Summary of Prior Studies and Results of 2013 Environmental Assessment

PUD No. 1 of Snohomish County Headquarters
2320 California Street
Everett, Washington

for
PUD No. 1 of Snohomish County

March 11, 2015

GeoEngineers
Earth Science + Technology

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ACRONYMS AND DEFINITIONS

ASTM	American Society for Testing and Materials
BNSF	Burlington Northern Santa Fe
BETX	benzene, ethylbenzene, toluene, and total xylenes (constituents of gasoline-range petroleum hydrocarbons)
bgs	below ground surface
cPAHs	carcinogenic polycyclic aromatic hydrocarbons
COCs	chemicals of concern
Ecology	Washington State Department of Ecology
EPA	Environmental Protection Agency
mg/kg	milligram per kilogram
MTCA	Model Toxics Control Act (Washington State regulatory act related to pollutants in soil, groundwater, air and surface water)
NFA	No Further Action
NWTPH-Dx	Northwest Total Petroleum Hydrocarbon - Diesel-Range petroleum hydrocarbon extended analytical method (semi-volatile petroleum products method for soil and water)
NWTPH-Gx	Northwest Total Petroleum Hydrocarbon - Gasoline-Range petroleum hydrocarbon extended analytical method (volatile petroleum products method for soil and water)
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PID	photoionization detector
PUD	Public Utilities Department No. 1 of Snohomish County
QC	quality control
TPH	total petroleum hydrocarbons
USGS	United States Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOCs	volatile organic compounds

1.0 INTRODUCTION

This report summarizes site characterization data gaps from prior assessment and cleanup actions at the site, and presents results of the preliminary round of environmental drilling and soil sampling conducted in September 2013 to evaluate the identified data gaps. The PUD No. 1 of Snohomish County (PUD) Headquarters property ("site") is located at 2320 California Street in Everett, Washington and is identified as Snohomish County Tax Parcel 00437866000000. See Figure 1 for the site Vicinity Map and Figure 2 for the Site Plan and Boring Locations with other key features.

2.0 SCOPE OF SERVICES

The PUD requested that GeoEngineers review all previous environmental assessment and cleanup reports for the site available in Washington State Department of Ecology (Ecology) and PUD files. As summarized in Section 4.0 of this report, we compiled information regarding soil and groundwater conditions at the site, previous potential sources of contamination at the site, and locations of prior documented releases and cleanup actions. Apparent site characterization data gaps were identified for each prior area of historic release or cleanup based on current MTCA regulations and guidance, and prior correspondence from Ecology to the PUD (Section 4.0). GeoEngineers subsequently developed an environmental exploration and sampling plan for the site with the objective of filling the identified site characterization data gaps and assessing locations which are likely to satisfy MTCA requirements for a completed cleanup, and locations and conditions likely to require further assessment and possibly cleanup action. The scope of services for the environmental exploration and sampling is presented below.

- Subcontracted a private utility locate to mark the locations of underground utilities and notified the public utilities notification service to mark public utilities in the rights-of-way and easements.
- Monitored completion of 16 exploratory borings at the site. The borings extended to depths ranging from 9 to 16.5 feet bgs. The exploratory borings were completed by a licensed drilling company (Cascade Drilling, LP) using a truck-mounted hollow-stem auger rig.
- Obtained soil samples from each of the explorations at approximate 2.5-foot depth intervals. Field screened the soil samples for evidence of petroleum hydrocarbons and volatiles using visual, water sheen and headspace vapor screening methods. Visually classified the samples in general accordance with ASTM D-2488 and maintained a detailed log of each boring.
- Selected up to two soil samples from each exploration for chemical analyses of one or more of the following: MTCA 5 Metals (mercury, arsenic, cadmium, chromium and lead) and copper by EPA 6000/7000 series methods; hexavalent chromium by EPA Method 7196; gasoline-, diesel- and oil-range hydrocarbons by NWTPH-Gx and NWTPH-Dx; volatile organic compounds (VOCs) by EPA Method 8260; benzene, ethylbenzene, toluene and xylenes (BETX) by EPA Method 8021; polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270 SIM or equivalent, and polychlorinated biphenyls (PCBs) by EPA Method 8082.
- Evaluated the field and laboratory data relative to MTCA Method A or B cleanup levels.

- Interpreted the results of the exploration and soil sampling data relative to prior documented releases and cleanup actions and identify areas where no further action is warranted, and areas where additional assessment and potential cleanup action may be appropriate.

3.0 SITE CONDITIONS

3.1. Surface Conditions

The PUD headquarters site is developed with the PUD's main headquarters office building (also referred to as the Electric Building) and annex and warehouse building, paved parking areas, and a single level below-grade parking garage (Figure 2). The site comprises approximately 4.61 acres and is owned by the PUD. Adjacent streets include California Street to the north, Virginia Avenue to the east and Hewitt Avenue to the south. BNSF railroad tracks are situated south of the PUD property and a vacant lot owned by BNSF is situated adjacent to the site to the west. The site is nearly completely capped with concrete or asphalt pavement or buildings, except for scattered landscaped areas. The parking garage is located south of the Electric Building. The Electric Building has a basement located below the eastern portion of the building. There are no water wells on the site.

The site was initially developed with single family residences, a mattress and awning workshop, a used car/auto wrecking and used automotive parts facility, a steel fabricating and welding facility, offices, a truck repair facility, a warehouse, paint shop, a sand dryer, and an "oil house," according to the historic Sanborn fire insurance maps. "Puget Sound Power and Light Co" is also depicted as a site occupant on the referenced map dated 1950. "Snohomish County Power & Light P.U.D. No. 1" facilities are shown on the site in the Sanborn fire insurance map dated 1957. Potential historic sources of contamination at the site are discussed in Section 4.0. Current facilities at the site include offices, a training center, and a warehouse. There is an existing 1,000-gallon single-walled diesel underground storage tank (UST) at the site, located near the southeast corner of the Electric Building; this UST contains fuel for the backup emergency generator.

Site surface topography is generally flat and at the same elevation as the surrounding streets, except for the southern portion of the site where the ground surface slopes downward toward the Hewitt Avenue Bridge and BNSF ROW where the tracks are situated several feet below the ground surface elevation of the PUD property. The site elevations range from approximately 161 feet to 168 feet (City of Everett Datum). Snohomish River, the nearest surface water body, is located approximately ½-mile southeast of the site.

3.2. Geologic and Hydrogeologic Conditions

The site lies within an area mapped as advance glacial outwash of the Vashon Stade of the Fraser Glaciation. The advance glacial outwash generally consists of stratified sand with gravel and some cobbles. Glacial till of the Vashon Stade of the Fraser Glaciation is mapped in the northeast corner of the site and east of the site. The glacial till consists of a glacially consolidated, unsorted mixture of silt, sand, gravel, cobbles and boulders. The upper soil profile encountered in recent and previous environmental and geotechnical borings at the site generally consists of approximately 3 to 10 feet of silty sand fill soil underlain by approximately 11 to 20 feet of glacial till comprised of stiff to hard silt and clay with varying amounts of sand. Advance outwash sand with varying silt and gravel content was encountered below the glacial till to the maximum depth explored, about 29 feet bgs, by Hart Crowser in 1991.

Two well logs dated 1953 and 1958 were identified for the site. The well log dated 1953 is for a 12-inch-diameter ground source heat pump well that was drilled on the site (Figure 2) to a reported depth of 303 feet bgs. The well log dated 1958 is for a 12-inch-diameter secondary ground source heat pump well that was drilled to 380 feet bgs. The well logs indicate the surficial aquifer consisting of "wet water sand" was encountered from approximately 76 to 103 feet bgs. Alternating layers of clay, "hard pan," "tight" dry sand, and "tight" sand and clay were encountered above the surficial aquifer. Alternating sand and clay deposits were encountered below the surficial aquifer. Water well reports dated 1997 indicate that these two wells were abandoned with grout and grout with bentonite clay. The approximate locations of the abandoned wells are shown in Figure 2.

Perched groundwater was encountered at the contact between the surficial fill soil and underlying native glacial till soil in some of the recent and previous explorations at random, isolated locations on the site. Based on the topography in the vicinity of the site the groundwater flow direction is likely toward the southeast toward the Snohomish River. Details regarding subsurface conditions at the site based on recent exploratory drilling are included in Section 5.0.

4.0 PREVIOUS ENVIRONMENTAL INVESTIGATION AND CLEANUP ACTIONS - 1990 TO 2000

The following is a summary of potential historic sources of contamination at the site, documented historic releases, and results of assessment and previous cleanup actions conducted between 1990 and 2000. The information is based on our review of previous reports and correspondence listed in Section 7.0. The information is organized based on six discrete areas of documented or suspect contamination at the site; refer to Figure 2 for the approximate locations of features and explorations described below.

- Waste Oil Area Remedial Excavation
- Transformer Oil PCB Release and Remedial Excavation
- Maintenance Garage UST Removals and Remedial Excavations
- New Parking Garage Remedial Excavations
- Heating Oil UST Removal
- Generator Diesel UST Removal

4.1. Waste Oil Area Remedial Excavation (1989-1991)

Environmental reports dated 1989 to 1991 identified the southwest portion of the PUD property as a waste oil and industrial refuse disposal area where discarded insulator components, concrete, metal coils, brick fragments, glass and lumber were observed. Test pits were completed in this area to evaluate the extent of fill/debris and contaminated soil. Based on the test pits completed, oily waste in this area was observed to extend to approximately 5 feet bgs; COCs in soil included petroleum hydrocarbons, lead and PCBs.

An estimated 975 cubic yards of affected soil/debris was determined to be located in this area based on the test pit exploration and sampling from 1989 to 1991. Remedial excavation of 799 tons of contaminated soil was performed in this area in 1991; contaminated soil was transported to a permitted landfill for disposal. The lateral extent of soil excavated was identified based on visible soil staining and odor. Stained soil reportedly appeared to extend to the south. The vertical limit of excavation was a visibly apparent layer

of silty soil underlying the stained soil. The waste oil area remedial excavation was backfilled with imported sandy soil and the area subsequently graded and paved.

Two composite soil samples from the western excavation sidewall had concentrations of TPH and/or total lead exceeding current MTCA Method A cleanup levels. Remedial excavation verification samples were composited and analyzed for TPH, total lead, and PCBs. Except for soil samples at the western property line, the concentrations of TPH, lead and PCBs in the remaining confirmation samples were less than MTCA Method A cleanup levels.

Based on the available documentation, the following site characterization data gaps were identified in relation to the waste oil area assessment and remedial excavation:

- There is a possibility that impacted soil remains in the waste oil area.
- No confirmation soil testing was performed after contaminated soil removal to document the presence or absence of other COCs associated with waste oil.

GeoEngineers completed 2013 environmental soil borings B-1 through B-7 to evaluate potentially impacted soil in the former waste oil area. Soil samples from the borings were submitted for chemical analysis of one or more of the following: gasoline-, diesel-, and oil-range petroleum hydrocarbons, BETX, VOCs, PCBs, PAHs and metals as described in Section 5.0.

4.2. Transformer Oil PCB Release and Remedial Excavation (1990 and 1991)

An isolated area of PCB-contaminated soil was discovered in the south-central portion of the site by the PUD in 1990. The contaminated soil was evidently adjacent to a parking lot drain that was subsequently removed. Concentrations of PCBs in the initial samples of contaminated soil submitted for chemical analysis were greater than the MTCA Method A cleanup level of 1 mg/kg. Approximately 27 cubic yards of PCB-contaminated soil was excavated in 1991 and transported off-site for treatment/disposal at Chem-Security Systems, Inc. Landfill in Arlington, Oregon. The concentrations of PCBs in cleanup confirmation soil samples obtained from the limits of the 1991 remedial excavation were less than the MTCA Method A cleanup level. The release and remedial excavation results were reported to Ecology in 1991. File documents do not include a cleanup confirmation or opinion letter from Ecology.

Based on the available documentation, the following site characterization data gaps were identified in relation to the transformer oil release and remedial excavation area:

- Cleanup confirmation soil samples were not tested for transformer mineral oil, the presumed source of PCBs.
- The specific locations of cleanup confirmation soil samples were not provided in the available report.

GeoEngineers completed borings B-8 through B-12 in this area and submitted samples from the borings for NWTPH-Dx analyses to evaluate possible residual mineral oil; soil samples from the borings were also submitted for MTCA 5 Metals analyses as described in Section 5.0.

4.3. Maintenance Garage UST Removals and Remedial Excavations (1990)

Three facility USTs identified as D-1, D-2, and D-3 were removed from the vicinity of the previous PUD maintenance garage in 1990. The USTs were in discrete locations and not within a common excavation pit (Figure 2). Tank D-1 was a 10,000-gallon gasoline tank, Tank D-2 was a 300-gallon waste oil tank and Tank D-3 was a 300-gallon used transformer oil tank. Soil sampling during each UST removal is described below.

Gasoline Tank D-1: Thirteen soil samples from the Tank D-1 excavation were analyzed for TPH and BETX. Initial confirmation sample analyses indicated that TPH and BETX concentrations in excavation wall samples were less than the MTCA Method A cleanup levels. A composite soil sample was obtained from the base of the excavation; TPH and benzene were detected at concentrations exceeding the corresponding MTCA Method A cleanup levels. To determine where additional excavation would be necessary, discrete excavation base samples were analyzed for TPH. TPH was detected at a concentration exceeding the MTCA Method A cleanup level in the western portion of the excavation base. The western portion of the excavation was subsequently overexcavated and resampled; TPH was detected at concentrations less than the MTCA Method A cleanup level in confirmation samples obtained from the western portion of the excavation.

Waste Oil Tank D-2: Eight soil samples from the excavation sidewalls and two composite soil samples from the base of the excavation were submitted for BETX and TPH analyses. BETX was detected at concentrations less than MTCA Method A cleanup levels. TPH was detected at concentrations less than the MTCA Method A cleanup level in composite soil samples obtained from the base of the excavation. Elevated concentrations of TPH were detected in soil samples obtained from the excavation sidewalls. The sidewalls were subsequently overexcavated and resampled for TPH. TPH was detected at concentrations less than the MTCA Method A cleanup level in confirmation samples obtained from the final excavation sidewalls.

Used Transformer Oil Tank D-3: TPH was detected at concentrations exceeding the MTCA Method A cleanup level in effect at the time (e.g. 200 mg/kg) in samples obtained from the north sidewall of the excavation[1]. Due to the close proximity of the maintenance building (now removed) near the north wall of the tank excavation, additional soil could not be removed from the north excavation sidewall. To determine the horizontal extent of the soil remaining in place with TPH concentrations exceeding the MTCA Method A cleanup level in effect at that time, additional samples were obtained one to two feet into the north wall beneath the maintenance building, at an approximate depth that corresponded to the position of the base of the removed UST (5 feet bgs). Analytical results from these samples indicated TPH concentrations less than the former and current MTCA Method A cleanup levels.

Ecology issued a NFA letter dated February 19, 1991 for the three UST removals described above. However, on March 4, 2013 Ecology issued a letter to the PUD stating that further action is required "south of the maintenance shop and transformer repair building" (assumed to be the location of Tank D-3, the used transformer oil tank). It appears that Ecology's 2013 letter stating further action is required south of the maintenance shop and transformer repair building is based on a typographical error in the 1990 CH2MHill report: the reported TPH concentration of 400,000 parts per million in a soil sample obtained from the north sidewall of the excavation should read 400 ppm (e.g. 400 mg/kg).

[1] There is a typographical error in the 1990 CH2MHill report: the reported TPH concentration of 400,000 parts per million in a soil sample obtained from the north sidewall of the excavation should read 400 ppm (e.g. 400 mg/kg).

Based on the available documentation, the following site characterization data gaps were identified in relation to the maintenance garage UST removals:

- The remedial excavation boundaries and specific locations of cleanup confirmation soil samples were not provided in the available report.

Borings B-8 through B-12 were completed to evaluate soil in the area of the former transformer oil UST (Tank D-3).

4.4. New Parking Garage Remedial Excavation (1992-1993)

The PUD constructed a below-grade parking garage on the site that included excavation extending 6 feet below original pre-construction grades in locations near the former maintenance garage USTs; spills from historic maintenance activities may also have occurred in the area where the maintenance parking garage was constructed.

Hart Crowser borings B-5, B-6, B-7, B-13 and B-14 were completed in the parking garage area in 1992 to assess impacted soil that was anticipated to be encountered and removed for construction of the PUD parking garage. COCs in this area of the site included metals, PAHs, petroleum and volatiles. Chemical analytical results from the borings that exceeded corresponding cleanup levels in place at the time are summarized below:

- Boring B-5: Sample from 2 feet bgs; lead and benzo(a)pyrene, one of the carcinogenic PAH compounds, detected at concentrations exceeding MTCA Method A cleanup levels.
- Boring B-6: Sample from 2 feet bgs; TPH, benzene, and lead detected at concentrations exceeding corresponding MTCA Method A cleanup levels, copper detected at concentration exceeding the MTCA Method B cleanup level.
- Boring B-7: Sample from 2 feet bgs; lead and benzo(a)pyrene detected at concentrations exceeding corresponding MTCA Method A cleanup levels.
- Boring B-13: Sample from 2 feet bgs; lead and benzo(a)pyrene detected at concentrations exceeding corresponding MTCA Method A cleanup levels.
- Boring B-14: Sample from 1 foot bgs; benzene and benzo(a)pyrene detected at concentrations exceeding corresponding MTCA Method A cleanup levels. Sample from 12 feet bgs: benzene detected at a concentration greater than the MTCA Method A cleanup level.

Remedial excavation of contaminated soil was conducted in the northwest portion of the new parking garage footprint in January 1992 (Figure 2). A total of 1,701 tons of contaminated soil from the parking garage remedial excavation were transported off-site to a permitted landfill for disposal. The lateral extent of remedial excavation was limited by the concrete apron at the maintenance building that was present at the time to the south, and by the concrete loading dock at the former warehouse that was present at the time to the west. The northern and eastern lateral extents of remedial excavation were reportedly determined based on removal of soil with visible petroleum staining. The vertical extent of the excavation was the underlying silty soil layer below the fill soil containing debris fragments and hydrocarbon-stained soil. Composite confirmation samples were collected from the excavation sidewalls and base. COCs were detected at concentrations less than MTCA Method A cleanup levels in remedial excavation confirmation soil samples obtained from the north and east sidewalls. COCs were detected at concentrations exceeding

MTCA Method A cleanup levels in excavation limits samples obtained from the south and west sidewalls of the excavation.

Contaminated soil was removed from utility trenches and other areas during parking garage construction activities in 1993. Five samples of stockpiled soil that had been removed from utility trench areas were tested for lead and TPH. Approximately 105 tons of excavated utility trench soil with concentrations of lead and TPH exceeding MTCA Method A cleanup levels was transported off site to a permitted landfill for permitted disposal.

Additional contaminated soil was excavated in 1993 during construction of the western portion of the parking garage. Contaminated soil profiling for waste disposal purposes was based on pre-excavation soil sampling from 16 test pits that extended to 7 feet bgs. Contaminated soil excavated from the western half of the parking garage included the following:

- Approximately 206 tons of soil exceeding the Dangerous Waste criteria for TCLP lead were disposed at the hazardous waste landfill in Arlington, Oregon.
- Approximately 1,164 tons of soil exceeding MTCA Method A cleanup levels for lead and TPH but not exceeding dangerous waste criteria were disposed at the Subtitle D landfill in Arlington, Oregon.
- Approximately 307 tons of soil containing lead at concentrations greater than 100 mg/kg and with elevated TPH concentrations were disposed at a permitted landfill.

Cleanup confirmation soil sampling from the 1993 parking garage excavation was limited to the following:

- Two confirmation samples were obtained from 5 feet bgs and deeper in the western half of the parking garage. The samples were tested for lead; lead was detected at concentrations less than the MTCA Method A cleanup level. TPH was not analyzed.
- Gasoline-contaminated soils were identified in the western portion of the garage excavation near the former gasoline pump island associated with UST D-1. Approximately 120 cubic yards of gasoline-contaminated soil was excavated to 10 feet bgs. One excavation sidewall and one base sample were obtained from the 1993 remedial excavation in this area. Gasoline-range petroleum hydrocarbons were detected at concentrations less than the MTCA Method A cleanup level. BETX and lead were not analyzed.

Based on the available documentation, the following site characterization data gaps were identified in relation to contaminated soil encountered and removed for the 1992 and 1993 parking garage construction activities:

- Confirmation sampling to document subsurface soil conditions after removal of lead- and TPH-impacted soil was limited.
- No confirmation sampling was performed to document subsurface conditions after removal of soil from the parking garage area with concentrations of cPAHs, copper and benzene greater than MTCA Method A cleanup levels based on 1991 soil borings.

Borings B-13 through B-16 were completed in 2013 to evaluate soil in accessible areas corresponding to the parking garage remedial excavation and former gasoline UST (Tank D-1). The area represented by Hart Crowser 1991 boring B-14 was not accessible due to the existing parking garage structure.

4.5. Heating Oil UST Removal (1992)

The PUD discovered and removed a 1,000-gallon heating oil UST from the western margin of the site in 1992 (Figure 2). The UST was connected to the boiler room in a building which had previously been demolished. The UST was discovered during construction activities associated with the Annex/Warehouse Building. The UST contents were identified as heating oil; PCBs were not identified in the oil.

Approximately 80 cubic yards of contaminated soil was excavated during the 1992 UST removal and transported to a permitted landfill for disposal. TPH was detected in confirmation samples from the limits of the remedial excavation at concentrations less than MTCA Method A cleanup levels.

No site characterization data gaps were identified in relation to the removed 1992 heating oil UST.

4.6. Generator Diesel UST Removal (2000)

The PUD removed a 1,000-gallon diesel UST from the site in 2000. The UST contained fuel for the backup emergency generator. The UST was located adjacent to the generator room, in the same location as the existing tank (1,000-gallon diesel UST) that replaced the removed tank. The UST was removed in 2000 so repairs could be made to nearby structures. There was no evidence of petroleum contamination surrounding the UST. Approximately 70 cubic yards of soil were excavated in connection with the UST removal. A total of seven confirmation soil samples were collected as part of UST removal and submitted for chemical analysis of petroleum. Confirmation samples consisted of four excavation sidewall samples and one base sample and two samples from the excavated soil stockpile. Diesel-range hydrocarbons were not detected in any of the seven soil samples submitted for chemical analysis.

5.0 EXPLORATION DRILLING AND SOIL SAMPLING (2013)

Sixteen environmental borings identified as B-1 through B-16 were completed in September 2013 to evaluate subsurface soil conditions and assess the identified areas of site characterization data gaps. The approximate exploration locations are shown in Figure 2. Drilling was completed by a licensed driller using hollow-stem auger drilling methods and observed by a representative of GeoEngineers. Soil samples were obtained from the explorations for field screening and potential chemical analysis. The exploration and sampling program is described in Appendix A. Soil field screening results are shown in the soil boring logs in Appendix A.

The 2013 boring locations and sample depths were selected based on the following rationale:

- Prior to soil sampling activities GeoEngineers prepared a cut and fill model of the site based on ground surface elevations obtained from historic topographic surveys and final as-built topographic surveys. The model was used to identify previous ground surface elevations consistent with when the original sampling was conducted in a given area and thus determine target depths for the 2013 samples that would be representative of the same depth of contamination documented during previous environmental studies.

- Borings B-1 through B-7 were completed to evaluate soil in the remediated waste oil area. The locations and depths of the borings were chosen to evaluate previous sampling data gaps in the general area of the Hart Crowser test pits and remedial excavation.
- Borings B-8 through B-12 were completed to evaluate soil in the area of the remediated former transformer oil PCB release and former transformer oil UST (Tank D-3). The locations and depths of the borings were chosen to evaluate the lateral and vertical extent of the PCB release area and perform soil sampling at the former used transformer oil UST location.
- Borings B-13 through B-16 were completed to evaluate soil in accessible areas corresponding to the parking garage remedial excavation and former gasoline UST (Tank D-1). The locations and depths of 2013 borings B-13 and B-14 were chosen to check for chemicals of concern identified in the 1991 Hart Crowser borings B-6 and B-13. The locations and depths of 2013 borings B-15 and B-16 were chosen to check for chemicals of concern identified in 1991 Hart Crowser borings B-5 and B-7 (see Figure 2).

The chemical analytical testing program was based on the COCs identified during previous assessment and remedial excavation activities as described in Section 4.0.

5.1. Subsurface Conditions

5.1.1. Waste Oil Area – Borings B-1 through B-7

Approximately 3 to 8 feet of fill soil consisting of silty sand and silt was encountered in borings B-1 through B-7, which extended to a maximum depth of 8.5 feet bgs. Oil-stained soil, industrial refuse, discarded insulator components, concrete, metal coils, brick fragments, and lumber were not observed in the 2013 borings. Occasional asphalt and glass fragments were observed in samples obtained from the fill soil in borings B-2 and B-7, respectively. Relict topsoil consisting of organic silt or silt with occasional organic matter was observed below the fill in borings B-1, B-3, B-5 and B-6. Native glacial drift consisting of medium stiff to stiff silt was encountered below the fill and relict topsoil.

Slight evidence of petroleum hydrocarbon-related sheen was observed in the soil samples obtained from borings B-1, B-2, B-4 and B-7 at depths ranging from approximately 2.5 to 8 feet bgs. The slight sheens were observed in fill soil comprised of gray and black silty sand and sandy silt within the upper 5 feet in borings B-1, B-2 and B-7 with the exception of boring B-4, where a slight sheen was observed in a wet sandy silt unit approximately 8 feet bgs. The only field screening indications of suspect contamination observed were the referenced slight sheens. The soil samples submitted for chemical analyses from these borings were selected based on the slight sheens observed.

5.1.2. Transformer Oil PCB Release and Transformer Oil Tank Area– Borings B-8 through B-12

Approximately 5 feet of fill soil was encountered in B-8 and approximately 10 to 11 feet of fill soil was encountered in borings B-9 through B-12. The fill soil generally consisted of silty sand and silt. Native glacial drift consisting of medium stiff to very stiff silt was encountered below the fill soil.

Evidence of petroleum hydrocarbon-related sheen was observed in the soil samples obtained from borings B-8, B-10 and B-12 at depths ranging from approximately to 9.5 to 10 feet bgs, and from boring B-11 from approximately 4 to 6 feet bgs. Moderate sheen and a faint petroleum odor was observed in the soil sample obtained from a wet sandy silt horizon within the native silt in Boring B-8. Slight sheens were generally

observed in fill soil comprised of silt with occasional wood and charred wood fragments in borings B-10 and B-11, and in wet silty sand fill soil just above the underlying native silt in Boring B-12.

5.1.3. Parking Garage and Former Gasoline UST Area – Borings B-13 through B-16

Silty sand fill ranging from 3 feet to approximately 9.5 feet thick was encountered in borings B-13 through B-16. Soil samples obtained from the fill soil in boring B-13 contained occasional asphalt, glass, plastic, and charred wood fragments. Native glacial drift consisting of medium stiff to very stiff silt or very dense silty sand was encountered below the fill soil.

Slight evidence of petroleum hydrocarbon-related sheen was observed in the soil samples obtained from boring B-13 at depths ranging from approximately to 2.5 to 6.5 feet bgs, and from boring B-14 from approximately 6 to 7 feet bgs. The slight sheens were observed in fill soil containing occasional asphalt, glass, plastic, and charred wood fragments in boring B-13, and in silty sand fill soil just above the underlying native silt in Boring B-14. No evidence of petroleum hydrocarbon-related sheen was observed in soil samples obtained from borings B-15 and B-16.

6.0 SOIL SAMPLE CHEMICAL ANALYSES

Soil samples from the 2013 environmental borings were tested for COCs based on historical site use, historical analytical testing and field screening results. Chemical analytical data from the 2013 sampling were evaluated relative to MTCA Method A soil cleanup levels for unrestricted land use. Method B soil cleanup levels were used for compounds and metals where Method A cleanup levels are not established. A total of 26 soil samples obtained in 2013 were submitted to ALS Environmental located in Everett, Washington for chemical analysis. The chemical analytical results are summarized in Table 1. Laboratory reports are provided in Appendix B.

6.1. Waste Oil Area – Borings B-1 through B-7

The soil samples from the waste oil area were submitted for chemical analysis of one or more of the following: gasoline-, diesel-, and oil-range petroleum hydrocarbons, BETX, VOCs, PCBs, PAHs and metals.

- cPAHs were detected at concentrations exceeding the MTCA Method A cleanup level in the soil sample obtained from boring B-2 at 5.5 feet bgs and the soil sample obtained from B-7 at 3 feet bgs.
- Arsenic, cadmium and lead were detected at concentrations exceeding the corresponding MTCA Method A cleanup levels in the soil sample from B-7 at 3 feet bgs.
- Gasoline-, diesel-, and oil-range petroleum hydrocarbons, BETX, VOCs, PCBs, PAHs and metals either were not detected or the detected concentrations were less than the corresponding MTCA Method A and B cleanup levels in the remaining soil samples analyzed from borings B-1 through B-7.

6.2. Transformer Oil PCB Release and Transformer Oil UST Area – Borings B-8 through B-12

The soil samples from the transformer oil PCB release and transformer oil UST area were submitted for chemical analysis of one or more of the following: diesel and mineral oil-range petroleum hydrocarbons, PCBs, and metals.

- Lead was detected at a concentration exceeding the MTCA Method A cleanup level in the soil sample from B-11 at 5.5 feet bgs.

- Diesel- and mineral oil-range petroleum hydrocarbons, PCBs and metals either were not detected or the detected concentrations were less than the corresponding MTCA Method A cleanup levels in the remaining soil samples analyzed from borings B-8 through B-12.

6.3. Parking Garage and Former Gasoline UST Area – Borings B-13 through B-16

The soil samples from parking garage excavation and the former gasoline UST area were submitted for chemical analysis of one or more of the following: gasoline, diesel, and oil-range petroleum hydrocarbons, BETX, PCBs, PAHs, metals, and copper.

- cPAHs were detected at a concentration exceeding the MTCA Method A cleanup level in the soil sample from B-14 at 5.5 feet bgs.
- Lead and copper were detected at concentrations exceeding the MTCA Method A or B cleanup levels in the soil sample from B-13 at 8 feet bgs.
- Gasoline-, diesel- and oil-range petroleum hydrocarbons, BETX, PAHs and metals either were not detected or the detected concentrations were less than the corresponding MTCA Methods A and B cleanup levels in the remaining soil samples analyzed from borings B-13 through B-16.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This data gaps assessment fulfilled the objective of identifying areas of the site that are likely to satisfy current MTCA requirements for a completed cleanup, and identifying locations and conditions likely to require further assessment and possibly cleanup action. Based on the results of prior studies and the 2013 sampling, conditions at the former heating oil UST in the western portion of the site, and at former Tanks D-1, D-2 and D-3 in the central portion of the site would meet Ecology's requirements for completed cleanups in our opinion. The results of the chemical analytical testing performed on confirmation soil samples from the limits of the transformer oil PCB release remedial excavation and the 2013 sampling indicate that the transformer oil PCB release to soil was successfully remediated. No further action is warranted in these locations. The PUD should consider requesting Ecology confirmation of the NFA condition by entering the VCP and requesting an Ecology opinion letter for these prior documented releases.

COCs were detected at concentrations exceeding MTCA Methods A or B cleanup levels in soil samples obtained from 2013 borings B-2 and B-7 (Waste Oil Area), boring B-11 (Transformer Oil PCB Release and Transformer Oil UST Area), and borings B-13 and B-14 (Parking Garage and Gasoline UST Area). Conclusions and recommendations for additional characterization to delineate the lateral and vertical extent of soil contamination and COCs in soil are presented below. Proposed locations for additional exploration and sampling are shown in Figure 3.

7.1. Waste Oil Excavation Area

- GeoEngineers submitted soil samples obtained from the 2013 borings completed in the waste oil excavation area for chemical analysis of the compounds listed in WAC 173-340-900 Table 830-1 Required Testing for Petroleum Releases, Waste Oils and Unknown Oils because some of these analytes had not previously been tested for in soil samples from 1991. Of all soil samples submitted for chemical analysis, cPAHs, arsenic, cadmium, and lead were the only COCs detected at concentrations exceeding MTCA Method A cleanup levels; the referenced COCs were encountered in

borings B-2 and B-7. COCs were either not detected or were detected at concentrations less than the MTCA Method A cleanup levels in the remaining borings completed in this area of the site.

- It appears that soil with concentrations of COCs greater than MTCA Method A cleanup levels is not widespread across the waste oil remedial excavation area. However, supplemental assessment is needed to evaluate the extent of contaminant concentrations exceeding cleanup levels in the vicinity of 2013 borings B-2 and B-7. The COCs in this area appear to be collocated with the black and gray fill soil containing fragments of charred wood, asphalt, and glass fragments.
- Proposed supplemental environmental boring locations to further delineate the lateral and vertical extent of COCs in soil near borings B-2 and B-7 are shown in Figure 3. One to two samples from each boring at depths ranging from 5 to 7 feet bgs near boring B-2 and from 1 to 6 feet bgs near boring B-7 should be sampled and analyzed for cPAHs and MTCA 5 metals.

7.2. Transformer Oil PCB Release to Soil and Removal of PCB Contaminated Soil

- The results of the chemical analytical testing performed on confirmation soil samples from the limits of the transformer oil PCB release remedial excavation indicate that the transformer oil PCB release to soil was successfully remediated.
- GeoEngineers submitted soil samples obtained from the 2013 borings completed in the transformer oil PCB remedial excavation area for chemical analysis of diesel-, oil-, and mineral oil-range petroleum hydrocarbons, PCBs, and MTCA 5 Metals because some of these analytes had not previously been tested for in soil samples from 1991. Of all soil samples submitted for chemical analysis, lead was the only COC detected at a concentration exceeding the MTCA Method A cleanup level (boring B-11). COCs were either not detected or were detected at concentrations less than the MTCA Method A cleanup levels in the remaining borings completed in this area of the site. Lead is not a COC in transformer oil. It is our opinion that the elevated lead concentration at boring B-11 is possibly an isolated “hot spot” in the fill soil unrelated to the transformer oil PCB release.
- Soil containing lead at a concentration exceeding the MTCA Method A cleanup level may be localized in the 2013 boring B-11 area, within the brown, black and gray fill soil containing wood fragments. We recommend completing supplemental soil borings to further delineate the lateral and vertical extent of lead in soil near boring B-11 as shown in Figure 2. One or two samples at depths ranging from 4.5 to 7.5 feet bgs near boring B-11 should be submitted for chemical analysis of lead.

7.3. Maintenance Garage UST Removals

- The results of the chemical analytical testing performed on confirmation soil samples from the limits of the remedial excavations performed following removal of Tanks D-1, D-2 and D-3 indicate that the gasoline, waste oil, and used transformer oil releases to soil were successfully remediated as noted above. Ecology issued an NFA letter in 1991 for the referenced UST removals. In 2013 Ecology issued a further action required letter we presume refers to Tank D-3, the used transformer oil UST. As previously stated, it appears that Ecology’s 2013 further action required letter may have resulted from the typographical error in the CH2MHill memo. Previous and recent soil sample results indicate the concentrations of petroleum hydrocarbon-related constituents at the former Tank D-3 are less than current MTCA Method A cleanup levels. Based on soil samples obtained by GeoEngineers from boring B-12 at the former location of Tank D-3, mineral oil and MTCA 5 metals were detected at concentrations less than the MTCA Method A cleanup levels and PCBs were not detected.

7.4. Parking Garage Excavation Area

- GeoEngineers submitted soil samples obtained from the 2013 borings completed in the parking garage excavation area for chemical analysis of diesel-, oil- and mineral oil-range petroleum hydrocarbons, BETX, PCBs, cPAHs, PAHs, MTCA 5 Metals and copper. Of all soil samples submitted for chemical analysis, cPAHs, lead and copper were the only COCs detected at concentrations exceeding the MTCA Methods A and B cleanup levels (see Table 1 and Figure 2).
- We recommend completing supplemental soil borings to further delineate the lateral and vertical extent of cPAHs, lead and copper in soil near 2013 borings B-13 and B-14 as shown in Figure 2. One or two samples from a depth of 8.0 feet bgs near 2013 boring B-13 should be submitted for chemical analysis of lead and copper and one or two samples from 5.5 feet bgs near 2013 boring B-14 should be submitted for chemical analysis of cPAHs.
- The upper 6 feet of contaminated soil in the area of 1991 Hart Crowser boring B-14 (Figure 2) was removed during the excavation for the parking garage; however, soil compliance for benzene was not determined during the parking garage excavation activities. We recommend additional exploration and sampling at depths ranging from 6 to 15 feet bgs in this area to determine if benzene concentrations in soil in this area are in compliance with MTCA Method A cleanup levels.

8.0 LIMITATIONS

We have prepared this report for use by the PUD No. 1 of Snohomish County.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix C titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

9.0 REFERENCES

Chempro, Untitled letter from Chempro to PUD No. 1 of Snohomish County dated December 26, 1990.

CH2M Hill, "Summary of Soil Investigation for Underground Storage Tanks at Everett and Mountlake Terrace" dated October 24, 1990.

Hart Crowser, "Soil Cleanup Report, Snohomish County PUD Headquarters, Everett, Washington" dated March 3, 1992.

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Hart Crowser, "Environmental Assessment, BNRR Property, Everett, Washington, Prepared for Snohomish PUD No. 1" dated October 12, 1989.

Hart Crowser, "Geotechnical Engineering Design Report, Snohomish County PUD Headquarters Building, Everett, Washington" dated July 11, 1991.

Hart Crowser, "Technical Memorandum of Interim Results, Task 1, Western Property Site Characterization, Assess Waste Oil Disposal Area, Snohomish County PUD Headquarters, Everett, Washington" dated June 14, 1991.

PUD No. 1 of Snohomish County, "Site Characterization Report – 2320 California St., Everett, WA" dated November 18, 1992.

Shannon & Wilson, "UST Removal Analytical Results, Snohomish County PUD Headquarters, 2320 California Street, Everett, WA" dated September 1, 2000.

Letters received by Department of Ecology (Ecology) from PUD No. 1 of Snohomish County dated May 21, 1990, May 24, 1990, and February 12, 1991 regarding a transformer oil PCB release and remedial excavation that was performed at the site.

USGS map titled "Geologic map of the Everett 7.5 minute quadrangle, Snohomish County, Washington" by J.P. Minard, dated 1985.

USGS Water-Resources Investigations Report 96-4312, "The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington" by B.E. Thomas and others, 1997.

Washington State Department of Ecology Washington State Well Log Viewer website https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/default.aspx.

