0.050
tert-Butylbenzene	ND		0.050
1,2,4-Trimethylbenzene	ND		0.050
sec-Butylbenzene	ND		0.050
1,3-Dichlorobenzene	ND		0.050
p-Isopropyltoluene	ND		0.050
1,4-Dichlorobenzene	ND		0.050
1,2-Dichlorobenzene	ND		0.050
n-Butylbenzene	ND		0.050
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.050
Hexachlorobutadiene	ND		0.25
Naphthalene	ND		0.050
1,2,3-Trichlorobenzene	ND		0.050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	91	66-128
Toluene-d8	99	68-126
4-Bromofluorobenzene	97	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted: 8-16-10
Date Analyzed: 8-16-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0816S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.050
Chloromethane	ND		0.25
Vinyl Chloride	ND		0.050
Bromomethane	ND		0.050
Chloroethane	ND		0.25
Trichlorofluoromethane	ND		0.050
1,1-Dichloroethene	ND		0.050
Acetone	ND		0.25
Iodomethane	ND		0.25
Carbon Disulfide	ND		0.050
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.050
Methyl t-Butyl Ether	ND		0.050
1,1-Dichloroethane	ND		0.050
Vinyl Acetate	ND		0.25
2,2-Dichloropropane	ND		0.050
(cis) 1,2-Dichloroethene	ND		0.050
2-Butanone	ND		0.25
Bromochloromethane	ND		0.050
Chloroform	ND		0.050
1,1,1-Trichloroethane	ND		0.050
Carbon Tetrachloride	ND		0.050
1,1-Dichloropropene	ND		0.050
Benzene	ND		0.050
1,2-Dichloroethane	ND		0.050
Trichloroethene	ND		0.050
1,2-Dichloropropane	ND		0.050
Dibromomethane	ND		0.050
Bromodichloromethane	ND		0.050
2-Chloroethyl Vinyl Ether	ND		0.25
(cis) 1,3-Dichloropropene	ND		0.050
Methyl Isobutyl Ketone	ND		0.25
Toluene	ND		0.25
(trans) 1,3-Dichloropropene	ND		0.050

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0816S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.050
Tetrachloroethene	ND		0.050
1,3-Dichloropropane	ND		0.050
2-Hexanone	ND		0.25
Dibromochloromethane	ND		0.050
1,2-Dibromoethane	ND		0.050
Chlorobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
Ethylbenzene	ND		0.050
m,p-Xylene	ND		0.10
o-Xylene	ND		0.050
Styrene	ND		0.050
Bromoform	ND		0.050
Isopropylbenzene	ND		0.050
Bromobenzene	ND		0.050
1,1,2,2-Tetrachloroethane	ND		0.050
1,2,3-Trichloropropane	ND		0.050
n-Propylbenzene	ND		0.050
2-Chlorotoluene	ND		0.050
4-Chlorotoluene	ND		0.050
1,3,5-Trimethylbenzene	ND		0.050
tert-Butylbenzene	ND		0.050
1,2,4-Trimethylbenzene	ND		0.050
sec-Butylbenzene	ND		0.050
1,3-Dichlorobenzene	ND		0.050
p-Isopropyltoluene	ND		0.050
1,4-Dichlorobenzene	ND		0.050
1,2-Dichlorobenzene	ND		0.050
n-Butylbenzene	ND		0.050
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.050
Hexachlorobutadiene	ND		0.25
Naphthalene	ND		0.050
1,2,3-Trichlorobenzene	ND		0.050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	108	66-128
Toluene-d8	91	68-126
4-Bromofluorobenzene	89	53-134

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 8-16-10
Date Analyzed: 8-16-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0816S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0357	71	0.0358	72	70-130	
Benzene	0.0500	0.0379	76	0.0382	76	70-121	
Trichloroethene	0.0500	0.0381	76	0.0397	79	70-124	
Toluene	0.0500	0.0399	80	0.0409	82	70-123	
Chlorobenzene	0.0500	0.0409	82	0.0395	79	71-119	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	0	14	
Benzene	1	10	
Trichloroethene	4	12	
Toluene	3	12	
Chlorobenzene	3	9	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP4-0811**					
Laboratory ID:	08-095-08					
Naphthalene	**6.2**	0.15	EPA 8270/SIM	8-16-10	8-19-10	
2-Methylnaphthalene	**17**	0.15	EPA 8270/SIM	8-16-10	8-19-10	
1-Methylnaphthalene	**16**	0.15	EPA 8270/SIM	8-16-10	8-19-10	
Acenaphthylene	**0.34**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Acenaphthene	**0.53**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Fluorene	**1.4**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Phenanthrene	**0.60**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Anthracene	**0.049**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Fluoranthene	**0.18**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Pyrene	**0.19**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]anthracene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Chrysene	**0.062**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[b]fluoranthene	**0.048**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[k]fluoranthene	**0.040**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]pyrene	**0.037**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Dibenz[a,h]anthracene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[g,h,i]perylene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*101*	*45 - 101*				
Pyrene-d10	*98*	*52 - 118*				
Terphenyl-d14	*82*	*41 - 106*				

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CFS1-0811**					
Laboratory ID:	08-095-13					
Naphthalene	**22**	0.72	EPA 8270/SIM	8-16-10	8-20-10	
2-Methylnaphthalene	**67**	0.72	EPA 8270/SIM	8-16-10	8-20-10	
1-Methylnaphthalene	**40**	0.72	EPA 8270/SIM	8-16-10	8-20-10	
Acenaphthylene	**0.80**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Acenaphthene	**1.8**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Fluorene	**6.9**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Phenanthrene	**7.2**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Anthracene	**0.39**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Fluoranthene	**0.24**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Pyrene	**0.21**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Benzo[a]anthracene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Chrysene	**0.090**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Benzo[b]fluoranthene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Benzo[k]fluoranthene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Benzo[a]pyrene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Dibenz[a,h]anthracene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Benzo[g,h,i]perylene	**ND**	0.072	EPA 8270/SIM	8-16-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*105*	*45 - 101*				Q
Pyrene-d10	*116*	*52 - 118*				
Terphenyl-d14	*96*	*41 - 106*				

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CFS9-0811**					
Laboratory ID:	08-095-14					
Naphthalene	**25**	0.73	EPA 8270/SIM	8-16-10	8-20-10	
2-Methylnaphthalene	**70**	0.73	EPA 8270/SIM	8-16-10	8-20-10	
1-Methylnaphthalene	**41**	0.73	EPA 8270/SIM	8-16-10	8-20-10	
Acenaphthylene	**0.79**	0.73	EPA 8270/SIM	8-16-10	8-20-10	
Acenaphthene	**1.2**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Fluorene	**7.0**	0.73	EPA 8270/SIM	8-16-10	8-20-10	
Phenanthrene	**7.7**	0.73	EPA 8270/SIM	8-16-10	8-20-10	
Anthracene	**0.63**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Fluoranthene	**0.31**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Pyrene	**0.28**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]anthracene	**0.069**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Chrysene	**0.11**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[b]fluoranthene	**0.036**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[k]fluoranthene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]pyrene	**0.053**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Dibenz[a,h]anthracene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[g,h,i]perylene	**ND**	0.036	EPA 8270/SIM	8-16-10	8-17-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*90*	*45 - 101*				
Pyrene-d10	*107*	*52 - 118*				
Terphenyl-d14	*90*	*41 - 106*				

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CFS4-0811**					
Laboratory ID:	08-095-17					
Naphthalene	**11**	0.34	EPA 8270/SIM	8-16-10	8-19-10	
2-Methylnaphthalene	**34**	0.34	EPA 8270/SIM	8-16-10	8-19-10	
1-Methylnaphthalene	**21**	0.34	EPA 8270/SIM	8-16-10	8-19-10	
Acenaphthylene	**0.39**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Acenaphthene	**1.1**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Fluorene	**3.6**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Phenanthrene	**3.7**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Anthracene	**0.17**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Fluoranthene	**0.10**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Pyrene	**0.095**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]anthracene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Chrysene	**0.034**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[b]fluoranthene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[k]fluoranthene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]pyrene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Dibenz[a,h]anthracene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[g,h,i]perylene	**ND**	0.034	EPA 8270/SIM	8-16-10	8-17-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*86*	*45 - 101*				
Pyrene-d10	*109*	*52 - 118*				
Terphenyl-d14	*88*	*41 - 106*				