TABLES

GeoEngineers

Table 1

Summary of Soil Field Screening and Chemical Analytical Data[1]

2013 Environmental Borings

Snohomish County PUD No. 1 Headquarters

Everett, Washington

Sample Name[2]	Date Sampled	Depth (feet bgs)	Field Screening[3]		Petroleum Hydrocarbons (mg/kg)				VOCs[6] (mg/kg)					Total PCBs (mg/kg)[7]
			Water Sheen	Headspace Vapor (ppm)	Gasoline Range[4]	Diesel Range[5]	Oil Range[5]	Mineral Oil[5]	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2,3-Trichlorobenzene	
B1-1-3-20130908	9/8/2013	3.0	SS	<1	<3.0	<25	**280**	–	<0.005	<0.01	<0.01	<0.02	**0.011**	**0.12**
B1-2-5.5-20130908	9/8/2013	5.5	NS	<1	<3.0	<26	<52	–	<0.005	<0.01	<0.01	<0.02	**0.012**	<0.10
B2-2-5.5-20130908	9/8/2013	5.5	SS	<1	<3.0	<35	**280**	–	<0.005	<0.01	<0.01	<0.02	<0.010	<0.10
B2-3-8-20130908	9/8/2013	8.0	NS	<1	<3.0	<25	<50	–	<0.005	<0.01	<0.01	<0.02	<0.010	<0.10
B3-2-5.5-20130908	9/8/2013	5.5	NS	<1	<3.0	<26	**69**	–	–	–	–	–	–	<0.10
B4-3-8-20130908	9/8/2013	8.0	SS	<1	<3.0	<25	<50	–	<0.005	<0.01	<0.01	<0.02	<0.010	<0.10
B4-4-10.5-20130908	9/8/2013	10.5	NS	<1	<3.0	<25	<50	–	<0.005	<0.01	<0.01	<0.02	<0.010	<0.10
B5-2-5.5-20130908	9/8/2013	5.5	NS	<1	<3.0	<25	<50	–	–	–	–	–	–	–
B6-1-3-20130908	9/8/2013	3.0	NS	<1	<3.0	<25	<50	–	–	–	–	–	–	–
B7-1-3-20130907	9/7/2013	3.0	SS	<1	<5.3	**140**	**390**	–	<0.005	<0.01	<0.01	<0.02	<0.010	**0.52**
B7-2-5.5-20130908	9/7/2013	5.5	NS	<1	<3.0	<25	<50	–	<0.005	<0.01	<0.01	<0.02	<0.010	<0.10
B8-4-10.5-20130907	9/7/2013	10.5	MS	<1	–	–	–	**250**	–	–	–	–	–	<0.10
B8-5-13-20130907	9/7/2013	13.0	NS	<1	–	–	–	<50	–	–	–	–	–	–
B9-3-8-20130907	9/7/2013	8.0	NS	<1	–	–	–	<50	–	–	–	–	–	–
B10-3-8-20130907	9/7/2013	8.0	SS	<1	–	–	–	<51	–	–	–	–	–	–
B10-4-10.5-20130907	9/7/2013	10.5	NS	<1	–	–	–	<50	–	–	–	–	–	–
B11-2-5.5-20130907	9/7/2013	5.5	SS	<1	–	**46**	**120**	<50	–	–	–	–	–	–
B11-3-8-20130907	9/7/2013	8.0	NS	<1	–	–	–	<50	–	–	–	–	–	–
B12-4-10.5-20130907	9/7/2013	10.5	SS	<1	–	–	–	**1000**	–	–	–	–	–	<0.10
B12-5-11.5-20130907	9/7/2013	11.5	SS	<1	–	–	–	**520**	–	–	–	–	–	–
B13-3-8-20130907	9/7/2013	8.0	SS	<1	<3.0	**55**	**74**	–	<0.030	<0.050	<0.050	<0.20	–	<0.10
B13-4-10.5-20130907	9/7/2013	10.5	NS	<1	<3.0	<25	<50	–	<0.030	<0.050	<0.050	<0.20	–	–
B14-2-5.5-20130907	9/7/2013	5.5	SS	<1	<3.0	<25	**84**	–	<0.030	<0.050	<0.050	<0.20	–	–
B14-3-8-20130907	9/7/2013	8.0	NS	<1	<3.0	<25	<50	–	<0.030	<0.050	<0.050	<0.20	–	–
B15-1-3-20130907	9/7/2013	3.0	NS	<1	–	–	–	–	–	–	–	–	–	–
B16-1-3-20130907	9/7/2013	3.0	NS	<1	–	–	–	–	–	–	–	–	–	–
MTCA Method A or B Cleanup Level for Unrestricted Land Use					100	2,000	2,000	4,000	0.03	7	6	9	Unavailable	1
Metals Background Concentrations[13]					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Name[2]	Date Sampled	Depth (feet bgs)	PAHs[8] (mg/kg)											Total cPAHs[8] (mg/kg)
			Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(ghi)perylene	TEQ
B1-1-3-20130908	9/8/2013	3.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	**0.039**	<0.020	**0.077**	**0.081**	**0.045**	**0.060**
B1-2-5.5-20130908	9/8/2013	5.5	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B2-2-5.5-20130908	9/8/2013	5.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.280**	<0.1	**0.360**	**0.330**	**0.160**	**0.219**
B2-3-8-20130908	9/8/2013	8.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B3-2-5.5-20130908	9/8/2013	5.5	--	--	--	--	--	--	--	--	--	--	--	ND
B4-3-8-20130908	9/8/2013	8.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B4-4-10.5-20130908	9/8/2013	10.5	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B5-2-5.5-20130908	9/8/2013	5.5	--	--	--	--	--	--	--	--	--	--	--	--
B6-1-3-20130908	9/8/2013	3.0	--	--	--	--	--	--	--	--	--	--	--	--
B7-1-3-20130907	9/7/2013	3.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.390**	**0.120**	**0.560**	**0.980**	**0.620**	**0.824**
B7-2-5.5-20130908	9/7/2013	5.5	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B8-4-10.5-20130907	9/7/2013	10.5	--	--	--	--	--	--	--	--	--	--	--	--
B8-5-13-20130907	9/7/2013	13.0	--	--	--	--	--	--	--	--	--	--	--	--
B9-3-8-20130907	9/7/2013	8.0	--	--	--	--	--	--	--	--	--	--	--	--
B10-3-8-20130907	9/7/2013	8.0	--	--	--	--	--	--	--	--	--	--	--	--
B10-4-10.5-20130907	9/7/2013	10.5	--	--	--	--	--	--	--	--	--	--	--	--
B11-2-5.5-20130907	9/7/2013	5.5	--	--	--	--	--	--	--	--	--	--	--	--
B11-3-8-20130907	9/7/2013	8.0	--	--	--	--	--	--	--	--	--	--	--	--
B12-4-10.5-20130907	9/7/2013	10.5	--	--	--	--	--	--	--	--	--	--	--	--
B12-5-11.5-20130907	9/7/2013	11.5	--	--	--	--	--	--	--	--	--	--	--	--
B13-3-8-20130907	9/7/2013	8.0	--	--	--	--	--	--	--	--	--	--	--	--
B13-4-10.5-20130907	9/7/2013	10.5	--	--	--	--	--	--	--	--	--	--	--	--
B14-2-5.5-20130907	9/7/2013	5.5	<0.020	<0.020	<0.020	<0.020	**0.044**	**0.042**	**0.037**	**0.010**	**0.034**	**0.032**	**0.086**	**0.157**
B14-3-8-20130907	9/7/2013	8.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B15-1-3-20130907	9/7/2013	3.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
B16-1-3-20130907	9/7/2013	3.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	ND
MTCA Method A or B Cleanup Level for Unrestricted Land Use			5.0			Unavailable	4,800	3,200	Unavailable	24,000	3,200	2,400	Unavailable	0.1
Metals Background Concentrations[13]			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sample Name[2]	Date Sampled	Depth (feet bgs)	Metals (mg/kg)[9]					
			Mercury	Arsenic	Cadmium	Chromium	Lead	Copper
B1-1-3-20130908	9/8/2013	3.0	**0.31**	**9.0**	<0.50	**39**	**91**	--
B1-2-5.5-20130908	9/8/2013	5.5	**0.13**	**5.2**	<0.50	**63**	**9.6**	--
B2-2-5.5-20130908	9/8/2013	5.5	**0.13**	**11**	<0.50	**58**	**110**	--
B2-3-8-20130908	9/8/2013	8.0	**0.077**	**13**	<0.50	**84**	**12**	--
B3-2-5.5-20130908	9/8/2013	5.5	**0.11**	**3.7**	<0.50	**60**	**9.3**	--
B4-3-8-20130908	9/8/2013	8.0	**0.16**	**4.8**	<0.50	**86**	**14**	--
B4-4-10.5-20130908	9/8/2013	10.5	**0.056**	**10**	<0.50	**83**	**9.2**	--
B5-2-5.5-20130908	9/8/2013	5.5	**0.15**	**3.4**	<0.50	**45**	**7.9**	--
B6-1-3-20130908	9/8/2013	3.0	**0.082**	**8.7**	<0.50	**78**	**10**	--
B7-1-3-20130907	9/7/2013	3.0	**0.22**	**32**	**3.2**	**46**[10]	**410**	--
B7-2-5.5-20130908	9/7/2013	5.5	<0.020	**3.2**	<0.50	**34**	**3.5**	--
B8-4-10.5-20130907	9/7/2013	10.5	**0.063**[11]	**11**	<0.50	**86**	**10**	--
B8-5-13-20130907	9/7/2013	13.0	**0.065**[11]	**5.3**	<0.50	**66**	**8.2**	--
B9-3-8-20130907	9/7/2013	8.0	**0.093**[11]	**7.2**	<0.50	**79**	**10**	--
B10-3-8-20130907	9/7/2013	8.0	**0.093**[11]	**5.4**	**0.59**	**68**	**22**	--
B10-4-10.5-20130907	9/7/2013	10.5	**0.10**[11]	**5.6**	**0.54**	**61**	**210**	--
B11-2-5.5-20130907	9/7/2013	5.5	**0.11**[11]	**19**	**0.83**	**61**	**410**	--
B11-3-8-20130907	9/7/2013	8.0	**0.036**[11]	**4.2**	<0.50	**34**	**4.2**	--
B12-4-10.5-20130907	9/7/2013	10.5	**0.057**[11]	**7.8**	<0.50	**67**	**16**	--
B12-5-11.5-20130907	9/7/2013	11.5	**0.071**[11]	**12**	<0.50	**88**	**10**	--
B13-3-8-20130907	9/7/2013	8.0	**0.13**	**8.2**	**0.69**	**46**	**310**	**5000**
B13-4-10.5-20130907	9/7/2013	10.5	**0.084**	**10**	<0.50	**85**	**11**	**59**
B14-2-5.5-20130907	9/7/2013	5.5	**0.022**	**4.2**	<0.50	**35**	**17**	--
B14-3-8-20130907	9/7/2013	8.0	**0.095**	**11**	<0.50	**82**	**11**	--
B15-1-3-20130907	9/7/2013	3.0	**0.089**	**8.1**	<0.50	**86**	**13**	**53**
B16-1-3-20130907	9/7/2013	3.0	**0.043**	**6.4**	<0.50	**62**	**5.5**	--
MTCA Method A or B Cleanup Level for Unrestricted Land Use			2	20	2	2,000[12]	250	3,200
Metals Background Concentrations[13]			0.07	7	1	48	24	36

Notes:

[1] Chemical analyses performed by ALS Environmental laboratory in Everett, Washington.

[2] See Figure 2 for approximate exploration locations.

[3] Field screening procedures described in Appendix A.

[4] Gasoline-range petroleum hydrocarbons analyzed by Northwest Method NWTPH-Gx.

[5] Diesel-, oil- and mineral oil-range hydrocarbons analyzed by Northwest Method NWTPH-Dx with acid/silica gel cleanup.

[6] Volatile organic compounds (VOCs) analyzed by EPA Method 8260C. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) analyzed by EPA Method 8021. VOCs other than BTEX are shown only if detected in at least one sample. Other VOCs not detected.

[7] Polychlorinated biphenyls (PCBs) analyzed by EPA Method 8082.

[8] Polycyclic aromatic hydrocarbons (PAHs) analyzed by EPA Method 8270D/SIM.

[9] MTCA 5 Metals and copper analyzed by EPA methods 6000/7000 Series.

[10] Sample submitted for Chromium VI analysis. Chromium VI not detected.

[11] Sample analyzed outside of hold time. Mercury analytical results should be considered estimated.

[12] Cleanup level for Chromium III.

[13] Natural background concentration for Puget Sound soils listed in Ecology Publication No. 94-115 "Natural Background Soil Metals Concentrations in Washington State" October 1994.

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

NS = No Sheen. SS = Slight Sheen. MS = Moderate Sheen.

MTCA = Model Toxics Control Act.

-- = not tested

NA = not applicable

A **bolded** value indicates an analyte has been detected at the indicated concentration.

Shaded cells represent analyte concentrations that are greater than the MTCA Method A or B cleanup level.

FIGURES

GeoEngineers

N
W E
S

2,000 0 2,000
Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

Vicinity Map

Snohomish PUD Headquarters
2320 California Street
Everett, Washington

GeoEngineers

Figure 1

Map Revised: January 30, 2015 TLN

048204301/GIS/Vicinity map

Office: Bellingham

GeoEngineers Boring Location (2013)	Corresponding Hart Crowser Boring Location (1991)
B-13	B-6
B-14	B-13
B-15	B-5
B-16	B-7

California

California St.

Entry

Entry

PP

FORMER GROUND SOURCE HEAT PUMP WELLS (ABANDONED, 1997)

BASEMENT

ANNEX/ WAREHOUSE BUILDING

ELECTRIC BUILDING

MAINTENANCE GARAGE REMEDIAL EXCAVATION AREA (HART CROWSER, 1992)

10,000-GALLON GASOLINE UST (REMOVED 1990)

1,000-GALLON DIESEL UST (OPERATIONAL)

APPROXIMATE LOCATION HART CROWSER BORING B-14 (1991)

1,000 GALLON HEATING OIL UST (REMOVED 1992)

Loading Dock

Annex fence

BNSF Property

BNSF ROW

B-1

TEST PIT (HART CROWSER, 1989)

B-2

B-3

TEST PIT 1 (HART CROWSER, 1991)

B-4

B-5

B-6

B-7

TEST PIT 4 (HART CROWSER, 1991)

TEST PIT 5 (HART CROWSER, 1991)

WASTE OIL AREA REMEDIAL EXCAVATION (HART CROWSER, 1992)

300-GALLON USED TRANSFORMER OIL UST (REMOVED 1990)

300-GALLON WASTE OIL UST (REMOVED 1990)

B-12

B-11

B-8

B-9

B-10

TRANSFORMER OIL PCB RELEASE REMEDIAL EXCAVATION AREA (1990-1991)

B-13

B-14

B-15

B-16

BELOW GRADE PARKING GARAGE

BUS STOP

Virginia Ave.

Hewitt Avenue

Legend

B-1 Boring Location (GeoEngineers, September 2013)

Red indicates cPAHs concentrations greater than MTCA Method A cleanup level

Blue indicates cPAHs and MTCA 5 metals concentrations greater than MTCA Method A cleanup level

Cyan indicates lead concentration greater than MTCA Method A cleanup level

Purple indicates lead and copper concentrations greater than MTCA Method A or B cleanup levels

Black indicates analytes less than MTCA Method A cleanup levels

TP Previous Test Pit Location (Hart Crowser)

D1 Underground Storage Tank (Removed)

1991 Boring Location (Hart Crowser)

N W E S

60 0 60

Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: CAD File of Snohomish PUD Headquaters.

Site Plan and Boring Locations

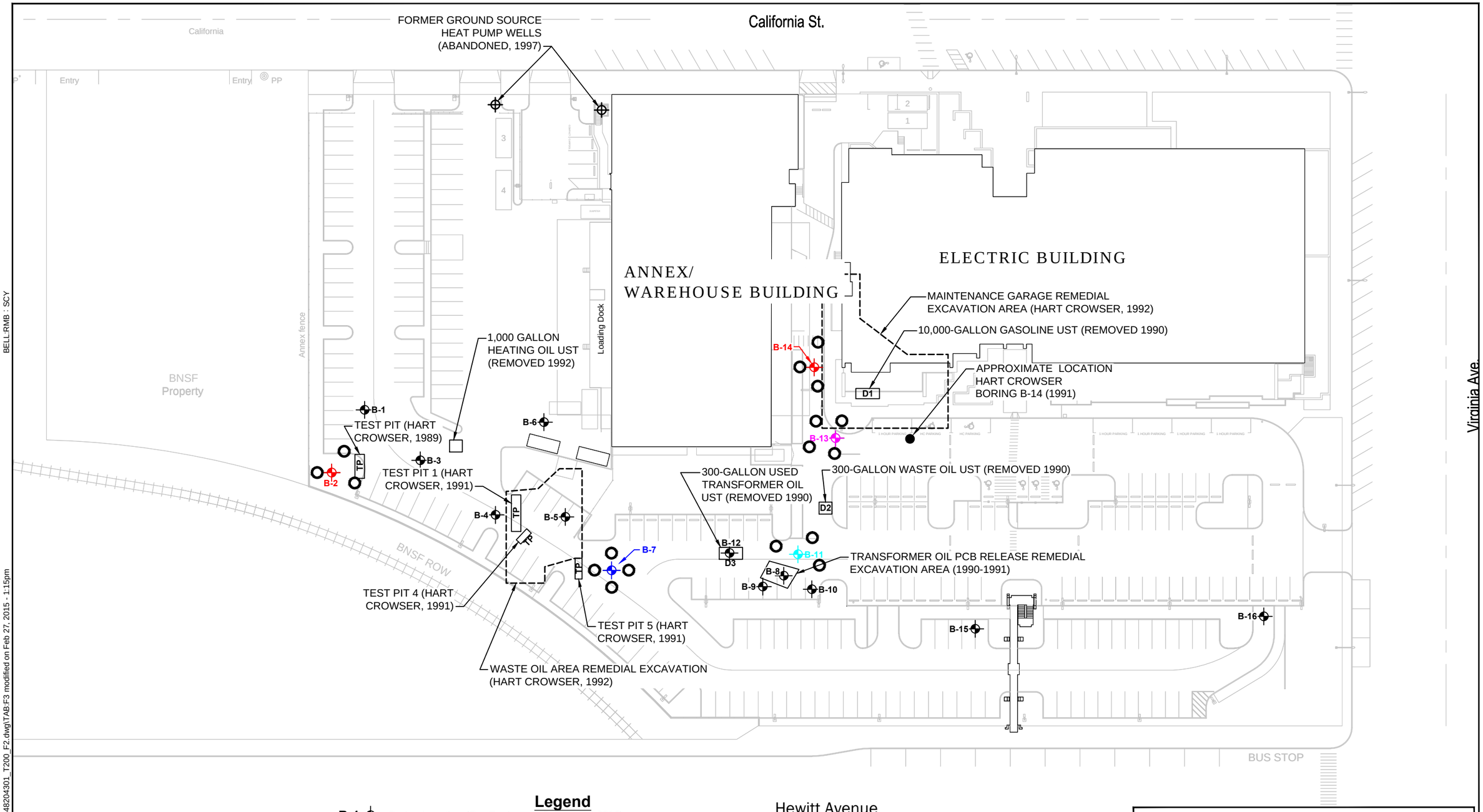
Snohomish PUD Headquarters
2320 California Street
Everett, Washington

GeoEngineers

Figure 2

P:\0\04820430\1\CAD\CIVIL 3D\EJC_048204301_T200_F2.dwg\TAB:F2 modified on Feb 26, 2015 - 9:50am

BELL:RMB : SCY



Legend

- B-1 — Boring Location (GeoEngineers, September 2013)
- Red indicates cPAHs concentrations greater than MTCA Method A cleanup level
- Blue indicates cPAHs and MTCA 5 metals concentrations greater than MTCA Method A cleanup level
- Cyan indicates lead concentration greater than MTCA Method A cleanup level
- Purple indicates lead and copper concentrations greater than MTCA Method A or B cleanup levels
- Black indicates analytes less than MTCA Method A cleanup levels
- TP — Previous Test Pit Location (Hart Crowser)
- D1 — Underground Storage Tank (Removed)
- 1991 Boring Location (Hart Crowser)
- Proposed Boring Location

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: CAD File of Snohomish PUD Headquaters.

Proposed Boring Locations Plan

Snohomish PUD Headquarters
2320 California Street
Everett, Washington

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Figure 3

APPENDICES

GeoEngineers

APPENDIX A
Field Exploration Program and Boring Logs

APPENDIX A
FIELD EXPLORATION PROGRAM AND BORING LOGS

GENERAL

Subsurface conditions at the site were evaluated by completing sixteen hollow-stem auger explorations using equipment owned and operated by Cascade Drilling, LP of Woodinville, Washington. Soil from the borings was visually classified in general accordance with ASTM D 2488-94. The boring logs are presented in Figures A-2 through A-17.The elevations depicted on the soil boring logs are based on an as-built survey drawing provided by PUD.

Soil samples were obtained from each of the borings at 2.5-foot depth intervals for field screening and possible chemical analysis. Soil samples from the borings were obtained using a 4-inch diameter, split-barrel sampler. The sampler was driven a maximum of 18 inches by a 300-pound weight falling a vertical distance of approximately 30 inches. The number of blows needed to advance the sampler the final 12 inches or other specified distance is indicated to the left of the corresponding sample notation on the boring log. Soil from the middle section of the spit-barrel sampler was placed in containers provided by the testing laboratory for potential chemical analysis. The remaining portion of the sample was placed in a plastic bag for field screening. The sampling equipment was decontaminated before each sampling attempt with a Liqui-Nox® solution wash and a distilled water final rinse.

Samples from the borings were selected for chemical analysis, based on field screening results and/or the sample location relative to potential sources of contamination. Samples submitted for chemical analysis are denoted by "CA" on the logs. The soil samples were placed in a cooler with ice for transport to the laboratory. Standard chain-of-custody procedures were followed in transporting the soil samples to the laboratory.

FIELD SCREENING

Soil samples obtained from the borings were evaluated for evidence of petroleum and volatiles using field screening techniques. Field screening results can be used as a general guideline to delineate areas of possible contamination in soils. In addition, screening results are often used as a basis for selecting soil samples for chemical analysis. The screening methods employed included: (1) visual examination, (2) water sheen testing, and (3) headspace vapor testing using a PID.

Visual screening consists of observing the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons such as motor oil, or when hydrocarbon concentrations are high. Sheen screening is a more sensitive screening method that can be effective in detecting petroleum-based products.

Water sheen testing involves placing soil in water and observing the water surface for signs of sheen. The results of water sheen testing on soil samples from the borings are presented on the boring logs. Sheens are classified as follows:

No Sheen (NS)	No visible sheen on water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly.
Moderate Sheen (MS)	Light to heavy sheen, may have some color/iridescence; spread is irregular to flowing; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of the PID is inserted into the bag. The PID measures the concentration of photoionizable gases and vapors in the sample bag headspace. The PID is designed to quantify photoionizable gases and vapors up to 2,000 parts per million (ppm), and is calibrated with isobutylene. A lower threshold of significance of 1 ppm is used in application.

Field screening results are site- and boring-specific. The results may vary with temperature, moisture content, soil lithology, organic content and type of contaminant.

DRUMMED INVESTIGATIVE WASTE

Investigation derived wastes (drill cuttings and decontamination water) were stored on site in labeled and sealed 55-gallon. The drums of investigation derived wastes were disposed of at Cemex in Everett, Washington.

Incidental waste generated during sampling activities includes items such as gloves, plastic bags, similar expended and discarded field supplies. These materials are considered de minimis and were disposed of in a local trash receptacle.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE A-1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
9/8/2013	9/8/2013	11.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
165	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								ML	Gray and black sandy silt with occasional gravel (medium stiff, moist) (fill)			
		18	7		1 CA					SS	<1	
160	5	18	5		2 CA			OL	Brown organic silt with occasional charred wood fragments (soft, moist) (relict topsoil)	NS	<1	
		18	17		3			ML	Brown and gray silt (stiff, moist) (glacial drift)	NS	<1	
155	10	18	19		4					NS	<1	

Note: See Figure A-1 for explanation of symbols.

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Log of Boring B-1

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-2
Sheet 1 of 1

Drilled	Start 9/8/2013	End 9/8/2013	Total Depth (ft) 11.5	Logged By RMB / Checked By	Driller Cascade Drilling, LP	Drilling Method Hollow-Stem Auger
Surface Elevation (ft) / Vertical Datum	167		Hammer Data	Autohammer 300 (lbs) / 30 (in) Drop	Drilling Equipment	CME 75 Truck-Mounted Drill Rig
Easting (X) / Northing (Y)			System Datum		Groundwater: Date Measured	Depth to Water (ft) / Elevation (ft)
Notes:						

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							TS	Landscape bark and topsoil			
165		18	9		1			SM	Brown silty fine to medium sand with occasional gravel (loose, moist) (fill)	NS	<1	
	5	18	20		2 CA			ML	Gray and black sandy silt with occasional gravel, charred wood, and asphalt fragments (medium dense, moist) (fill)	SS	<1	
160								ML	Brown and gray silt (stiff, moist) (glacial drift)			
		18	19		3 CA					NS	<1	
										NS	<1	
	10	18	24		4				Becomes very stiff			

Note: See Figure A-1 for explanation of symbols.

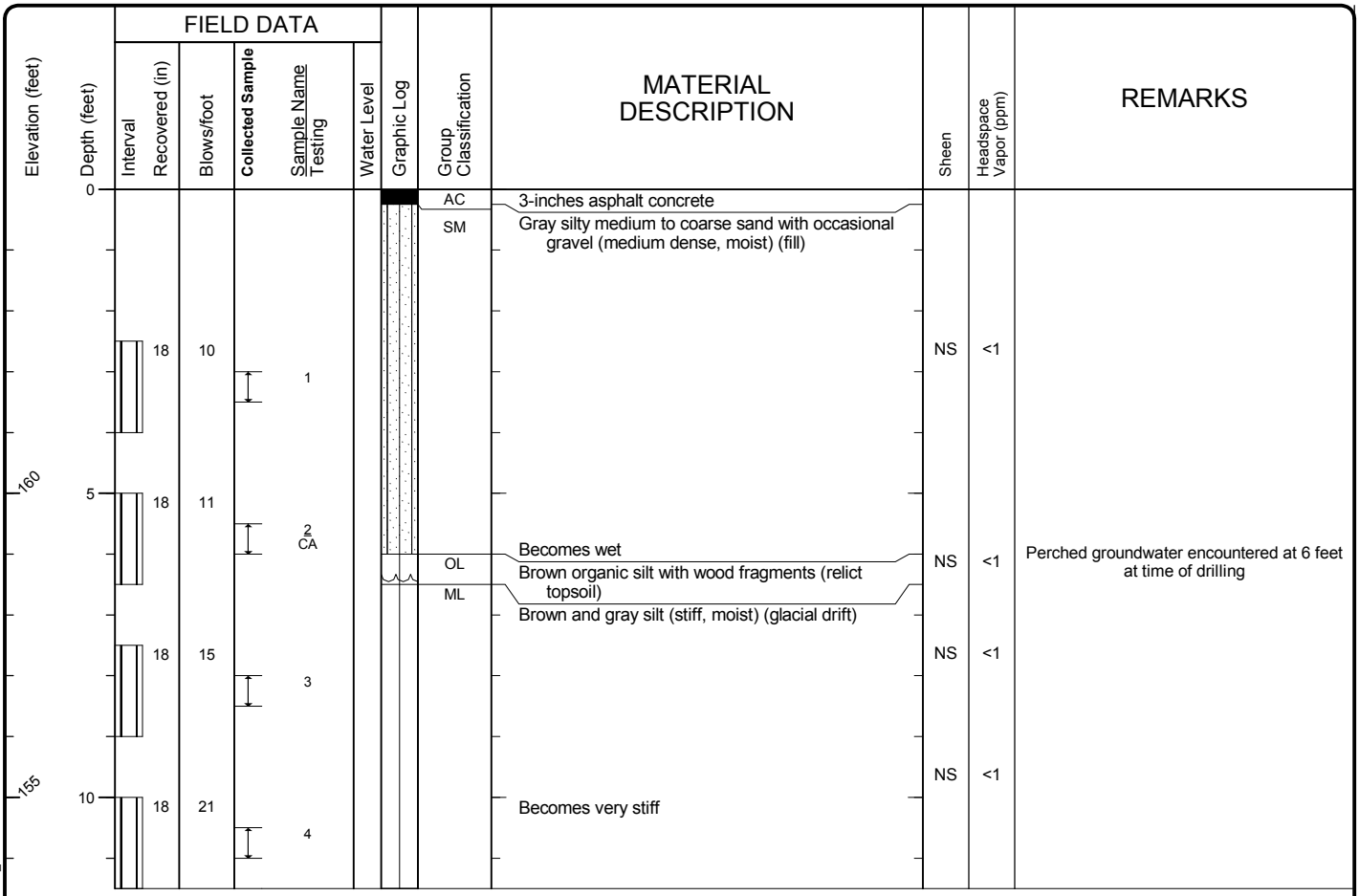
Log of Boring B-2

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-3
Sheet 1 of 1

Drilled: Start 9/8/2013 End 9/8/2013	Total Depth (ft): 11.5	Logged By: RMB Checked By:	Driller: Cascade Drilling, LP	Drilling Method: Hollow-Stem Auger	
Surface Elevation (ft) Vertical Datum: 165	Hammer Data: Autohammer 300 (lbs) / 30 (in) Drop	Drilling Equipment: CME 75 Truck-Mounted Drill Rig			
Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)	
Notes:					



Note: See Figure A-1 for explanation of symbols.

Log of Boring B-3

GeoEngineers

Project:	PUD No. 1 of Snohomish County
Project Location:	2320 California Street, Everett, Washington
Project Number:	0482-043-01

Figure A-4
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	9/8/2013	9/8/2013	14	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
164	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0								AC	3-inches asphalt concrete			
									SM	Brown silty medium to coarse sand with occasional gravel (loose, moist) (fill)			
160			16	7		1					NS	<1	
	5		18	5		2			ML	Brown silt with wood fragments and silty sand layers (soft, moist) (fill)	NS	<1	
			18	9		3 CA			ML	Gray sandy silt (soft, wet)	SS	<1	
155									ML	Gray silt (medium stiff, moist) (glacial drift)			Perched groundwater encountered at 8.5 feet at time of drilling
	10		18	11		4 CA			ML	Brown and gray silt (stiff, moist)	NS	<1	
			18	21		5				Becomes very stiff	NS	<1	
150													

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-4

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-5
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Driller	Drilling Method
	9/8/2013	9/8/2013	16.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
165	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Brown silty medium to coarse sand with occasional gravel (medium dense, moist) (fill)			
		8	10		1					NS	<1	
160	5	18	15		2 CA			ML	Brown silt with occasional organics (stiff, moist) (relict topsoil)	NS	<1	
		18	14		3			ML	Brown silt (stiff,moist) (glacial drift)	NS	<1	
155	10	18	17		4					NS	<1	
		18	15		5					NS	<1	
150	15	18	16		6					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-5

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-6
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	9/8/2013	9/8/2013	9	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
165	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Brown silty medium to coarse sand with occasional gravel (fill)			
		18	4		1 CA			ML	Brown silty (soft, moist) (relict topsoil)	NS	<1	
160								ML	Brown silt (stiff, moist) (glacial drift)			
	5	18	11		2					NS	<1	
		18	15		3					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-6

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-7
Sheet 1 of 1

Drilled: Start 9/7/2013 End 9/7/2013	Total Depth (ft): 16.5	Logged By: RMB Checked By:	Driller: Cascade Drilling, LP	Drilling Method: Hollow-Stem Auger	
Surface Elevation (ft) Vertical Datum: 164	Hammer Data: Autohammer 300 (lbs) / 30 (in) Drop		Drilling Equipment: CME 75 Truck-Mounted Drill Rig		
Easting (X) Northing (Y)	System Datum:		Groundwater Date Measured:	Depth to Water (ft):	Elevation (ft):
Notes:					

Elevation (feet)	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Gray and black silty sand with glass fragments and silt lenses (medium dense, moist) (fill)			
160		18	17		1 CA					SS	<1	
	5	18	10		2 CA			SM	Orange-brown silty fine to medium sand (loose, moist) (fill)	NS	<1	
								ML	Brown silt (stiff, moist) (glacial drift)			
		18	18		3					NS	<1	
155												
	10	18	12		4					NS	<1	
		18	20		5							
150										NS	<1	
	15	18	12		6					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-7

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-8
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
9/7/2013	9/7/2013	14	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
167	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0						AC	3-inches asphalt concrete			
							SM	Gray silty fine to medium sand with gravel and occasional cobbles (very dense, moist) (fill)			
165		6	50/6"	1					NS	<1	
	5	18	24	2			ML	Gray sandy silt with occasional gravel and sand lenses (very stiff, moist) (glacial drift)	NS	<1	
160		18	15	3					NS	<1	
									MS	<1	
	10	18	15				ML	Gray sandy silt (medium stiff, wet)			
				4 CA			ML	Brown and gray silt (stiff, moist)	NS	<1	Petroleum odor
155		18	20	5 CA				Becomes very stiff	NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-8

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-9
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	9/7/2013	9/7/2013	11.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
167	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0						AC	3-inches asphalt concrete			
							SM	Brown silty fine to medium sand with occasional gravel and asphalt fragments (medium dense, moist) (fill)			
165		18	11	1					NS	<1	
	5	18	11	2			ML	Brown silt with gray silt pods (stiff, moist) (fill)	NS	<1	
160							ML	Gray and brown silt with organic pockets and sand lenses (stiff, moist) (fill)			
		18	14	3 CA					NS	<1	
	10	18	10	4			ML	Gray and brown silt (stff, moist) (glacial drift)	NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-9

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-10
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
9/7/2013	9/7/2013	11.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
168	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Brown and gray silty fine to medium sand with silt lenses (medium dense, moist) (fill)			
165		18	15		1					NS	<1	
	5	18	11		2							
								SM	Brown silty medium to coarse sand with gravel (medium dense, moist) (fill)	NS	<1	
160		18	9		3 CA			ML	Brown silt with occasional charred wood fragments (medium stiff, moist) (fill)	SS	<1	
	10	18	16		4 CA			ML	Brown and gray silt (stiff, moist) (glacial drift)	NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-10

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-11
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
9/7/2013	9/7/2013	11.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
168	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0						AC	3-inches asphalt concrete			
							SM	Gray and brown silty fine to medium sand with occasional gravel (dense, moist) (fill)			
165		18	40	1					SS	<1	
							ML	Gray, brown, and black silt with sand and occasional wood fragments (stiff, moist) (fill)			
	5	18	17	2 CA					SS	<1	Faint petroleum odor
160		14	6	3 CA			SP-SM	Brown fine to medium sand with silt (loose, moist) (fill)	NS	<1	
	10	18	8	4			SM	Gray and brown silty fine to medium sand with silt lenses (glacial drift)	NS	<1	
							ML	Brown and gray silt (medium stiff, moist) (glacial drift)	NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-11

GeoEngineers

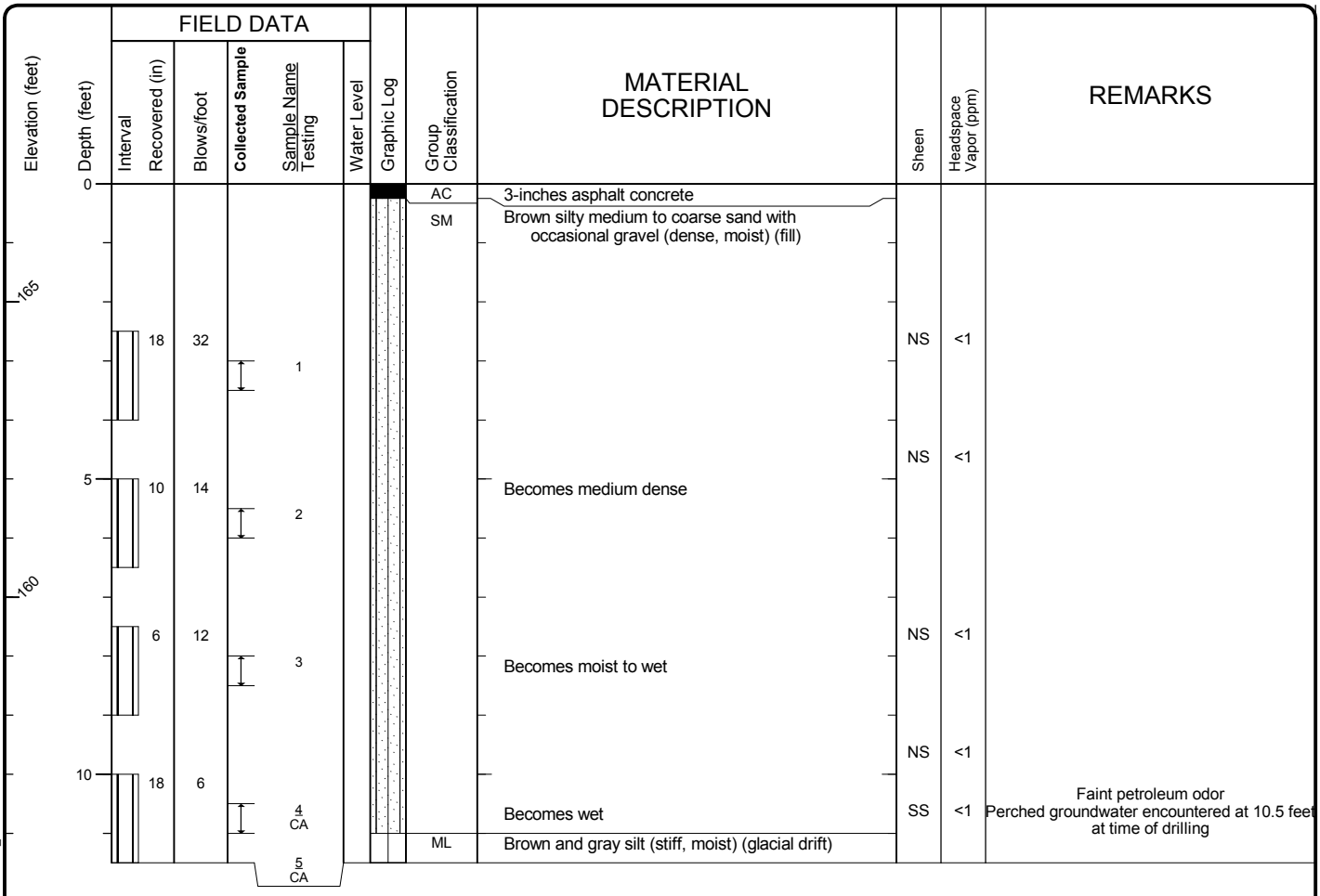
Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	9/7/2013	9/7/2013	11.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
167	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:



Note: See Figure A-1 for explanation of symbols.

Log of Boring B-12

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-13
Sheet 1 of 1

Drilled: Start 9/7/2013 End 9/7/2013	Total Depth (ft): 16.5	Logged By: RMB Checked By:	Driller: Cascade Drilling, LP	Drilling Method: Hollow-Stem Auger	
Surface Elevation (ft) Vertical Datum: 169	Hammer Data: Autohammer 300 (lbs) / 30 (in) Drop		Drilling Equipment: CME 75 Truck-Mounted Drill Rig		
Easting (X) Northing (Y)	System Datum:		Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Black, brown, and gray silty fine to medium sand with gray silt lenses and occasional asphalt, glass, and plastic fragments (medium dense, moist) (fill)			
165		18	16		1					SS	<1	
	5	18	12		2				Occasional brick and charred wood fragments encountered	SS	<1	
		18	14		3 CA			SM	Dark gray sandy silt with clay pods and occasional brick fragments (medium dense, moist) (fill)	SS	<1	
160								ML	Brown and gray silt (stiff, moist) (glacial drift)			
	10		11		4 CA					NS	<1	
		18	14		5			ML	Brown silt (stiff, moist)	NS	<1	
155												
	15	18	17		6					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-13

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-14
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	9/7/2013	9/7/2013	16.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
168	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Brown silty medium to coarse sand with gravel and occasional cobbles (dense, moist) (fill)			
165		18	35		1					NS	<1	
	5	18	40		2 CA					SS	<1	
160		18	18		3 CA			ML	Brown and gray silt (stiff, moist) (glacial drift)	NS	<1	
	10	18	11		4					NS	<1	
155		18	15		5			ML	Brown silt (stiff, moist)	NS	<1	
	15	18	15		6					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-14

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-15
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Driller	Drilling Method
	9/7/2013	9/7/2013	16.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
163	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								ML	Brown silt with sand (medium stiff, moist) (fill)			
160		18	12		1 CA			ML	Gray sandy silt (stiff, moist) (glacial drift)	NS	<1	
	5	18	21		2			ML	Brown silt with gray colored partings (very stiff, moist)	NS	<1	
155		18	27		3					NS	<1	
	10	18	31		4			ML	Brown silt with fine sand lenses (very stiff, moist)	NS	<1	
150		12	50/6"		5			SM	Brown silty fine to medium sand (very dense, moist)	NS	<1	
	15	6	50/6"		6					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-15

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-16
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Driller	Drilling Method
	9/7/2013	9/7/2013	16.5	RMB	Cascade Drilling, LP	Hollow-Stem Auger

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
160	Autohammer 300 (lbs) / 30 (in) Drop	CME 75 Truck-Mounted Drill Rig

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	3-inches asphalt concrete			
								SM	Brown and gray fine to medium silty sand with occasional gravel (very dense, moist) (fill)			
		12	50/6"		1 CA					NS	<1	
155	5	11	50/5"		2			SM	Brown silty fine to medium sand with occasional gravel (very dense, moist) (glacial drift)	NS	<1	
		8	50/6"		3					NS	<1	
150	10	6	50/6"		4					NS	<1	
		18	67		5					NS	<1	
145	15	18	41		6				Becomes dense, increased moisture observed	NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring B-16

GeoEngineers

Project: PUD No. 1 of Snohomish County
Project Location: 2320 California Street, Everett, Washington
Project Number: 0482-043-01

Figure A-17
Sheet 1 of 1

APPENDIX B
Chemical Analytical Program

APPENDIX B
CHEMICAL ANALYTICAL PROGRAM

ANALYTICAL METHODS

Chain-of-custody procedures were followed during the transport of the field samples to ALS Laboratory Group in Everett, Washington. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory QC records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

ANALYTICAL DATA REVIEW

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. Data quality exceptions documented by the accredited laboratory were reviewed by GeoEngineers and are addressed in the "Analytical Data Review Summary" section of this appendix.

ANALYTICAL DATA REVIEW SUMMARY

The soil samples obtained from borings B-8 through B-12 submitted for mercury analyses were performed outside of the hold time. Other data quality exceptions were not noted in the laboratory report and during our review.

Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use with the qualifications noted.

September 24, 2013

Mr. Ron Bek
Geoengineers, Inc.
600 DuPont St.
Bellingham, WA 98225

Dear Mr. Bek,

On September 10th, 78 samples were received by our laboratory and assigned our laboratory project number EV13090063. The project was identified as your 0482-043-01. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -01
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:25:00 AM
CLIENT SAMPLE ID	B1-1-3-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.23	0.68	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.1	9.2	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**280**	50	6.0	18	1		MG/KG	09/11/13	EBS
CFC-12	SW8260C	ND	10	0.70	2.1	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.44	1.3	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.018	0.054	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.44	1.3	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.81	2.4	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.019	0.056	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.87	2.6	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.45	1.3	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.42	1.2	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.62	1.8	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.45	1.4	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.75	2.2	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.011	0.033	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.014	0.042	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.030	0.090	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.49	1.5	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.44	1.3	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.45	1.3	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.45	1.3	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -01
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:25:00 AM
CLIENT SAMPLE ID	B1-1-3-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	LIMITS RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.30	0.90	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.45	1.4	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.029	0.087	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.67	2.0	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.015	0.043	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.82	2.5	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.50	1.5	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.48	1.4	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.51	1.5	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.48	1.4	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.48	1.4	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.69	2.1	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.45	1.3	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.49	1.5	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.45	1.4	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.49	1.5	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.57	1.7	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.50	1.5	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.48	1.4	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	**11**	10	0.46	1.4	1		UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	20	0.85	2.6	1	U	UG/KG	09/12/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.0	3.1	1	U	UG/KG	09/12/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.85	2.5	1	U	UG/KG	09/12/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.76	2.3	1	U	UG/KG	09/12/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.70	2.1	1	U	UG/KG	09/12/13	LAP

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -01
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:25:00 AM
CLIENT SAMPLE ID	B1-1-3-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	20	1.0	3.1	1	U	UG/KG	09/12/13	LAP
Phenanthrene	SW8270DSIM	**39**	20	1.4	4.1	1		UG/KG	09/12/13	LAP
Anthracene	SW8270DSIM	ND	20	1.2	3.5	1	U	UG/KG	09/12/13	LAP
Fluoranthene	SW8270DSIM	**77**	20	1.1	3.3	1		UG/KG	09/12/13	LAP
Pyrene	SW8270DSIM	**81**	20	1.2	3.6	1		UG/KG	09/12/13	LAP
Benz[a]anthracene	SW8270DSIM	**39**	20	0.88	2.6	1		UG/KG	09/12/13	LAP
Chrysene	SW8270DSIM	**53**	20	1.2	3.6	1		UG/KG	09/12/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	**38**	20	1.2	3.5	1		UG/KG	09/12/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	**32**	20	0.96	2.9	1		UG/KG	09/12/13	LAP
Benzo(a)pyrene	SW8270DSIM	**44**	20	0.95	2.8	1		UG/KG	09/12/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	**32**	20	1.1	3.4	1		UG/KG	09/12/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/12/13	LAP
Benzo(ghi)perylene	SW8270DSIM	**45**	20	1.5	4.5	1		UG/KG	09/12/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1254	SW8082	**0.12**	0.10	0.0027	0.0081	1		MG/KG	09/16/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
Mercury	SW7471	**0.31**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**9.0**	1.0	0.29	0.86	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.088	0.27	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**39**	0.50	0.15	0.44	5		MG/KG	09/16/13	RAL
Lead	SW6020	**91**	0.50	0.094	0.28	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**85%**	60	140		10.0		85.0	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**110%**	58	134		10.0		110	09/11/13	EBS
1,2-Dichloroethane-d4	SW8260C	**82.3%**	72.4	138		20.0		82.3	09/19/13	GAP
Toluene-d8	SW8260C	**98.7%**	69.4	126		20.0		98.7	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**121%**	73	123		20.0		121	09/19/13	GAP
Terphenyl-d14	SW8270DSIM	**103%**	28.9	157		5000000		103	09/12/13	LAP
Tetrachloro-m-xylene	SW8082	**115%**	33	146		100		115	09/16/13	LAP
PCB-209	SW8082	**107%**	30	155		100		107	09/16/13	LAP

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -01
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:25:00 AM
CLIENT SAMPLE ID	B1-1-3-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains bunker C.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -02
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:27:00 AM
CLIENT SAMPLE ID	B1-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.54	1.6	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	26	4.1	12	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	52	8.0	24	1	U	MG/KG	09/11/13	EBS
CFC-12	SW8260C	ND	10	0.90	2.7	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.57	1.6	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.023	0.070	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.45	1.4	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.55	1.6	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.57	1.7	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.48	1.4	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.56	1.7	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	1.1	3.2	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.024	0.073	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	1.1	3.4	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.58	1.8	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.57	1.7	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.54	1.6	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.55	1.6	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.80	2.4	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.56	1.7	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.97	2.9	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.56	1.7	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.50	1.5	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.50	1.5	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.014	0.043	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.018	0.055	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.039	0.12	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.51	1.5	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.64	1.9	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.57	1.7	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.60	1.8	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.56	1.7	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.58	1.7	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.58	1.8	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.60	1.8	1	U	UG/KG	09/19/13	GAP

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -02
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:27:00 AM
CLIENT SAMPLE ID	B1-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.038	0.11	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.87	2.6	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.019	0.057	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.60	1.8	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.47	1.4	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	1.1	3.2	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.51	1.5	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.65	1.9	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.50	1.5	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.62	1.9	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.66	2.0	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.63	1.9	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.60	1.8	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.63	1.9	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.45	1.4	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.90	2.7	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.58	1.7	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.49	1.5	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.53	1.6	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.64	1.9	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.47	1.4	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.64	1.9	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.75	2.2	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.55	1.7	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.66	2.0	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	**12**	10	0.62	1.9	1		UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	**12**	10	0.59	1.8	1		UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	20	1.2	3.6	1	U	UG/KG	09/12/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/12/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	1.2	3.6	1	U	UG/KG	09/12/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/12/13	LAP
Acenaphthene	SW8270DSIM	ND	20	1.0	3.0	1	U	UG/KG	09/12/13	LAP

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -02
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 10:27:00 AM
CLIENT SAMPLE ID	B1-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/12/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.9	5.8	1	U	UG/KG	09/12/13	LAP
Anthracene	SW8270DSIM	ND	20	1.6	4.9	1	U	UG/KG	09/12/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.6	4.7	1	U	UG/KG	09/12/13	LAP
Pyrene	SW8270DSIM	ND	20	1.7	5.1	1	U	UG/KG	09/12/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/12/13	LAP
Chrysene	SW8270DSIM	ND	20	1.7	5.1	1	U	UG/KG	09/12/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.7	5.0	1	U	UG/KG	09/12/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.4	4.1	1	U	UG/KG	09/12/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/12/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.6	4.8	1	U	UG/KG	09/12/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.9	5.7	1	U	UG/KG	09/12/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	2.1	6.4	1	U	UG/KG	09/12/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Mercury	SW7471	**0.13**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**5.2**	1.3	0.43	1.3	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.13	0.39	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**63**	0.64	0.22	0.64	5		MG/KG	09/16/13	RAL
Lead	SW6020	**9.6**	0.50	0.14	0.41	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**71.9%**	60	140		10.0		71.9	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**125%**	58	134		10.0		125	09/11/13	EBS
1,2-Dichloroethane-d4	SW8260C	**82.4%**	72.4	138		20.0		82.4	09/19/13	GAP
Toluene-d8	SW8260C	**116%**	69.4	126		20.0		116	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**118%**	73	123		20.0		118	09/19/13	GAP
Terphenyl-d14	SW8270DSIM	**46.6%**	28.9	157		5000000		46.6	09/12/13	LAP
Tetrachloro-m-xylene	SW8082	**71%**	33	146		100		71.0	09/12/13	LAP
PCB-209	SW8082	**88%**	30	155		100		88.0	09/12/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -06
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:07:00 AM
CLIENT SAMPLE ID	B2-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.29	0.86	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	35	2.7	8.2	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**280**	50	5.3	16	1		MG/KG	09/11/13	EBS
CFC-12	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.015	0.046	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.31	0.94	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.69	2.1	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.016	0.048	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.74	2.2	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.52	1.6	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.63	1.9	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0093	0.028	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.012	0.036	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.026	0.077	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -06
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:07:00 AM
CLIENT SAMPLE ID	B2-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	LIMITS RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.25	0.76	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.38	1.2	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.025	0.074	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.57	1.7	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.012	0.037	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.70	2.1	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.32	0.96	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.28	0.85	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.42	1.2	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.49	1.5	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	100	4.5	13	5	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	100	5.5	16	5	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	100	4.5	13	5	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	100	4.0	12	5	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	100	3.7	11	5	U	UG/KG	09/17/13	LAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -06
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:07:00 AM
CLIENT SAMPLE ID	B2-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	100	5.4	16	5	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	**280**	100	7.2	22	5		UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	100	6.1	18	5	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	**360**	100	5.8	17	5		UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	**330**	100	6.3	19	5		UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	**150**	100	4.6	14	5		UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	**210**	100	6.3	19	5		UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	**140**	100	6.2	18	5		UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	**120**	100	5.1	15	5		UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	**160**	100	5.0	15	5		UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	**110**	100	5.9	18	5		UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	100	7.0	21	5	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	**160**	100	7.9	24	5		UG/KG	09/17/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Mercury	SW7471	**0.13**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**11**	1.0	0.29	0.87	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.089	0.27	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**58**	0.50	0.15	0.44	5		MG/KG	09/16/13	RAL
Lead	SW6020	**110**	0.50	0.095	0.28	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**102%**	60	140		10.0		102	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**117%**	58	134		10.0		117	09/11/13	EBS
1,2-Dichloroethane-d4	SW8260C	**79.5%**	72.4	138		20.0		79.5	09/19/13	GAP
Toluene-d8	SW8260C	**97.4%**	69.4	126		20.0		97.4	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**89.7%**	73	123		20.0		89.7	09/19/13	GAP
Terphenyl-d14 5X Dilution	SW8270DSIM	**55.8%**	28.9	157		5000000		55.8	09/17/13	LAP
Tetrachloro-m-xylene	SW8082	**96%**	33	146		100		96.0	09/12/13	LAP
PCB-209	SW8082	**82%**	30	155		100		82.0	09/12/13	LAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -06
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:07:00 AM
CLIENT SAMPLE ID	B2-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.
Diesel range product reporting limits raised due to motor oil range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -07
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:10:00 AM
CLIENT SAMPLE ID	B2-3-8-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.28	0.84	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.1	9.4	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	6.1	18	1	U	MG/KG	09/11/13	EBS
CFC-12	SW8260C	ND	10	0.54	1.6	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.34	0.97	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.014	0.042	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.27	0.81	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.28	0.85	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.63	1.9	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.014	0.043	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.67	2.0	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.35	1.0	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.32	0.96	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.33	0.98	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.48	1.4	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.58	1.7	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0085	0.026	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.011	0.032	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.023	0.070	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.33	0.99	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -07
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:10:00 AM
CLIENT SAMPLE ID	B2-3-8-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.23	0.69	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.022	0.067	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.52	1.6	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.011	0.034	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.28	0.84	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.63	1.9	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.27	0.81	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.30	0.91	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.38	1.2	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.29	0.88	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.27	0.80	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.54	1.6	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.29	0.87	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.31	0.95	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.26	0.77	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.28	0.84	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.44	1.3	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	20	0.94	2.8	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.94	2.8	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.84	2.5	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.78	2.3	1	U	UG/KG	09/17/13	LAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -07
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 11:10:00 AM
CLIENT SAMPLE ID	B2-3-8-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	0.97	2.9	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.0	3.1	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.7	5.0	1	U	UG/KG	09/17/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Mercury	SW7471	**0.077**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**13**	1.0	0.31	0.94	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.096	0.29	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**84**	0.50	0.16	0.48	5		MG/KG	09/16/13	RAL
Lead	SW6020	**12**	0.50	0.10	0.30	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**101%**	60	140		10.0		101	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**99.3%**	58	134		10.0		99.3	09/11/13	EBS
1,2-Dichloroethane-d4	SW8260C	**82.3%**	72.4	138		20.0		82.3	09/19/13	GAP
Toluene-d8	SW8260C	**94.4%**	69.4	126		20.0		94.4	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**79.1%**	73	123		20.0		79.1	09/19/13	GAP
Terphenyl-d14	SW8270DSIM	**109%**	28.9	157		5000000		109	09/17/13	LAP
Tetrachloro-m-xylene	SW8082	**67%**	33	146		100		67.0	09/12/13	LAP
PCB-209	SW8082	**45%**	30	155		100		45.0	09/12/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -10
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 9:40:00 AM
CLIENT SAMPLE ID	B3-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.56	1.7	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	26	4.1	12	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**69**	50	7.9	24	1		MG/KG	09/11/13	EBS
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
Mercury	SW7471	**0.11**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**3.7**	1.3	0.42	1.3	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.13	0.39	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**60**	0.64	0.22	0.64	5		MG/KG	09/16/13	RAL
Lead	SW6020	**9.3**	0.50	0.14	0.41	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**69.7%**	60	140		10.0		69.7	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**95.7%**	58	134		10.0		95.7	09/11/13	EBS
Tetrachloro-m-xylene	SW8082	**81%**	33	146		100		81.0	09/16/13	LAP
PCB-209	SW8082	**66%**	30	155		100		66.0	09/16/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -15
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 8:37:00 AM
CLIENT SAMPLE ID	B4-3-8-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.44	1.3	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.7	11	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	7.2	22	1	U	MG/KG	09/11/13	EBS
CFC-12	SW8260C	ND	10	0.57	1.7	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.36	1.0	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.015	0.044	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.30	0.91	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.67	2.0	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.015	0.046	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.71	2.1	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.51	1.5	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.61	1.8	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.32	0.96	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.32	0.96	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0090	0.027	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.012	0.035	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.025	0.074	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.32	0.96	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.35	1.1	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -15
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 8:37:00 AM
CLIENT SAMPLE ID	B4-3-8-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.25	0.74	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.024	0.071	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.55	1.7	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.012	0.036	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.67	2.0	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.29	0.87	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.31	0.94	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.42	1.2	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.57	1.7	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.31	0.93	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.28	0.83	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.47	1.4	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	20	1.1	3.3	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.4	4.1	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	1.1	3.3	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.99	3.0	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.92	2.8	1	U	UG/KG	09/17/13	LAP

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -15
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 8:37:00 AM
CLIENT SAMPLE ID	B4-3-8-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.8	5.3	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.5	4.6	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.4	4.3	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.6	4.7	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.6	4.7	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.5	4.6	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.7	5.2	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	2.0	5.9	1	U	UG/KG	09/17/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Mercury	SW7471	**0.16**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**4.8**	1.2	0.39	1.2	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.12	0.36	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**86**	0.59	0.20	0.59	5		MG/KG	09/16/13	RAL
Lead	SW6020	**14**	0.50	0.13	0.37	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**77.4%**	60	140		10.0		77.4	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**107%**	58	134		10.0		107	09/11/13	EBS
1,2-Dichloroethane-d4	SW8260C	**79.7%**	72.4	138		20.0		79.7	09/19/13	GAP
Toluene-d8	SW8260C	**100%**	69.4	126		20.0		100	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**86.7%**	73	123		20.0		86.7	09/19/13	GAP
Terphenyl-d14	SW8270DSIM	**86.1%**	28.9	157		5000000		86.1	09/17/13	LAP
Tetrachloro-m-xylene	SW8082	**59%**	33	146		100		59.0	09/12/13	LAP
PCB-209	SW8082	**49%**	30	155		100		49.0	09/12/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -16
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 8:47:00 AM
CLIENT SAMPLE ID	B4-4-10.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.32	0.95	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.3	9.9	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	6.4	19	1	U	MG/KG	09/11/13	EBS
CFC-12	SW8260C	ND	10	0.55	1.7	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.014	0.043	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.28	0.83	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.29	0.88	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.64	1.9	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.015	0.045	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.69	2.1	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.49	1.5	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.59	1.8	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0087	0.026	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.011	0.033	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.024	0.072	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.31	0.93	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.35	1.0	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -16
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 8:47:00 AM
CLIENT SAMPLE ID	B4-4-10.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.24	0.71	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.023	0.069	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.53	1.6	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.012	0.034	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.65	2.0	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.28	0.84	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.31	0.93	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.30	0.91	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.28	0.83	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.55	1.7	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.27	0.80	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.46	1.4	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	20	0.93	2.8	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.93	2.8	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.83	2.5	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.77	2.3	1	U	UG/KG	09/17/13	LAP

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -16
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 8:47:00 AM
CLIENT SAMPLE ID	B4-4-10.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.2	3.6	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	0.96	2.9	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.0	3.1	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.6	4.9	1	U	UG/KG	09/17/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Mercury	SW7471	**0.056**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**10**	1.0	0.32	0.94	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.097	0.29	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**83**	0.50	0.16	0.48	5		MG/KG	09/16/13	RAL
Lead	SW6020	**9.2**	0.50	0.10	0.30	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**103%**	60	140		10.0		103	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**104%**	58	134		10.0		104	09/11/13	EBS
1,2-Dichloroethane-d4	SW8260C	**83.8%**	72.4	138		20.0		83.8	09/19/13	GAP
Toluene-d8	SW8260C	**93.8%**	69.4	126		20.0		93.8	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**82.8%**	73	123		20.0		82.8	09/19/13	GAP
Terphenyl-d14	SW8270DSIM	**96.2%**	28.9	157		5000000		96.2	09/17/13	LAP
Tetrachloro-m-xylene	SW8082	**68%**	33	146		100		68.0	09/12/13	LAP
PCB-209	SW8082	**59%**	30	155		100		59.0	09/12/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -19
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 7:40:00 AM
CLIENT SAMPLE ID	B5-2-5.5-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.48	1.4	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.7	11	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	7.1	21	1	U	MG/KG	09/11/13	EBS
Mercury	SW7471	**0.15**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**3.4**	1.1	0.36	1.1	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.11	0.33	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**45**	0.54	0.18	0.54	5		MG/KG	09/16/13	RAL
Lead	SW6020	**7.9**	0.50	0.12	0.34	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**63.2%**	60	140		10.0		63.2	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**108%**	58	134		10.0		108	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -24
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/8/2013 9:12:00 AM
CLIENT SAMPLE ID	B6-1-3-20130908	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.48	1.4	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.5	10	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	6.8	20	1	U	MG/KG	09/11/13	EBS
Mercury	SW7471	**0.082**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**8.7**	1.1	0.36	1.1	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.11	0.33	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**78**	0.54	0.18	0.54	5		MG/KG	09/16/13	RAL
Lead	SW6020	**10**	0.50	0.12	0.34	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**70.5%**	60	140		10.0		70.5	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**105%**	58	134		10.0		105	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -27
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:32:00 PM
CLIENT SAMPLE ID	B7-1-3-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	5.3	0.31	0.93	1	U	MG/KG	09/11/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	**140**	25	3.4	10	1		MG/KG	09/12/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**390**	50	6.6	20	1		MG/KG	09/12/13	EBS
CFC-12	SW8260C	ND	10	0.60	1.8	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.015	0.047	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.32	0.95	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.70	2.1	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.016	0.048	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.75	2.2	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.53	1.6	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.64	1.9	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0094	0.028	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.012	0.036	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.026	0.078	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.38	1.1	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.38	1.2	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -27
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:32:00 PM
CLIENT SAMPLE ID	B7-1-3-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	LIMITS RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.26	0.77	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.025	0.075	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.58	1.7	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.013	0.037	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.31	0.93	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.71	2.1	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.30	0.91	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.34	1.0	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.33	0.98	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.44	1.3	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.42	1.2	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.42	1.2	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.60	1.8	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.35	1.1	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.31	0.94	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.42	1.3	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.49	1.5	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.41	1.2	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.39	1.2	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	100	4.7	14	5	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	100	5.7	17	5	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	100	4.7	14	5	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	100	4.2	13	5	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	100	3.9	12	5	U	UG/KG	09/17/13	LAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -27
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:32:00 PM
CLIENT SAMPLE ID	B7-1-3-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	100	5.7	17	5	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	**390**	100	7.5	22	5		UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	**120**	100	6.4	19	5		UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	**560**	100	6.1	18	5		UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	**980**	100	6.6	20	5		UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	**410**	100	4.8	14	5		UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	**570**	100	6.6	20	5		UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	**400**	100	6.4	19	5		UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	**350**	100	5.3	16	5		UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	**650**	100	5.2	16	5		UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	**380**	100	6.2	19	5		UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	**140**	100	7.3	22	5		UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	**620**	100	8.3	25	5		UG/KG	09/17/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	**0.32**	0.10	0.0027	0.0081	1		MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	**0.20**	0.10	0.0027	0.0081	1		MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Chromium	SW7196	ND	5.0	0.90	2.7	1	U	MG/KG	09/18/13	RAL
Mercury	SW7471	**0.22**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**32**	1.0	0.31	0.93	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	**3.2**	0.50	0.095	0.29	5		MG/KG	09/16/13	RAL
Chromium	SW6020	**46**	0.50	0.16	0.47	5		MG/KG	09/16/13	RAL
Lead	SW6020	**410**	0.50	0.10	0.30	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**82.5%**	60	140		10.0		82.5	09/11/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**112%**	58	134		20.0		112	09/12/13	EBS
1,2-Dichloroethane-d4	SW8260C	**116%**	72.4	138		20.0		116	09/19/13	GAP
Toluene-d8	SW8260C	**93.1%**	69.4	126		20.0		93.1	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**83.6%**	73	123		20.0		83.6	09/19/13	GAP
Terphenyl-d14 5X Dilution	SW8270DSIM	**74%**	28.9	157		5000000		74.0	09/17/13	LAP
Tetrachloro-m-xylene	SW8082	**41%**	33	146		100		41.0	09/12/13	LAP
PCB-209	SW8082	**40%**	30	155		100		40.0	09/12/13	LAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -27
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:32:00 PM
CLIENT SAMPLE ID	B7-1-3-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains weathered diesel and light oil/lube oil.
Gasoline range reporting limit raised due to semivolatile range product overlap.
Diesel range product results biased high due to oil range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -28
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:36:00 PM
CLIENT SAMPLE ID	B7-2-5.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.29	0.87	1	U	MG/KG	09/12/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	2.8	8.5	1	U	MG/KG	09/12/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	5.5	16	1	U	MG/KG	09/12/13	EBS
CFC-12	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.29	0.83	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.012	0.036	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.23	0.69	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.28	0.83	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.29	0.87	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.24	0.73	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.28	0.85	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.53	1.6	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.012	0.037	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.57	1.7	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.30	0.89	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.27	0.82	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.28	0.83	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.41	1.2	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.28	0.85	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.49	1.5	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.28	0.85	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.25	0.77	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.25	0.77	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0072	0.022	1	U	UG/KG	09/19/13	GAP
Benzene	SW8260C	ND	5.0	0.0092	0.028	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.020	0.059	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.26	0.77	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.29	0.86	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.30	0.91	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.28	0.85	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.29	0.88	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -28
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:36:00 PM
CLIENT SAMPLE ID	B7-2-5.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
2-Hexanone	SW8260C	ND	50	0.20	0.59	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.30	0.89	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.019	0.057	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.44	1.3	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.0096	0.029	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.24	0.71	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.54	1.6	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.23	0.69	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.26	0.77	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.33	0.99	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.25	0.75	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.32	0.95	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.32	0.95	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.31	0.92	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.32	0.95	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.23	0.69	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.46	1.4	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.29	0.88	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.25	0.74	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.27	0.81	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.22	0.66	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.32	0.97	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.24	0.71	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.32	0.96	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.38	1.1	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.28	0.84	1	U	UG/KG	09/19/13	GAP
Hexachlorobutadiene	SW8260C	ND	10	0.33	1.0	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.32	0.95	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.30	0.90	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8270DSIM	ND	20	0.80	2.4	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	0.98	2.9	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.80	2.4	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.72	2.1	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.67	2.0	1	U	UG/KG	09/17/13	LAP

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -28
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 4:36:00 PM
CLIENT SAMPLE ID	B7-2-5.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Fluorene	SW8270DSIM	ND	20	0.97	2.9	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.1	3.3	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.0	3.1	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	0.83	2.5	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.1	3.3	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	0.91	2.7	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	0.89	2.7	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.4	4.3	1	U	UG/KG	09/17/13	LAP
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
Mercury	SW7471	ND	0.020	0.0014	0.0041	1	U	MG/KG	09/13/13	RAL
Arsenic	SW6020	**3.2**	1.0	0.27	0.81	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.083	0.25	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**34**	0.50	0.14	0.41	5		MG/KG	09/16/13	RAL
Lead	SW6020	**3.5**	0.50	0.088	0.26	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**97.9%**	60	140		10.0		97.9	09/12/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**101%**	58	134		20.0		101	09/12/13	EBS
1,2-Dichloroethane-d4	SW8260C	**76.9%**	72.4	138		20.0		76.9	09/19/13	GAP
Toluene-d8	SW8260C	**93.3%**	69.4	126		20.0		93.3	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**83.5%**	73	123		20.0		83.5	09/19/13	GAP
Terphenyl-d14	SW8270DSIM	**82.4%**	28.9	157		5000000		82.4	09/17/13	LAP
Tetrachloro-m-xylene	SW8082	**69%**	33	146		100		69.0	09/12/13	LAP
PCB-209	SW8082	**47%**	30	155		100		47.0	09/12/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -36
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 1:21:00 PM
CLIENT SAMPLE ID	B8-4-10.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Transformer Oil	NWTPH-DX w/ SGA	**250**	50	7.0	21	1		MG/KG	09/13/13	EBS
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**113%**	58	134		20.0		113	09/13/13	EBS
Tetrachloro-m-xylene	SW8082	**53%**	33	146		100		53.0	09/12/13	LAP
PCB-209	SW8082	**51%**	30	155		100		51.0	09/12/13	LAP

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Chromatogram indicates that it is likely that sample contains transformer oil.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -37
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 1:27:00 PM
CLIENT SAMPLE ID	B8-5-13-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mineral Oil	NWTPH-DX w/ SGA	ND	50	5.8	17	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**119%**	58	134		10.0		119	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -40
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 2:36:00 PM
CLIENT SAMPLE ID	B9-3-8-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mineral Oil	NWTPH-DX w/ SGA	ND	50	7.5	23	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**122%**	58	134		10.0		122	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -44
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 12:50:00 PM
CLIENT SAMPLE ID	B10-3-8-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mineral Oil	NWTPH-DX w/ SGA	ND	51	7.8	24	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**122%**	58	134		10.0		122	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -45
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 12:54:00 PM
CLIENT SAMPLE ID	B10-4-10.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mineral Oil	NWTPH-DX w/ SGA	ND	50	6.9	21	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**118%**	58	134		10.0		118	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -47
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 1:58:00 PM
CLIENT SAMPLE ID	B11-2-5.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	**46**	25	3.1	9.3	1		MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**120**	50	6.0	18	1		MG/KG	09/11/13	EBS
Mineral Oil	NWTPH-DX w/ SGA	ND	50	6.0	18	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**134%**	58	134		10.0		134	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and lube oil.
Diesel range product results biased high due to oil range product overlap.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -48
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 2:03:00 PM
CLIENT SAMPLE ID	B11-3-8-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mineral Oil	NWTPH-DX w/ SGA	ND	50	5.6	17	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**123%**	58	134		10.0		123	09/11/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -53
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 3:12:00 PM
CLIENT SAMPLE ID	B12-4-10.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Transformer Oil	NWTPH-DX w/ SGA	**1000**	50	6.3	19	1		MG/KG	09/13/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**101%**	58	134		10.0		101	09/13/13	EBS

Chromatogram indicates that it is likely that sample contains transformer oil.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -54
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 3:14:00 PM
CLIENT SAMPLE ID	B12-5-11.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Transformer Oil	NWTPH-DX w/ SGA	**520**	50	6.0	18	1		MG/KG	09/12/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX w/ SGA	**105%**	58	134		10.0		105	09/12/13	EBS

Chromatogram indicates that it is likely that sample contains transformer oil.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -57
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 11:06:00 AM
CLIENT SAMPLE ID	B13-3-8-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.24	0.72	1	U	MG/KG	09/12/13	DLC
Benzene	SW8021	ND	0.030	0.0047	0.0057	1	U	MG/KG	09/12/13	DLC
Toluene	SW8021	ND	0.050	0.0016	0.0047	1	U	MG/KG	09/12/13	DLC
Ethylbenzene	SW8021	ND	0.050	0.0018	0.0054	1	U	MG/KG	09/12/13	DLC
Total Xylenes	SW8021	ND	0.20	0.0047	0.014	1	U	MG/KG	09/12/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	**55**	25	3.4	10	1		MG/KG	09/12/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**74**	50	6.7	20	1		MG/KG	09/12/13	EBS
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/16/13	LAP
Mercury	SW7471	**0.13**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**8.2**	1.0	0.30	0.90	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	**0.69**	0.50	0.093	0.28	5		MG/KG	09/16/13	RAL
Chromium	SW6020	**46**	0.50	0.15	0.46	5		MG/KG	09/16/13	RAL
Copper	SW6020	**5000**	5.0	0.99	2.9	50		MG/KG	09/20/13	RAL
Lead	SW6020	**310**	0.50	0.099	0.29	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**65.4%**	60	140		10.0		65.4	09/12/13	DLC
TFT	SW8021	**60.7%**	60	140		10.0		60.7	09/12/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**123%**	58	134		10.0		123	09/12/13	EBS
Tetrachloro-m-xylene	SW8082	**74%**	33	146		100		74.0	09/16/13	LAP
PCB-209	SW8082	**63%**	30	155		100		63.0	09/16/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and lube oil.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -58
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 11:11:00 AM
CLIENT SAMPLE ID	B13-4-10.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.29	0.86	1	U	MG/KG	09/12/13	DLC
Benzene	SW8021	ND	0.030	0.0056	0.0069	1	U	MG/KG	09/12/13	DLC
Toluene	SW8021	ND	0.050	0.0019	0.0056	1	U	MG/KG	09/12/13	DLC
Ethylbenzene	SW8021	ND	0.050	0.0022	0.0065	1	U	MG/KG	09/12/13	DLC
Total Xylenes	SW8021	ND	0.20	0.0056	0.017	1	U	MG/KG	09/12/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.6	11	1	U	MG/KG	09/12/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	7.0	21	1	U	MG/KG	09/12/13	EBS
Mercury	SW7471	**0.084**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**10**	1.0	0.32	0.96	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.098	0.30	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**85**	0.50	0.16	0.49	5		MG/KG	09/16/13	RAL
Copper	SW6020	**59**	0.50	0.10	0.31	5		MG/KG	09/16/13	RAL
Lead	SW6020	**11**	0.50	0.10	0.31	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**86.4%**	60	140		10.0		86.4	09/12/13	DLC
TFT	SW8021	**78.9%**	60	140		10.0		78.9	09/12/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**104%**	58	134		10.0		104	09/12/13	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -62
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 10:07:00 AM
CLIENT SAMPLE ID	B14-2-5.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.26	0.77	1	U	MG/KG	09/12/13	DLC
Benzene	SW8021	ND	0.030	0.0050	0.0062	1	U	MG/KG	09/12/13	DLC
Toluene	SW8021	ND	0.050	0.0017	0.0050	1	U	MG/KG	09/12/13	DLC
Ethylbenzene	SW8021	ND	0.050	0.0019	0.0058	1	U	MG/KG	09/12/13	DLC
Total Xylenes	SW8021	ND	0.20	0.0050	0.015	1	U	MG/KG	09/12/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	2.9	8.6	1	U	MG/KG	09/12/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	**84**	50	5.6	17	1		MG/KG	09/12/13	EBS
Naphthalene	SW8270DSIM	ND	20	0.79	2.4	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	0.96	2.9	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.79	2.4	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.70	2.1	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	**44**	20	0.65	2.0	1		UG/KG	09/17/13	LAP
Fluorene	SW8270DSIM	**42**	20	0.95	2.8	1		UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	**370**	20	1.3	3.8	1		UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	**100**	20	1.1	3.2	1		UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	**340**	20	1.0	3.1	1		UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	**320**	20	1.1	3.3	1		UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	**130**	20	0.81	2.4	1		UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	**140**	20	1.1	3.3	1		UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	**77**	20	1.1	3.2	1		UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	**74**	20	0.89	2.7	1		UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	**120**	20	0.88	2.6	1		UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	**65**	20	1.0	3.1	1		UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	**86**	20	1.4	4.2	1		UG/KG	09/17/13	LAP
Mercury	SW7471	**0.022**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**4.2**	1.0	0.26	0.77	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.079	0.24	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**35**	0.50	0.13	0.39	5		MG/KG	09/16/13	RAL
Lead	SW6020	**17**	0.50	0.084	0.25	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**94.7%**	60	140		10.0		94.7	09/12/13	DLC
TFT	SW8021	**87.4%**	60	140		10.0		87.4	09/12/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**114%**	58	134		10.0		114	09/12/13	EBS
Terphenyl-d14	SW8270DSIM	**105%**	28.9	157		5000000		105	09/17/13	LAP

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -62
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 10:07:00 AM
CLIENT SAMPLE ID	B14-2-5.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -63
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 10:11:00 AM
CLIENT SAMPLE ID	B14-3-8-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.30	0.89	1	U	MG/KG	09/12/13	DLC
Benzene	SW8021	ND	0.030	0.0058	0.0071	1	U	MG/KG	09/12/13	DLC
Toluene	SW8021	ND	0.050	0.0019	0.0058	1	U	MG/KG	09/12/13	DLC
Ethylbenzene	SW8021	ND	0.050	0.0022	0.0067	1	U	MG/KG	09/12/13	DLC
Total Xylenes	SW8021	ND	0.20	0.0058	0.017	1	U	MG/KG	09/12/13	DLC
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX w/ SGA	ND	25	3.0	9.1	1	U	MG/KG	09/12/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX w/ SGA	ND	50	5.9	18	1	U	MG/KG	09/12/13	EBS
Naphthalene	SW8270DSIM	ND	20	0.95	2.8	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.2	3.5	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.95	2.8	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.85	2.5	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.79	2.4	1	U	UG/KG	09/17/13	LAP
Fluorene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	0.98	2.9	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.7	5.0	1	U	UG/KG	09/17/13	LAP
Mercury	SW7471	**0.095**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**11**	1.0	0.32	0.96	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.098	0.29	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**82**	0.50	0.16	0.48	5		MG/KG	09/16/13	RAL
Lead	SW6020	**11**	0.50	0.10	0.31	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**81.9%**	60	140		10.0		81.9	09/12/13	DLC
TFT	SW8021	**77.8%**	60	140		10.0		77.8	09/12/13	DLC
Pentacosane	NWTPH-DX w/ SGA	**110%**	58	134		10.0		110	09/12/13	EBS
Terphenyl-d14	SW8270DSIM	**90.1%**	28.9	157		5000000		90.1	09/17/13	LAP

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -63
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 10:11:00 AM
CLIENT SAMPLE ID	B14-3-8-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -67
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 8:55:00 AM
CLIENT SAMPLE ID	B15-1-3-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	SW8270DSIM	ND	20	0.95	2.9	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.2	3.5	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.95	2.8	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.85	2.5	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.79	2.4	1	U	UG/KG	09/17/13	LAP
Fluorene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.2	3.7	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	0.98	2.9	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.3	4.0	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.7	5.0	1	U	UG/KG	09/17/13	LAP
Mercury	SW7471	**0.089**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**8.1**	1.0	0.32	0.96	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.098	0.30	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**86**	0.50	0.16	0.49	5		MG/KG	09/16/13	RAL
Copper	SW6020	**53**	0.50	0.10	0.31	5		MG/KG	09/16/13	RAL
Lead	SW6020	**13**	0.50	0.10	0.31	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Terphenyl-d14	SW8270DSIM	**87.2%**	28.9	157		5000000		87.2	09/17/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	9/24/2013 EV13090063 -73
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 7:53:00 AM
CLIENT SAMPLE ID	B16-1-3-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	SW8270DSIM	ND	20	0.82	2.5	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.0	3.0	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	0.82	2.5	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.73	2.2	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.68	2.0	1	U	UG/KG	09/17/13	LAP
Fluorene	SW8270DSIM	ND	20	0.99	3.0	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.2	3.5	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	0.85	2.5	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.2	3.5	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.1	3.4	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	0.93	2.8	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	0.92	2.7	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.1	3.3	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/17/13	LAP
Mercury	SW7471	**0.043**	0.020	0.0014	0.0041	1		MG/KG	09/13/13	RAL
Arsenic	SW6020	**6.4**	1.0	0.29	0.85	5		MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.50	0.088	0.26	5	U	MG/KG	09/16/13	RAL
Chromium	SW6020	**62**	0.50	0.15	0.43	5		MG/KG	09/16/13	RAL
Lead	SW6020	**5.5**	0.50	0.093	0.27	5		MG/KG	09/16/13	RAL

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Terphenyl-d14	SW8270DSIM	**96.5%**	28.9	157		5000000		96.5	09/17/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT: Geoengineers, Inc.
600 DuPont St.
Bellingham, WA 98225

CLIENT CONTACT: Ron Bek
CLIENT PROJECT: 0482-043-01

DATE: 9/24/2013
ALS SDG#: EV13090063
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MBG-091113S - Batch 7038 - Soil by NWTPH-GX Prepared 09/11/13 00:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Gasoline	NWTPH-GX	ND	3.0	0.29	0.87	1	U	MG/KG	09/11/13	DLC

SURROGATE	METHOD	RESULTS	MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**105**	60	140		0.5		**105**	09/11/13	DLC

MB-091113S - Batch 7038 - Soil by SW8021 Prepared 09/11/13 00:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Benzene	SW8021	ND	0.030	0.0057	0.0070	1	U	MG/KG	09/11/13	DLC
Toluene	SW8021	ND	0.050	0.0019	0.0057	1	U	MG/KG	09/11/13	DLC
Ethylbenzene	SW8021	ND	0.050	0.0022	0.0066	1	U	MG/KG	09/11/13	DLC
Total Xylenes	SW8021	ND	0.20	0.0057	0.017	1	U	MG/KG	09/11/13	DLC

SURROGATE	METHOD	RESULTS	MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	SW8021	**105**	60	140		0.5		**105**	09/11/13	DLC

MB-090613S2 - Batch 7013 - Soil by NWTPH-DX Prepared 09/06/13 11:45

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX	ND	25	3.9	12	1	U	MG/KG	09/06/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/06/13	EBS
Mineral Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/06/13	EBS
Transformer Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/06/13	EBS

SURROGATE	METHOD	RESULTS	MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX	**111**	58	134		5		**111**	09/06/13	EBS

MB-091113S - Batch 7045 - Soil by NWTPH-DX Prepared 09/11/13 09:47

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX	ND	25	3.9	12	1	U	MG/KG	09/11/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/11/13	EBS
Mineral Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/11/13	EBS
Transformer Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/11/13	EBS

SURROGATE	METHOD	RESULTS	MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY

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CLIENT PROJECT: 0482-043-01

DATE: 9/24/2013
ALS SDG#: EV13090063
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-091113S - Batch 7045 - Soil by NWTPH-DX Prepared 09/11/13 09:47

Pentacosane	NWTPH-DX	**105**	58	134	5		**105**	09/11/13	EBS

MB-091113S2 - Batch 7051 - Soil by NWTPH-DX Prepared 09/11/13 18:13

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel	NWTPH-DX	ND	25	3.9	12	1	U	MG/KG	09/13/13	EBS
Total Petroleum Hydrocarbon – Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/13/13	EBS
Mineral Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/13/13	EBS
Transformer Oil	NWTPH-DX	ND	50	7.6	23	1	U	MG/KG	09/13/13	EBS

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Pentacosane	NWTPH-DX	**104**	58	134		5		**104**	09/13/13	EBS

MB-091913S - Batch 7112 - Soil by SW8260C Prepared 09/19/13 13:22

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
CFC-12	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Chloromethane	SW8260C	ND	10	0.23	0.66	1	U	UG/KG	09/19/13	GAP
Vinyl Chloride	SW8260C	ND	10	0.0095	0.029	1	U	UG/KG	09/19/13	GAP
Bromomethane	SW8260C	ND	10	0.18	0.56	1	U	UG/KG	09/19/13	GAP
Chloroethane	SW8260C	ND	10	0.22	0.66	1	U	UG/KG	09/19/13	GAP
Carbon Tetrachloride	SW8260C	ND	10	0.23	0.70	1	U	UG/KG	09/19/13	GAP
CFC-11	SW8260C	ND	10	0.20	0.58	1	U	UG/KG	09/19/13	GAP
Carbon Disulfide	SW8260C	ND	10	0.23	0.68	1	U	UG/KG	09/19/13	GAP
Acetone	SW8260C	ND	50	0.43	1.3	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethene	SW8260C	ND	10	0.0099	0.030	1	U	UG/KG	09/19/13	GAP
Methylene Chloride	SW8260C	ND	20	0.46	1.4	1	U	UG/KG	09/19/13	GAP
Acrylonitrile	SW8260C	ND	50	0.24	0.71	1	U	UG/KG	09/19/13	GAP
Methyl t-butyl ether	SW8260C	ND	10	0.23	0.69	1	U	UG/KG	09/19/13	GAP
Trans-1,2-Dichloroethene	SW8260C	ND	10	0.22	0.66	1	U	UG/KG	09/19/13	GAP
1,1-Dichloroethane	SW8260C	ND	10	0.22	0.67	1	U	UG/KG	09/19/13	GAP
2-Butanone	SW8260C	ND	50	0.33	0.98	1	U	UG/KG	09/19/13	GAP
Cis-1,2-Dichloroethene	SW8260C	ND	10	0.24	0.72	1	U	UG/KG	09/19/13	GAP
2,2-Dichloropropane	SW8260C	ND	10	0.23	0.68	1	U	UG/KG	09/19/13	GAP
Bromochloromethane	SW8260C	ND	10	0.40	1.2	1	U	UG/KG	09/19/13	GAP
Chloroform	SW8260C	ND	10	0.23	0.68	1	U	UG/KG	09/19/13	GAP
1,1,1-Trichloroethane	SW8260C	ND	10	0.20	0.62	1	U	UG/KG	09/19/13	GAP
1,1-Dichloropropene	SW8260C	ND	10	0.20	0.62	1	U	UG/KG	09/19/13	GAP
1,2-Dichloroethane	SW8260C	ND	10	0.0058	0.018	1	U	UG/KG	09/19/13	GAP

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ALS SDG#: EV13090063
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-091913S - Batch 7112 - Soil by SW8260C Prepared 09/19/13 13:22

Benzene	SW8260C	ND	5.0	0.0074	0.022	1	U	UG/KG	09/19/13	GAP
Trichloroethene	SW8260C	ND	10	0.016	0.048	1	U	UG/KG	09/19/13	GAP
1,2-Dichloropropane	SW8260C	ND	10	0.21	0.62	1	U	UG/KG	09/19/13	GAP
Dibromomethane	SW8260C	ND	10	0.26	0.78	1	U	UG/KG	09/19/13	GAP
Dichlorobromomethane	SW8260C	ND	10	0.23	0.69	1	U	UG/KG	09/19/13	GAP
Trans-1,3-Dichloropropene	SW8260C	ND	10	0.24	0.74	1	U	UG/KG	09/19/13	GAP
Methyl isobutyl ketone	SW8260C	ND	50	0.23	0.68	1	U	UG/KG	09/19/13	GAP
Toluene	SW8260C	ND	10	0.24	0.71	1	U	UG/KG	09/19/13	GAP
Cis-1,3-Dichloropropene	SW8260C	ND	10	0.24	0.71	1	U	UG/KG	09/19/13	GAP
1,1,2-Trichloroethane	SW8260C	ND	10	0.25	0.74	1	U	UG/KG	09/19/13	GAP
2-Hexanone	SW8260C	ND	50	0.16	0.48	1	U	UG/KG	09/19/13	GAP
1,3-Dichloropropane	SW8260C	ND	10	0.24	0.72	1	U	UG/KG	09/19/13	GAP
Tetrachloroethene	SW8260C	ND	10	0.015	0.046	1	U	UG/KG	09/19/13	GAP
Dibromochloromethane	SW8260C	ND	10	0.36	1.1	1	U	UG/KG	09/19/13	GAP
Ethylene dibromide	SW8260C	ND	5.0	0.0077	0.023	1	U	UG/KG	09/19/13	GAP
Chlorobenzene	SW8260C	ND	10	0.25	0.74	1	U	UG/KG	09/19/13	GAP
1,1,1,2-Tetrachloroethane	SW8260C	ND	10	0.19	0.57	1	U	UG/KG	09/19/13	GAP
Ethylbenzene	SW8260C	ND	10	0.24	0.72	1	U	UG/KG	09/19/13	GAP
m, p-Xylene	SW8260C	ND	20	0.43	1.3	1	U	UG/KG	09/19/13	GAP
Styrene	SW8260C	ND	10	0.19	0.56	1	U	UG/KG	09/19/13	GAP
o-Xylene	SW8260C	ND	10	0.21	0.62	1	U	UG/KG	09/19/13	GAP
Bromoform	SW8260C	ND	10	0.26	0.79	1	U	UG/KG	09/19/13	GAP
Isopropylbenzene (Cumene)	SW8260C	ND	10	0.20	0.60	1	U	UG/KG	09/19/13	GAP
1,1,2,2-Tetrachloroethane	SW8260C	ND	10	0.25	0.76	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichloropropane	SW8260C	ND	10	0.27	0.80	1	U	UG/KG	09/19/13	GAP
Bromobenzene	SW8260C	ND	10	0.26	0.77	1	U	UG/KG	09/19/13	GAP
n-Propylbenzene	SW8260C	ND	10	0.25	0.74	1	U	UG/KG	09/19/13	GAP
2-Chlorotoluene	SW8260C	ND	10	0.26	0.77	1	U	UG/KG	09/19/13	GAP
1,3,5-Trimethylbenzene	SW8260C	ND	10	0.18	0.55	1	U	UG/KG	09/19/13	GAP
4-Chlorotoluene	SW8260C	ND	10	0.37	1.1	1	U	UG/KG	09/19/13	GAP
Tert-Butylbenzene	SW8260C	ND	10	0.24	0.71	1	U	UG/KG	09/19/13	GAP
1,2,4-Trimethylbenzene	SW8260C	ND	10	0.20	0.60	1	U	UG/KG	09/19/13	GAP
Sec-Butylbenzene	SW8260C	ND	10	0.22	0.65	1	U	UG/KG	09/19/13	GAP
p-Isopropyltoluene	SW8260C	ND	10	0.18	0.53	1	U	UG/KG	09/19/13	GAP
1,3-Dichlorobenzene	SW8260C	ND	10	0.26	0.78	1	U	UG/KG	09/19/13	GAP
1,4-Dichlorobenzene	SW8260C	ND	10	0.24	0.72	1	U	UG/KG	09/19/13	GAP
n-Butylbenzene	SW8260C	ND	10	0.19	0.57	1	U	UG/KG	09/19/13	GAP
1,2-Dichlorobenzene	SW8260C	ND	10	0.26	0.78	1	U	UG/KG	09/19/13	GAP
1,2-Dibromo-3-Chloropropane	SW8260C	ND	50	0.30	0.91	1	U	UG/KG	09/19/13	GAP
1,2,4-Trichlorobenzene	SW8260C	ND	10	0.22	0.68	1	U	UG/KG	09/19/13	GAP