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PAHs by EPA 8270D/SIM
(with silica gel clean-up)
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0816S1					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Fluorene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Anthracene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Pyrene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	8-16-10	8-17-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*56*	*45 - 101*				
Pyrene-d10	*88*	*52 - 118*				
Terphenyl-d14	*85*	*41 - 106*				

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PAHs by EPA 8270D/SIM
(with silica gel clean-up)
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0816S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0563**	**0.0565**	0.0833	0.0833	68	68	33 - 105	0	30	
Acenaphthylene	**0.0615**	**0.0584**	0.0833	0.0833	74	70	51 - 110	5	22	
Acenaphthene	**0.0646**	**0.0620**	0.0833	0.0833	78	74	51 - 105	4	20	
Fluorene	**0.0687**	**0.0653**	0.0833	0.0833	82	78	61 - 107	5	17	
Phenanthrene	**0.0712**	**0.0673**	0.0833	0.0833	85	81	61 - 106	6	12	
Anthracene	**0.0632**	**0.0582**	0.0833	0.0833	76	70	59 - 106	8	12	
Fluoranthene	**0.0758**	**0.0715**	0.0833	0.0833	91	86	66 - 116	6	12	
Pyrene	**0.0768**	**0.0725**	0.0833	0.0833	92	87	67 - 118	6	14	
Benzo[a]anthracene	**0.0702**	**0.0660**	0.0833	0.0833	84	79	60 - 114	6	11	
Chrysene	**0.0749**	**0.0706**	0.0833	0.0833	90	85	64 - 112	6	12	
Benzo[b]fluoranthene	**0.0727**	**0.0657**	0.0833	0.0833	87	79	61 - 123	10	14	
Benzo[k]fluoranthene	**0.0720**	**0.0696**	0.0833	0.0833	86	84	50 - 124	3	17	
Benzo[a]pyrene	**0.0662**	**0.0612**	0.0833	0.0833	79	73	50 - 114	8	17	
Indeno(1,2,3-c,d)pyrene	**0.0762**	**0.0705**	0.0833	0.0833	91	85	56 - 122	8	16	
Dibenz[a,h]anthracene	**0.0754**	**0.0704**	0.0833	0.0833	91	85	57 - 124	7	16	
Benzo[g,h,i]perylene	**0.0747**	**0.0682**	0.0833	0.0833	90	82	56 - 121	9	15	
Surrogate:										
2-Fluorobiphenyl					*68*	*69*	*45 - 101*			
Pyrene-d10					*91*	*88*	*52 - 118*			
Terphenyl-d14					*87*	*83*	*41 - 106*			

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PCBs by EPA 8082

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CFS8-0811**					
Laboratory ID:	08-095-21					
Aroclor 1016	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Aroclor 1221	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Aroclor 1232	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Aroclor 1242	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Aroclor 1248	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Aroclor 1254	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Aroclor 1260	**ND**	0.055	EPA 8082	8-16-10	8-16-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*62*	*46-122*				

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

PCBs by EPA 8082
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0816S1					
Aroclor 1016	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Aroclor 1221	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Aroclor 1232	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Aroclor 1242	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Aroclor 1248	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Aroclor 1254	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Aroclor 1260	**ND**	0.050	EPA 8082	8-16-10	8-16-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*70*	*46-122*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-101-01										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	**0.383**	**0.377**	0.500	0.500	ND	**77**	**75**	36-121	2	15	
Surrogate:											
DCB						*76*	*73*	*46-122*			

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B

Date Extracted:	8-11-10	
Date Analyzed:	8-17-10	
Matrix: Soil		
Units: mg/kg (ppm)		
Client ID:	**TP1-0811**	**TP1A-0811**
Lab ID:	08-095-01	08-095-02

	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.037	**ND**		0.041
Ethyl Benzene	**0.037**		0.037	**0.044**		0.041
m,p-Xylene	**0.11**		0.037	**0.13**		0.041
o-Xylene	**ND**		0.037	**ND**		0.041
Alaska GRO (C6 TO C10)	**ND**		3.7	**ND**		4.1
Surrogate Recovery:						
Fluorobenzene	56%			63%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B

Date Extracted:	8-11-10	
Date Analyzed:	8-17-10	
Matrix: Soil		
Units: mg/kg (ppm)		
Client ID:	**TP2-0811**	**TP3-0811**
Lab ID:	08-095-06	08-095-07

	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.0062
Toluene	**ND**		0.041	**0.034**		0.031
Ethyl Benzene	**ND**		0.041	**0.058**		0.031
m,p-Xylene	**0.072**		0.041	**0.32**		0.031
o-Xylene	**ND**		0.041	**ND**	**U1**	0.16
Alaska GRO (C6 TO C10)	**ND**		4.1	**ND**		3.1
Surrogate Recovery:						
Fluorobenzene	79%			73%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B

Date Extracted:	8-11-10	
Date Analyzed:	8-17&20-10	
Matrix: Soil		
Units: mg/kg (ppm)		
Client ID:	**TP4-0811**	**SP1-0811**
Lab ID:	08-095-08	08-095-09

	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**---**		0.023
Toluene	**0.20**		0.081	**---**		**---**
Ethyl Benzene	**1.8**		0.081	**---**		**---**
m,p-Xylene	**9.3**		0.41	**---**		**---**
o-Xylene	**7.0**		0.081	**---**		
Alaska GRO (C6 TO C10)	**ND**		8.1	**ND**		11
Surrogate Recovery:						
Fluorobenzene	69%			73%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B

Date Extracted:	8-11-10					
Date Analyzed:	8-17-10					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**SP2-0811**			**SP3-0811**		
Lab ID:	08-095-10			08-095-11		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.051	**ND**		0.038
Ethyl Benzene	**ND**		0.051	**ND**		0.038
m,p-Xylene	**4.0**		0.051	**0.092**		0.038
o-Xylene	**ND**	**U1**	1.0	**ND**	**U1**	0.19
Alaska GRO (C6 TO C10)	**ND**		5.1	**ND**		3.8
Surrogate Recovery:						
Fluorobenzene	58%			59%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B

Date Extracted:	8-11-10					
Date Analyzed:	8-17-10					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**SP4-0811**			**CFS1-0811**		
Lab ID:	08-095-12			08-095-13		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	---		---
Toluene	**ND**		0.056	---		---
Ethyl Benzene	**0.13**		0.056	---		---
m,p-Xylene	**0.34**		0.056	---		---
o-Xylene	**ND**	**U1**	0.28	---		---
Alaska GRO (C6 TO C10)	**ND**		5.6	**ND**		33
Surrogate Recovery:						
Fluorobenzene	70%			64%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO AK101

Date Extracted:	8-11-10					
Date Analyzed:	8-17-10					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**CFS9-0811**			**CFS2-0811**		
Lab ID:	08-095-14			08-095-15		
	Result	Flags	PQL	**Result**	Flags	PQL
Alaska GRO (C6 TO C10)	**ND**		31	**ND**		38
Surrogate Recovery:						
Fluorobenzene	53%			66%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO AK101

Date Extracted:	8-11-10					
Date Analyzed:	8-17-10					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**CFS3-0811**			**CFS4-0811**		
Lab ID:	08-095-16			08-095-17		
	Result	Flags	PQL	**Result**	Flags	PQL
Alaska GRO (C6 TO C10)	**ND**		23	**ND**		27
Surrogate Recovery:						
Fluorobenzene	61%			69%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO AK101

Date Extracted:	8-11-10					
Date Analyzed:	8-17-10					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**CFS5-0811**			**CFS6-0811**		
Lab ID:	08-095-18			08-095-19		
	Result	Flags	PQL	**Result**	Flags	PQL
Alaska GRO (C6 TO C10)	**ND**		43	**ND**		3.4
Surrogate Recovery:						
Fluorobenzene	63%			66%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO AK101

Date Extracted:	8-11-10					
Date Analyzed:	8-18-10					
Matrix: Soil						
Units: mg/kg (ppm)						
Client ID:	**CFS7-0811**			**CFS8-0811**		
Lab ID:	08-095-20			08-095-21		
	Result	Flags	PQL	**Result**	Flags	PQL
Alaska GRO (C6 TO C10)	**ND**		3.5	**ND**		24
Surrogate Recovery:						
Fluorobenzene	69%			65%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B

Date Extracted:	8-11-10
Date Analyzed:	8-17-10
Matrix: Soil	
Units: mg/kg (ppm)	
Client ID:	**TRIP BLANK**
Lab ID:	08-095-22

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
Alaska GRO (C6 TO C10)	**ND**		5.0
Surrogate Recovery:			
Fluorobenzene	78%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-17-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0817S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
Alaska GRO (C6 TO C10)	**ND**		5.0
Surrogate Recovery:			
Fluorobenzene	80%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B
METHOD BLANK QUALITY CONTROL

Date Extracted: 8-17-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0817S2

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
Alaska GRO (C6 TO C10)	**ND**		5.0
Surrogate Recovery:			
Fluorobenzene	79%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-11-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-095-06 **Original**	08-095-06 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**0.0695**	**0.0615**	12	
o-Xylene	**ND**	**ND**	NA	
Alaska GRO (C6 TO C10)	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	79%	77%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B
DUPLICATE QUALITY CONTROL

Date Extracted: 8-11-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	08-095-12 **Original**	08-095-12 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**0.101**	**0.0858**	17	
m,p-Xylene	**0.262**	**0.239**	9	
o-Xylene	**ND**	**ND**	NA	
Alaska GRO (C6 TO C10)	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	70%	63%		

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

GRO/BTEX
AK101/EPA 8021B
SB/SBD QUALITY CONTROL

Date Extracted: 8-17-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	SB0817S1 **SB**	Percent Recovery	SBD0817S1 **SBD**	Percent Recovery	**RPD**	**Flags**
Benzene	**0.900**	**90**	**0.901**	**90**	0	
Toluene	**0.900**	**90**	**0.895**	**90**	1	
Ethyl Benzene	**0.901**	**90**	**0.893**	**89**	1	
m,p-Xylene	**0.911**	**91**	**0.900**	**90**	1	
o-Xylene	**0.911**	**91**	**0.882**	**88**	3	

Surrogate Recovery:
Fluorobenzene 82% 81%

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

DRO/RRO AK102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP1-0811**					
Laboratory ID:	08-095-01					
Diesel Range Organics	**5200**	1200	AK102	8-17-10	8-19-10	
Residual Range Organics	**31000**	2300	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**TP1A-0811**					
Laboratory ID:	08-095-02					
Diesel Range Organics	**3700**	1200	AK102	8-17-10	8-19-10	
Residual Range Organics	**21000**	2300	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**TP2-0811**					
Laboratory ID:	08-095-06					
Diesel Range Organics	**130**	10	AK102	8-17-10	8-19-10	
Residual Range Organics	**570**	21	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**TP3-0811**					
Laboratory ID:	08-095-07					
Diesel Range Organics	**1400**	11	AK102	8-17-10	8-19-10	
Residual Range Organics	**150**	21	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*114*	*50-150*				
Client ID:	**TP4-0811**					
Laboratory ID:	08-095-08					
Diesel Range Organics	**13000**	110	AK102	8-17-10	8-19-10	
Residual Range Organics	**990**	220	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**SP1-0811**					
Laboratory ID:	08-095-09					
Diesel Range Organics	**4400**	100	AK102	8-17-10	8-19-10	
Residual Range Organics	**250**	210	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

DRO/RRO AK102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SP2-0811**					
Laboratory ID:	08-095-10					
Diesel Range Organics	**13000**	130	AK102	8-17-10	8-19-10	
Residual Range Organics	**910**	250	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**SP3-0811**					
Laboratory ID:	08-095-11					
Diesel Range Organics	**510**	11	AK102	8-17-10	8-19-10	
Residual Range Organics	**220**	23	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				
Client ID:	**SP4-0811**					
Laboratory ID:	08-095-12					
Diesel Range Organics	**1600**	13	AK102	8-17-10	8-19-10	
Residual Range Organics	**410**	26	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*112*	*50-150*				
Client ID:	**CFS1-0811**					
Laboratory ID:	08-095-13					
Diesel Range Organics	**11000**	110	AK102	8-17-10	8-19-10	
Residual Range Organics	**450**	220	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**CFS9-0811**					
Laboratory ID:	08-095-14					
Diesel Range Organics	**13000**	110	AK102	8-17-10	8-19-10	
Residual Range Organics	**340**	220	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**CFS2-0811**					
Laboratory ID:	08-095-15					
Diesel Range Organics	**3000**	110	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	210	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
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Project: Kiewit/BGES

DRO/RRO AK102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CFS3-0811**					
Laboratory ID:	08-095-16					
Diesel Range Organics	**8400**	110	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	210	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**CFS4-0811**					
Laboratory ID:	08-095-17					
Diesel Range Organics	**7600**	100	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	210	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**CFS5-0811**					
Laboratory ID:	08-095-18					
Diesel Range Organics	**9200**	110	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	230	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**CFS6-0811**					
Laboratory ID:	08-095-19					
Diesel Range Organics	**ND**	10	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	21	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**CFS7-0811**					
Laboratory ID:	08-095-20					
Diesel Range Organics	**ND**	11	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	22	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Client ID:	**CFS8-0811**					
Laboratory ID:	08-095-21					
Diesel Range Organics	**11000**	1100	AK102	8-17-10	8-19-10	
Residual Range Organics	**36000**	2200	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

DRO/RRO AK102/103
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0817S1					
Diesel Range Organics	**ND**	10	AK102	8-17-10	8-19-10	
Residual Range Organics	**ND**	20	AK103	8-17-10	8-19-10	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*60-120*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	SB0817S1						
	ORIG	DUP					
Diesel Range Organics	**98.2**	**108**			10	20	
Residual Range Organics	**103**	**119**			14	20	
Surrogate:							
o-Terphenyl			*100* *108*	*50-150*			

Analyte	Result			Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANK									
Laboratory ID:	SB0817S1								
	ORIG	DUP							
Diesel Range Organics	**98.2**	**117**	**108**	98	108	75-120	8	20	
Residual Range Organics	**103**	**121**	**119**	103	119	75-120	2	20	
Surrogate:									
o-Terphenyl				*116*	*108*	*60-120*			