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LABORATORY BLANK RESULTS

MB-091913S - Batch 7112 - Soil by SW8260C Prepared 09/19/13 13:22

Hexachlorobutadiene	SW8260C	ND	10	0.27	0.80	1	U	UG/KG	09/19/13	GAP
Naphthalene	SW8260C	ND	10	0.25	0.76	1	U	UG/KG	09/19/13	GAP
1,2,3-Trichlorobenzene	SW8260C	ND	10	0.24	0.72	1	U	UG/KG	09/19/13	GAP

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	SW8260C	**93.2**	72.4	138		20		**93.2**	09/19/13	GAP
Toluene-d8	SW8260C	**95.1**	69.4	126		20		**95.1**	09/19/13	GAP
p-Bromofluorobenzene	SW8260C	**113**	73	123		20		**113**	09/19/13	GAP

MB-091213S - Batch 7105 - Soil by SW8270DSIM Prepared 09/12/13 00:28

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Naphthalene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
2-Methylnaphthalene	SW8270DSIM	ND	20	1.3	3.9	1	U	UG/KG	09/17/13	LAP
1-Methylnaphthalene	SW8270DSIM	ND	20	1.1	3.2	1	U	UG/KG	09/17/13	LAP
Acenaphthylene	SW8270DSIM	ND	20	0.95	2.8	1	U	UG/KG	09/17/13	LAP
Acenaphthene	SW8270DSIM	ND	20	0.88	2.6	1	U	UG/KG	09/17/13	LAP
Fluorene	SW8270DSIM	ND	20	1.3	3.8	1	U	UG/KG	09/17/13	LAP
Phenanthrene	SW8270DSIM	ND	20	1.7	5.1	1	U	UG/KG	09/17/13	LAP
Anthracene	SW8270DSIM	ND	20	1.4	4.3	1	U	UG/KG	09/17/13	LAP
Fluoranthene	SW8270DSIM	ND	20	1.4	4.1	1	U	UG/KG	09/17/13	LAP
Pyrene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Benz[a]anthracene	SW8270DSIM	ND	20	1.1	3.3	1	U	UG/KG	09/17/13	LAP
Chrysene	SW8270DSIM	ND	20	1.5	4.5	1	U	UG/KG	09/17/13	LAP
Benzo(b)fluoranthene	SW8270DSIM	ND	20	1.5	4.4	1	U	UG/KG	09/17/13	LAP
Benzo(k)fluoranthene	SW8270DSIM	ND	20	1.2	3.6	1	U	UG/KG	09/17/13	LAP
Benzo(a)pyrene	SW8270DSIM	ND	20	1.2	3.5	1	U	UG/KG	09/17/13	LAP
Indeno(1,2,3-cd)pyrene	SW8270DSIM	ND	20	1.4	4.2	1	U	UG/KG	09/17/13	LAP
Dibenzo(a,h)anthracene	SW8270DSIM	ND	20	1.7	5.0	1	U	UG/KG	09/17/13	LAP
Benzo(ghi)perylene	SW8270DSIM	ND	20	1.9	5.6	1	U	UG/KG	09/17/13	LAP

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Terphenyl-d14	SW8270DSIM	**106**	28.9	157		1000		**106**	09/17/13	LAP

MBLK-9122013 - Batch R91293 - Soil by SW8082 Prepared 09/12/13 00:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP

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LABORATORY BLANK RESULTS

MBLK-9122013 - Batch R91293 - Soil by SW8082 Prepared 09/12/13 00:00

PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	09/12/13	LAP

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Tetrachloro-m-xylene	SW8082	**95.0**	33	146		100		**95.0**	09/12/13	LAP
PCB-209	SW8082	**90.0**	30	155		100		**90.0**	09/12/13	LAP

MBLK-9182013 - Batch R91301 - Soil by SW7196 Prepared 09/18/13 00:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Chromium	SW7196	ND	5.0	0.90	2.7	1	U	MG/KG	09/18/13	RAL

MBLK-9132013 - Batch R91299 - Soil by SW7471 Prepared 09/13/13 00:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	ND	0.020	0.0014	0.0041	1	U	MG/KG	09/13/13	RAL

MB-091213S - Batch 7086 - Soil by SW6020 Prepared 09/12/13 12:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	SW6020	ND	0.20	0.049	0.15	1	U	MG/KG	09/16/13	RAL
Cadmium	SW6020	ND	0.10	0.015	0.045	1	U	MG/KG	09/16/13	RAL
Chromium	SW6020	ND	0.10	0.025	0.074	1	U	MG/KG	09/16/13	RAL
Copper	SW6020	ND	0.10	0.016	0.047	1	U	MG/KG	09/16/13	RAL
Lead	SW6020	ND	0.10	0.016	0.047	1	U	MG/KG	09/16/13	RAL

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LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 7038 - Soil by NWTPH-GX Prepared 09/11/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Gasoline - BS	NWTPH-GX	**65.8**			25	59	104		09/11/13	DLC
Gasoline - BSD	NWTPH-GX	**71.3**	**8**		25	59	104	15	09/11/13	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
TFT - BS	NWTPH-GX	**118**			0.5	60	140		09/11/13	DLC
TFT - BSD	NWTPH-GX	**123**			0.5	60	140		09/11/13	DLC

ALS Test Batch ID: 7038 - Soil by SW8021 Prepared 09/11/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	SW8021	**117**			1	67.7	124		09/11/13	DLC
Benzene - BSD	SW8021	**118**	**1**		1	67.7	124	8.5	09/11/13	DLC
Toluene - BS	SW8021	**122**			1	71	123		09/11/13	DLC
Toluene - BSD	SW8021	**124**	**1**		1	71	123	9.7	09/11/13	DLC
Ethylbenzene - BS	SW8021	**119**			1	69.8	117		09/11/13	DLC
Ethylbenzene - BSD	SW8021	**120**	**1**		1	69.8	117	10	09/11/13	DLC
Total Xylenes - BS	SW8021	**122**			3	70	119		09/11/13	DLC
Total Xylenes - BSD	SW8021	**124**	**1**		3	70	119	10	09/11/13	DLC

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
TFT - BS	SW8021	**135**			0.5	60	140		09/11/13	DLC
TFT - BSD	SW8021	**133**			0.5	60	140		09/11/13	DLC

ALS Test Batch ID: 7013 - Soil by NWTPH-DX Prepared 09/06/13 10:44

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel - BS	NWTPH-DX	**97.3**			125	76.2	112		09/06/13	EBS

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Pentacosane - BS	NWTPH-DX	**104**			5	58	134		09/06/13	EBS

ALS Test Batch ID: 7013 - Soil by NWTPH-DX Prepared 09/06/13 11:14

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel - BSD	NWTPH-DX	**94.4**	**3**		125	76.2	112	12	09/06/13	EBS

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT: Geoengineers, Inc.
600 DuPont St.
Bellingham, WA 98225

CLIENT CONTACT: Ron Bek
CLIENT PROJECT: 0482-043-01

DATE: 9/24/2013
ALS SDG#: EV13090063
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Pentacosane - BSD	NWTPH-DX	**104**			5	58	134		09/06/13	EBS

ALS Test Batch ID: 7045 - Soil by NWTPH-DX Prepared 09/11/13 11:19

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel - BS	NWTPH-DX	**84.1**			125	76.2	112		09/11/13	EBS

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Pentacosane - BS	NWTPH-DX	**112**			5	58	134		09/11/13	EBS

ALS Test Batch ID: 7045 - Soil by NWTPH-DX Prepared 09/11/13 11:49

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel - BSD	NWTPH-DX	**90.8**	**8**		125	76.2	112	12	09/11/13	EBS

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Pentacosane - BSD	NWTPH-DX	**125**			5	58	134		09/11/13	EBS

ALS Test Batch ID: 7051 - Soil by NWTPH-DX Prepared 09/11/13 18:13

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Total Petroleum Hydrocarbon – Diesel - BS	NWTPH-DX	**92.8**			125	76.2	112		09/12/13	EBS
Total Petroleum Hydrocarbon – Diesel - BSD	NWTPH-DX	**94.8**	**2**		125	76.2	112	12	09/12/13	EBS

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Pentacosane - BS	NWTPH-DX	**99.8**			5	58	134		09/12/13	EBS
Pentacosane - BSD	NWTPH-DX	**96.3**			5	58	134		09/12/13	EBS

ALS Test Batch ID: 7112 - Soil by SW8260C Prepared 09/19/13 13:54

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	SW8260C	**82.5**			10	73	138		09/19/13	GAP
Benzene - BS	SW8260C	**78.1**			10	75	138		09/19/13	GAP
Trichloroethene - BS	SW8260C	**81.6**			10	75	136		09/19/13	GAP
Toluene - BS	SW8260C	**90.2**			10	76	134		09/19/13	GAP

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CLIENT CONTACT: Ron Bek
CLIENT PROJECT: 0482-043-01

DATE: 9/24/2013
ALS SDG#: EV13090063
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Chlorobenzene - BS	SW8260C	**93.3**			10	79	128		09/19/13	GAP

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 - BS	SW8260C	**92.9**			20	72.4	138		09/19/13	GAP
Toluene-d8 - BS	SW8260C	**99.9**			20	69.4	126		09/19/13	GAP
p-Bromofluorobenzene - BS	SW8260C	**110**			20	73	123		09/19/13	GAP

ALS Test Batch ID: 7112 - Soil by SW8260C Prepared 09/19/13 14:01

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BSD	SW8260C	**84.3**	**2**		10	73	138	22	09/19/13	GAP
Benzene - BSD	SW8260C	**79.8**	**2**		10	75	138	21	09/19/13	GAP
Trichloroethene - BSD	SW8260C	**83.0**	**2**		10	75	136	20	09/19/13	GAP
Toluene - BSD	SW8260C	**90.3**	**0**		10	76	134	19	09/19/13	GAP
Chlorobenzene - BSD	SW8260C	**95.8**	**3**		10	79	128	16	09/19/13	GAP

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4 - BSD	SW8260C	**95.3**			20	72.4	138		09/19/13	GAP
Toluene-d8 - BSD	SW8260C	**98.3**			20	69.4	126		09/19/13	GAP
p-Bromofluorobenzene - BSD	SW8260C	**86.0**			20	73	123		09/19/13	GAP

ALS Test Batch ID: 7105 - Soil by SW8270DSIM Prepared 09/12/13 00:28

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Naphthalene - BS	SW8270DSIM	**106**			500	49.2	140		09/12/13	LAP
Naphthalene - BSD	SW8270DSIM	**96.0**	**10**		500	49.2	140	17.3	09/18/13	LAP
Acenaphthene - BS	SW8270DSIM	**116**			500	55	147		09/12/13	LAP
Acenaphthene - BSD	SW8270DSIM	**97.1**	**18**		500	55	147	19	09/18/13	LAP
Pyrene - BS	SW8270DSIM	**110**			500	47.9	176		09/12/13	LAP
Pyrene - BSD	SW8270DSIM	**83.7**	**27**		500	47.9	176	21.3	09/18/13	LAP
Benzo(ghi)perylene - BS	SW8270DSIM	**108**			500	40.4	143		09/12/13	LAP
Benzo(ghi)perylene - BSD	SW8270DSIM	**86.6**	**22**		500	40.4	143	22.8	09/18/13	LAP

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Terphenyl-d14 - BS	SW8270DSIM	**126**			1000	28.9	157		09/12/13	LAP
Terphenyl-d14 - BSD	SW8270DSIM	**96.4**			1000	28.9	157		09/18/13	LAP

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DATE: 9/24/2013
ALS SDG#: EV13090063
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R91293 - Soil by SW8082 Prepared 09/12/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
PCB-aroclor 1016 - BS	SW8082	**84.0**			100	50	150		09/12/13	LAP
PCB-aroclor 1016 - BSD	SW8082	**93.0**	**10**		100	50	150	21	09/12/13	LAP
PCB-aroclor 1260 - BS	SW8082	**91.0**			100	50	150		09/12/13	LAP
PCB-aroclor 1260 - BSD	SW8082	**114**	**22**		100	50	150	21	09/12/13	LAP

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Tetrachloro-m-xylene - BS	SW8082	**82.0**			100	33	146		09/12/13	LAP
Tetrachloro-m-xylene - BSD	SW8082	**102**			100	33	146		09/12/13	LAP
PCB-209 - BS	SW8082	**70.0**			100	30	155		09/12/13	LAP
PCB-209 - BSD	SW8082	**97.0**			100	30	155		09/12/13	LAP

ALS Test Batch ID: R91301 - Soil by SW7196 Prepared 09/18/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Chromium - BS	SW7196	**106**			100	91	114		09/18/13	RAL
Chromium - BSD	SW7196	**105**	**1**		100	91	114	7.8	09/18/13	RAL

ALS Test Batch ID: R91299 - Soil by SW7471 Prepared 09/13/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	SW7471	**99.0**			100	81.8	117		09/13/13	RAL
Mercury - BSD	SW7471	**99.0**	**0**		100	81.8	117	8.84	09/13/13	RAL

ALS Test Batch ID: 7086 - Soil by SW6020 Prepared 09/12/13 12:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	SW6020	**96.4**			5	80	120		09/16/13	RAL
Arsenic - BSD	SW6020	**96.4**	**0**		5	80	120	8.91	09/16/13	RAL
Cadmium - BS	SW6020	**97.4**			5	80	120		09/16/13	RAL
Cadmium - BSD	SW6020	**94.6**	**3**		5	80	120	9.2	09/16/13	RAL
Chromium - BS	SW6020	**102**			5	80	120		09/16/13	RAL
Chromium - BSD	SW6020	**102**	**0**		5	80	120	9.6	09/16/13	RAL
Copper - BS	SW6020	**104**			5	80	120		09/16/13	RAL
Copper - BSD	SW6020	**104**	**0**		5	80	120	8.69	09/16/13	RAL
Lead - BS	SW6020	**96.7**			5	80	120		09/16/13	RAL
Lead - BSD	SW6020	**95.4**	**1**		5	80	120	9.36	09/16/13	RAL

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CERTIFICATE OF ANALYSIS

APPROVED BY

Laboratory Director

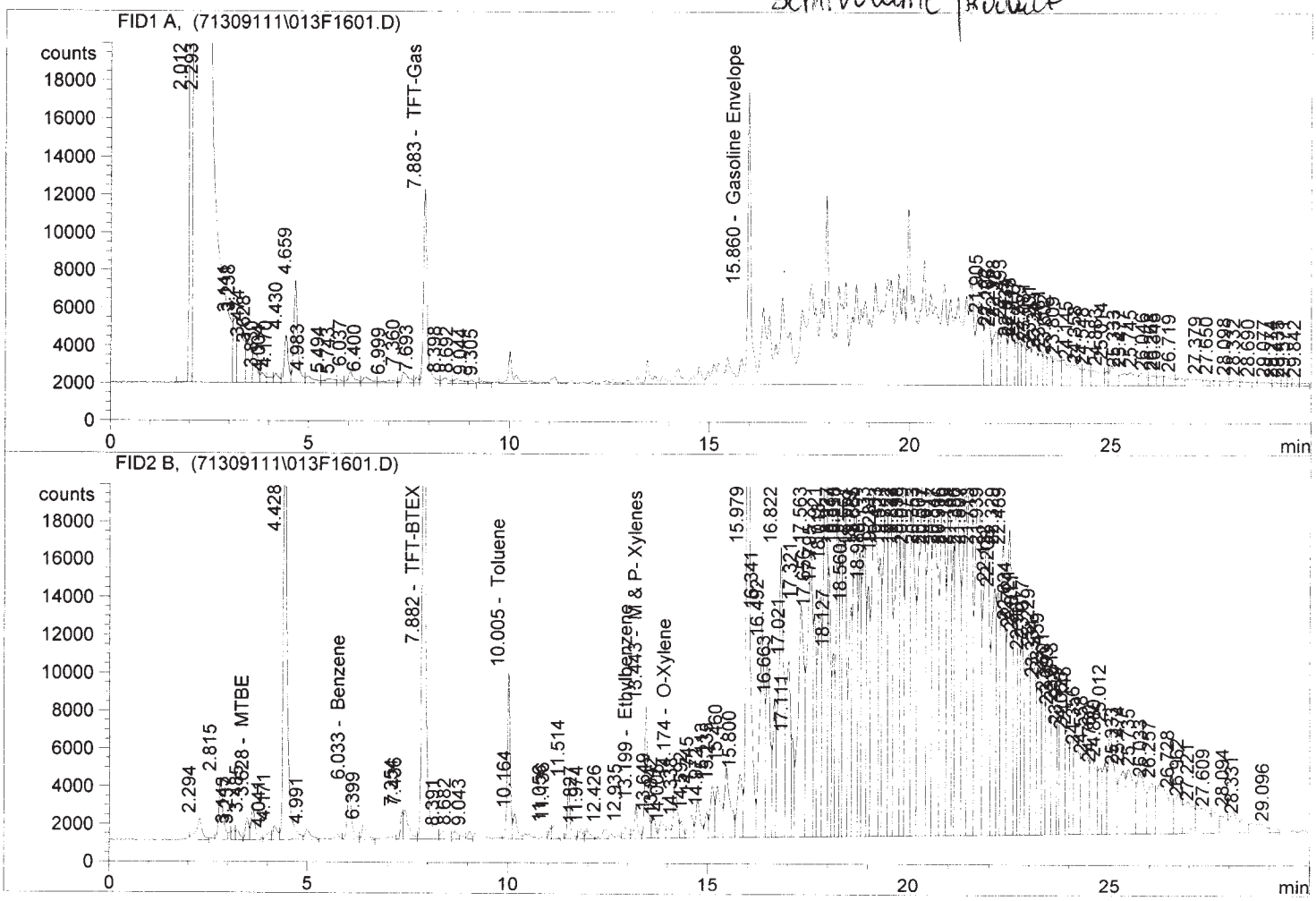
ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\013F1601.D
Injection Date & Time: 9/11/2013 4:57:30 PM
Report Created on: 9/12/2013 8:15:56 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-01 Dilution: X 0.0

semivolatile product



Ret. Time	Compound Name	Area	Amount ug/L
7.883	TFT-Gas	65431.605	8.501
15.860	Gasoline Envelope	1.478e+006	341.424

85%

Gas < ~~50 ug~~ 3.0 mg/kg

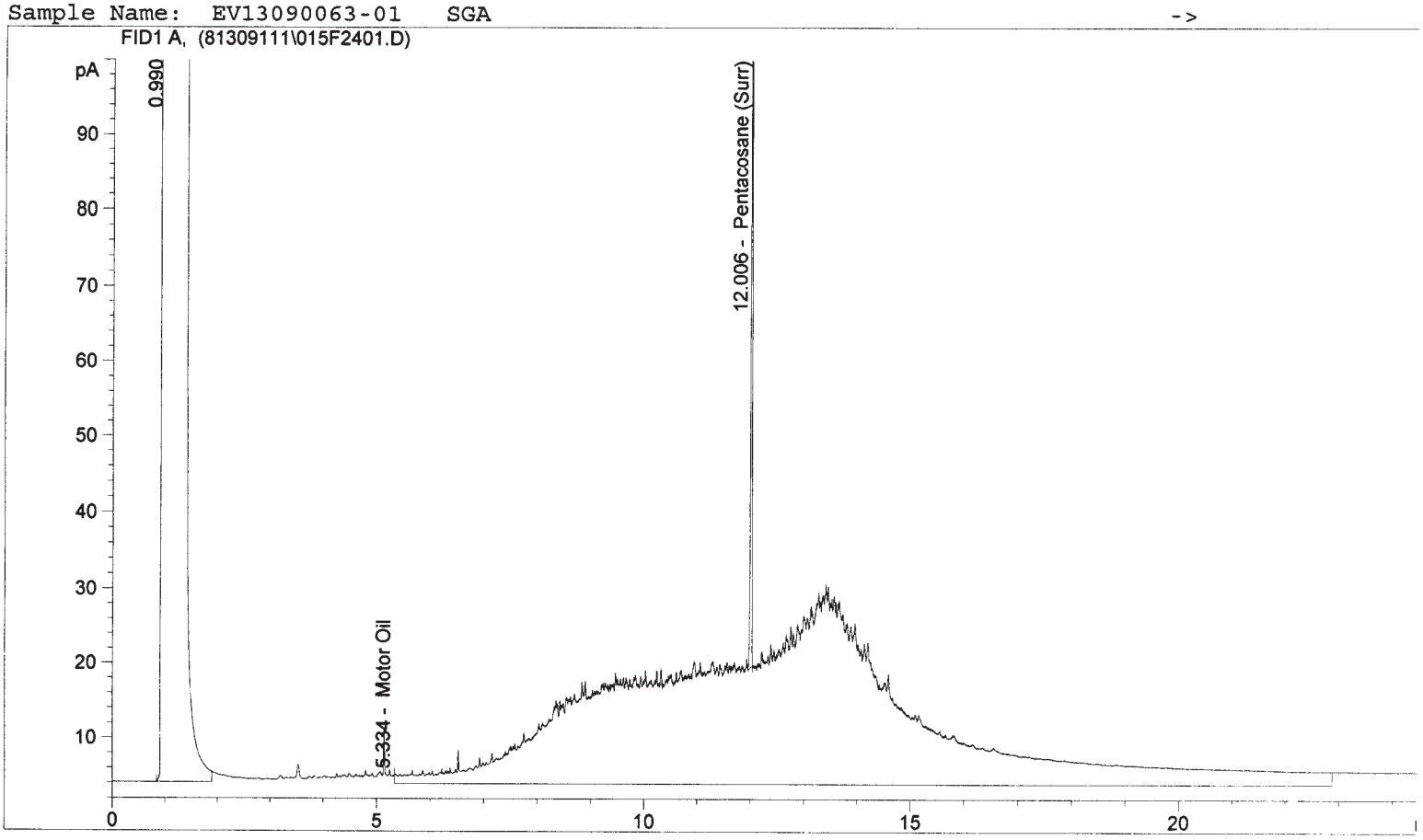
Ret. Time	Compound Name	Area	Amount ug/L
3.628	MTBE	12818.025	0.420
6.033	Benzene	21094.652	0.516
7.882	TFT-BTEX	195911.844	7.738
10.005	Toluene	43735.617	0.866
13.199	Ethylbenzene	9991.491	0.685
13.443	M & P- Xylenes	36188.727	1.010
14.174	O-Xylene	20063.557	0.312

RE[illegible] BY [illegible]
DA[illegible] 9/12/13

9-13-13 NC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\015F2401.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 7:27:35 PM 9/11/2013 7:27:35 PM
Report Creation: 9/12/2013 10:05:54 AM

Sample Name: EV13090063-01 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
0.000	FID1 A,	Diesel	0.000	0.000
5.334		Motor Oil	8339.820	726.806
12.006		Pentacosane (Surr)	254.931	10.967

110%

25.65g

0 = 726.806 µg/mL x $\frac{10\,mL}{25.65g}$ = 280 mg/kg Bunker C or similar product

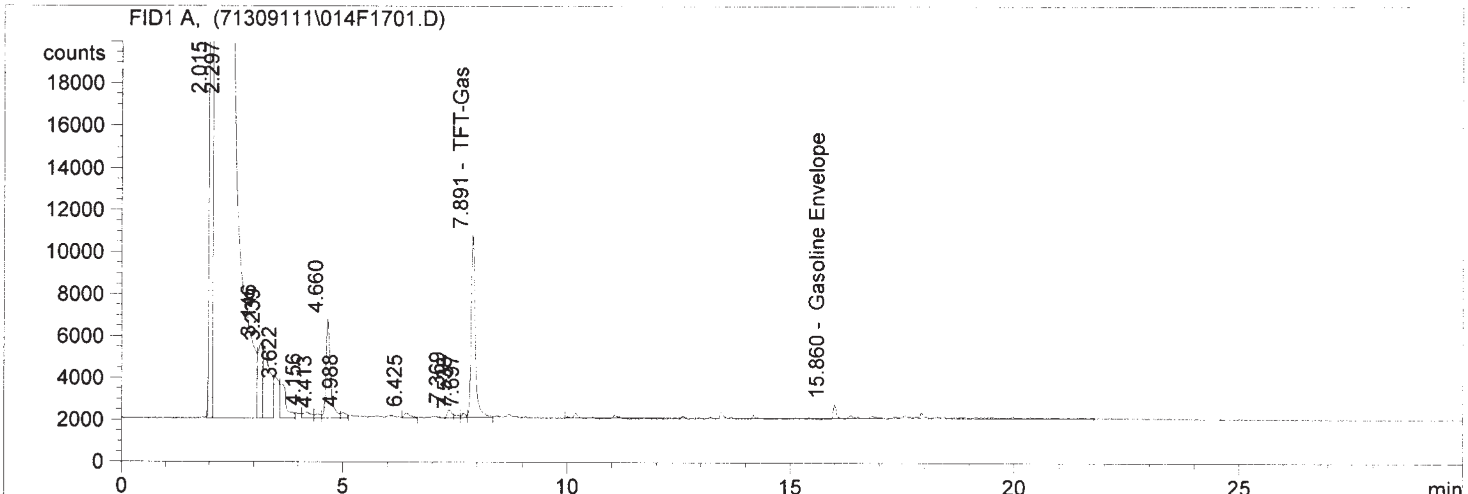
REVIEWED BY & DATE 9/13

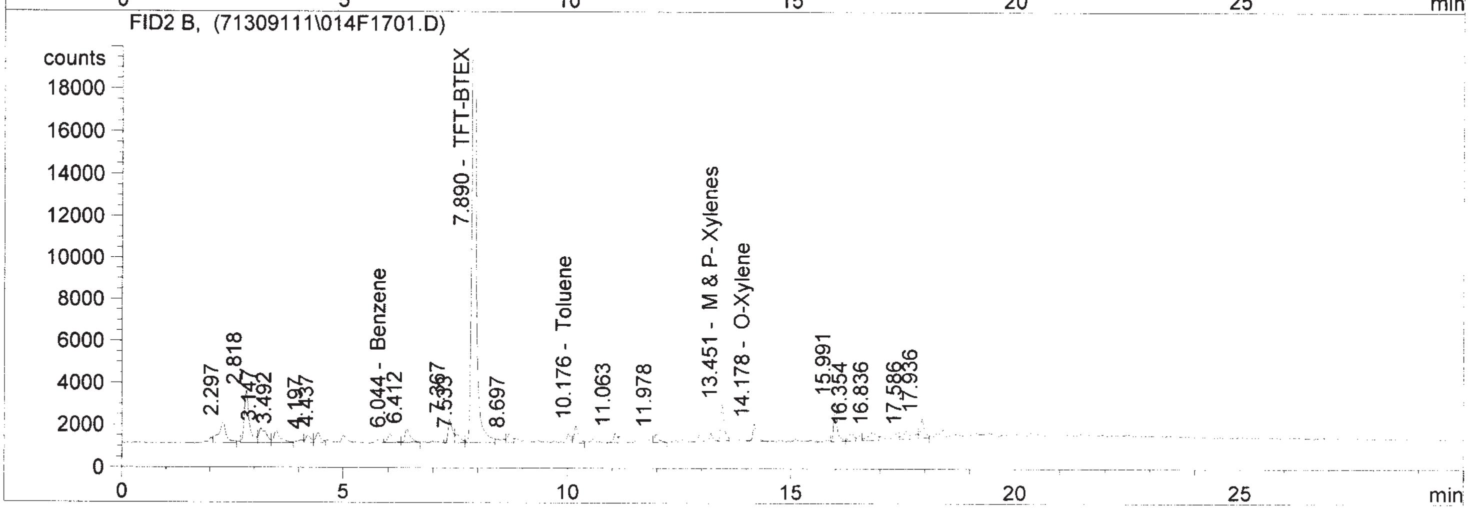
09-13-13

Gas/BTEX   Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\014F1701.D
Injection Date & Time: 9/11/2013   5:33:37 PM
Report Created on: 9/12/2013   8:16:08 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-02   Dilution: X 0.0





Ret. Time	Compound Name	Area	Amount ug/L
7.891	TFT-Gas	55325.395	7.188
15.860	Gasoline Envelope	24007.398	5.546

72-1

Gas < 3.0 mg/kg

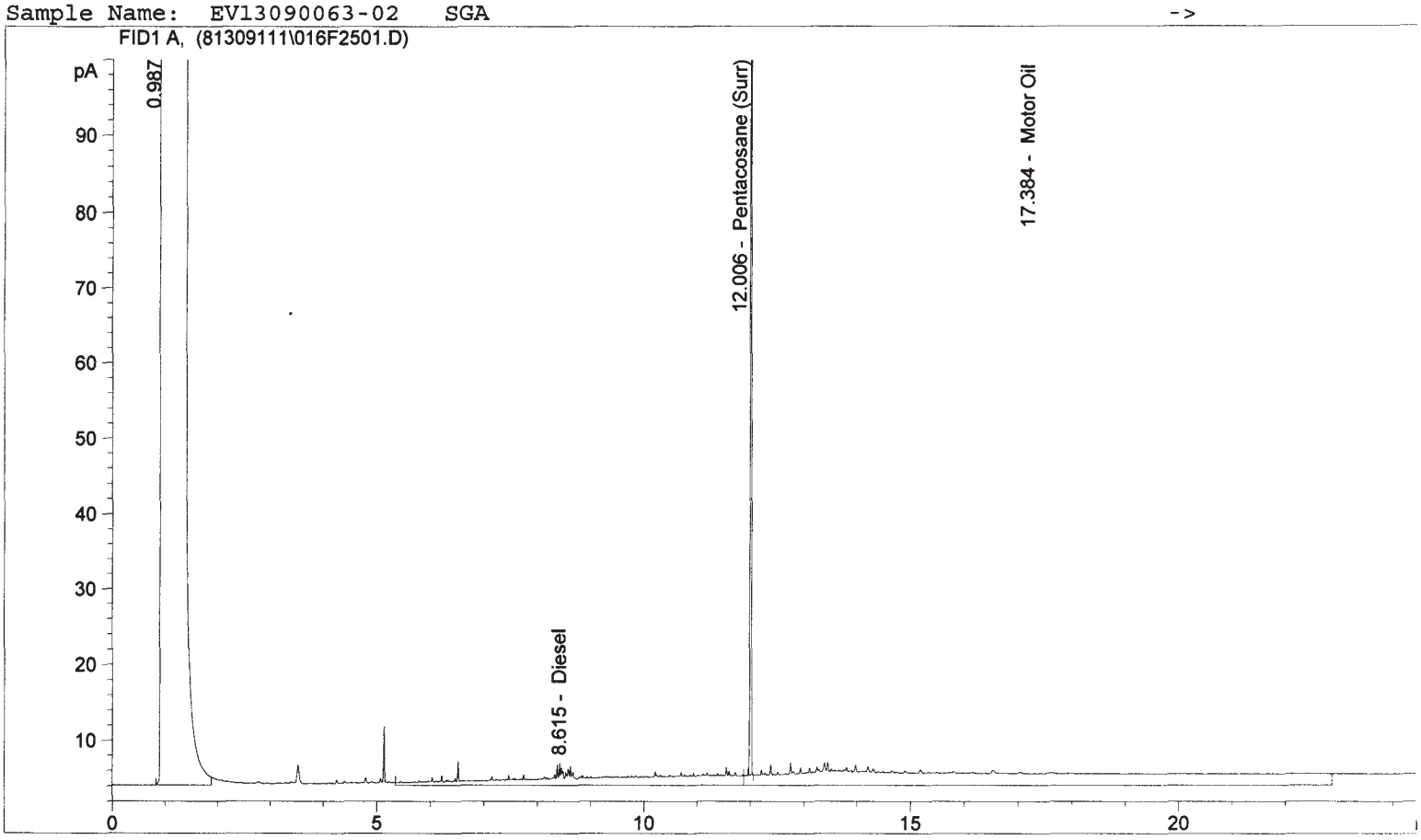
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
6.044	Benzene	3568.696	0.301
7.890	TFT-BTEX	171655.344	6.807
10.176	Toluene	5151.637	0.369
0.000	Ethylbenzene	0.000	0.000
13.451	M & P- Xylenes	9710.009	0.669
14.178	O-Xylene	4532.918	0.071

REVIEWED BY LB
DATE 9/17/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\016F2501.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 7:58:06 PM 9/11/2013 7:58:06 PM
Report Creation: 9/12/2013 10:06:27 AM

Sample Name: EV13090063-02 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	369.062	28.067
12.006		Pentacosane (Surr)	291.243	12.529
17.384		Motor Oil	1047.463	91.285

125 %

19.178

$D < 50\ ug/mL \times \frac{10\ mL}{19.178} < 26\ mg/kg$ *

$D < 100\ ug/mL \times \frac{10mL}{19.178} < 52\ mg/kg$ *

* reporting limits raised due to low % solids

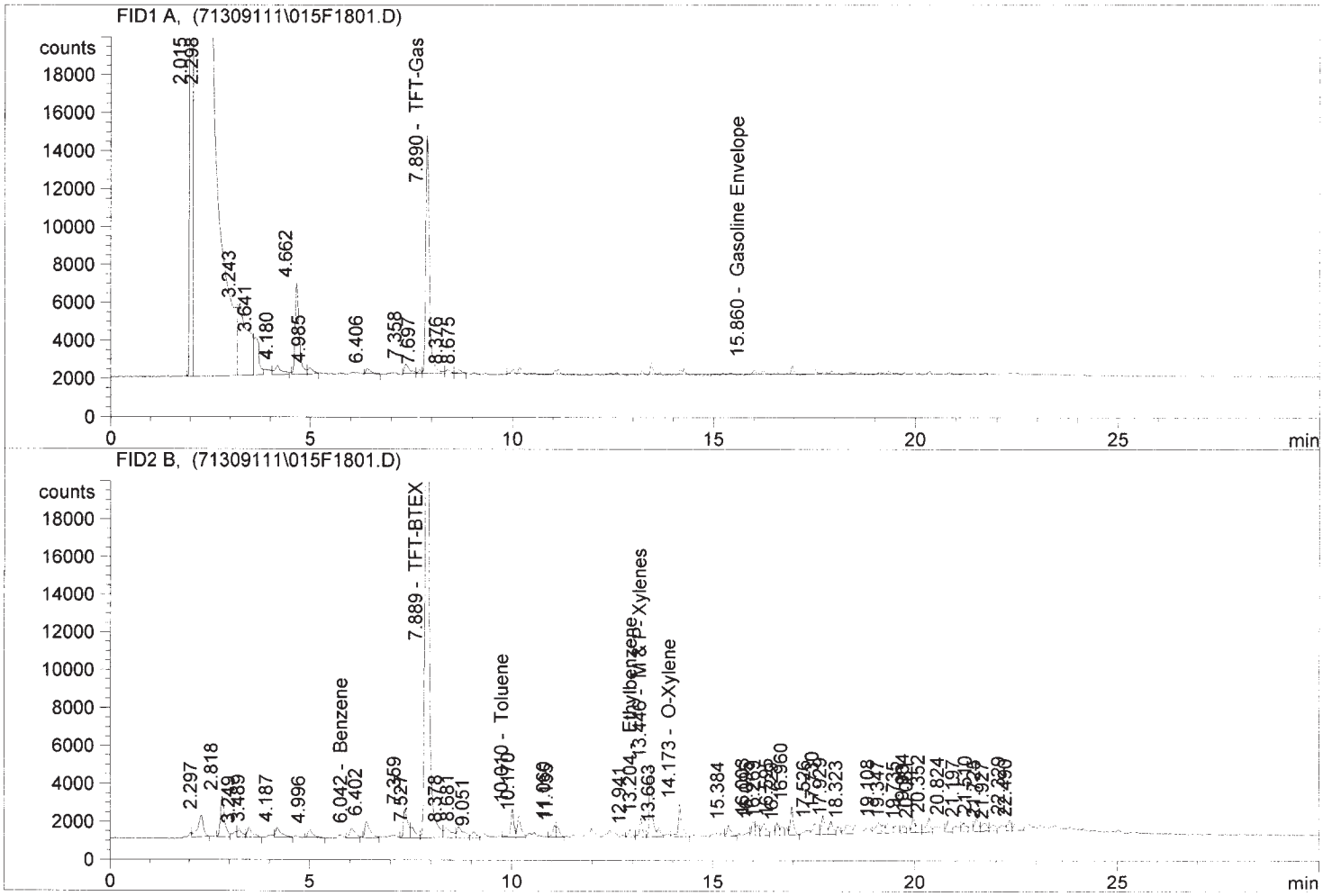
REVIEWED BY & DATE 9/13/13

09.13.13 ES

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\015F1801.D
Injection Date & Time: 9/11/2013 6:09:40 PM
Report Created on: 9/12/2013 8:16:19 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-06 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.890	TFT-Gas	78366.906	10.181
15.860	Gasoline Envelope	17816.287	4.116

102/

Gas < 3.0 mg/kg

Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
6.042	Benzene	4895.769	0.317
7.889	TFT-BTEX	243336.594	9.560
10.010	Toluene	8554.691	0.412
13.204	Ethylbenzene	5394.176	0.613
13.446	M & P- Xylenes	20069.066	0.802
14.173	O-Xylene	11154.075	0.174

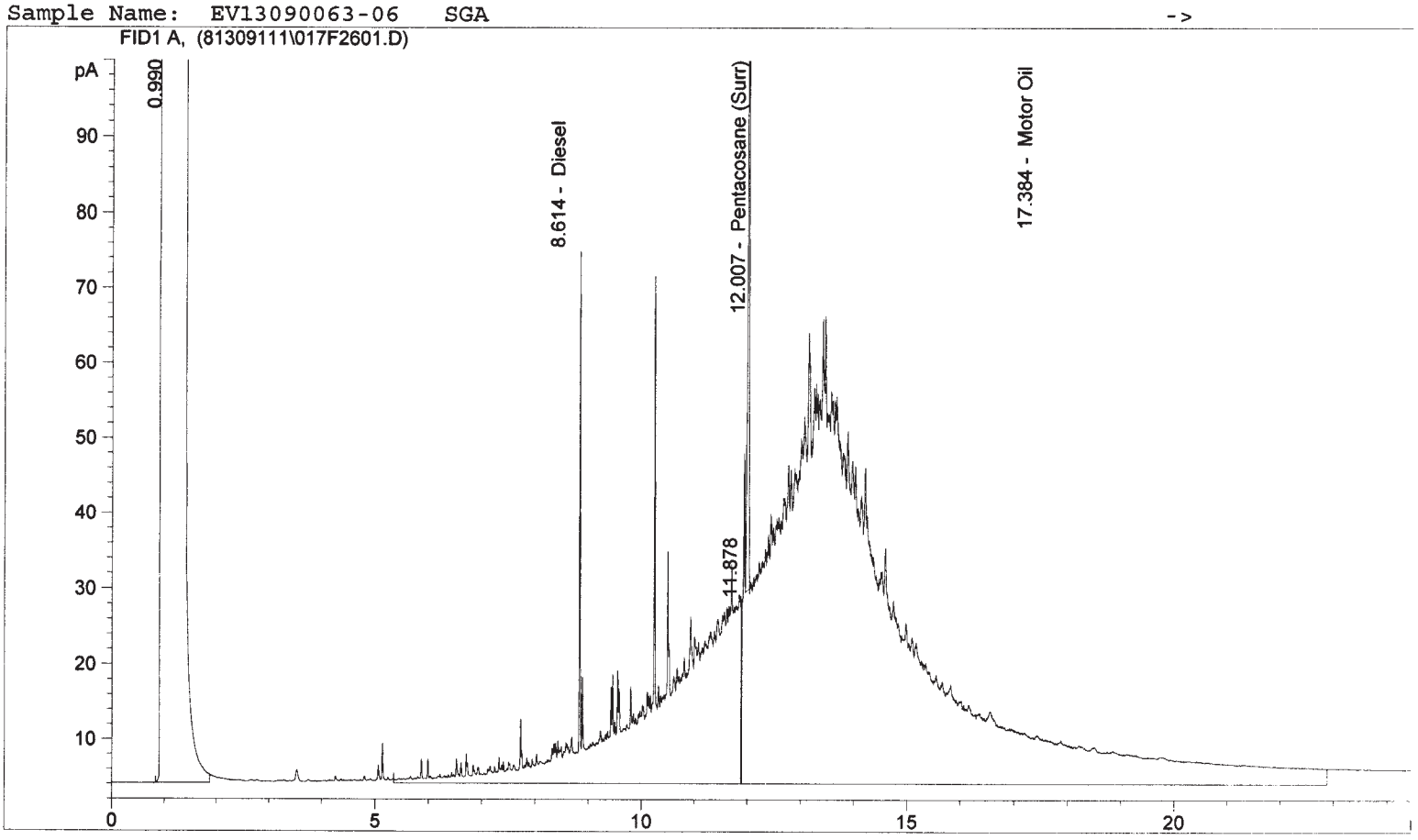
&

BY 9/13/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\017F2601.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 8:28:38 PM 9/11/2013 8:28:38 PM
Report Creation: 9/13/2013 2:49:09 PM