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL ARSENIC
EPA 6010B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-01					
Client ID:	**TP1-0811**					
Arsenic	**8.0**	5.8	6010B	8-16-10	8-16-10	
Lab ID:	08-095-02					
Client ID:	**TP1A-0811**					
Arsenic	**7.3**	5.7	6010B	8-16-10	8-16-10	
Lab ID:	08-095-03					
Client ID:	**TP1-2-0811**					
Arsenic	**7.2**	5.6	6010B	8-16-10	8-16-10	
Lab ID:	08-095-04					
Client ID:	**TP1-3-0811**					
Arsenic	**7.4**	5.5	6010B	8-16-10	8-16-10	
Lab ID:	08-095-05					
Client ID:	**TP-4-0811**					
Arsenic	**6.7**	5.6	6010B	8-16-10	8-16-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-13					
Client ID:	**CFS1-0811**					
Arsenic	**ND**	2.7	6020	8-16-10	9-9-10	
Barium	**42**	2.7	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.54	6010B	8-16-10	8-16-10	
Chromium	**9.7**	0.54	6010B	8-16-10	8-16-10	
Lead	**ND**	5.4	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.27	7471A	8-17-10	8-17-10	
Selenium	**ND**	11	6010B	8-16-10	8-16-10	
Silver	**ND**	0.54	6010B	8-16-10	8-16-10	
Lab ID:	08-095-14					
Client ID:	**CFS9-0811**					
Arsenic	**2.8**	2.7	6020	8-16-10	9-9-10	
Barium	**42**	2.7	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.54	6010B	8-16-10	8-16-10	
Chromium	**11**	0.54	6010B	8-16-10	8-16-10	
Lead	**ND**	5.4	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.27	7471A	8-17-10	8-17-10	
Selenium	**ND**	11	6010B	8-16-10	8-16-10	
Silver	**ND**	0.54	6010B	8-16-10	8-16-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-15					
Client ID:	**CFS2-0811**					
Arsenic	**5.6**	5.3	6010B	8-16-10	8-16-10	
Barium	**52**	2.7	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.53	6010B	8-16-10	8-16-10	
Chromium	**12**	0.53	6010B	8-16-10	8-16-10	
Lead	**ND**	5.3	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.27	7471A	8-17-10	8-17-10	
Selenium	**ND**	11	6010B	8-16-10	8-16-10	
Silver	**ND**	0.53	6010B	8-16-10	8-16-10	
Lab ID:	08-095-16					
Client ID:	**CFS3-0811**					
Arsenic	**3.3**	2.6	6020	8-16-10	9-9-10	
Barium	**46**	2.6	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.52	6010B	8-16-10	8-16-10	
Chromium	**11**	0.52	6010B	8-16-10	8-16-10	
Lead	**ND**	5.2	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.26	7471A	8-17-10	8-17-10	
Selenium	**ND**	10	6010B	8-16-10	8-16-10	
Silver	**ND**	0.52	6010B	8-16-10	8-16-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-17					
Client ID:	**CFS4-0811**					
Arsenic	**3.4**	2.6	6020	8-16-10	9-9-10	
Barium	**37**	2.6	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.51	6010B	8-16-10	8-16-10	
Chromium	**9.0**	0.51	6010B	8-16-10	8-16-10	
Lead	**ND**	5.1	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.26	7471A	8-17-10	8-17-10	
Selenium	**ND**	10	6010B	8-16-10	8-16-10	
Silver	**ND**	0.51	6010B	8-16-10	8-16-10	
Lab ID:	08-095-18					
Client ID:	**CFS5-0811**					
Arsenic	**7.3**	5.7	6010B	8-16-10	8-16-10	
Barium	**58**	2.9	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.57	6010B	8-16-10	8-16-10	
Chromium	**13**	0.57	6010B	8-16-10	8-16-10	
Lead	**ND**	5.7	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.29	7471A	8-17-10	8-17-10	
Selenium	**ND**	11	6010B	8-16-10	8-16-10	
Silver	**ND**	0.57	6010B	8-16-10	8-16-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-19					
Client ID:	**CFS6-0811**					
Arsenic	**3.2**	2.6	6020	8-16-10	9-9-10	
Barium	**40**	2.6	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.52	6010B	8-16-10	8-16-10	
Chromium	**9.4**	0.52	6010B	8-16-10	8-16-10	
Lead	**ND**	5.2	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.26	7471A	8-17-10	8-17-10	
Selenium	**ND**	10	6010B	8-16-10	8-16-10	
Silver	**ND**	0.52	6010B	8-16-10	8-16-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-20					
Client ID:	**CFS7-0811**					
Arsenic	**5.9**	5.4	6010B	8-16-10	8-16-10	
Barium	**44**	2.7	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.54	6010B	8-16-10	8-16-10	
Chromium	**11**	0.54	6010B	8-16-10	8-16-10	
Lead	**ND**	5.4	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.27	7471A	8-17-10	8-17-10	
Selenium	**ND**	11	6010B	8-16-10	8-16-10	
Silver	**ND**	0.54	6010B	8-16-10	8-16-10	
Lab ID:	08-095-21					
Client ID:	**CFS8-0811**					
Arsenic	**7.1**	5.5	6010B	8-16-10	8-16-10	
Barium	**95**	2.8	6010B	8-16-10	8-16-10	
Cadmium	**ND**	0.55	6010B	8-16-10	8-16-10	
Chromium	**15**	0.55	6010B	8-16-10	8-16-10	
Lead	**27**	5.5	6010B	8-16-10	8-16-10	
Mercury	**ND**	0.28	7471A	8-17-10	8-17-10	
Selenium	**ND**	11	6010B	8-16-10	8-16-10	
Silver	**ND**	0.55	6010B	8-16-10	8-16-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL ARSENIC
EPA 6020

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-095-23					
Client ID:	**BKGD-0811**					
Arsenic	**4.0**	2.6	6020	8-16-10	9-9-10	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-16-10
Date Analyzed:	8-16&9-9-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0816S3

Analyte	Method	Result	PQL
Arsenic	6020	**ND**	2.5
Barium	6010B	**ND**	2.5
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL MERCURY
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-17-10
Date Analyzed:	8-17-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0817S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.25

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020
DUPLICATE QUALITY CONTROL

Date Extracted: 8-16-10
Date Analyzed: 8-16&9-9-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-23

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**3.80**	**3.90**	3	2.5	
Barium	**58.5**	**61.2**	4	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**13.4**	**14.6**	9	0.50	
Lead	**15.6**	**16.7**	7	5.0	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL MERCURY
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 8-17-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-101-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL METALS
EPA 6010B/6020
MS/MSD QUALITY CONTROL

Date Extracted: 8-16-10
Date Analyzed: 8-16&9-9-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-095-23

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**93.8**	90	**91.3**	87	3	
Barium	100	**152**	94	**151**	92	1	
Cadmium	50	**47.1**	94	**47.2**	94	0	
Chromium	100	**109**	95	**107**	93	2	
Lead	250	**233**	87	**230**	86	1	
Selenium	100	**99.9**	100	**101**	101	1	
Silver	25	**22.6**	90	**22.7**	91	0	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

TOTAL MERCURY
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 8-17-10
Date Analyzed: 8-17-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-101-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.484**	97	**0.478**	96	1	

Date of Report: August 25, 2010
Samples Submitted: August 13, 2010
Laboratory Reference: 1008-095
Project: Kiewit/BGES

% MOISTURE

Date Analyzed: 8-16&17-10

Client ID	Lab ID	% Moisture
TP1-0811	08-095-01	14
TP1A-0811	08-095-02	13
TP1-2-0811	08-095-03	11
TP1-3-0811	08-095-04	9
TP1-4-0811	08-095-05	10
TP2-0811	08-095-06	4
TP3-0811	08-095-07	5
TP4-0811	08-095-08	8
SP1-0811	08-095-09	3
SP2-0811	08-095-10	20
SP3-0811	08-095-11	12
SP4-0811	08-095-12	22
CFS1-0811	08-095-13	8
CFS9-0811	08-095-14	8
CFS2-0811	08-095-15	6
CFS3-0811	08-095-16	5
CFS4-0811	08-095-17	2
CFS5-0811	08-095-18	13
CFS6-0811	08-095-19	4
CFS7-0811	08-095-20	7
CFS8-0811	08-095-21	10
BKGD-0811	08-095-23	5

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: BGES
Project Number:
Project Name: KIEWIT
Project Manager: JAYNE MARTIN
Sampled by: SEAN PETERSON

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-095

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D / SIM	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	GRO by AK101	BTEX by 8021B	DRO/ERO by AK102/103	Arsenic by EPA 6000 Series			% Moisture
1	TP1-0811	8/11/10	0732	S	4														X	X	X	X			X
2	TP1A-0811		0735	S	4														X	X	X	X			
3	TP1-2-0811		0737	S	1																	X			
4	TP1-3-0811		0738	S	1																	X			
5	TP1-4-0811		0739	S	1																	X			
6	TP2-0811		0749	S	4														X	X	X				
7	TP3-0811		0801	S	4														X	X	X				
8	TP4-0811		0833	S	5							X							X	X	X				
9	SP1-0811		1010	S	5				X										X		X				
10	SP2-0811		1021	S	5														X	X	X				

	Signature	Company	Date	Time
Relinquished by	SEAN PETERSON	BGES	8/11/10	1715
Received by			8/13/10	1030
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

INVOICE TO DAVID COLLENTINE AT KIEWIT AND COPY BGES ON RESULTS

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Client Copy

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: BGES
Project Number:
Project Name: KIEWIT
Project Manager: JAYNE MARTIN
Sampled by: SEAN PETERSON

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (7 working days)
  (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-095

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D / SIM	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	GRO by AK101	DRO/ORO by AK102/103	BTEX by 8021B				% Moisture
11	SP3-0811	8/11/10	1033	S	5														X	X	X				X
12	SP4-0811		1049	S	4														X	X	X				
13	CFS1-0811		1210	S	5				X			X				X			X	X					
14	CFS9-0811		1212	S	5				X			X				X			X	X					
15	CFS2-0811		1217	S	4				X							X			X	X					
16	CFS3-0811		1224	S	4				X							X			X	X					
17	CFS4-0811		1227	S	5				X			X				X			X	X					
18	CFS5-0811		1231	S	4				X							X			X	X					
19	CFS6-0811		1234	S	4				X							X			X	X					
20	CFS7-0811		1237	S	4				X							X			X	X					✓

	Signature	Company	Date	Time
Relinquished by	SEAN PETERSON	BGES	8/11/10	1715
Received by		OSE	8/13/10	1030
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Client Copy

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: BGES
Project Number:
Project Name: KIEWIT
Project Manager: JAYNE MARTIN
Sampled by: SEAN PETERSON

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
  (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 08-095

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D / SIM	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	Arsenic BY EPA 6000 Series	GRO BY AK101	DRO/ORO BY AK 102/103	% Moisture
21	CFS8-0811	8/11/10	1240	S	5				X				X			X				X	X	X
22	TRIP BLANK	—	—	↓	3				(X)											(X)		
23	BKGD-0811	8/11/10	1310	S	1														X			X

	Signature	Company	Date	Time
Relinquished by	SEAN PETERSON	BGES	8/11/10	1715
Received by		OSE	8/13/10	1030
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

(7) Added 8/13/10 BG per TK w/Sean P.

Chromatograms with final report ☐

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OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 28, 2010

David Collentine
Kiewit Pacific
2200 Columbia House Boulevard
Vancouver, WA 98661

Re: Analytical Data for Project Kiewit
Laboratory Reference No. 1009-173

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on September 18, 2010.

CS Laboratory Approval Number: UST-039

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

Case Narrative

Samples were collected on September 15, 2010 and received by the laboratory on September 18, 2010. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260B Analysis

The samples were received in pre-weighed 4 ounce jars preserved with 25 millileters of Methanol.

Some MTCA Method A cleanup levels are non-achievable for samples FDL-2-0915 and FDL-2A-0915 due to the necessary dilution of the samples.

PAHs EPA 8270D/SIM Analysis

Sample FDL-2-0915 had one surrogate recovery out of control limits. This is within allowance of our standard operating procedure as long as the recovery is above 10%.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Analyst's Signature

Stacey Duran, Volatiles Chemist — 9-28-10 Date

Analyst's Signature

Erika Maestas, GC/Semivolatiles Chemist — 9/28/10 Date

Analyst's Signature

Zeus Thornton, DRO/RRO Chemist — 9/28/10 Date

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-15-10
Date Analyzed:	9-21-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-173-02
Client ID:	**FDL-2-0915**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.11
Chloromethane	ND		0.53
Vinyl Chloride	ND		0.11
Bromomethane	ND		0.11
Chloroethane	ND		0.53
Trichlorofluoromethane	ND		0.11
1,1-Dichloroethene	ND		0.11
Acetone	ND		0.53
Iodomethane	ND		0.53
Carbon Disulfide	ND		0.11
Methylene Chloride	ND		0.53
(trans) 1,2-Dichloroethene	ND		0.11
Methyl t-Butyl Ether	ND		0.11
1,1-Dichloroethane	ND		0.11
Vinyl Acetate	ND		0.53
2,2-Dichloropropane	ND		0.11
(cis) 1,2-Dichloroethene	ND		0.11
2-Butanone	ND		0.53
Bromochloromethane	ND		0.11
Chloroform	ND		0.11
1,1,1-Trichloroethane	ND		0.11
Carbon Tetrachloride	ND		0.11
1,1-Dichloropropene	ND		0.11
Benzene	ND		0.11
1,2-Dichloroethane	ND		0.11
Trichloroethene	ND		0.11
1,2-Dichloropropane	ND		0.11
Dibromomethane	ND		0.11
Bromodichloromethane	ND		0.11
2-Chloroethyl Vinyl Ether	ND		0.53
(cis) 1,3-Dichloropropene	ND		0.11
Methyl Isobutyl Ketone	ND		0.53
Toluene	ND		0.53
(trans) 1,3-Dichloropropene	ND		0.11

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-173-02
Client ID: FDL-2-0915

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.11
Tetrachloroethene	ND		0.11
1,3-Dichloropropane	ND		0.11
2-Hexanone	ND		0.53
Dibromochloromethane	ND		0.11
1,2-Dibromoethane	ND		0.11
Chlorobenzene	ND		0.11
1,1,1,2-Tetrachloroethane	ND		0.11
Ethylbenzene	0.18		0.11
m,p-Xylene	3.7		0.21
o-Xylene	8.7		0.11
Styrene	ND		0.11
Bromoform	ND		0.11
Isopropylbenzene	0.14		0.11
Bromobenzene	ND		0.11
1,1,2,2-Tetrachloroethane	ND		0.11
1,2,3-Trichloropropane	ND		0.11
n-Propylbenzene	0.23		0.11
2-Chlorotoluene	ND		0.11
4-Chlorotoluene	ND		0.11
1,3,5-Trimethylbenzene	17		0.11
tert-Butylbenzene	0.19		0.11
1,2,4-Trimethylbenzene	20		0.11
sec-Butylbenzene	0.24		0.11
1,3-Dichlorobenzene	ND		0.11
p-Isopropyltoluene	0.57		0.11
1,4-Dichlorobenzene	ND		0.11
1,2-Dichlorobenzene	ND		0.11
n-Butylbenzene	ND		0.11
1,2-Dibromo-3-chloropropane	ND		0.53
1,2,4-Trichlorobenzene	ND		0.11
Hexachlorobutadiene	ND		0.53
Naphthalene	4.0		0.11
1,2,3-Trichlorobenzene	ND		0.11

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	97	66-128
Toluene-d8	111	68-126
4-Bromofluorobenzene	81	53-134

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-15-10
Date Analyzed:	9-21-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-173-12
Client ID:	**FDL-2A-0915**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.11
Chloromethane	ND		0.55
Vinyl Chloride	ND		0.11
Bromomethane	ND		0.11
Chloroethane	ND		0.55
Trichlorofluoromethane	ND		0.11
1,1-Dichloroethene	ND		0.11
Acetone	ND		0.55
Iodomethane	ND		0.55
Carbon Disulfide	ND		0.11
Methylene Chloride	ND		0.55
(trans) 1,2-Dichloroethene	ND		0.11
Methyl t-Butyl Ether	ND		0.11
1,1-Dichloroethane	ND		0.11
Vinyl Acetate	ND		0.55
2,2-Dichloropropane	ND		0.11
(cis) 1,2-Dichloroethene	ND		0.11
2-Butanone	ND		0.55
Bromochloromethane	ND		0.11
Chloroform	ND		0.11
1,1,1-Trichloroethane	ND		0.11
Carbon Tetrachloride	ND		0.11
1,1-Dichloropropene	ND		0.11
Benzene	ND		0.11
1,2-Dichloroethane	ND		0.11
Trichloroethene	ND		0.11
1,2-Dichloropropane	ND		0.11
Dibromomethane	ND		0.11
Bromodichloromethane	ND		0.11
2-Chloroethyl Vinyl Ether	ND		0.55
(cis) 1,3-Dichloropropene	ND		0.11
Methyl Isobutyl Ketone	ND		0.55
Toluene	ND		0.55
(trans) 1,3-Dichloropropene	ND		0.11

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-173-12
Client ID: FDL-2A-0915

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.11
Tetrachloroethene	ND		0.11
1,3-Dichloropropane	ND		0.11
2-Hexanone	ND		0.55
Dibromochloromethane	ND		0.11
1,2-Dibromoethane	ND		0.11
Chlorobenzene	ND		0.11
1,1,1,2-Tetrachloroethane	ND		0.11
Ethylbenzene	0.16		0.11
m,p-Xylene	3.0		0.22
o-Xylene	6.3		0.11
Styrene	ND		0.11
Bromoform	ND		0.11
Isopropylbenzene	0.13		0.11
Bromobenzene	ND		0.11
1,1,2,2-Tetrachloroethane	ND		0.11
1,2,3-Trichloropropane	ND		0.11
n-Propylbenzene	0.24		0.11
2-Chlorotoluene	ND		0.11
4-Chlorotoluene	ND		0.11
1,3,5-Trimethylbenzene	14		0.11
tert-Butylbenzene	0.16		0.11
1,2,4-Trimethylbenzene	18		0.11
sec-Butylbenzene	0.24		0.11
1,3-Dichlorobenzene	ND		0.11
p-Isopropyltoluene	0.49		0.11
1,4-Dichlorobenzene	ND		0.11
1,2-Dichlorobenzene	ND		0.11
n-Butylbenzene	ND		0.11
1,2-Dibromo-3-chloropropane	ND		0.55
1,2,4-Trichlorobenzene	ND		0.11
Hexachlorobutadiene	ND		0.55
Naphthalene	3.7		0.11
1,2,3-Trichlorobenzene	ND		0.11

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	89	66-128
Toluene-d8	105	68-126
4-Bromofluorobenzene	75	53-134

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted:	9-15-10
Date Analyzed:	9-21-10
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	09-173-13
Client ID:	**TRIP BLANK**