Sample Name: EV13090063-06 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.614	FID1 A,	Diesel	2937.450	223.395
12.007		Pentacosane (Surr)	271.724	11.689
17.384		Motor Oil	9375.899	817.099

117

28.73g

$D < 100\ g/mL \times \frac{10mL}{28.73g} < 35\ mg/kg$ *

* reporting limit raised due to Oil Range Product overlap

$D = 817.099\ g/mL \times \frac{10mL}{28.73g} = 280\ mg/kg$ Lube Oil

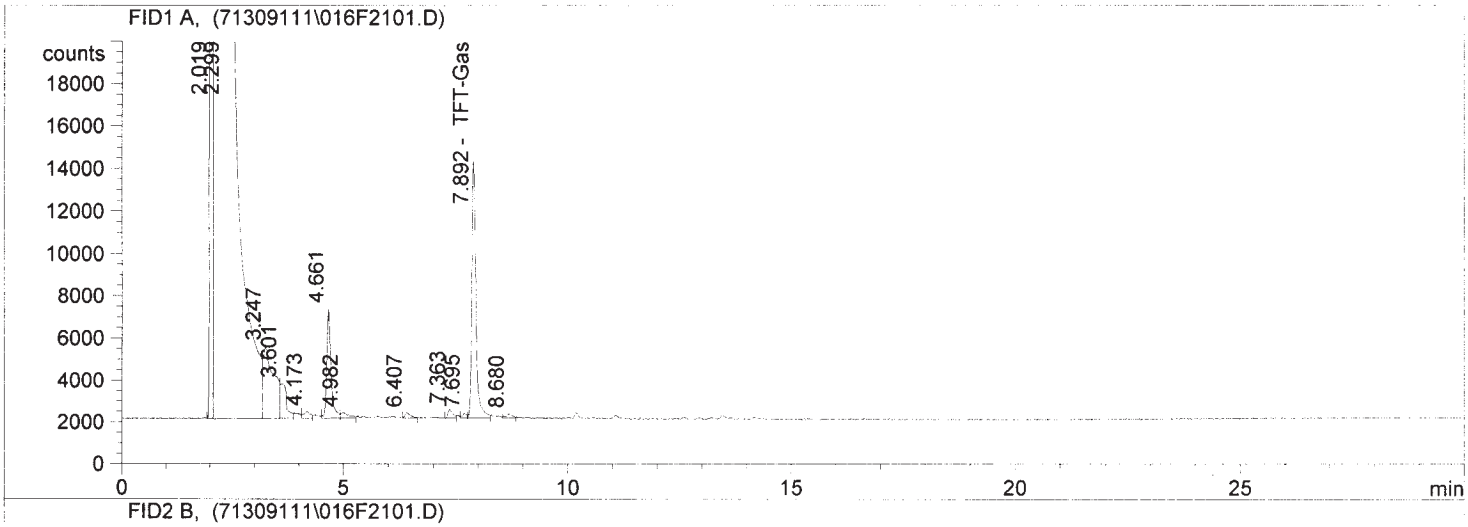
REVIEWED BY & DATE 9/17/13

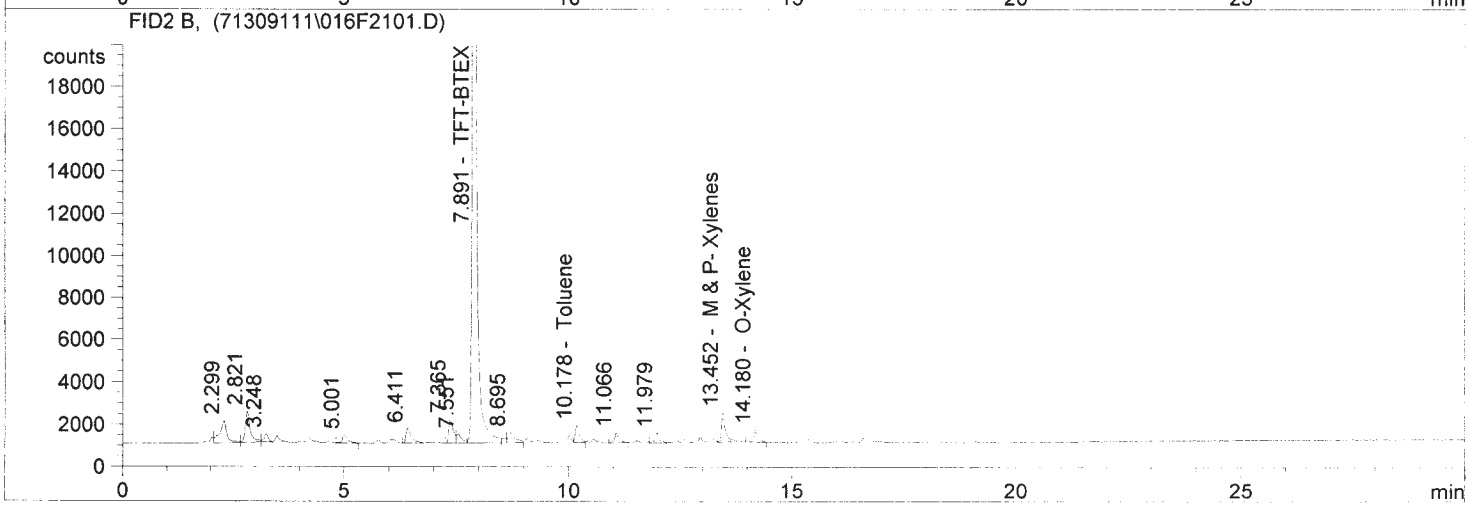
09.13.13 ES

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\016F2101.D
Injection Date & Time: 9/11/2013 7:58:21 PM
Report Created on: 9/12/2013 8:16:29 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-07 Dilution: X 0.0





Ret. Time	Compound Name	Area	Amount ug/L
7.892	TFT-Gas	77409.102	10.057
0.000	Gasoline Envelope	0.000	0.000

100%

Gas <3.0 mg/kg

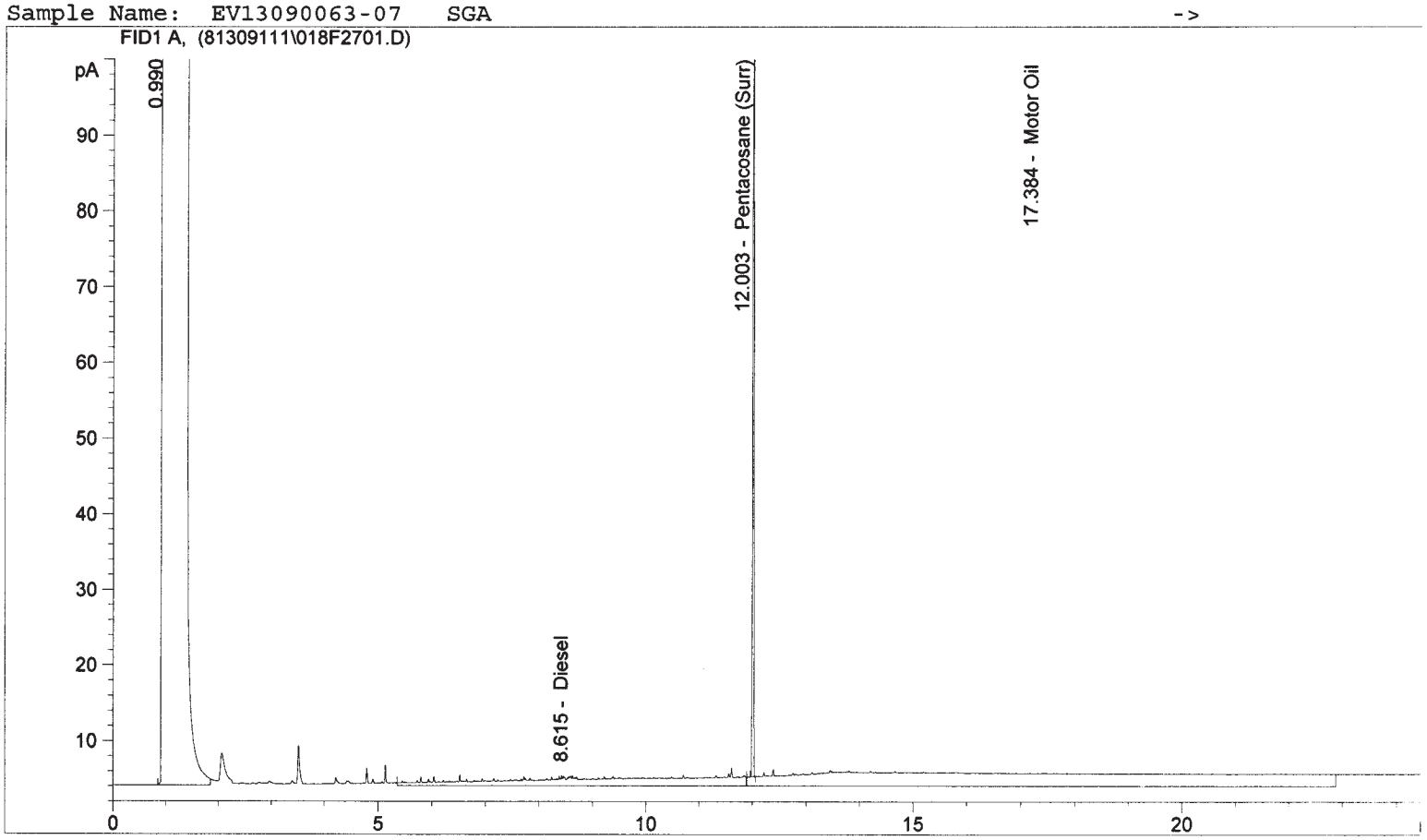
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.891	TFT-BTEX	241958.156	9.507
10.178	Toluene	5075.008	0.368
0.000	Ethylbenzene	0.000	0.000
13.452	M & P- Xylenes	8630.516	0.655
14.180	O-Xylene	3515.808	0.055

RE[illegible] BY DC 9/12/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\018F2701.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 8:59:08 PM 9/11/2013 8:59:08 PM
Report Creation: 9/12/2013 10:07:05 AM

Sample Name: EV13090063-07 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	331.634	25.221
12.003		Pentacosane (Surr)	230.887	9.932
17.384		Motor Oil	1098.097	95.698
				25.168

99%

D < 25 mg/kg

O < 50 mg/kg

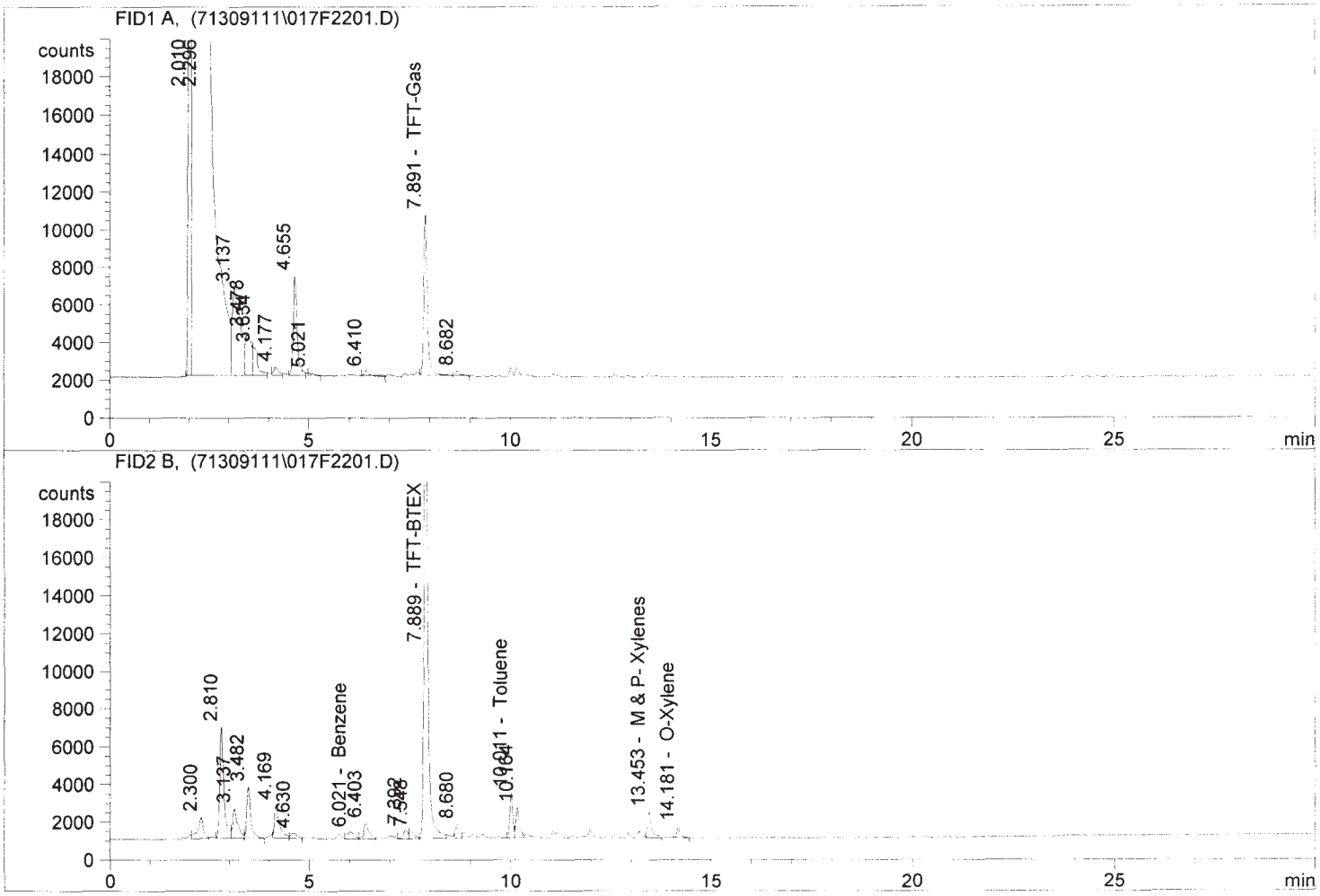
REVIEWED BY & DATE 9/17/13

09.13.13

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\017F2201.D
Injection Date & Time: 9/11/2013 8:34:25 PM
Report Created on: 9/12/2013 8:16:40 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-10 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.891	TFT-Gas	53658.812	6.971
0.000	Gasoline Envelope	0.000	0.000

70%

Gas < 3.0 mg/kg

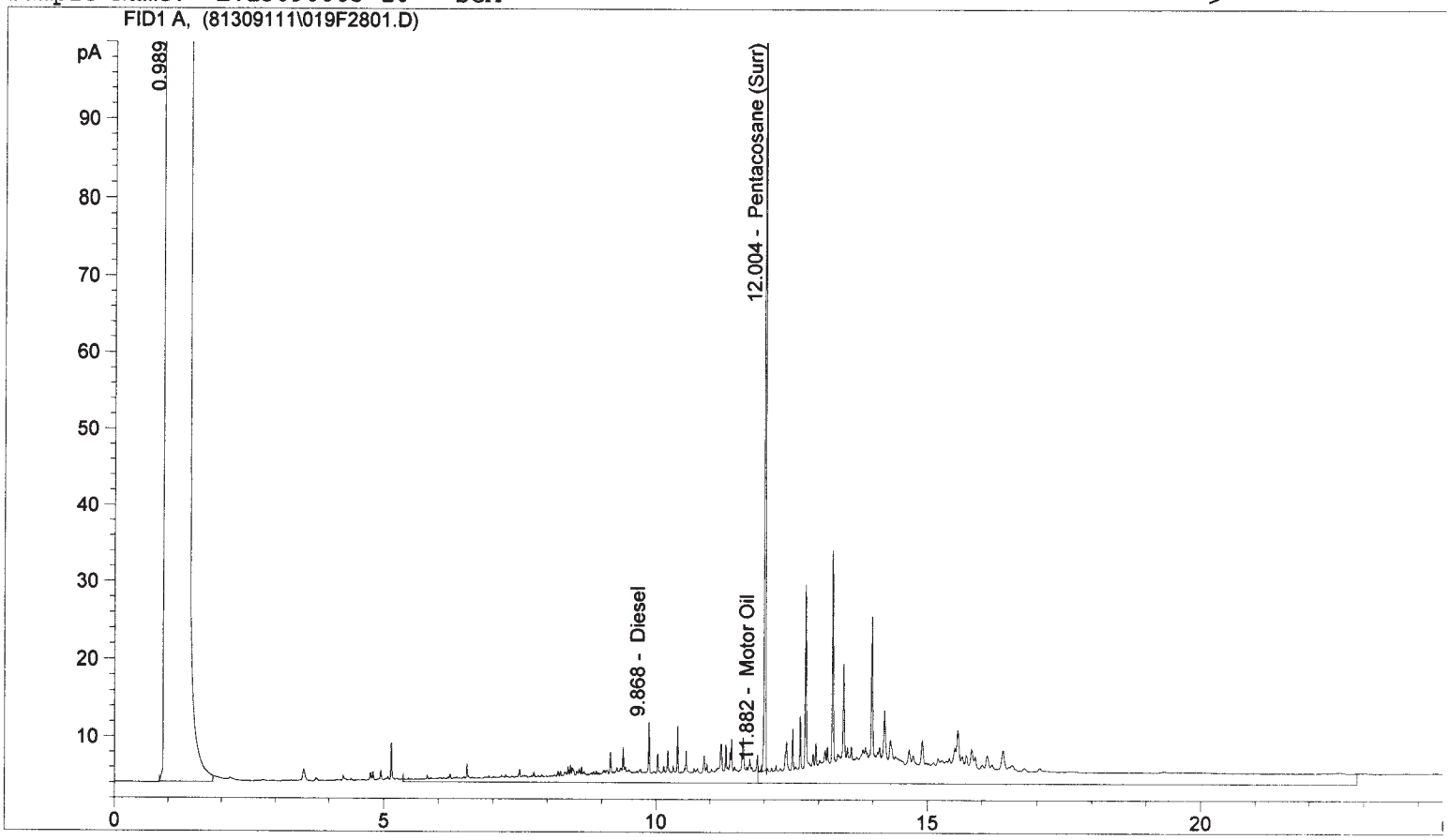
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
6.021	Benzene	4498.697	0.313
7.889	TFT-BTEX	170355.156	6.757
10.011	Toluene	11976.179	0.457
0.000	Ethylbenzene	0.000	0.000
13.453	M & P- Xylenes	8813.785	0.657
14.181	O-Xylene	3339.531	0.052

RE[illegible] BY NB
DA[illegible] 9/17/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\019F2801.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 9:29:38 PM 9/11/2013 9:29:38 PM
Report Creation: 9/12/2013 10:07:58 AM

Sample Name: EV13090063-10 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
9.868	FID1 A,	Diesel	493.649	37.542	
11.882		Motor Oil	1541.326	134.325	
12.004		Pentacosane (Surr)	222.465	9.570	96%

19.42g

D < 50 g/mL $\times \frac{10\text{mL}}{19.42\text{g}} < 26$ mg/kg *

* reporting limit raised due to low % solids

O $= 134.325$ g/mL $\times \frac{10\text{mL}}{19.42\text{g}} = 69$ mg/kg Lube Oil or similar product

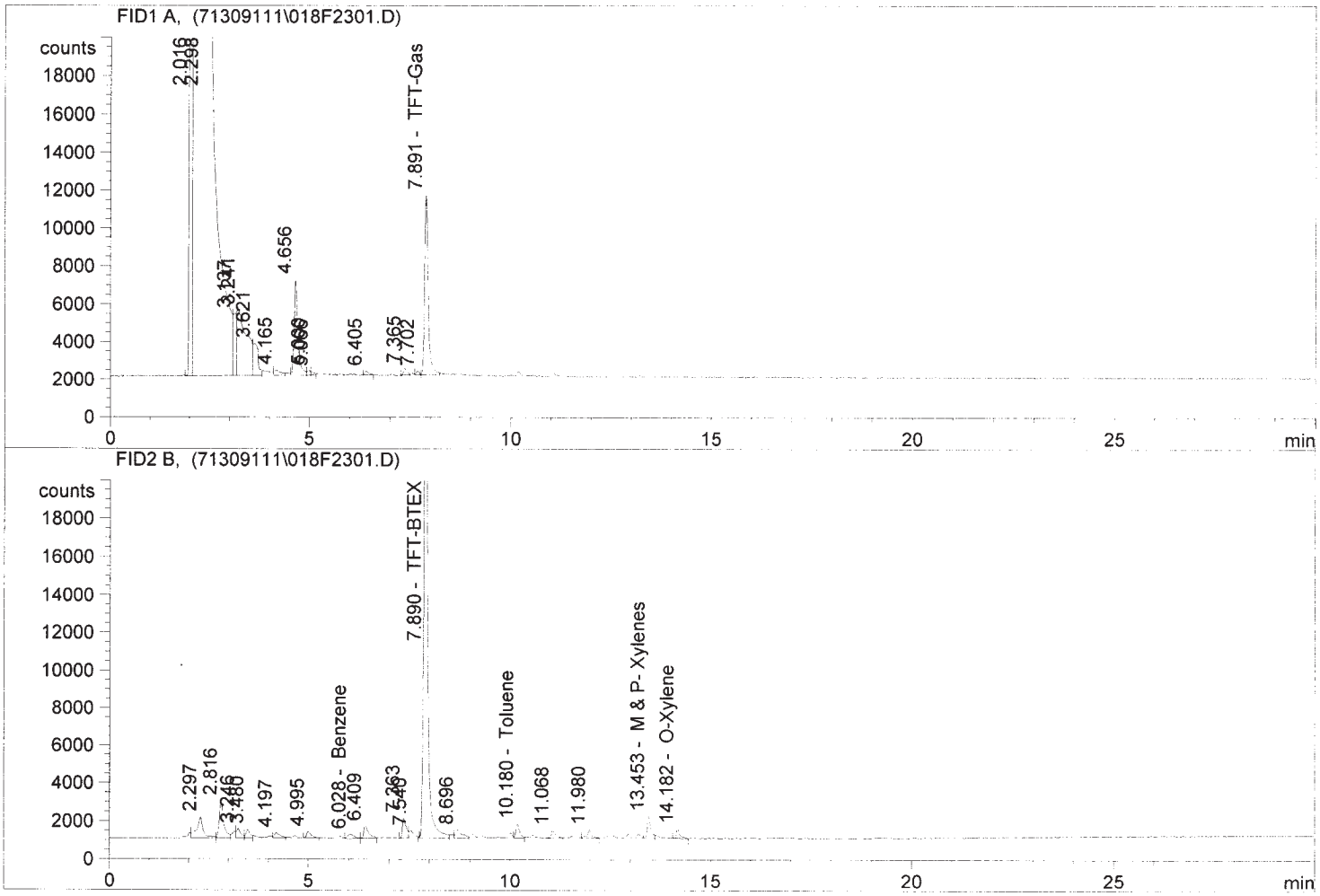
REVIEWED BY MB
& DATE 9/17/13

09.13.13

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\018F2301.D
Injection Date & Time: 9/11/2013 9:10:31 PM
Report Created on: 9/12/2013 8:16:51 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-15 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.891	TFT-Gas	59572.937	7.740 ??
0.000	Gasoline Envelope	0.000	0.000

Gas < 30 mg/kg

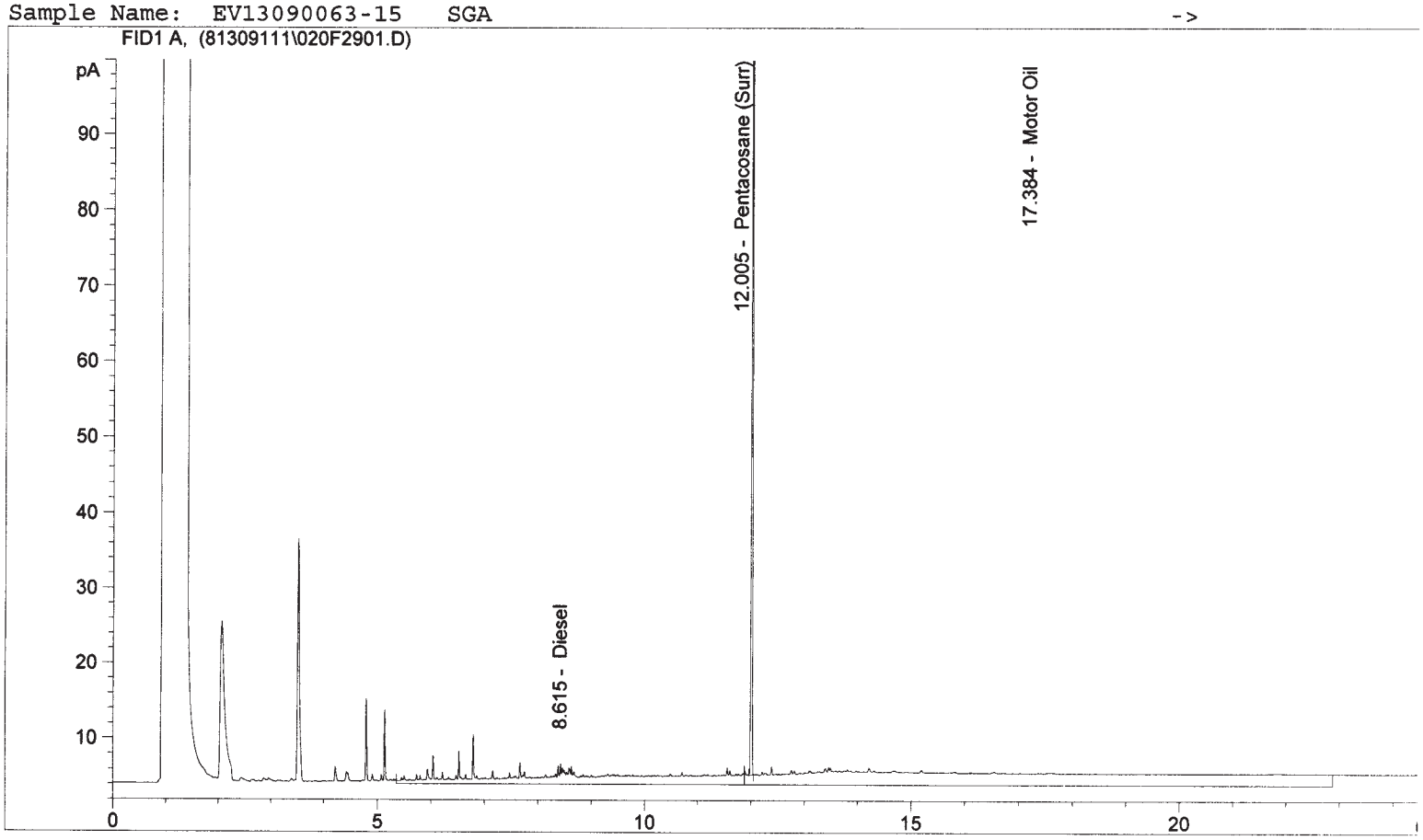
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
6.028	Benzene	2792.265	0.292
7.890	TFT-BTEX	189649.359	7.498
10.180	Toluene	5003.591	0.367
0.000	Ethylbenzene	0.000	0.000
13.453	M & P- Xylenes	7049.587	0.635
14.182	O-Xylene	3045.283	0.047

REVIEWED BY DC 9/17/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\020F2901.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 10:00:04 PM 9/11/2013 10:00:04 PM
Report Creation: 9/12/2013 10:08:27 AM

Sample Name: EV13090063-15 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
8.615	FID1 A,	Diesel	400.675	30.472	
12.005		Pentacosane (Surr)	247.643	10.653	107%
17.384		Motor Oil	1049.336	91.448	
				21.289	

D < 25 mg/kg

O < 50 mg/kg

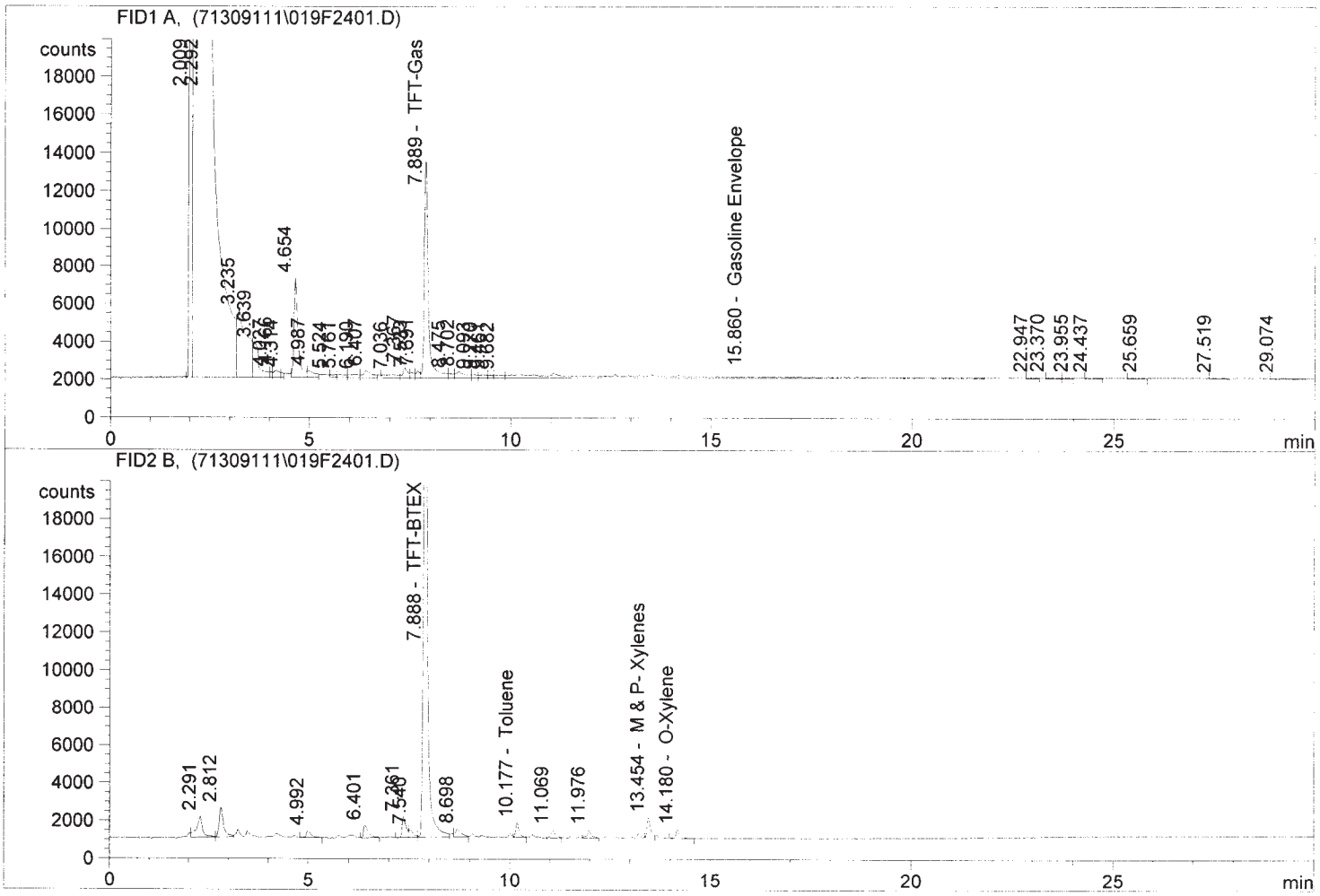
REVIEWED BY & DATE NB 9/13/13

09.13.13 ES

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\019F2401.D
Injection Date & Time: 9/11/2013 9:46:35 PM
Report Created on: 9/12/2013 8:17:00 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-16 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.889	TFT-Gas	79337.203	10.307
15.860	Gasoline Envelope	65534.793	15.139

103/

Gas < 30 mg/kg

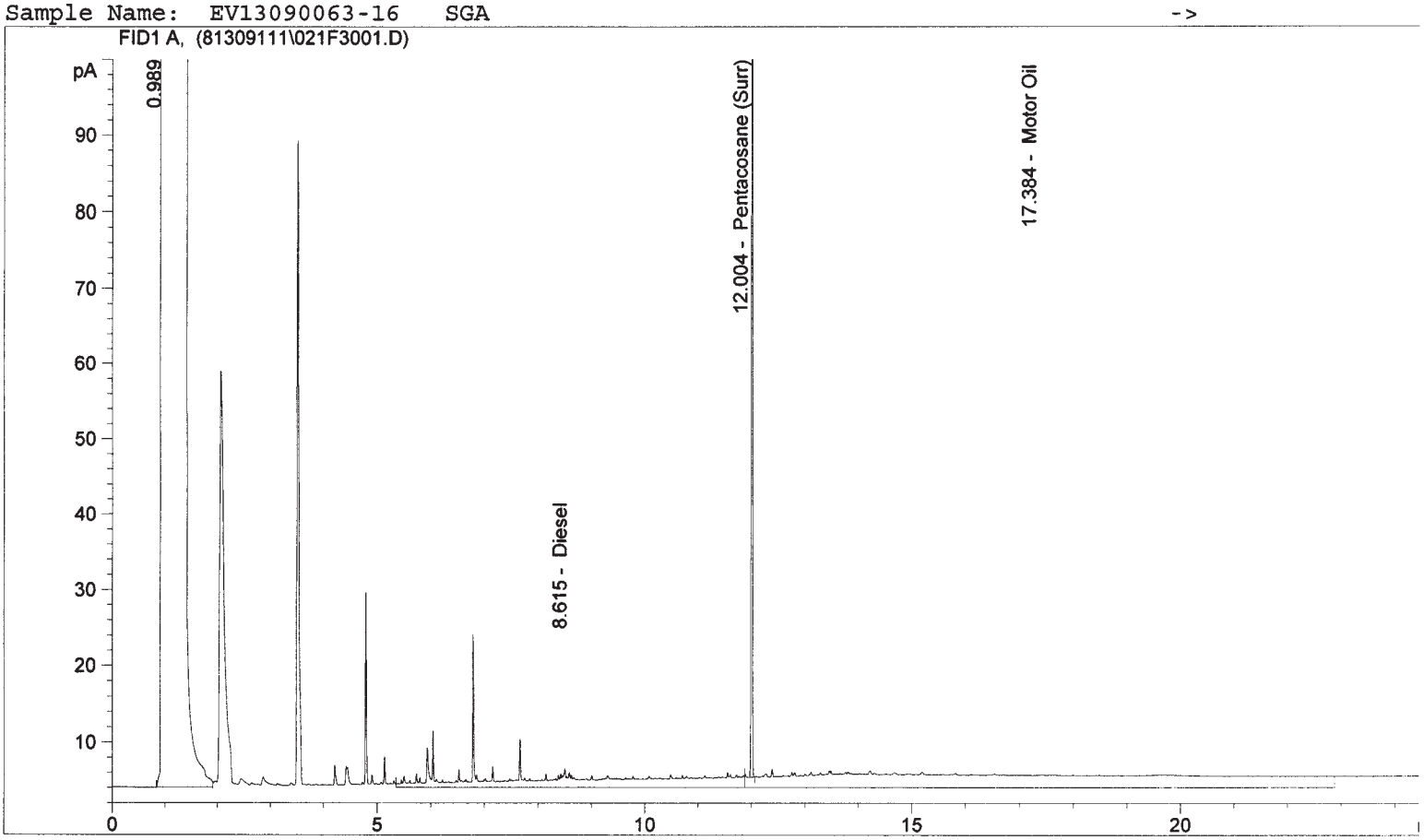
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.888	TFT-BTEX	224746.750	8.846
10.177	Toluene	5080.155	0.368
0.000	Ethylbenzene	0.000	0.000
13.454	M & P- Xylenes	6611.116	0.629
14.180	O-Xylene	3261.568	0.051

R[illegible] BY DB
DA[illegible] 9/12/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\021F3001.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 10:30:35 PM 9/11/2013 10:30:35 PM
Report Creation: 9/12/2013 10:08:46 AM

Sample Name: EV13090063-16 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	454.218	34.544
12.004		Pentacosane (Surr)	241.283	10.379 104%
17.384		Motor Oil	1055.172	91.957
				23768

0 < 25 mg/kg

0 < 50 mg/kg

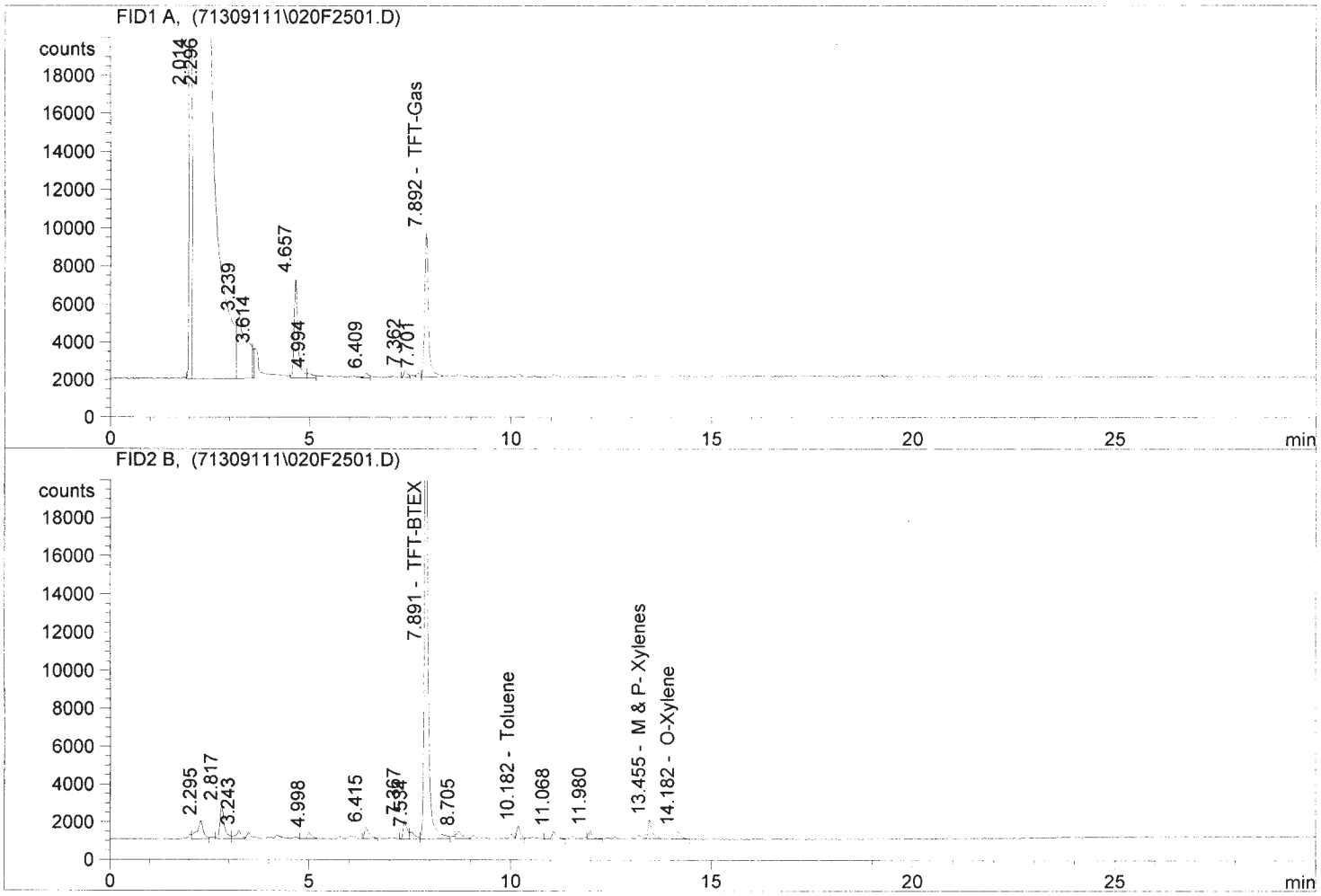
REVIEWED BY & DATE 9/17/13

09.13.13 ES

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\020F2501.D
Injection Date & Time: 9/11/2013 10:22:56 PM
Report Created on: 9/12/2013 8:17:11 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-19 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.892	TFT-Gas	48662.938	6.322
0.000	Gasoline Envelope	0.000	0.000