Compound	**Results**	**Flags**	**PQL**
Dichlorodifluoromethane	ND		0.050
Chloromethane	ND		0.25
Vinyl Chloride	ND		0.050
Bromomethane	ND		0.050
Chloroethane	ND		0.25
Trichlorofluoromethane	ND		0.050
1,1-Dichloroethene	ND		0.050
Acetone	ND		0.25
Iodomethane	ND		0.25
Carbon Disulfide	ND		0.050
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.050
Methyl t-Butyl Ether	ND		0.050
1,1-Dichloroethane	ND		0.050
Vinyl Acetate	ND		0.25
2,2-Dichloropropane	ND		0.050
(cis) 1,2-Dichloroethene	ND		0.050
2-Butanone	ND		0.25
Bromochloromethane	ND		0.050
Chloroform	ND		0.050
1,1,1-Trichloroethane	ND		0.050
Carbon Tetrachloride	ND		0.050
1,1-Dichloropropene	ND		0.050
Benzene	ND		0.050
1,2-Dichloroethane	ND		0.050
Trichloroethene	ND		0.050
1,2-Dichloropropane	ND		0.050
Dibromomethane	ND		0.050
Bromodichloromethane	ND		0.050
2-Chloroethyl Vinyl Ether	ND		0.25
(cis) 1,3-Dichloropropene	ND		0.050
Methyl Isobutyl Ketone	ND		0.25
Toluene	ND		0.25
(trans) 1,3-Dichloropropene	ND		0.050

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 09-173-13
Client ID: TRIP BLANK

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.050
Tetrachloroethene	ND		0.050
1,3-Dichloropropane	ND		0.050
2-Hexanone	ND		0.25
Dibromochloromethane	ND		0.050
1,2-Dibromoethane	ND		0.050
Chlorobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
Ethylbenzene	ND		0.050
m,p-Xylene	ND		0.10
o-Xylene	ND		0.050
Styrene	ND		0.050
Bromoform	ND		0.050
Isopropylbenzene	ND		0.050
Bromobenzene	ND		0.050
1,1,2,2-Tetrachloroethane	ND		0.050
1,2,3-Trichloropropane	ND		0.050
n-Propylbenzene	ND		0.050
2-Chlorotoluene	ND		0.050
4-Chlorotoluene	ND		0.050
1,3,5-Trimethylbenzene	ND		0.050
tert-Butylbenzene	ND		0.050
1,2,4-Trimethylbenzene	ND		0.050
sec-Butylbenzene	ND		0.050
1,3-Dichlorobenzene	ND		0.050
p-Isopropyltoluene	ND		0.050
1,4-Dichlorobenzene	ND		0.050
1,2-Dichlorobenzene	ND		0.050
n-Butylbenzene	ND		0.050
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.050
Hexachlorobutadiene	ND		0.25
Naphthalene	ND		0.050
1,2,3-Trichlorobenzene	ND		0.050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	80	66-128
Toluene-d8	101	68-126
4-Bromofluorobenzene	81	53-134

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted: 9-21-10
Date Analyzed: 9-21-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0921S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.050
Chloromethane	ND		0.25
Vinyl Chloride	ND		0.050
Bromomethane	ND		0.050
Chloroethane	ND		0.25
Trichlorofluoromethane	ND		0.050
1,1-Dichloroethene	ND		0.050
Acetone	ND		0.25
Iodomethane	ND		0.25
Carbon Disulfide	ND		0.050
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.050
Methyl t-Butyl Ether	ND		0.050
1,1-Dichloroethane	ND		0.050
Vinyl Acetate	ND		0.25
2,2-Dichloropropane	ND		0.050
(cis) 1,2-Dichloroethene	ND		0.050
2-Butanone	ND		0.25
Bromochloromethane	ND		0.050
Chloroform	ND		0.050
1,1,1-Trichloroethane	ND		0.050
Carbon Tetrachloride	ND		0.050
1,1-Dichloropropene	ND		0.050
Benzene	ND		0.050
1,2-Dichloroethane	ND		0.050
Trichloroethene	ND		0.050
1,2-Dichloropropane	ND		0.050
Dibromomethane	ND		0.050
Bromodichloromethane	ND		0.050
2-Chloroethyl Vinyl Ether	ND		0.25
(cis) 1,3-Dichloropropene	ND		0.050
Methyl Isobutyl Ketone	ND		0.25
Toluene	ND		0.25
(trans) 1,3-Dichloropropene	ND		0.050

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB0921S1

Compound	Results	Flags	PQL
1,1,2-Trichloroethane	ND		0.050
Tetrachloroethene	ND		0.050
1,3-Dichloropropane	ND		0.050
2-Hexanone	ND		0.25
Dibromochloromethane	ND		0.050
1,2-Dibromoethane	ND		0.050
Chlorobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
Ethylbenzene	ND		0.050
m,p-Xylene	ND		0.10
o-Xylene	ND		0.050
Styrene	ND		0.050
Bromoform	ND		0.050
Isopropylbenzene	ND		0.050
Bromobenzene	ND		0.050
1,1,2,2-Tetrachloroethane	ND		0.050
1,2,3-Trichloropropane	ND		0.050
n-Propylbenzene	ND		0.050
2-Chlorotoluene	ND		0.050
4-Chlorotoluene	ND		0.050
1,3,5-Trimethylbenzene	ND		0.050
tert-Butylbenzene	ND		0.050
1,2,4-Trimethylbenzene	ND		0.050
sec-Butylbenzene	ND		0.050
1,3-Dichlorobenzene	ND		0.050
p-Isopropyltoluene	ND		0.050
1,4-Dichlorobenzene	ND		0.050
1,2-Dichlorobenzene	ND		0.050
n-Butylbenzene	ND		0.050
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.050
Hexachlorobutadiene	ND		0.25
Naphthalene	ND		0.050
1,2,3-Trichlorobenzene	ND		0.050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	89	66-128
Toluene-d8	110	68-126
4-Bromofluorobenzene	87	53-134

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 9-21-10
Date Analyzed: 9-21-10

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB0921S1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
1,1-Dichloroethene	0.0500	0.0541	108	0.0492	98	70-130	
Benzene	0.0500	0.0409	82	0.0411	82	70-121	
Trichloroethene	0.0500	0.0477	95	0.0494	99	70-124	
Toluene	0.0500	0.0442	88	0.0450	90	70-123	
Chlorobenzene	0.0500	0.0424	85	0.0432	86	71-119	

	RPD	RPD Limit	Flags
1,1-Dichloroethene	10	14	
Benzene	1	10	
Trichloroethene	3	12	
Toluene	2	12	
Chlorobenzene	2	9	

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FDL-2-0915**					
Laboratory ID:	09-173-02					
Naphthalene	**0.98**	0.69	EPA 8270/SIM	9-21-10	9-24-10	
2-Methylnaphthalene	**14**	0.69	EPA 8270/SIM	9-21-10	9-24-10	
1-Methylnaphthalene	**23**	0.69	EPA 8270/SIM	9-21-10	9-24-10	
Acenaphthylene	**0.050**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Acenaphthene	**0.26**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Fluorene	**0.52**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Phenanthrene	**0.52**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Anthracene	**0.045**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Fluoranthene	**0.051**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Pyrene	**0.051**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[a]anthracene	**0.0078**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Chrysene	**0.0080**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[b]fluoranthene	**ND**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[k]fluoranthene	**ND**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[a]pyrene	**ND**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Dibenz[a,h]anthracene	**ND**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[g,h,i]perylene	**ND**	0.0069	EPA 8270/SIM	9-21-10	9-24-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
2-Fluorobiphenyl	***90***	***45 - 101***				
Pyrene-d10	***117***	***52 - 118***				
Terphenyl-d14	***125***	***41 - 106***				Q

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FDL-2A-0915**					
Laboratory ID:	09-173-12					
Naphthalene	**ND**	0.70	EPA 8270/SIM	9-21-10	9-24-10	
2-Methylnaphthalene	**7.6**	0.70	EPA 8270/SIM	9-21-10	9-24-10	
1-Methylnaphthalene	**17**	0.70	EPA 8270/SIM	9-21-10	9-24-10	
Acenaphthylene	**0.039**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Acenaphthene	**0.26**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Fluorene	**0.45**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Phenanthrene	**0.46**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Anthracene	**0.042**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Fluoranthene	**0.057**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Pyrene	**0.040**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[a]anthracene	**0.0086**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Chrysene	**0.0079**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[b]fluoranthene	**ND**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[k]fluoranthene	**ND**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[a]pyrene	**ND**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Dibenz[a,h]anthracene	**ND**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Benzo[g,h,i]perylene	**ND**	0.0070	EPA 8270/SIM	9-21-10	9-24-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
2-Fluorobiphenyl	***79***	***45 - 101***				
Pyrene-d10	***63***	***52 - 118***				
Terphenyl-d14	***63***	***41 - 106***				