63%

Gas < 3.0 mg/kg

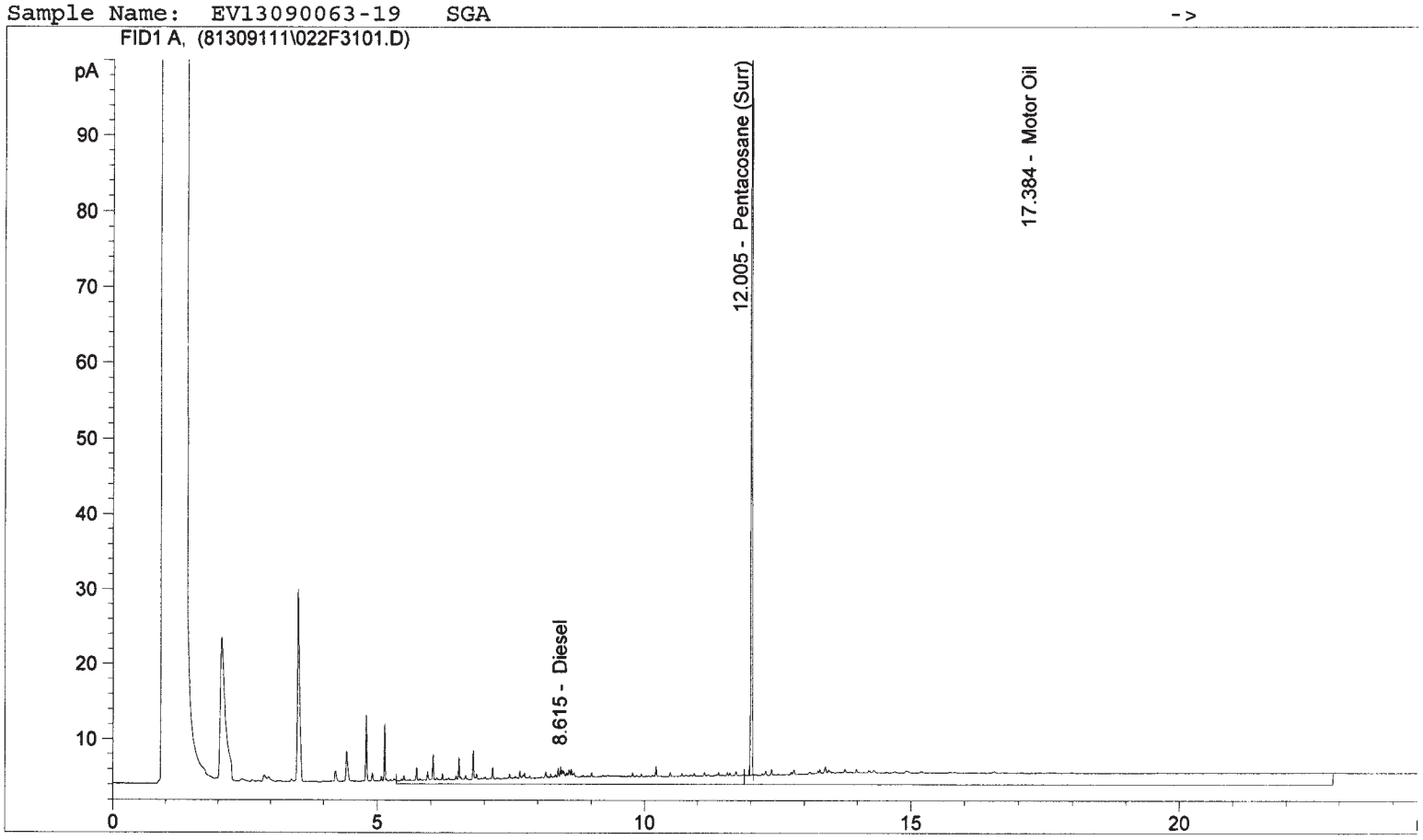
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.891	TFT-BTEX	153397.672	6.106
10.182	Toluene	4475.122	0.360
0.000	Ethylbenzene	0.000	0.000
13.455	M & P- Xylenes	6882.238	0.633
14.182	O-Xylene	2841.370	0.044

[illegible] BY [illegible] 9/17/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\022F3101.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/11/2013 11:01:07 PM 9/11/2013 11:01:07 PM
Report Creation: 9/12/2013 10:09:08 AM

Sample Name: EV13090063-19 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
8.615	FID1 A,	Diesel	386.959	29.428	
12.005		Pentacosane (Surr)	251.814	10.833	108%
17.384		Motor Oil	1004.349	87.528	
				21.538	

D < 25 mg/kg

O < 50 mg/kg

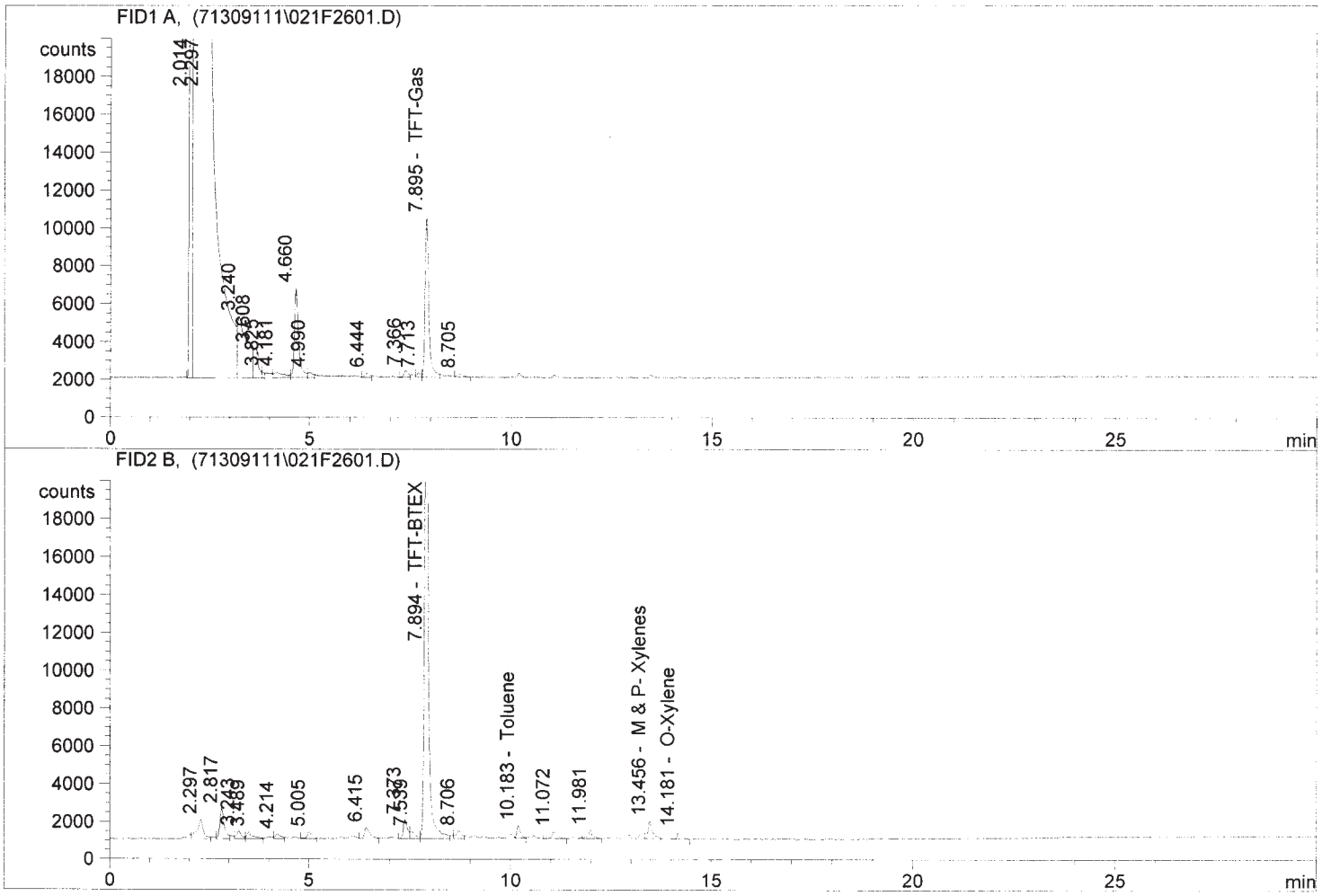
REVIEWED BY & DATE NB 9/17/13

09.13.13 EJ

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\021F2601.D
Injection Date & Time: 9/11/2013 10:59:16 PM
Report Created on: 9/12/2013 8:17:21 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-24 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.895	TFT-Gas	54254.840	7.049
0.000	Gasoline Envelope	0.000	0.000

70!

Gas < 3.0 mg/kg

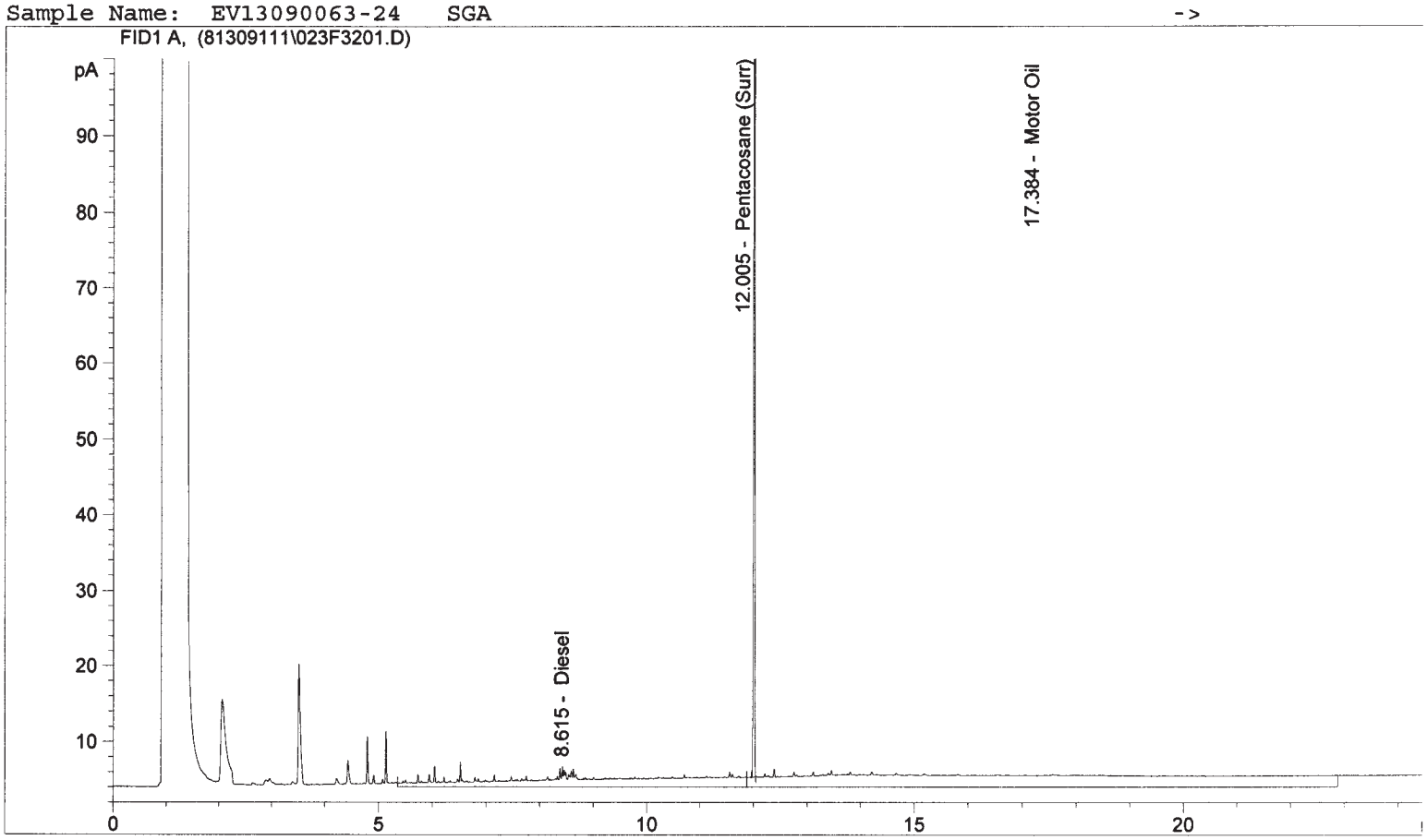
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.894	TFT-BTEX	172035.125	6.821
10.183	Toluene	4058.538	0.354
0.000	Ethylbenzene	0.000	0.000
13.456	M & P- Xylenes	7060.886	0.635
14.181	O-Xylene	2834.407	0.044

RECEIVED BY NB 9/17/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\023F3201.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDM00213.M
Injection Date & Time: 9/11/2013 11:31:39 PM 9/11/2013 11:31:39 PM
Report Creation: 9/12/2013 10:09:28 AM

Sample Name: EV13090063-24 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	393.528	29.928
12.005		Pentacosane (Surr)	244.612	10.523
17.384		Motor Oil	990.441	86.316

105%

22.48g

D < 25 mg/kg

O < 50 mg/kg

REVIEWED BY & DATE 9/7/13

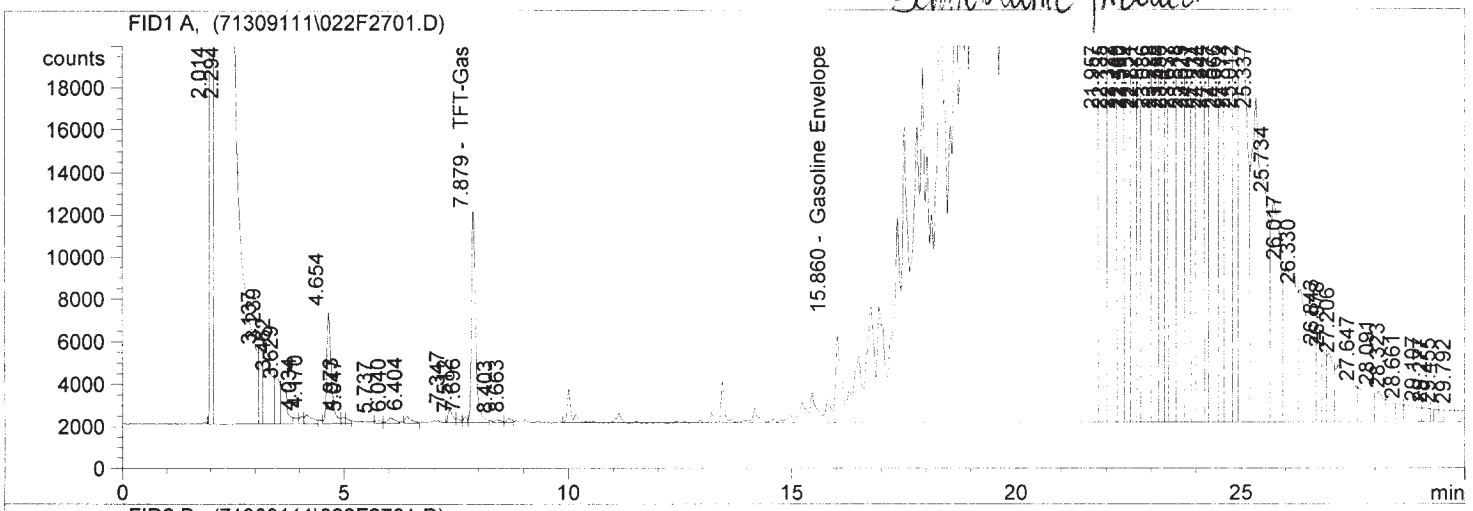
09.13.13

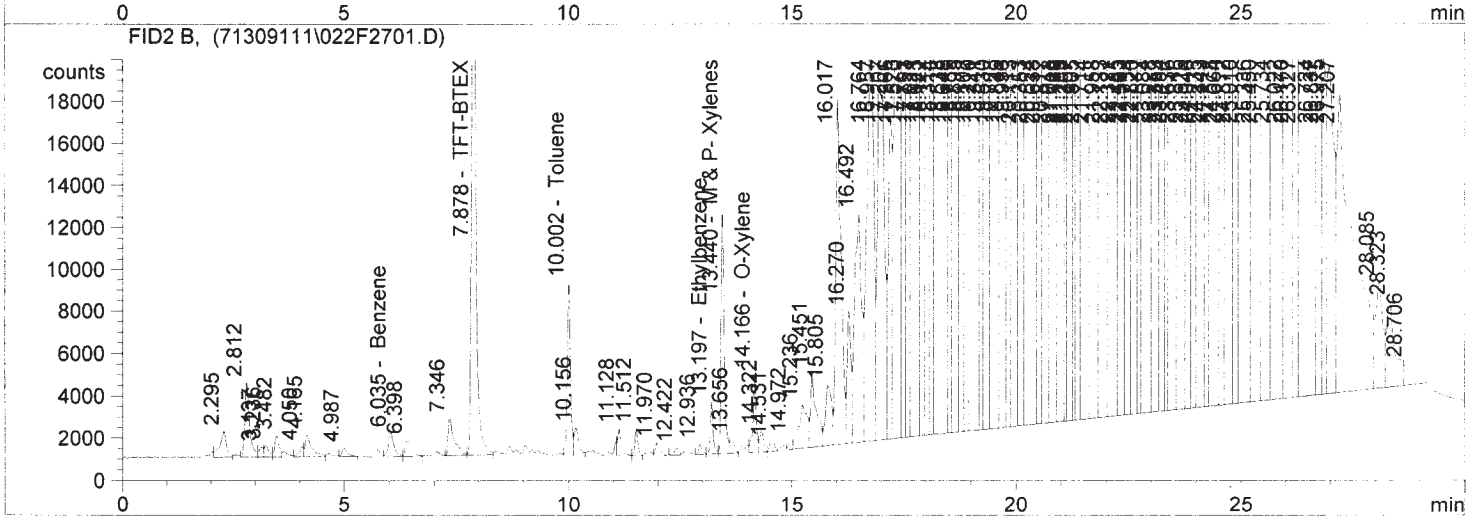
Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\022F2701.D
Injection Date & Time: 9/11/2013 11:35:29 PM
Report Created on: 9/12/2013 8:17:32 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-27 Dilution: X 0.0

semivolatile product





Ret. Time	Compound Name	Area	Amount ug/L
7.879	TFT-Gas	63467.820	8.246
15.860	Gasoline Envelope	8.070e+006	1864.167

6.30g
6.71 mL

8%

Gas < 100 µg/L × 5mL / 0.1mL × 0.00671L / 6.30g < 5.3 mg/kg*

Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
6.035	Benzene	10085.084	0.381
7.878	TFT-BTEX	194396.844	7.680
10.002	Toluene	40918.840	0.830
13.197	Ethylbenzene	11368.767	0.706
13.440	M & P- Xylenes	54837.492	1.250
14.166	O-Xylene	18639.475	0.290

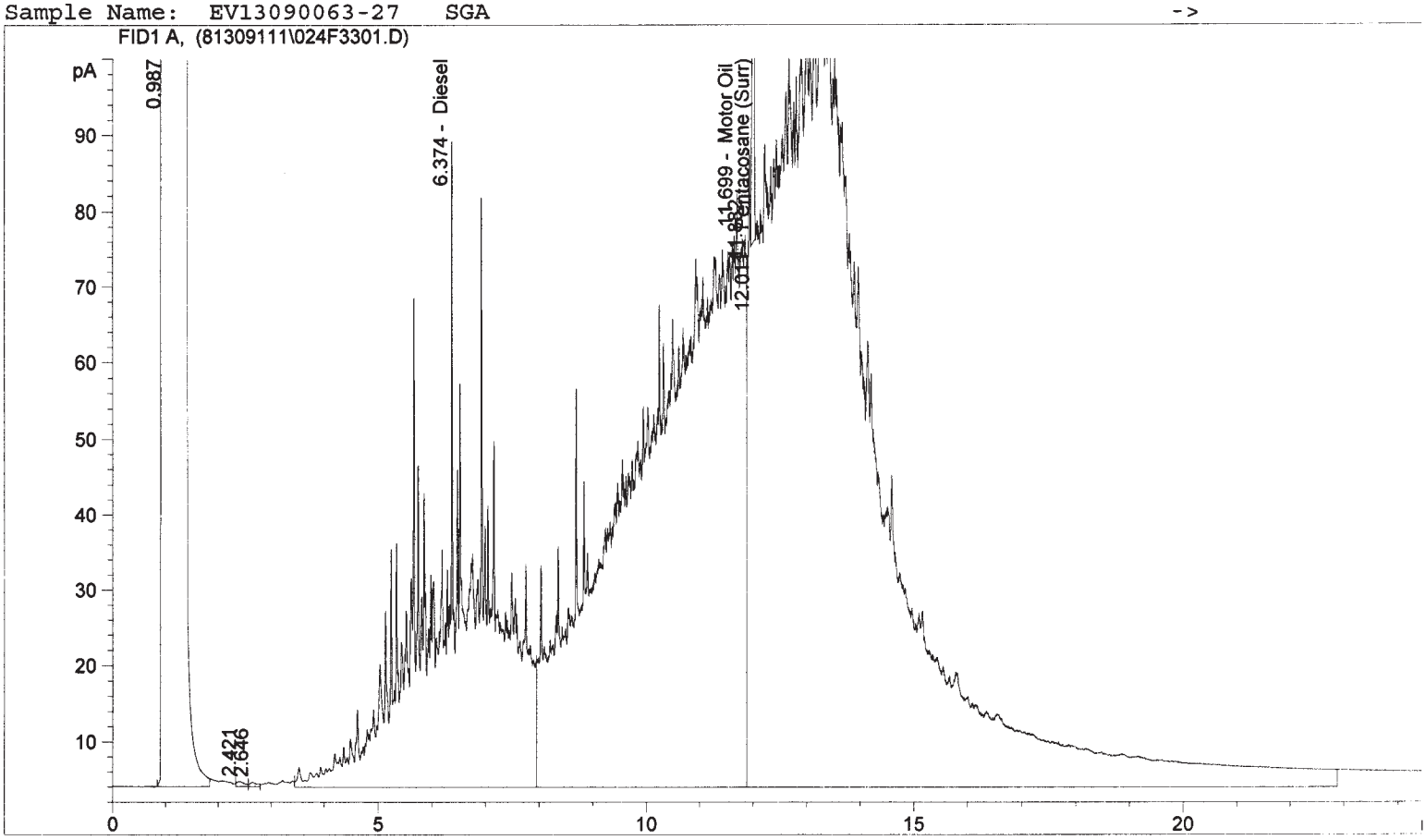
[illegible] DATE 9/17/13

*Reporting limit raised due to semivol. range product overlap

9-13-13DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\024F3301.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/12/2013 12:02:09 AM 9/12/2013 12:02:09 AM
Report Creation: 9/13/2013 2:59:09 PM

Sample Name: EV13090063-27 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
6.374	FID1 A,	Diesel	4208.114	320.029	
11.699		Motor Oil	10338.328	900.973	
12.011		Pentacosane (Surr)	519.522	22.349	* 112%
				23.24g	

* spike 2x with surrogate

$D = 320.029\ g/mL \times \frac{10\ mL}{23.24g} = 140\ mg/kg$ Weathered Diesel Fuel or similar product

(bias high due to Oil Range Product overlap)

$D = 900\ g/mL \times \frac{10\ mL}{23.24g} = 390\ mg/kg$ Light Oil and Lube Oil or similar products

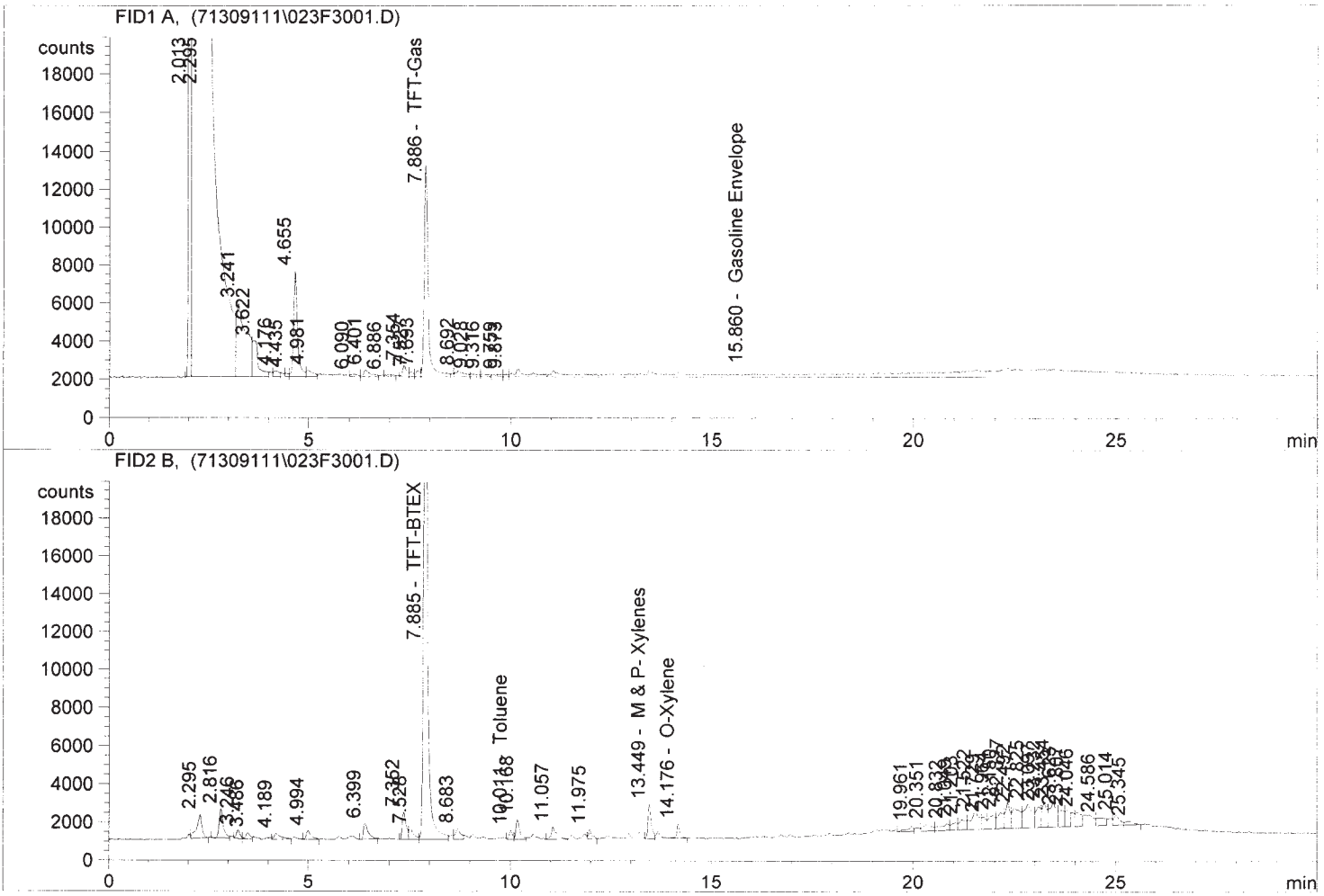
REVIEWED BY & DATE 9/17/13

09.13.13 ES

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\023F3001.D
Injection Date & Time: 9/12/2013 1:23:50 AM
Report Created on: 9/12/2013 8:17:45 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-28 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.886	TFT-Gas	75332.023	9.787
15.860	Gasoline Envelope	122090.672	28.204

98%

Gas < 3.0 mg/kg

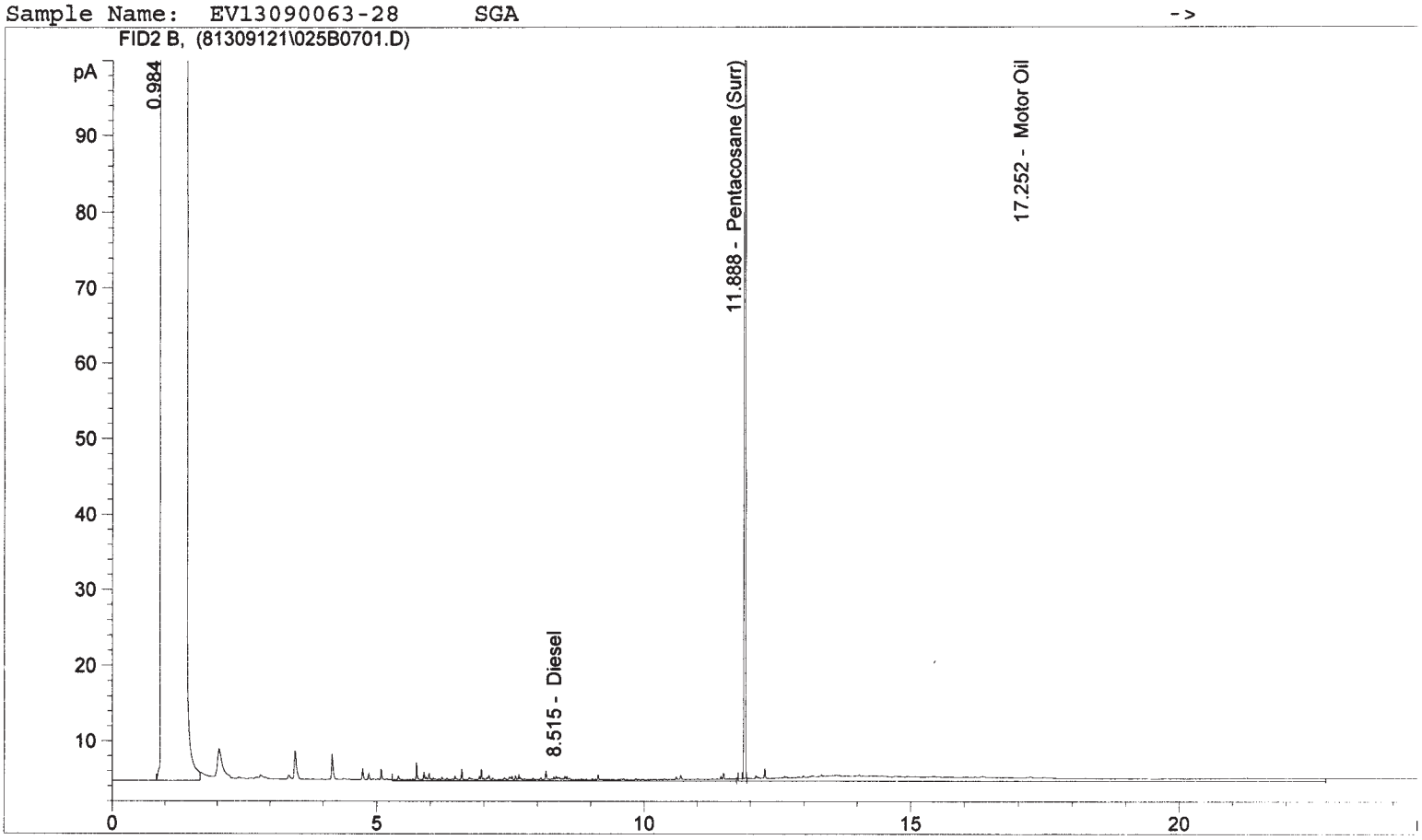
Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.885	TFT-BTEX	218723.891	8.615
10.011	Toluene	2628.215	0.336
0.000	Ethylbenzene	0.000	0.000
13.449	M & P- Xylenes	10320.189	0.677
14.176	O-Xylene	4317.769	0.067

[illegible] BY [illegible] DA
9/17/13

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309121\025B0701.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BDMO0213.M
Injection Date & Time: 9/12/2013 10:40:02 AM 9/12/2013 10:40:02 AM
Report Creation: 9/13/2013 3:09:27 PM

Sample Name: EV13090063-28 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
8.515	FID2 B,	Diesel	105.964	8.079	
11.888		Pentacosane (Surr)	460.145	20.198	* 101%
17.252		Motor Oil	320.429	26.022	
				2782g	

* Spiked 2x with surrogate

0 < 25 mg/kg

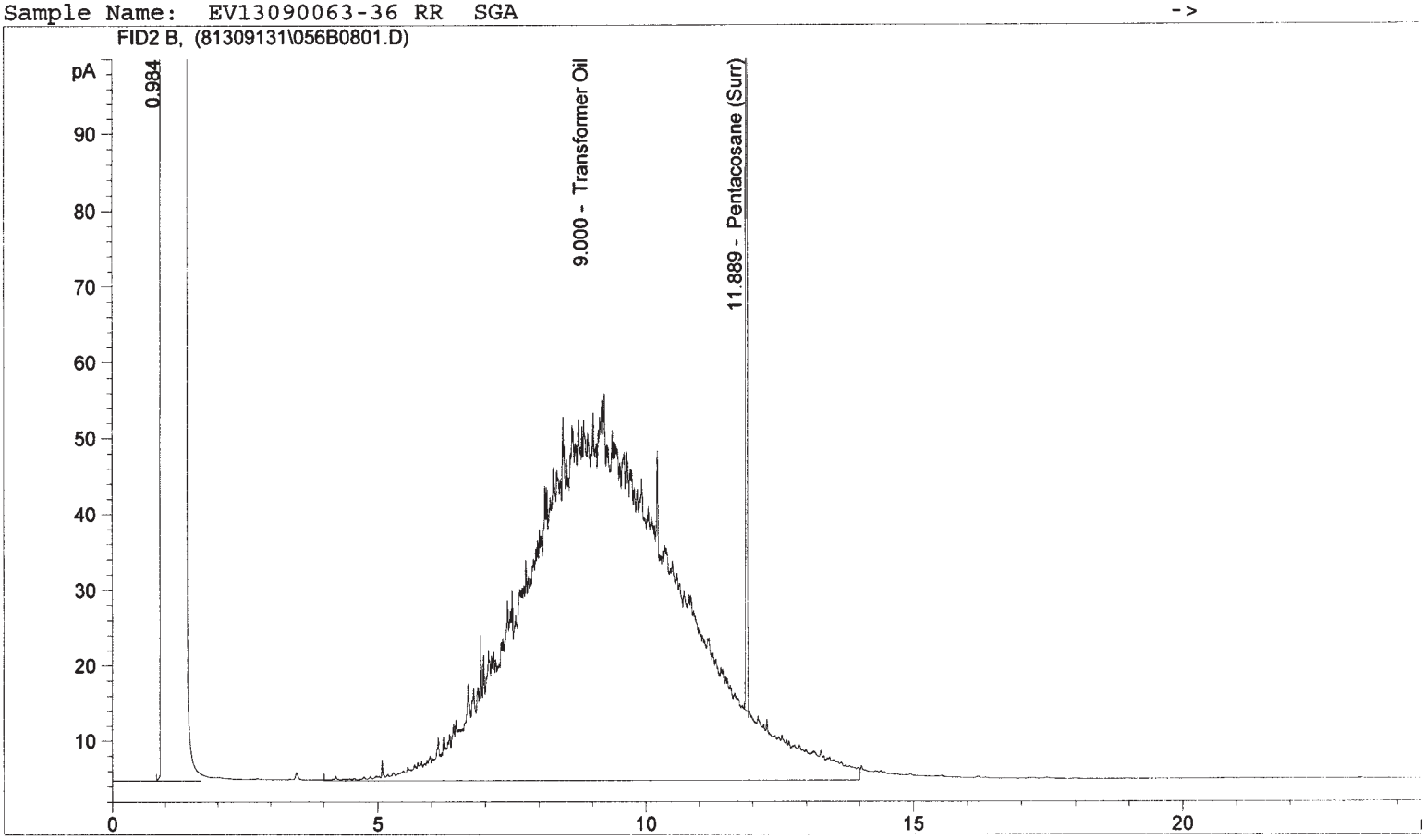
0 < 50 mg/kg

REVIEWED BY & DATE 9/7/13

09-13-13

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309131\056B0801.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BTO0712.M
Injection Date & Time: 9/13/2013 11:41:28 AM 9/13/2013 11:41:28 AM
Report Creation: 9/13/2013 2:42:14 PM

Sample Name: EV13090063-36 RR SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
9.000	FID2 B,	Transformer Oil	9677.540	532.027	
11.889		Pentacosane (Surr)	532.471	22.571	* 113%

* spike 2x with surrogate 21.70g

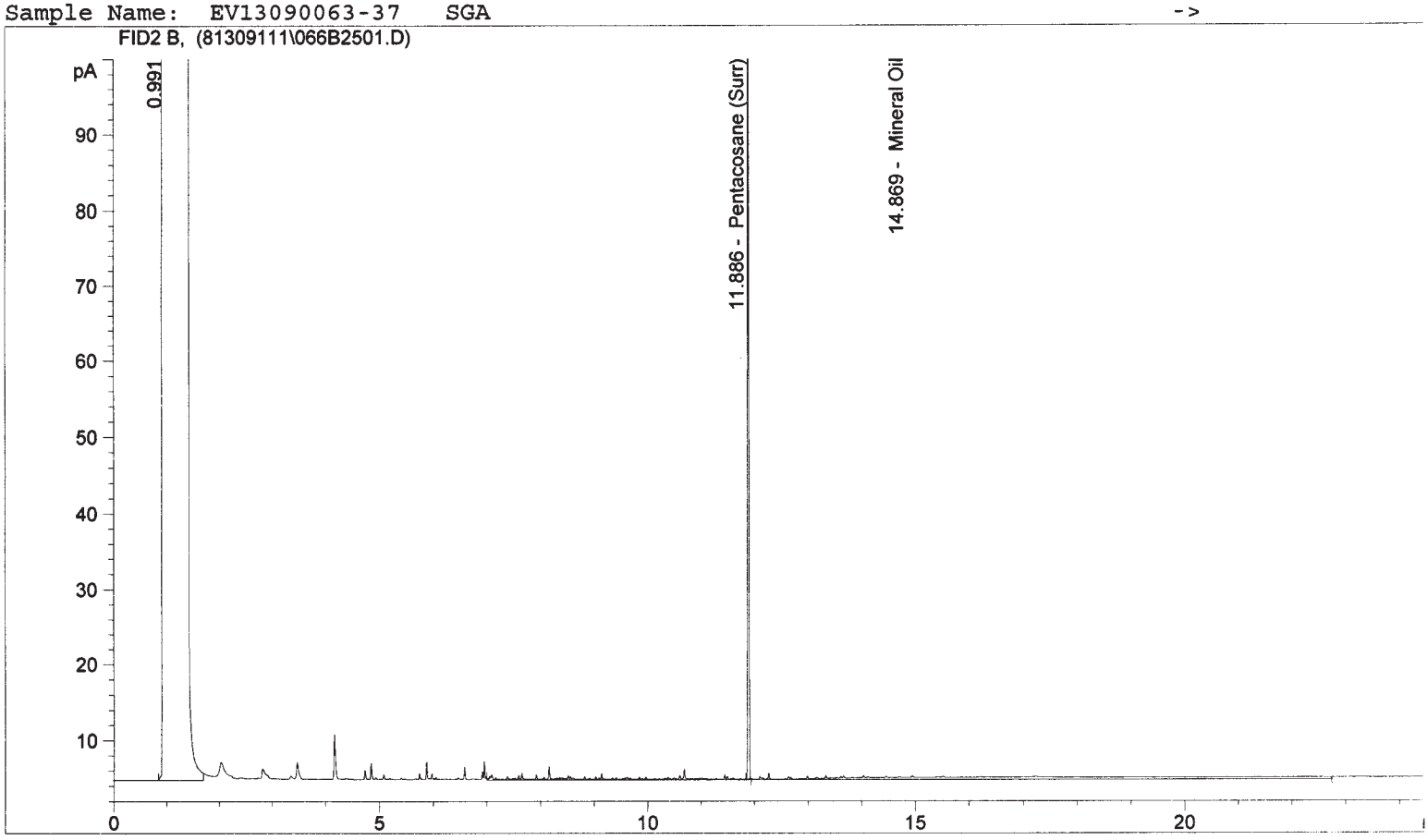
T.O = 532.027 g/mL x $\frac{10mL}{21.70g}$ = 250 mg/kg Transformer Oil or similar product

REVIEWED BY & DATE 9/17/13

09.13.13 EB

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\066B2501.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BMIN0212.M
Injection Date & Time: 9/11/2013 7:58:06 PM 9/11/2013 7:58:06 PM
Report Creation: 9/12/2013 10:37:02 AM

Sample Name: EV13090063-37 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
11.886	FID2 B,	Pentacosane (Surr)	234.036	11.928
14.869		Mineral Oil	212.365	14.417

119%

26.228

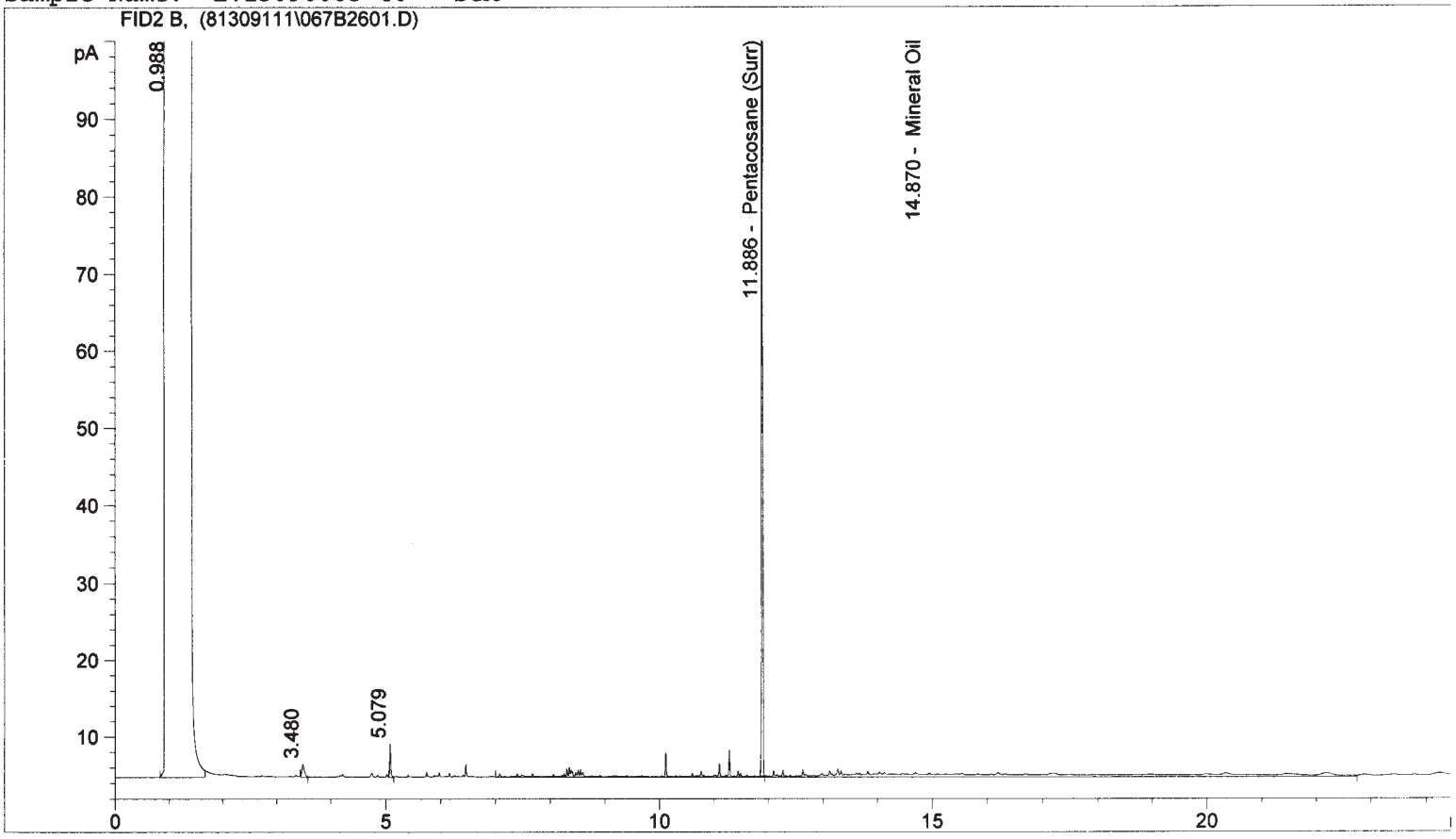
Mineral Oil < 50 mg/kg

REVIEWED BY NB
& DATE 9/17/13

09/13/13

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\067B2601.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BMIN0212.M
Injection Date & Time: 9/11/2013 8:28:38 PM 9/11/2013 8:28:38 PM
Report Creation: 9/12/2013 10:37:25 AM

Sample Name: EV13090063-40 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
11.886	FID2 B,	Pentacosane (Surr)	238.491	12.155	122 %
14.870		Mineral Oil	236.455	16.053	
				20238	

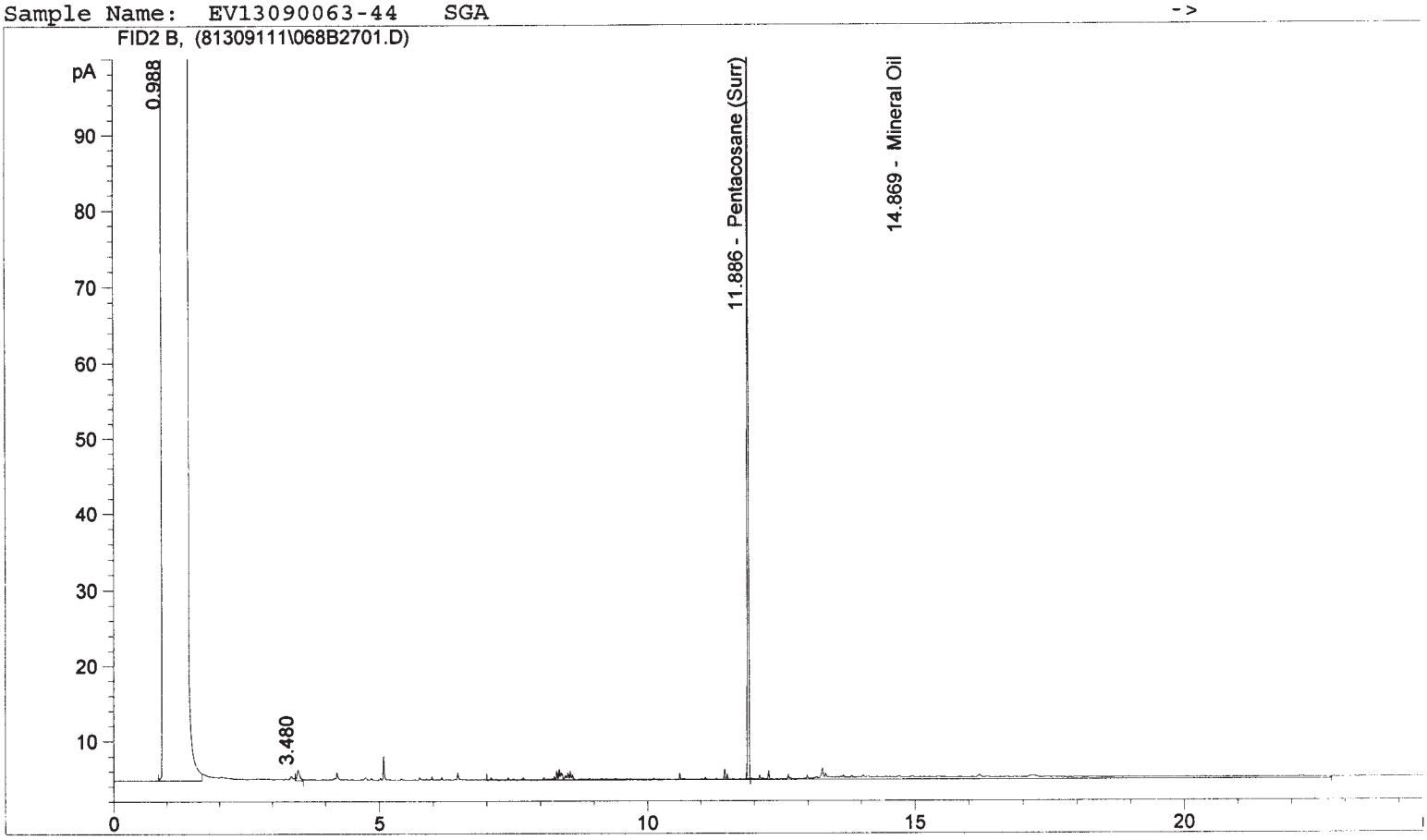
Mineral Oil < 50 mg/kg

REVIEWED BY [illegible] & DATE 9/17/13

09.18.13 ED

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\068B2701.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BMIN0212.M
Injection Date & Time: 9/11/2013 8:59:08 PM 9/11/2013 8:59:08 PM
Report Creation: 9/13/2013 2:25:26 PM

Sample Name: EV13090063-44 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
11.886	FID2 B,	Pentacosane (Surr)	238.750	12.168
14.869		Mineral Oil	215.672	14.642
				19.478

122/.

Mineral Oil < 100 g/mL x $\frac{10\,mL}{19.478\,g}$ < 51 mg/kg

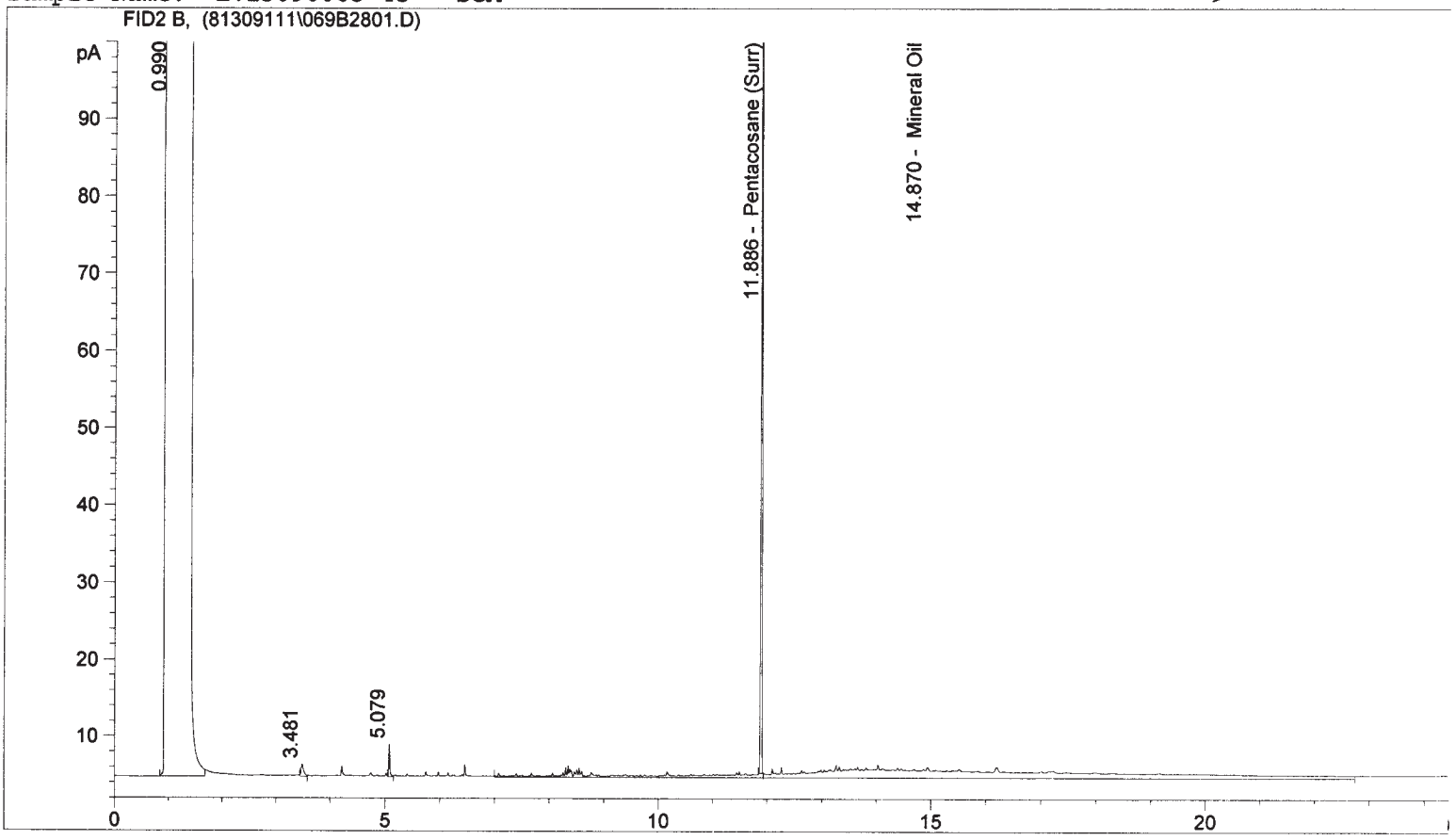
* reporting limit raised due low % solids

REVIEWED BY MB
DATE 9/13/13

09.13.13

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\069B2801.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BMIN0212.M
Injection Date & Time: 9/11/2013 9:29:37 PM 9/11/2013 9:29:37 PM
Report Creation: 9/12/2013 10:37:44 AM

Sample Name: EV13090063-45 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
11.886	FID2 B,	Pentacosane (Surr)	231.898	11.819
14.870		Mineral Oil	562.168	38.165

118% 21-978

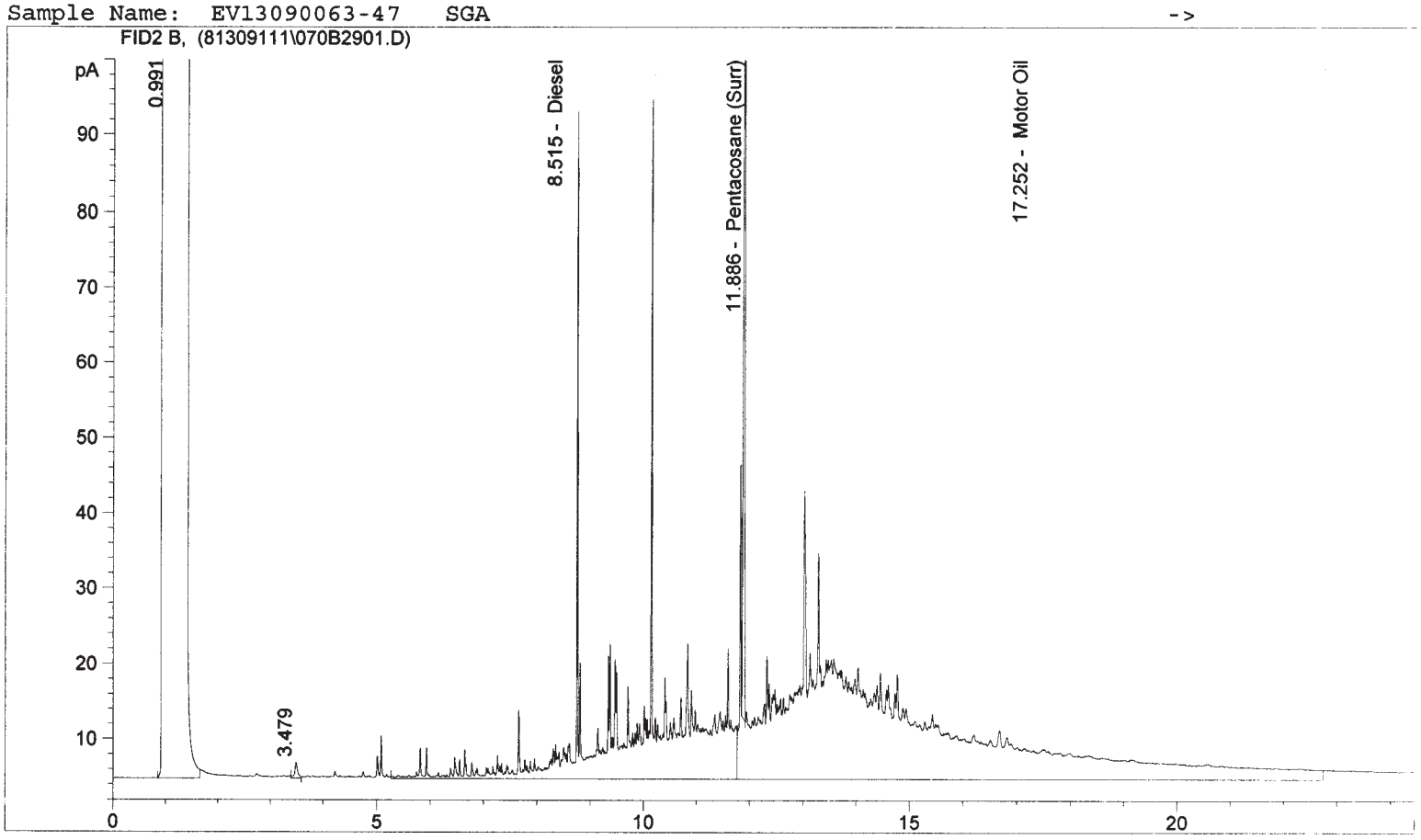
Mineral Oil < 50 mg/kg

REVIEWED BY & DATE 9/12/13

09.12.13 ES

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\070B2901.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BDMO0213.M
Injection Date & Time: 9/11/2013 10:00:04 PM 9/11/2013 10:00:04 PM
Report Creation: 9/13/2013 2:33:11 PM

Sample Name: EV13090063-47 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
8.515	FID2 B,	Diesel	1519.283	115.838	134%
11.886		Pentacosane (Surr)	304.320	13.358	
17.252		Motor Oil	3662.972	297.465	

25.25 g

Mineral Oil < 50 mg/kg

$D = 115.838\ \mu g/mL \times \frac{10mL}{25.25g} = 46\ mg/kg$ Unidentified Late Diesel Range Product (bias high due to Oil Range Product overlap)

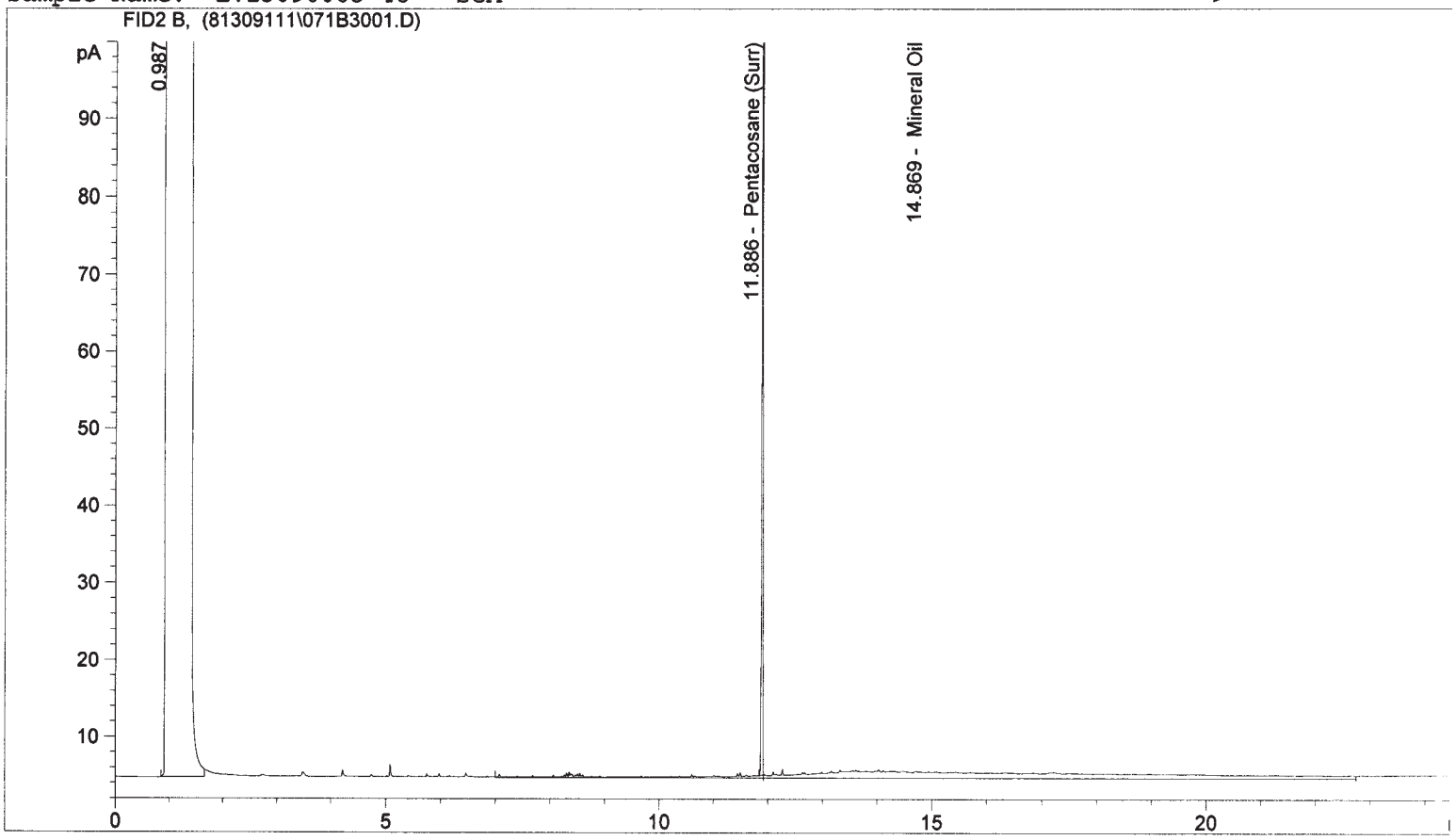
$D = 297.465\ \mu g/mL \times \frac{10mL}{25.25g} = 120\ mg/kg$ Lube Oil

REVIEWED BY [illegible] 9/17/13

09-13-13

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309111\071B3001.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BMIN0212.M
Injection Date & Time: 9/11/2013 10:30:35 PM 9/11/2013 10:30:35 PM
Report Creation: 9/12/2013 10:39:13 AM

Sample Name: EV13090063-48 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
11.886	FID2 B,	Pentacosane (Surr)	241.921	12.330
14.869		Mineral Oil	445.076	30.216
				27.478

123)

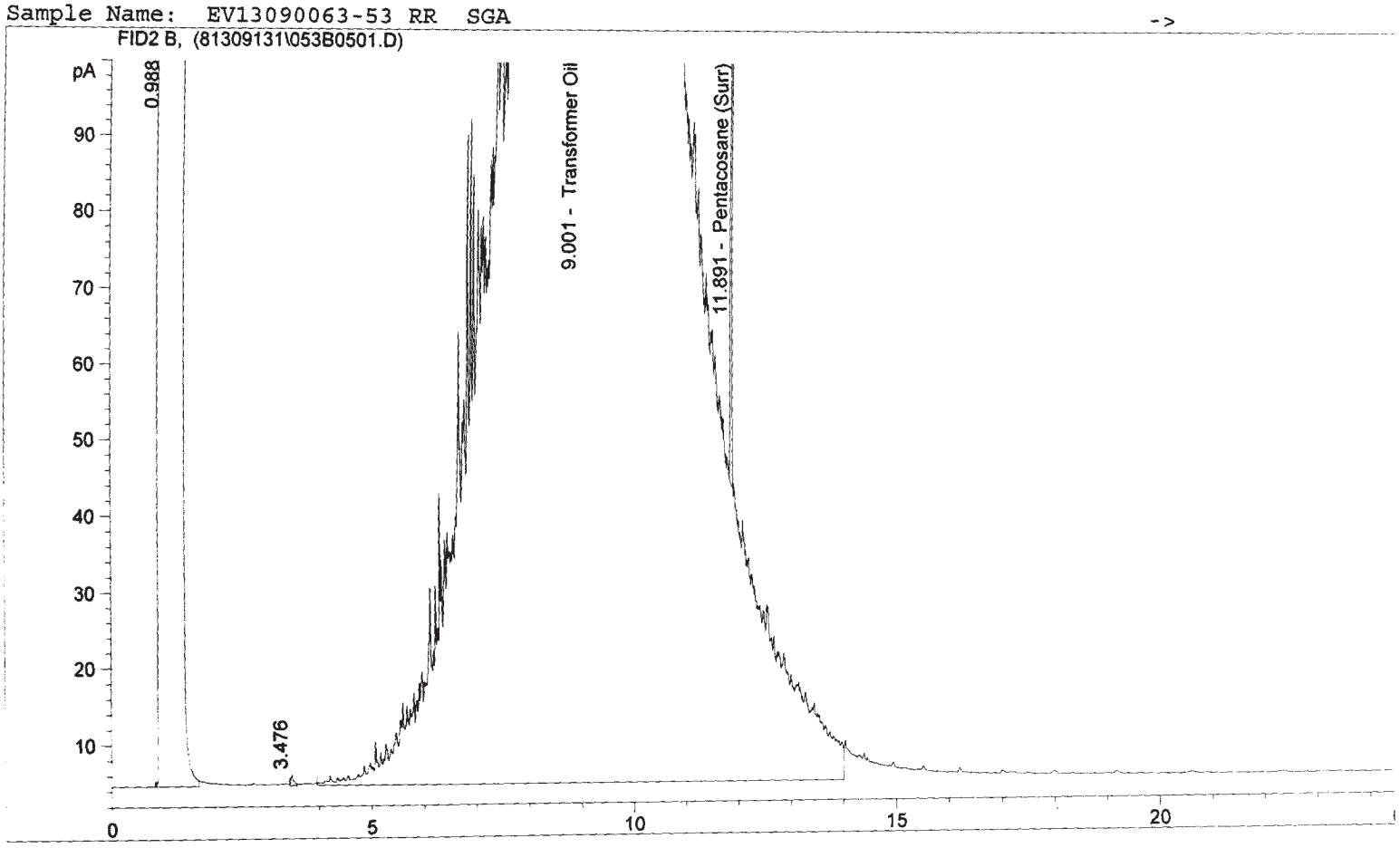
Mineral Oil < 50 mg/kg

REVIEWED BY [illegible] DATE 9/13/13

09-13-13

Data File: C:\HPCHEM\1\DATA\81309131\053B0501.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BTO0712.M
Injection Date & Time: 9/13/2013 10:09:36 AM 9/13/2013 10:09:36 AM
Report Creation: 9/13/2013 1:08:36 PM

Sample Name: EV13090063-53 RR SGA



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
9.001	FID2 B,	Transformer Oil	44607.129	2452.297
11.891		Pentacosane (Surr)	237.761	10.079

101 %

24.35 g

$7.0 = 2452.297 \text{ ug/mL} \times \frac{10 \text{mL}}{24.35 \text{g}} = 1000 \text{ mg/kg}$

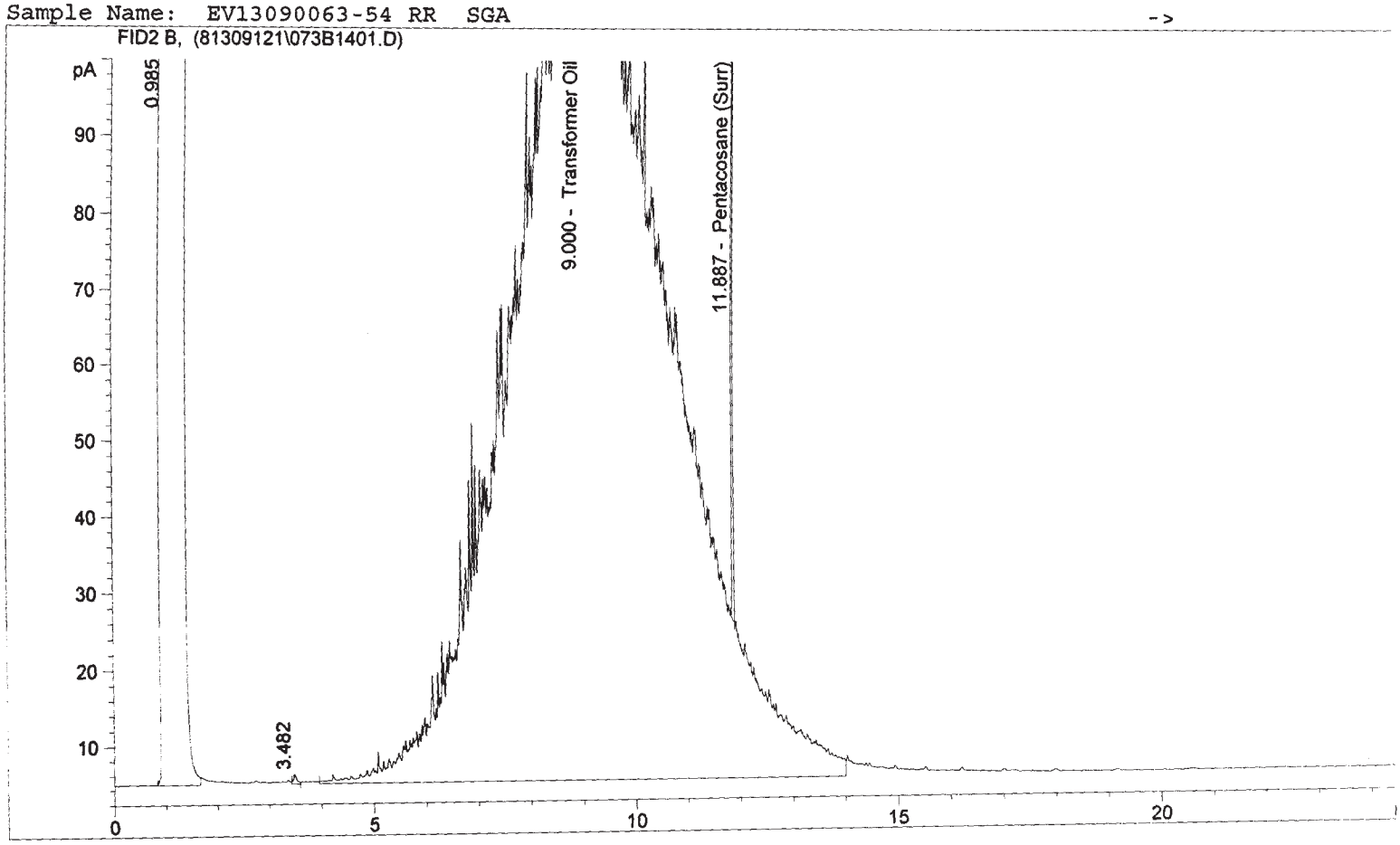
Transformer Oil or similar product

REVIEWED BY [illegible] DATE 9/17/13

09.12.13 ES

Data File: C:\HPCHEM\1\DATA\81309121\073B1401.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BTO0712.M
Injection Date & Time: 9/12/2013 2:43:31 PM 9/12/2013 2:43:31 PM
Report Creation: 9/12/2013 3:12:42 PM

Sample Name: EV13090063-54 RR SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
9.000	FID2 B,	Transformer Oil	24070.178	1323.269
11.887		Pentacosane (Surr)	247.822	10.505

106%

25.41g

T.O = 1323.269 ug/mL x $\frac{10\,mL}{25.41\,g}$ = 520 mg/kg Transformer Oil or similar product

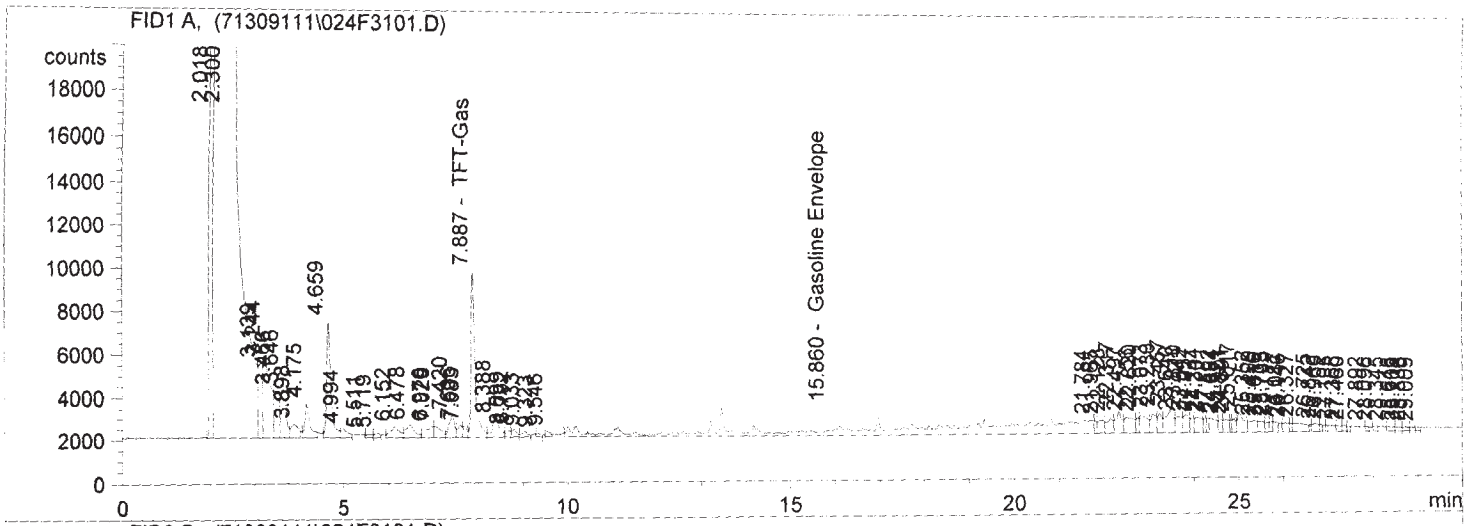
REVIEWED BY [illegible] 9/17/13

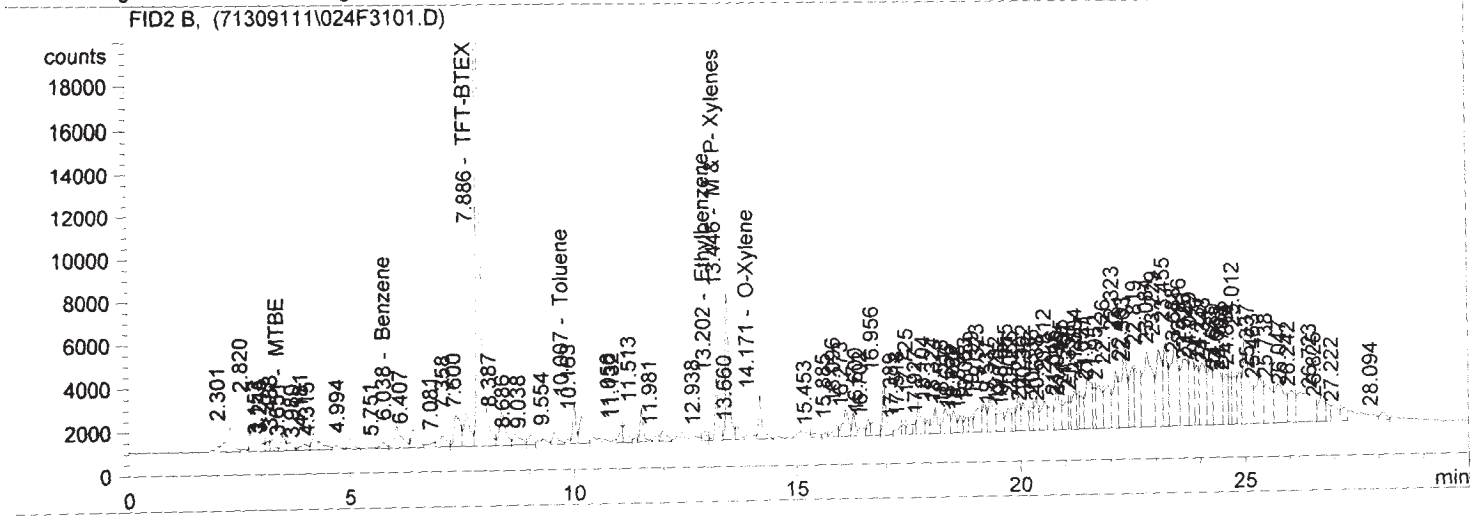
59.12.135

C:\HPCHEM\1\DATA\71309111\024F3101.D
Injection Date & Time: 9/12/2013 1:59:54 AM
Report Created on: 9/12/2013 8:17:56 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-57 Dilution: X 0.0





Ret. Time	Compound Name	Area	Amount ug/L
7.887	TFT-Gas	50319.391	6.537 65%
15.860	Gasoline Envelope	199755.078	46.145

Gas < 3.0 mg/kg

Ret. Time	Compound Name	Area	Amount ug/L
3.651	MTBE	3186.864	0.104
6.038	Benzene	12430.222	0.410
7.886	TFT-BTEX	152547.516	6.073 61%
10.007	Toluene	9578.251	0.426
13.202	Ethylbenzene	14303.987	0.752
13.446	M & P- Xylenes	35381.059	0.999
14.171	O-Xylene	11256.206	0.175

RB 9/17/13

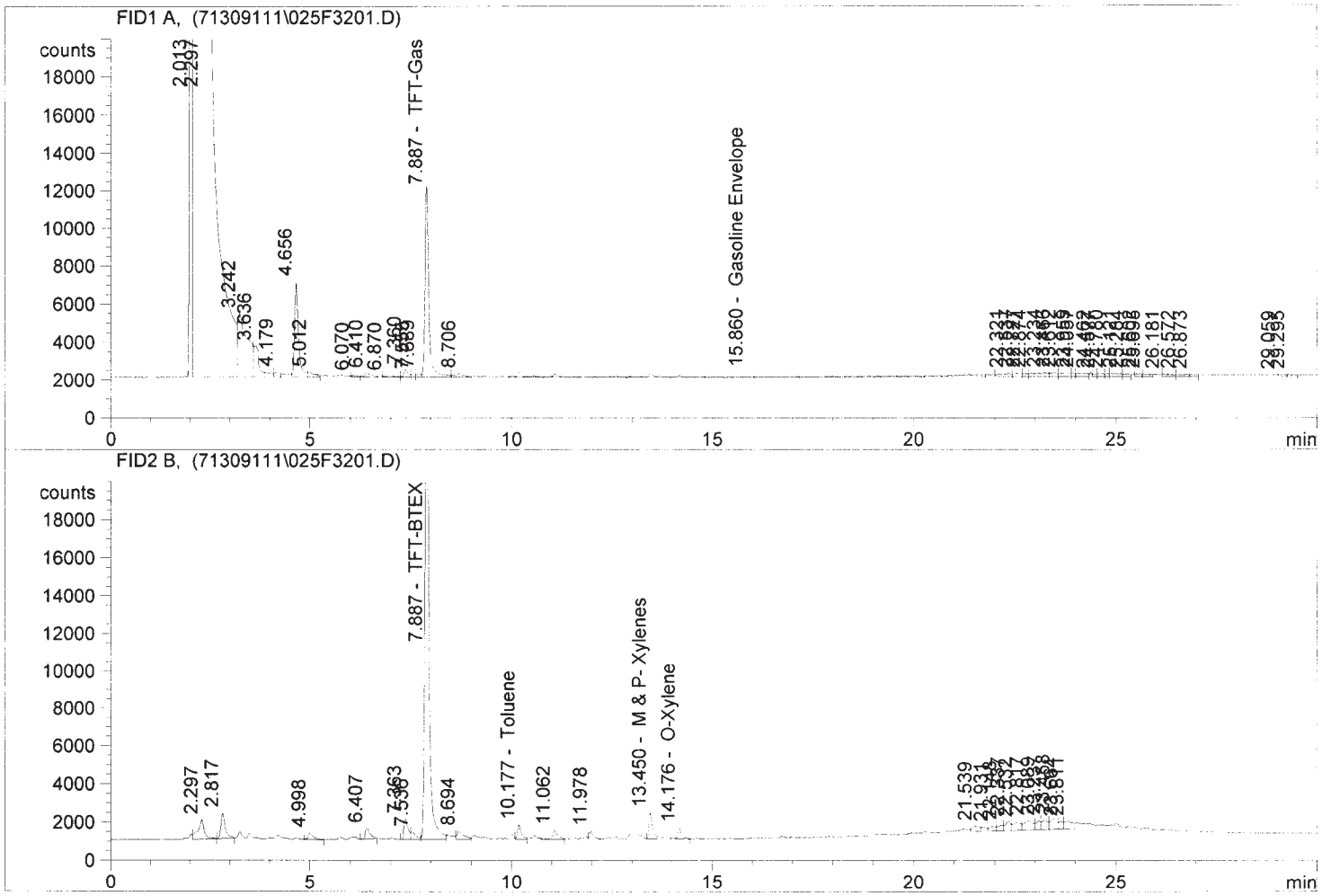
B < 0.03 mg/kg TIE < 0.05 mg/kg x < 0.2 mg/kg

9-13-13 DC

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\025F3201.D
Injection Date & Time: 9/12/2013 2:36:13 AM
Report Created on: 9/12/2013 8:18:07 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-58 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.887	TFT-Gas	66512.992	8.641
15.860	Gasoline Envelope	18056.688	4.171

86%

Gas < 3.0 mg/kg

Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.887	TFT-BTEX	199935.906	7.893
10.177	Toluene	5085.515	0.368
0.000	Ethylbenzene	0.000	0.000
13.450	M & P- Xylenes	8217.637	0.650
14.176	O-Xylene	3677.115	0.057

79%

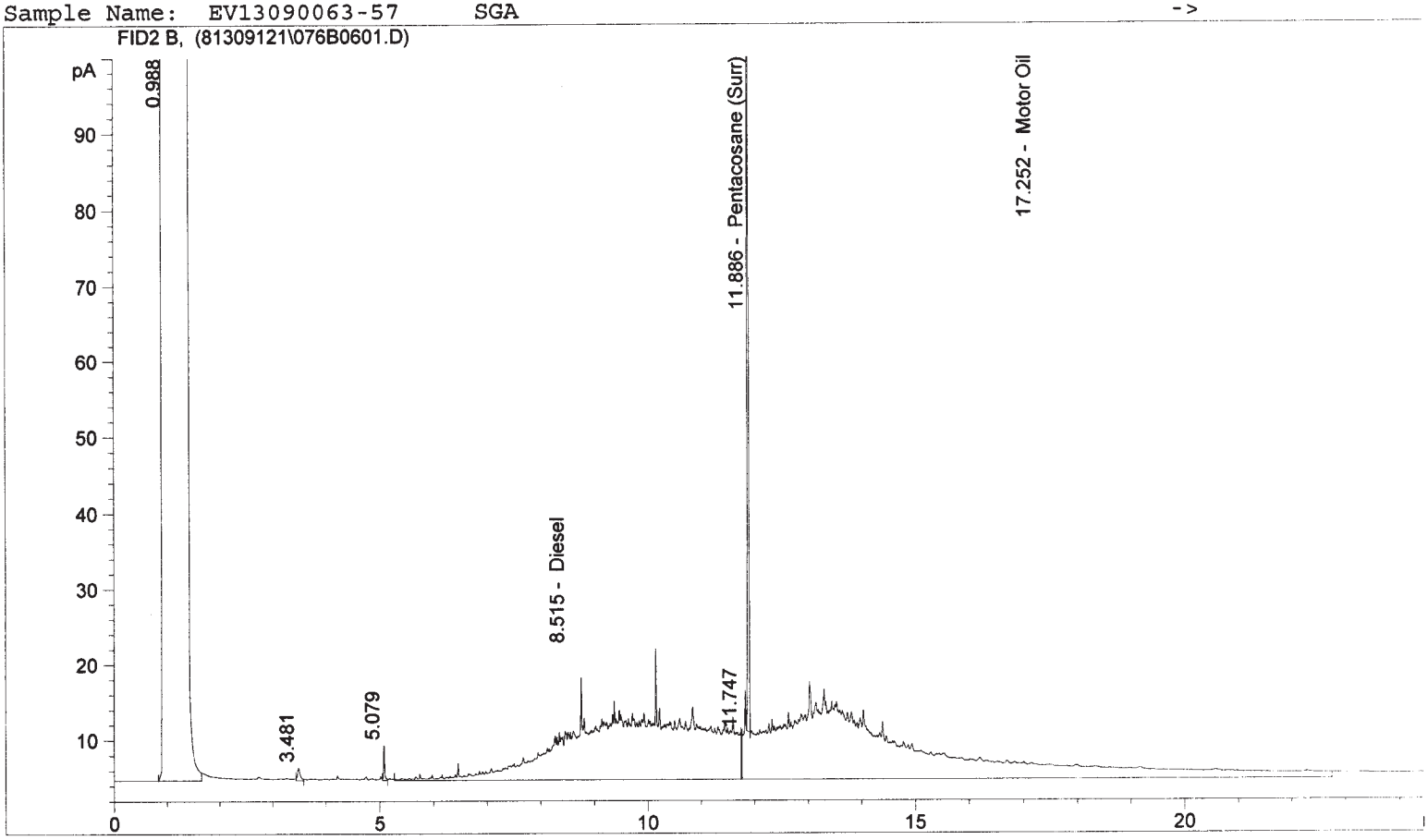
9/13/13

B < 0.03 mg/kg T/E < 0.05 mg/kg X < 0.2 mg/kg

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309121\076B0601.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\BDMO0213.M
Injection Date & Time: 9/12/2013 10:09:38 AM 9/12/2013 10:09:38 AM
Report Creation: 9/13/2013 1:43:34 PM

Sample Name: EV13090063-57 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL	
8.515	FID2 B,	Diesel	1649.394	125.758	
11.886		Pentacosane (Surr)	279.510	12.269	123%
17.252		Motor Oil	2065.939	167.772	
				22.71g	

D = 125.758 g/mL × 10mL / 22.71g = 55 mg/kg Unidentified Late Diesel Range Product