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

PAHs by EPA 8270D/SIM
(with silica gel clean-up)
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0921S1					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Fluorene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Anthracene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Pyrene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Chrysene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	9-21-10	9-21-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
2-Fluorobiphenyl	***60***	***45 - 101***				
Pyrene-d10	***74***	***52 - 118***				
Terphenyl-d14	***87***	***41 - 106***				

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

PAHs by EPA 8270D/SIM
(with silica gel clean-up)
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-193-02										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0879**	**0.0772**	0.0833	0.0833	0.0203	81	68	31 - 115	13	19	
Acenaphthylene	**0.0624**	**0.0592**	0.0833	0.0833	ND	75	71	40 - 134	5	22	
Acenaphthene	**0.0811**	**0.0734**	0.0833	0.0833	0.00880	87	78	48 - 118	10	17	
Fluorene	**0.0860**	**0.0776**	0.0833	0.0833	0.00754	94	84	54 - 122	10	16	
Phenanthrene	**0.0774**	**0.0726**	0.0833	0.0833	ND	93	87	46 - 123	6	19	
Anthracene	**0.0659**	**0.0626**	0.0833	0.0833	ND	79	75	53 - 123	5	27	
Fluoranthene	**0.0725**	**0.0689**	0.0833	0.0833	ND	87	83	47 - 132	5	26	
Pyrene	**0.0738**	**0.0700**	0.0833	0.0833	ND	89	84	41 - 137	5	25	
Benzo[a]anthracene	**0.0789**	**0.0762**	0.0833	0.0833	ND	95	91	43 - 132	3	26	
Chrysene	**0.0793**	**0.0772**	0.0833	0.0833	ND	95	93	46 - 126	3	24	
Benzo[b]fluoranthene	**0.0833**	**0.0807**	0.0833	0.0833	ND	100	97	44 - 134	3	24	
Benzo[k]fluoranthene	**0.0815**	**0.0752**	0.0833	0.0833	ND	98	90	45 - 132	8	20	
Benzo[a]pyrene	**0.0813**	**0.0777**	0.0833	0.0833	ND	98	93	36 - 136	5	23	
Indeno(1,2,3-c,d)pyrene	**0.0823**	**0.0788**	0.0833	0.0833	ND	99	95	40 - 136	4	16	
Dibenz[a,h]anthracene	**0.0813**	**0.0778**	0.0833	0.0833	ND	98	93	40 - 142	4	13	
Benzo[g,h,i]perylene	**0.0784**	**0.0763**	0.0833	0.0833	ND	94	92	37 - 137	3	18	
Surrogate:											
2-Fluorobiphenyl						***72***	***67***	***45 - 101***			
Pyrene-d10						***79***	***76***	***52 - 118***			
Terphenyl-d14						***89***	***88***	***41 - 106***			

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

DRO/RRO AK102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FDL-1-0915**					
Laboratory ID:	09-173-01					
Diesel Range Organics	**1900**	12	AK102	9-27-10	9-27-10	
Residual Range Organics	**49**	23	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***74***	***50-150***				
Client ID:	**FDL-2-0915**					
Laboratory ID:	09-173-02					
Diesel Range Organics	**3900**	100	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	210	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-3-0915**					
Laboratory ID:	09-173-03					
Diesel Range Organics	**6700**	110	AK102	9-27-10	9-27-10	
Residual Range Organics	**250**	210	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-4-0915**					
Laboratory ID:	09-173-04					
Diesel Range Organics	**3900**	100	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	210	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-5-0915**					
Laboratory ID:	09-173-05					
Diesel Range Organics	**1000**	10	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	20	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***93***	***50-150***				
Client ID:	**FDL-6-0915**					
Laboratory ID:	09-173-06					
Diesel Range Organics	**5500**	110	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	220	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

DRO/RRO AK102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FDL-7-0915**					
Laboratory ID:	09-173-07					
Diesel Range Organics	**660**	12	AK102	9-27-10	9-27-10	
Residual Range Organics	**150**	24	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***66***	***50-150***				
Client ID:	**FDL-8-0915**					
Laboratory ID:	09-173-08					
Diesel Range Organics	**6800**	120	AK102	9-27-10	9-27-10	
Residual Range Organics	**290**	240	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-9-0915**					
Laboratory ID:	09-173-09					
Diesel Range Organics	**7200**	110	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	220	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-10-0915**					
Laboratory ID:	09-173-10					
Diesel Range Organics	**5600**	110	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	230	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-11-0915**					
Laboratory ID:	09-173-11					
Diesel Range Organics	**17000**	120	AK102	9-27-10	9-27-10	
Residual Range Organics	**450**	240	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**FDL-2A-0915**					
Laboratory ID:	09-173-12					
Diesel Range Organics	**3200**	110	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	210	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

DRO/RRO AK102/103
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0927S1					
Diesel Range Organics	**ND**	10	AK102	9-27-10	9-27-10	
Residual Range Organics	**ND**	20	AK103	9-27-10	9-27-10	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***82***	***60-120***				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS								
Laboratory ID:	SB0927S1							
	ORIG	DUP						
Diesel Range Organics	**103**	**101**	103	101	75-120	2	20	
Residual Range Organics	**108**	**105**	108	105	75-120	3	20	
Surrogate:								
o-Terphenyl			***96***	***96***	***50-150***			

Date of Report: September 28, 2010
Samples Submitted: September 18, 2010
Laboratory Reference: 1009-173
Project: Kiewit

% MOISTURE

Date Analyzed: 9-21&27-10

Client ID	Lab ID	% Moisture
FDL-1-0915	09-173-01	13
FDL-2-0915	09-173-02	3
FDL-3-0915	09-173-03	6
FDL-4-0915	09-173-04	3
FDL-5-0915	09-173-05	1
FDL-6-0915	09-173-06	8
FDL-7-0915	09-173-07	15
FDL-8-0915	09-173-08	17
FDL-9-0915	09-173-09	7
FDL-10-0915	09-173-10	12
FDL-11-0915	09-173-11	17
FDL-2A-0915	09-173-12	5

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: KIEWIT
Project Number:
Project Name: KIEWIT
Project Manager: DAVID COLCENTINE
Sampled by: SEAN PETERSON

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (7 working days) (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-173

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D / SIM	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	DRO – AK102	RRO – AK103					% Moisture
1	FDL – 1 – 0915	9/15/10	1714	S	1														X	X					X
2	FDL – 2 – 0915		1720	S	3				X			X							X	X					X
3	FDL – 3 – 0915		1723	S	1														X	X					X
4	FDL – 4 – 0915		1726	S	1														X	X					X
5	FDL – 5 – 0915		1731	S	1														X	X					X
6	FDL – 6 – 0915		1735	S	1														X	X					X
7	FDL – 7 – 0915		1742	S	1														X	X					X
8	FDL – 8 – 0915		1746	S	1														X	X					X
9	FDL – 9 – 0915		1749	S	1														X	X					X
10	FDL – 10 – 0915		1753	S	1														X	X					X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by	S. Peterson	BGS	9/16/10	1433	
Received by		OnSite Env	9/18/10	930	
Relinquished by					
Received by					
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

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Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: KIEWIT
Project Number:
Project Name: KIEWIT
Project Manager: DAVID COLLENTINE
Sampled by: SEAN PETERSON

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (7 working days)
  (TPH analysis 5 working days)
- ☐ _____ (other)

Laboratory Number: 09-173

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D / SIM	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	ADPO - AK 102	ADPO - AK 103					% Moisture
11	FDL-11-0915	9/15/10	1801	S	1														X	X					X
12	FDL-2A-0915	9/15/10	1721	S	3				X			X							X	X					X
13	TRIPBLANK								X																

	Signature	Company	Date	Time	Comments/Special Instructions:
Relinquished by	SEAN PETERSON	BGES	9/16/10	1433	
Received by		OnSite Env	9/16/10	930	
Relinquished by					
Received by					
Relinquished by					
Received by					
Reviewed by/Date		Reviewed by/Date			Chromatograms with final report ☐

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APPENDIX F
LABORATORY ANALYTICAL DATA QUALITY CONTROL CHECKLISTS

Laboratory Data Review Checklist

Completed by: Sean Peterson

Title: Environmental Scientist II Date: November 3, 2010

CS Report Name: 2010 Site Remediation Report Date: November 2010

Consultant Firm: BGES, Inc.

Laboratory Name: Onsite Environmental Laboratory Report Number: 1008-095R

ADEC File Number: **N/A** ADEC RecKey Number: **N/A**

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      (Yes) No NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      (Yes) No NA (Please explain.) Comments:

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      (Yes) No NA (Please explain.) Comments:

   b. Correct analyses requested?
      (Yes) No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      (Yes) No NA (Please explain.) Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
      (Yes) No NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
Yes No NA (Please explain.) Comments:

No irregularities or abnormalities with respect to sample containers were reported.

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 (NA) (Please explain.) Comments:

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

N/A

4. Case Narrative
   a. Present and understandable?
   (Yes) No NA (Please explain.) Comments:

   b. Discrepancies, errors or QC failures identified by the lab?
   Yes (No) NA (Please explain.) Comments:

   c. Were all corrective actions documented?
   Yes No (NA) (Please explain.) Comments:

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

   N/A

5. Samples Results
   a. Correct analyses performed/reported as requested on COC?
   (Yes) No NA (Please explain.) Comments:

b. All applicable holding times met?

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

c. All soils reported on a dry weight basis?

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

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

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

The following VOCs reporting limits exceeded their applicable ADEC cleanup criteria for Field Samples CFS1 through CFS8: bromodichloromethane, carbon tetrachloride, 1,2-dibromoethane, 1,2-dichloroethane, 1,2-dichloropropane, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,1,2-trichloroethane, trichloroethene, 1,2,3-trichloropropane, and vinyl chloride. The reporting limits for dibromochloromethane and 1,1-dichloroethene also exceeded their ADEC cleanup criteria in Field Samples CFS1, CFS2, CFS3, CFS4, CFS5, CFS7, CFS8, and SP1; as such it cannot be determined if actual concentrations of the previously listed VOCs within the field samples exceed their respective ADEC cleanup criteria. Because all of the field samples contained concentrations of DRO that in some cases greatly exceeded the ADEC cleanup criterion, it is our opinion that the lack of information concerning the previously listed VOCs does not affect the interpretation of the data for their intended use.

e. Data quality or usability affected?

Comments:

See 5.d, above.

6. QC Samples

a. Method Blank

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

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

ii. All method blank results less than PQL?

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

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
Yes No (NA) (Please explain.) Comments:

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

N/A

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
(Yes) No NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
(Yes) No NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
(Yes) No NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
(Yes) No NA (Please explain.) Comments:

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

N/A

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes No (NA) (Please explain.) Comments:

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

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
(Yes) No NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
(Yes) No NA (Please explain.) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
Yes No (NA) (Please explain.) Comments:

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

N/A

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
(Yes) No NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
Yes No (NA) (Please explain.) Comments:

iii. All results less than PQL?
(Yes) No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

e. Field Duplicate

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

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

ii. Submitted blind to lab?

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

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

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

The relative percent differences (RPDs) calculated utilizing the duplicate sample (CFS9) collected in association with Soil Sample CFS1 were below the ADEC recommended acceptable limit of 50 percent.

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

Comments:

N/A

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.) Comments:

Not applicable. A decontamination or equipment blank was not collected; not part of our approved scope of work.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

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

Laboratory Data Review Checklist

Completed by: Sean Peterson

Title: Environmental Scientist II Date: November 3, 2010

CS Report Name: 2010 Site Remediation Report Date: November 2010

Consultant Firm: BGES, Inc.

Laboratory Name: Onsite Environmental Laboratory Report Number: 1009-073

ADEC File Number: **N/A** ADEC RecKey Number: **N/A**

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      (Yes) No NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      (Yes) No NA (Please explain.) Comments:

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      (Yes) No NA (Please explain.) Comments:

   b. Correct analyses requested?
      (Yes) No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      (Yes) No NA (Please explain.) Comments:

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
      (Yes) No NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
Yes No NA (Please explain.) Comments:

No irregularities or abnormalities with respect to sample containers were reported.

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 (NA) (Please explain.) Comments:

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

N/A

4. Case Narrative
   a. Present and understandable?
   (Yes) No NA (Please explain.) Comments:

   b. Discrepancies, errors or QC failures identified by the lab?
   (Yes) No NA (Please explain.) Comments:

The percentage of recovery for the surrogate terphenyl-d14 was above acceptance limits (125 percent; acceptable limit range is 41 percent to 106 percent). However, because the remaining surrogate recovery percentages were all within their acceptance limits, it is our opinion that this QC failure does not affect the acceptability of the data for their intended use.

   c. Were all corrective actions documented?
   (Yes) No NA (Please explain.) Comments:

See 4.b, above.

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

See 4.b, above.

5. Samples Results
   a. Correct analyses performed/reported as requested on COC?
   (Yes) No NA (Please explain.) Comments:

b. All applicable holding times met?

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

c. All soils reported on a dry weight basis?

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

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

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

The following VOCs reporting limits exceeded their applicable ADEC cleanup criteria for Field Samples FDL-2 and FDL-2A: bromodichloromethane, carbon tetrachloride, dibromochloromethane, 1,2-dibromoethane, 1,2-dichloroethane, 1,1-dichloroethene, 1,2-dichloropropane, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,1,2-trichloroethane, trichloroethene, 1,2,3-trichloropropane, and vinyl chloride; as such it cannot be determined if actual concentrations of the previously listed VOCs within the field samples exceed their respective ADEC cleanup criteria. Because the field samples contained concentrations of DRO that greatly exceeded the ADEC cleanup criterion, it is our opinion that the lack of information concerning the previously listed VOCs does not affect the interpretation of the data for their intended use.

e. Data quality or usability affected?

Comments:

See 5.d, above.

6. QC Samples

a. Method Blank

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

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

ii. All method blank results less than PQL?

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

iii. If above PQL, what samples are affected?

Comments:

N/A

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

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

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

N/A

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
(Yes) No NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
(Yes) No NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
(Yes) No NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
(Yes) No NA (Please explain.) Comments:

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

N/A

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes No (NA) (Please explain.) Comments:

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

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
(Yes) No NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
Yes (No) NA (Please explain.) Comments:

See 4.b, above.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
(Yes) No NA (Please explain.) Comments:

See 4.b, above.

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

See 4.b, above.

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
(Yes) No NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)
Yes No (NA) (Please explain.) Comments:

iii. All results less than PQL?
(Yes) No NA (Please explain.) Comments:

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

N/A

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

Comments:

N/A

e. Field Duplicate

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

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

ii. Submitted blind to lab?

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

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

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

The RPDs calculated utilizing the duplicate sample (TP1A) collected in association with Soil Sample TP1 were below the ADEC recommended acceptable limit of 50 percent. Additionally, the RPDs calculated utilizing the duplicate sample (FDL-2A) collected in association with Soil Sample FDL-2 were below the ADEC recommended acceptable limit of 50 percent.

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

Comments:

N/A

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.) Comments:

Not applicable. A decontamination or equipment blank was not collected; not part of our approved scope of work.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

N/A

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

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

APPENDIX G
CONCEPTUAL SITE MODEL

HUMAN HEALTH CONCEPTUAL SITE MODEL

Site: 2050 Peger Road, Fairbanks, Alaska

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

Completed By: Sean Peterson, Environmental Scientist II

Date Completed: November 3, 2010

(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/F	C/F	C/F			
	☑ Migration or leaching to subsurface → check soil		☑ Dermal Absorption of Contaminants from Soil		C/F	C/F	C/F			
	☑ 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		F		F			
	☑ *Migration to groundwater* → check groundwater		☑ Dermal Absorption of Contaminants in Groundwater		F		F			
	☑ *Volatilization* → check air		☑ Inhalation of Volatile Compounds in Tap Water		F		F			
	☐ *Other (list):*									
☐ Ground-water	☐ Direct release to groundwater → check groundwater	☑ air	☑ Inhalation of Outdoor Air		C/F	C/F	C/F			
	☐ *Volatilization* → check air		☑ Inhalation of Indoor Air		C/F	C/F	C/F			
	☐ *Flow to surface water body* → check surface water		☑ Inhalation of Fugitive Dust		C/F	C/F	C/F			
	☐ *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