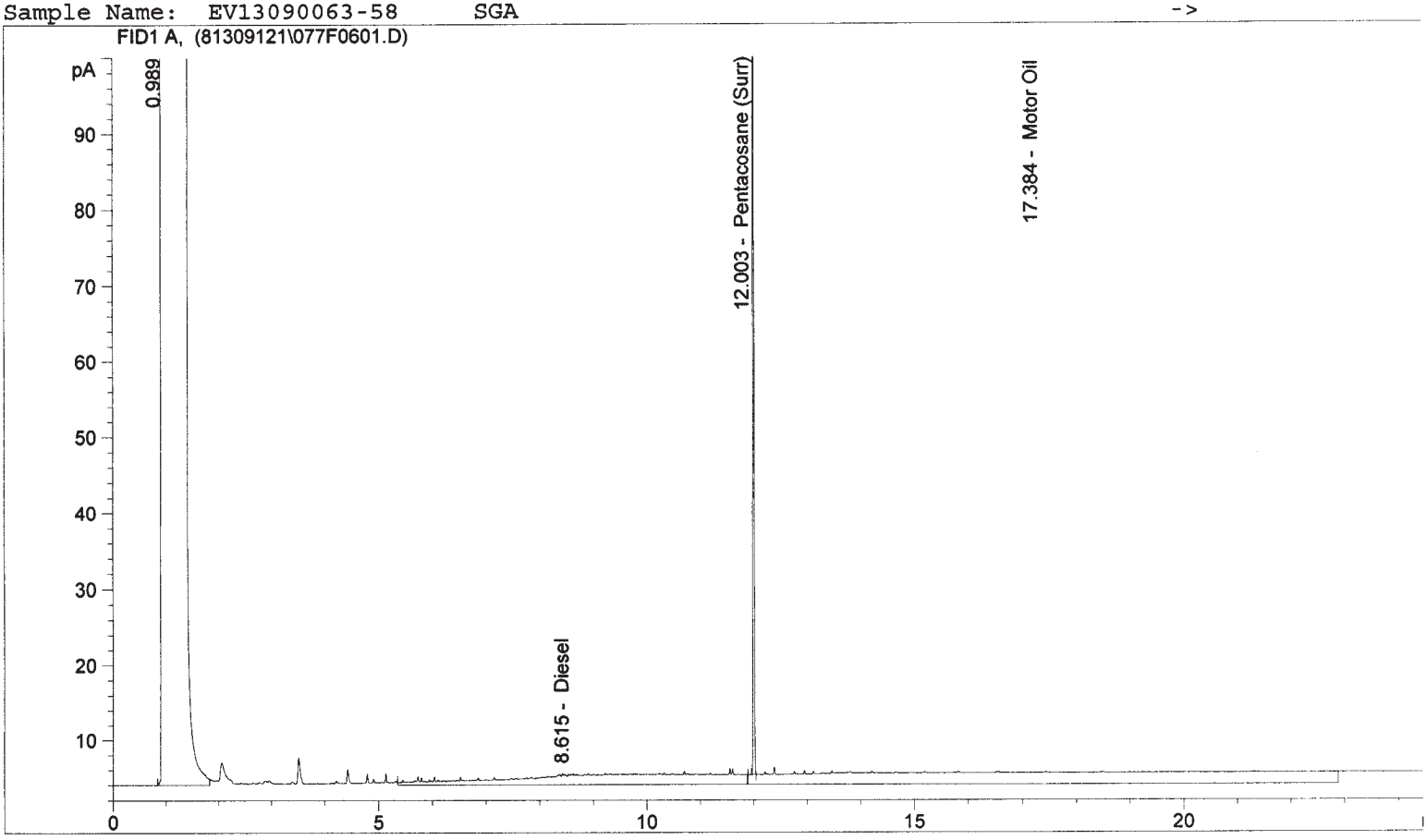
O = 167.772 g/mL × 10 mL / 22.71g = 74 mg/kg Lube Oil

REVIEWED BY DATE 9/17/13

09.13.13 EJ

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309121\077F0601.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/12/2013 10:09:38 AM 9/12/2013 10:09:38 AM
Report Creation: 9/13/2013 4:46:39 PM

Sample Name: EV13090063-58 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	401.977	30.571
12.003		Pentacosane (Surr)	240.626	10.351
17.384		Motor Oil	984.645	85.811

104%

21.848

D < 25 mg/kg

O < 50 mg/kg

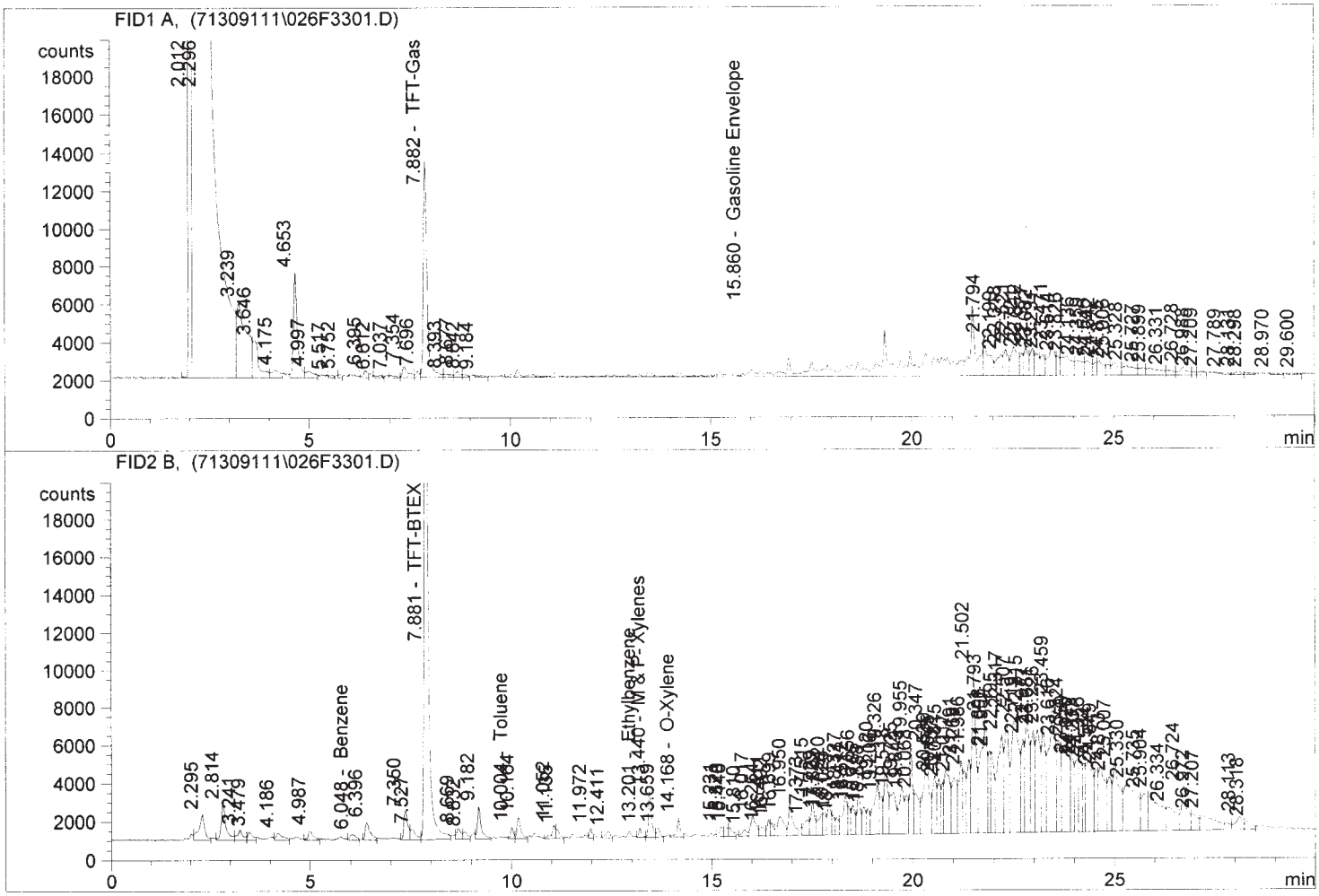
REVIEWED BY [illegible] 9/17/13

09.13.13 EJ
~~08.13~~

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\026F3301.D
Injection Date & Time: 9/12/2013 3:12:16 AM
Report Created on: 9/12/2013 8:18:17 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-62 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.882	TFT-Gas	72868.516	9.467
15.860	Gasoline Envelope	227570.578	52.571

95%

Gas < 3.0 mg/kg

Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
6.048	Benzene	3129.588	0.296
7.881	TFT-BTEX	222084.453	8.744
10.004	Toluene	3139.833	0.343
13.201	Ethylbenzene	2553.659	0.569
13.440	M & P- Xylenes	12908.569	0.710
14.168	O-Xylene	6134.154	0.095

87%

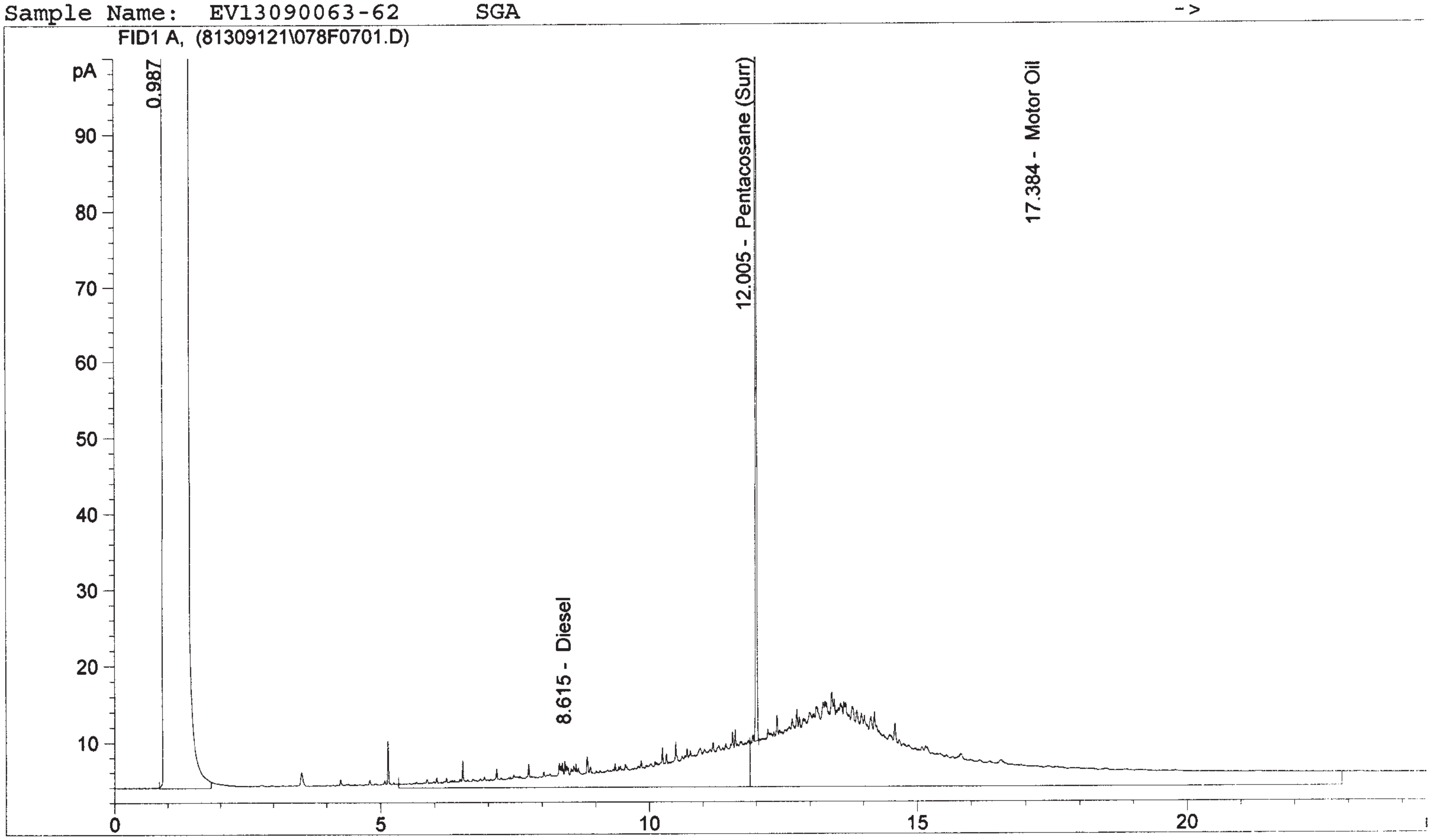
R[illegible] BY DA[illegible] 9/12/13

B < 0.03 mg/kg T/E < 0.05 mg/kg x < 0.2 mg/kg

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309121\078F0701.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/12/2013 10:40:01 AM 9/12/2013 10:40:01 AM
Report Creation: 9/12/2013 2:59:52 PM

Sample Name: EV13090063-62 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	931.034	70.806
12.005		Pentacosane (Surr)	264.396	11.374 114%
17.384		Motor Oil	2630.068	229.207

27.40g

D < 25 mg/kg

O = 229.207 ug/mL × 10mL / 27.40g = 84 mg/kg Lube Oil

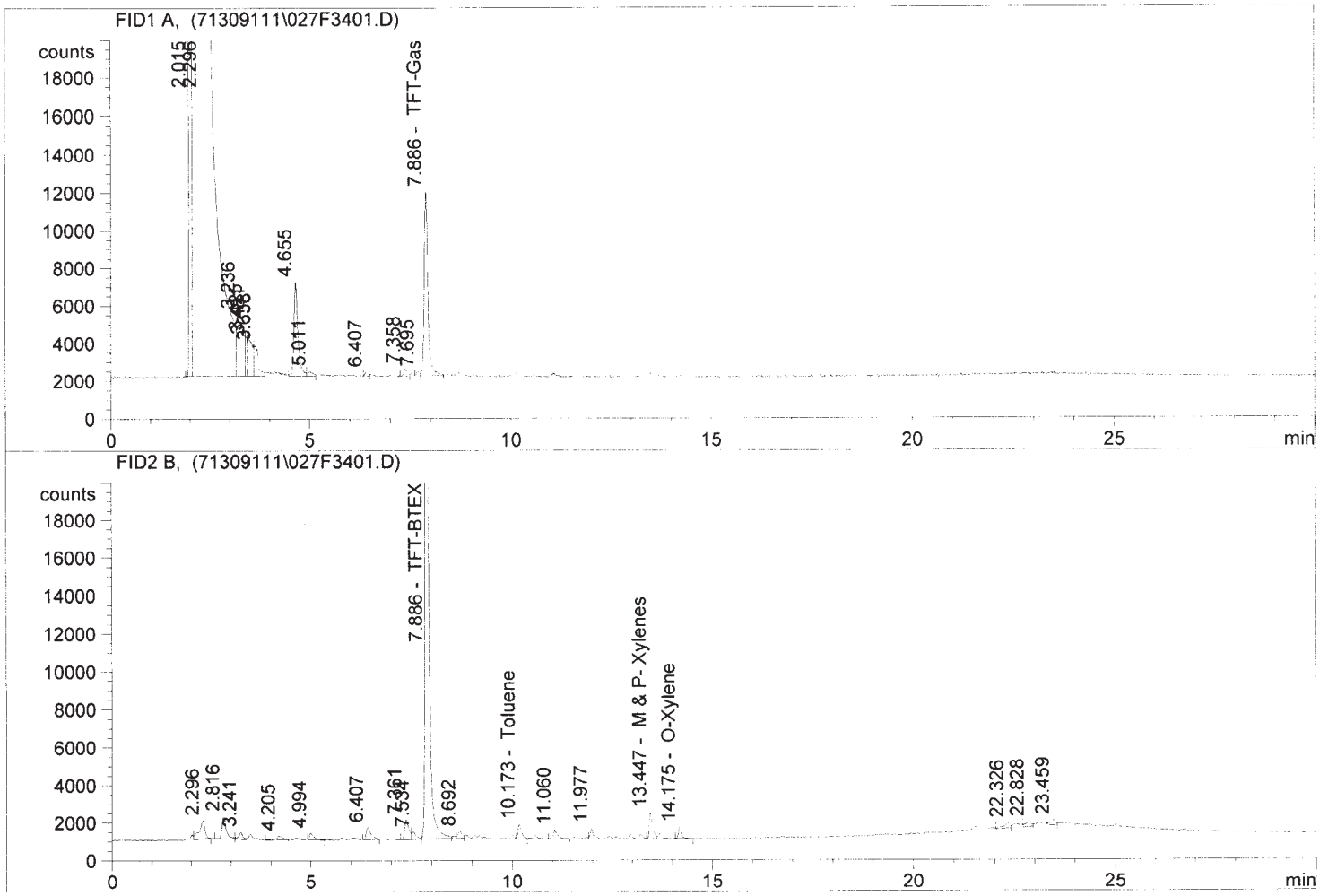
REVIEWED BY B
& DATE 9/17/13

09.13.13 EB

Gas/BTEX Instrument 70
Data File: C:\HPCHEM\1\DATA\71309111\027F3401.D
Injection Date & Time: 9/12/2013 3:48:24 AM
Report Created on: 9/12/2013 8:18:28 AM
Operator: DLC
Aquistion Method: GX0513.M
Analysis Method: C:\HPCHEM\1\METHODS\GX0513.M

FID1 A equivalent to FID analysis.
FID2 B equivalent to PID analysis.

Sample Name:EV13090063-63 Dilution: X 0.0



Ret. Time	Compound Name	Area	Amount ug/L
7.886	TFT-Gas	63059.996	8.193
0.000	Gasoline Envelope	0.000	0.000

82%

Gas < 3.0 mg/kg

Ret. Time	Compound Name	Area	Amount ug/L
0.000	MTBE	0.000	0.000
0.000	Benzene	0.000	0.000
7.886	TFT-BTEX	197030.625	7.781
10.173	Toluene	5108.554	0.368
0.000	Ethylbenzene	0.000	0.000
13.447	M & P- Xylenes	8336.637	0.651
14.175	O-Xylene	3574.098	0.056

78%

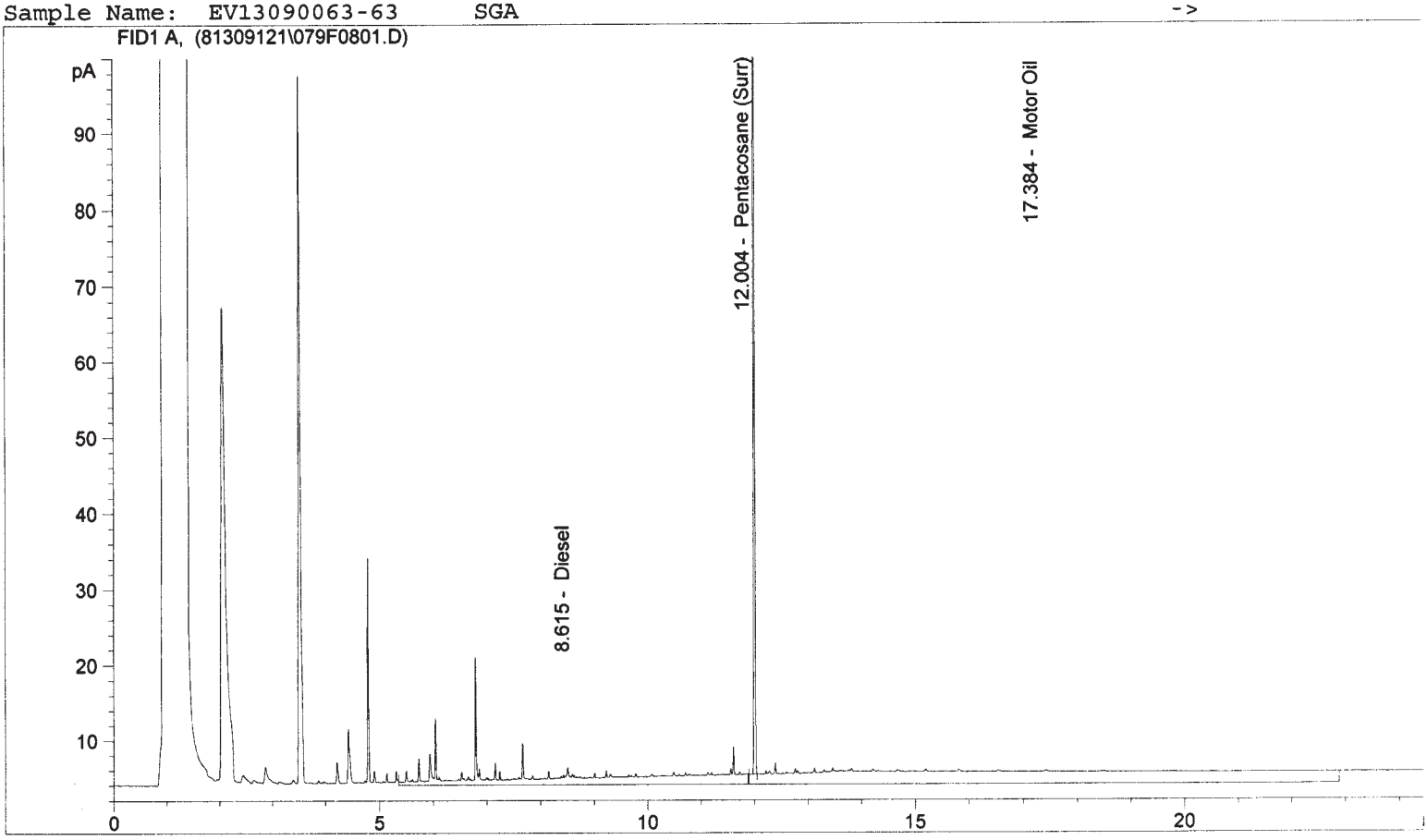
REVIEWED BY NB
DATE 9/12/13

B < 0.03 mg/kg T/E < 0.05 mg/kg X < 0.2 mg/kg

9-13-13 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81309121\079F0801.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO0213.M
Injection Date & Time: 9/12/2013 11:10:30 AM 9/12/2013 11:10:30 AM
Report Creation: 9/13/2013 3:20:04 PM

Sample Name: EV13090063-63 SGA ->



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.615	FID1 A,	Diesel	437.617	33.281
12.004		Pentacosane (Surr)	255.746	11.002
17.384		Motor Oil	1066.305	92.927

110%

26.05g

D < 25 mg/kg

O < 50 mg/kg

REVIEWED BY [illegible] DATE 9/13/13

09-13-13

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1309063

Date 9/9/13 Page 1 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: Geo Engineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ si gel CU	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM X	PCB X Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 X RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B1-1-3-20130908	9/8/13	1025	S	1		X	X				X				X	X	X				5	
2. B1-2-5.5-20130908	9/8/13	1027		2		X	X				X				X	X	X				5	
3. B1-3-8-20130908	9/8/13	1029		3																	5	
4. B1-4-10.5-20130908	9/8/13	1031		4																	5	
5. B2-1-3-20130908	9/8/13	1104		5																	5	
6. B2-2-5.5-20130908	9/8/13	1107		6		X	X				X				X	X	X				5	
7. B2-3-8-20130908	9/8/13	1110		7		X	X				X				X	X	X				5	
8. B2-4-10.5-20130908	9/8/13	1112		8																	5	
9. B3-1-3-20130908	9/8/13	935		9																	5	
10 B3-2-5.5-20130908	9/8/13	940	S	10		X	X									X	X				5	

LABORATORY COPY

SPECIAL INSTRUCTIONS: Send invoice to Ron Bek, he will forward to Snohomish County PUD
X - Added 9/10/13 SR

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Bek, GEZ, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: X Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: X Standard | 3 | 1 | SAME DAY

OTHER: Specify: hold until Ron sends addendum COC

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1309063

Date 9/9/13 Page 2 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 360 303 2819 FAX: 360 647 5044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No.1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

LABORATORY COPY

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ si gel cu	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM X	PCB X Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 X RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B3-3-8-20130908	9/8/13	945	S	11																	5	
2. B3-4-10.5-20130908	9/8/13	956	|	12																	5	
3. B4-1-3-20130908	9/8/13	821	|	13																	5	
4. B4-2-5.5-20130908	9/8/13	826	|	14																	5	
5. B4-3-8-20130908	9/8/13	837	|	15		X	X				X				X	X	X				5	
6. B4-4-10.5-20130908	9/8/13	847	|	16		X	X				X				X	X	X				5	
7. B4-5-13-20130908	9/8/13	852	|	17																	5	
8. B5-1-3-20130908	9/8/13	736	|	18																	5	
9. B5-2-5.5-20130908	9/8/13	740	|	19		X	X										X				5	
10. B5-3-8-20130908	9/8/13	743	S	20																	5	

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Bek, GEI, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Rebman ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: Standard X | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: Standard X | 3 | 1 | SAME DAY

OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1309 0063

Date _____ Page 3 Of 3

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Bell
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 360 647 5049
P.O. #: 2320 CA ST E-MAIL: ~~cabell~~rbell@geoengineers
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: Po Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Silgel cu	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify) Chromium VI	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B5-4-10.5-20130908	9/8/13	746	S	21																	5	
2. B5-5-13-20130908	9/8/13	749		22																	5	
3. B5-6-15.5-20130908	9/8/13	755		23																	5	
4. B6-1-3-20130908	9/8/13	912		24		X	X										X				5	
5. B6-2-5.5-20130908	9/8/13	915		25																	5	
6. B6-3-8-20130908	9/8/13	917		26																	5	
7. B7-1-3-20130907	9/7/13	1632		27		X	X				X				X	X	X			X	5	
8. B7-2-5.5-20130907	9/7/13	1636		28		X	X				X				X	X	X				5	
9. B7-3-8-20130907	9/7/13	1640		29																	5	
10. B7-4-10.5-20130907	9/7/13	1646	S	30																	5	

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [illegible], GEI, 9/10/13, 0800
Received By: _____
2. Relinquished By: _____
Received By: Shawn Roberson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: ☒ 10 Standard ☐ 5 ☐ 3 ☐ 2 ☐ 1 ☐ SAME DAY
Fuels & Hydrocarbon Analysis: ☒ 5 Standard ☐ 3 ☐ 1 ☐ SAME DAY
OTHER: Specify: _____

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1309006 3

Date 9/9/13 Page 4 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Beik
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbeik@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

LABORATORY COPY

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX W/Si sel cu *	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B7-5-13-20130907	9/7/13	1651	S	31																	5	
2. B7-6-15.5-20130907	"	1657	"	32																	5	
3. B8-1-3-20130907	"	1311	"	33																	1	
4. B8-2-5.5-20130907	"	1316	"	34																	1	
5. B8-3-8-20130907	"	1318	"	35																	1	
6. B8-4-10.5-20130907	"	1321	"	36		X										X					1	
7. B8-5-13-20130907	"	1327	"	37		X															1	
8. B9-1-3-20130907	"	1428	"	38																	1	
9. B9-2-5.5-20130907	"	1432	"	39																	1	
10. B9-3-8-20130907	9/7/13	1436	S	40		X															1	

SPECIAL INSTRUCTIONS * quantified to mineral oil

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Beik, GEI, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Rokusan ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: ☒ 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV13090063

Date 9/9/13 Page 5 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Belk
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA 5T E-MAIL: rbelk@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Si gel CU *	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B9-4-10.5-20130907	9/7/13	1438	S	41																	1	
2. B10-1-3-20130907		1246		42																	1	
3. B10-2-5.5-20130907		1248		43																	1	
4. B10-3-8-20130907		1250		44		X															1	
5. B10-4-10.5-20130907		1254		45		X															1	
6. B11-1-3-20130907		1356		46																	1	
7. B11-2-5.5-20130907		1358		47		X															1	
8. B11-3-8-20130907		1403		48		X															1	
9. B11-4-10.5-20130907		1408		49																	1	
10. B12-1-3-20130907	9/7/13	1500	S	50																	1	

SPECIAL INSTRUCTIONS: * quantified to mineral oil

LABORATORY COPY

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [illegible], GEI, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Rokuson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ~~10~~ Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: ~~5~~ Standard | 3 | 1 | SAME DAY

OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV13090063

Date 9/9/13 Page 6 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ si gel cu *	NWTPH-GX w/ BTEX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM X	PCB X Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 X RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify) NWTPH-Dx w/ si gel cu total Copper							NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B12-2-5.5-20130907	9/7/13	1503	S	51																								1	
2. B12-3-8-20130907		1506		52																								1	
3. B12-4-10.5-20130907		1512		53		X																						1	
4. B12-5-11.5-20130907		1514		54		X																						1	
5. B13-1-3-20130907		1056		55																								2	
6. B13-2-5.5-20130907		1102		56																								2	
7. B13-3-8-20130907		1106		57			X									X	X			X	X							2	
8. B13-4-10.5-20130907		1111		58			X										X			X	X							2	
9. B13-5-13-20130907		1116		59																								2	
10. B13-6-15.5-20130907	9/7/13	1120	S	60																								2	

LABORATORY COPY

SPECIAL INSTRUCTIONS * quantified to mineral oil

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [illegible], GEI, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1309006 3

Date 9/9/13 Page 7 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: Geo Engineers
PROJECT MANAGER: Ron Beik
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbeik@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ SG CU	NWTPH-GX w/ BTEX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify) Copper	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B14-1-3-20130907	9/7/13	1003	S	61																	2	
2. B14-2-5.5-20130907		1007		62		X	X								X		X				2	
3. B14-3-8-20130907		1011		63		X	X								X		X				2	
4. B14-4-10.5-20130907		1015		64																	2	
5. B14-5-13-20130907		1019		65																	2	
6. B14-6-15.5-20130907		1024		66																	2	
7. B15-1-3-20130907		855		67											X		X	X			2	
8. B15-2-5.5-20130907		900		68																	2	
9. B15-3-8-20130907		904		69																	2	
10. B15-4-10.5-20130907		911	S	70																	2	

LABORATORY COPY

SPECIAL INSTRUCTIONS ~~Ron Beik, GEI~~

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Beik, GEI, 9/10/13, 0900
   Received By:
2. Relinquished By:
   Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ 10 Standard ☐ 5 ☐ 3 ☐ 2 ☐ 1 ☐ SAME DAY

Fuels & Hydrocarbon Analysis: ☒ F Standard ☐ 3 ☐ 1 ☐ SAME DAY

OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1309006 3

Date 9/9/13 Page 8 of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Belk
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603632819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbelk@geoengineers.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Si gel Cu	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B15-5-13-20130907	9/7/13	916	S	71																	2	
2. B15-6-15.5-20130907	9/7/13	920	S	72																	2	
3. B16-1-3-20130907		753		73											X		X				2	
4. B16-2-5.5-20130907		758		74																	2	
5. B16-3-8-20130907		804		75																	2	
6. B16-4-10.5-20130907		810		76																	2	
7. B16-5-13-20130907		817		77																	2	
8. B16-6-15.5-20130907	9/7/13	819	S	78																	2	
9.																						
10.																						

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: Jon Belk, GEI, 9/10/13, 0800
Received By:
2. Relinquished By:
Received By: Shawn Roberson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY
Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY
OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

October 11, 2013

Mr. Ron Bek
Geoengineers, Inc.
600 DuPont St.
Bellingham, WA 98225

Dear Mr. Bek,

On September 10th, 1 sample was received by our laboratory and assigned our laboratory project number EV13100024. The project was identified as your 0482-043-01. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/11/2013 EV13100024 EV13100024-01
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 3:12:00 PM
CLIENT SAMPLE ID	B12-4-10.5-20130907	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/04/13	LAP

SURROGATE	METHOD	RESULTS	LIMITS MIN	MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Tetrachloro-m-xylene	SW8082	**101%**	33	146		100		101	10/04/13	LAP
PCB-209	SW8082	**128%**	30	155		100		128	10/04/13	LAP

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE:	10/11/2013
		ALS SDG#:	EV13100024
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ron Bek		
CLIENT PROJECT:	0482-043-01		

LABORATORY BLANK RESULTS

MBLK-1032013 - Batch R91673 - Soil by SW8082 Prepared 10/03/13 00:00

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
PCB-aroclor 1016	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1221	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1232	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1242	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1248	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1254	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1260	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP
PCB-aroclor 1268	SW8082	ND	0.10	0.0027	0.0081	1	U	MG/KG	10/03/13	LAP

SURROGATE	METHOD	RESULTS	LIMITS MIN	LIMITS MAX	RPD	SPIKE ADDED	QUAL	%REC	ANALYSIS DATE	ANALYSIS BY
Tetrachloro-m-xylene	SW8082	ND	33	146		100	U		10/03/13	LAP
PCB-209	SW8082	ND	30	155		100	U		10/03/13	LAP

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE:	10/11/2013
		ALS SDG#:	EV13100024
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ron Bek		
CLIENT PROJECT:	0482-043-01		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R91673 - Soil by SW8082 Prepared 10/03/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
PCB-aroclor 1016 - BS	SW8082	**116**			100	50	150		10/03/13	LAP
PCB-aroclor 1016 - BSD	SW8082	**119**	**3**		100	50	150	21	10/03/13	LAP
PCB-aroclor 1260 - BS	SW8082	**125**			100	50	150		10/03/13	LAP
PCB-aroclor 1260 - BSD	SW8082	**125**	**0**		100	50	150	21	10/03/13	LAP

SURROGATE	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Tetrachloro-m-xylene - BS	SW8082			U	100	33	146		10/03/13	LAP
Tetrachloro-m-xylene - BSD	SW8082			U	100	33	146		10/03/13	LAP
PCB-209 - BS	SW8082			U	100	30	155		10/03/13	LAP
PCB-209 - BSD	SW8082			U	100	30	155		10/03/13	LAP

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE:	10/11/2013
		ALS SDG#:	EV13100024
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ron Bek		
CLIENT PROJECT:	0482-043-01		

MATRIX SPIKE RESULTS

ALS Test Batch ID: R91673 - Soil
Parent Sample: BATCH QC

SPIKED COMPOUND	METHOD	PARENT SAMPLE RESULT	SPIKE ADDED	RESULT	RPD	%REC	QUAL	ANALYSIS DATE	ANALYSIS BY
PCB-aroclor 1016 - MS	SW8082	0	0.500	**0.451**		**90.2**		10/03/13	LAP
PCB-aroclor 1016 - MSD	SW8082	0	0.500	**0.485**	**7**	**97.1**		10/03/13	LAP
PCB-aroclor 1260 - MS	SW8082	0	0.500	**0.495**		**99.0**		10/03/13	LAP
PCB-aroclor 1260 - MSD	SW8082	0	0.500	**0.529**	**7**	**106**		10/03/13	LAP

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job#: EV1310024 (Laboratory Use Only)
~~EV1310063~~

Date 9/9/13 Page 6 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ si gel cu *	NWTPH-GX w/ BTEX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify): NWTPH-Dx w/ si gel CU; Total Copper							NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B12-2-5.5-20130907	9/7/13	1503	S	51																							1	
2. B12-3-8-20130907		1506		52																							1	
3. B12-4-10.5-20130907		1512		53		X										X											1	
4. B12-5-11.5-20130907		1514		54		X																					1	
5. B13-1-3-20130907		1056		55																							2	
6. B13-2-5.5-20130907		1102		56																							2	
7. B13-3-8-20130907		1106		57			X									X	X			X	X						2	
8. B13-4-10.5-20130907		1111		58			X										X			X	X						2	
9. B13-5-13-20130907		1116		59																							2	
10. B13-6-15.5-20130907	9/7/13	1120	S	60																							2	

SPECIAL INSTRUCTIONS * quantified to mineral oil

LABORATORY COPY

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: Ron Bek, GEI, 9/10/13, 0800
Received By:
2. Relinquished By:
Received By: Shaun Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: ~~10~~ Standard | 5 | 3 | 2 | 1 | SAME DAY
Fuels & Hydrocarbon Analysis: ~~5~~ Standard | 3 | 1 | SAME DAY
OTHER: Specify: 10/1/13 - Ron added on Std TAT. SR

* Turnaround request less than standard may incur Rush Charges

October 31, 2013

Mr. Ron Bek
Geoengineers, Inc.
600 DuPont St.
Bellingham, WA 98225

Dear Mr. Bek,

On September 10th, 11 samples were received by our laboratory and assigned our laboratory project number EV13100110. The project was identified as your 0482-043-01. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-03
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 1:21:00 PM
CLIENT SAMPLE ID	B8-4-10.5-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.063**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**11**	1.1	0.37	1.1	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.50	0.11	0.34	5	**U**	MG/KG	10/21/13	RAL
Chromium	SW6020	**86**	0.56	0.19	0.56	5		MG/KG	10/21/13	RAL
Lead	SW6020	**10**	0.50	0.12	0.36	5		MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-04
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 1:27:00 PM
CLIENT SAMPLE ID	B8-5-13-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.065**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**5.3**	1.0	0.30	0.90	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.50	0.092	0.28	5	**U**	MG/KG	10/21/13	RAL
Chromium	SW6020	**66**	0.50	0.15	0.45	5		MG/KG	10/21/13	RAL
Lead	SW6020	**8.2**	0.50	0.098	0.29	5		MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-05
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 2:36:00 PM
CLIENT SAMPLE ID	B9-3-8-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.093**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**7.2**	1.2	0.40	1.2	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.50	0.12	0.37	5	**U**	MG/KG	10/21/13	RAL
Chromium	SW6020	**79**	0.60	0.20	0.60	5		MG/KG	10/21/13	RAL
Lead	SW6020	**10**	0.50	0.13	0.38	5		MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

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CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-06
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 12:50:00 PM
CLIENT SAMPLE ID	B10-3-8-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.093**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**5.4**	1.3	0.43	1.3	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	**0.59**	0.50	0.13	0.39	5		MG/KG	10/21/13	RAL
Chromium	SW6020	**68**	0.65	0.22	0.65	5		MG/KG	10/21/13	RAL
Lead	SW6020	**22**	0.50	0.14	0.41	5		MG/KG	10/21/13	RAL

H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-07
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 12:54:00 PM
CLIENT SAMPLE ID	B10-4-10.5-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.10**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**5.6**	1.2	0.39	1.2	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	**0.54**	0.50	0.12	0.36	5		MG/KG	10/21/13	RAL
Chromium	SW6020	**61**	0.59	0.20	0.59	5		MG/KG	10/21/13	RAL
Lead	SW6020	**210**	0.50	0.13	0.38	5		MG/KG	10/21/13	RAL

H - Sample analyzed outside of hold time.

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-08
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 1:58:00 PM
CLIENT SAMPLE ID	B11-2-5.5-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.11**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**19**	1.0	0.29	0.88	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	**0.83**	0.50	0.090	0.27	5		MG/KG	10/21/13	RAL
Chromium	SW6020	**61**	0.50	0.15	0.44	5		MG/KG	10/21/13	RAL
Lead	SW6020	**410**	0.50	0.096	0.28	5		MG/KG	10/21/13	RAL

H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-09
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 2:03:00 PM
CLIENT SAMPLE ID	B11-3-8-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.036**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**4.2**	1.0	0.27	0.80	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.50	0.082	0.25	5	**U**	MG/KG	10/21/13	RAL
Chromium	SW6020	**34**	0.50	0.14	0.40	5		MG/KG	10/21/13	RAL
Lead	SW6020	**4.2**	0.50	0.087	0.26	5		MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-10
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 3:12:00 PM
CLIENT SAMPLE ID	B12-4-10.5-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.057**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**7.8**	1.0	0.32	0.96	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.50	0.098	0.30	5	**U**	MG/KG	10/21/13	RAL
Chromium	SW6020	**67**	0.50	0.16	0.49	5		MG/KG	10/21/13	RAL
Lead	SW6020	**16**	0.50	0.11	0.31	5		MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE: ALS JOB#: ALS SAMPLE#:	10/31/2013 EV13100110 EV13100110-11
CLIENT CONTACT:	Ron Bek	DATE RECEIVED:	09/10/13
CLIENT PROJECT:	0482-043-01	COLLECTION DATE:	9/7/2013 3:14:00 PM
CLIENT SAMPLE ID	B12-5-11.5-20130907	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	RL	LIMITS MDL	PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	**0.071**	0.020	0.0014	0.0041	1	**H**	MG/KG	10/28/13	RAL
Arsenic	SW6020	**12**	1.0	0.32	0.96	5		MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.50	0.099	0.30	5	**U**	MG/KG	10/21/13	RAL
Chromium	SW6020	**88**	0.50	0.16	0.49	5		MG/KG	10/21/13	RAL
Lead	SW6020	**10**	0.50	0.11	0.31	5		MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.
H - Sample analyzed outside of hold time.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE:	10/31/2013
		ALS SDG#:	EV13100110
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ron Bek		
CLIENT PROJECT:	0482-043-01		

LABORATORY BLANK RESULTS

MBLK-10282013 - Batch R91896 - Soil by SW7471 Prepared 10/28/13 00:00

ANALYTE	METHOD	RESULTS	LIMITS RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Mercury	SW7471	ND	0.020	0.0014	0.0041	1	U	MG/KG	10/28/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

MB-102113S - Batch 7285 - Soil by SW6020 Prepared 10/21/13 15:12

ANALYTE	METHOD	RESULTS	LIMITS RL	LIMITS MDL	LIMITS PQL	DILUTION FACTOR	QUAL	UNITS	ANALYSIS DATE	ANALYSIS BY
Arsenic	SW6020	ND	0.20	0.049	0.15	1	U	MG/KG	10/21/13	RAL
Cadmium	SW6020	ND	0.10	0.015	0.045	1	U	MG/KG	10/21/13	RAL
Chromium	SW6020	ND	0.10	0.025	0.074	1	U	MG/KG	10/21/13	RAL
Lead	SW6020	ND	0.10	0.016	0.047	1	U	MG/KG	10/21/13	RAL

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Geoengineers, Inc. 600 DuPont St. Bellingham, WA 98225	DATE:	10/31/2013
		ALS SDG#:	EV13100110
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Ron Bek		
CLIENT PROJECT:	0482-043-01		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R91896 - Soil by SW7471 Prepared 10/28/13 00:00

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Mercury - BS	SW7471	**97.0**			100	81.8	117		10/28/13	RAL
Mercury - BSD	SW7471	**98.5**	**2**		100	81.8	117	8.84	10/28/13	RAL

ALS Test Batch ID: 7285 - Soil by SW6020 Prepared 10/21/13 15:17

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Arsenic - BS	SW6020	**104**			5	80	120		10/21/13	RAL
Cadmium - BS	SW6020	**104**			5	80	120		10/21/13	RAL
Chromium - BS	SW6020	**104**			5	80	120		10/21/13	RAL
Lead - BS	SW6020	**102**			5	80	120		10/21/13	RAL

ALS Test Batch ID: 7285 - Soil by SW6020 Prepared 10/21/13 15:23

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	SPIKE ADDED	LIMITS MIN	LIMITS MAX	RPD	ANALYSIS DATE	ANALYSIS BY
Arsenic - BSD	SW6020	**105**	**1**		5	80	120	8.91	10/21/13	RAL
Cadmium - BSD	SW6020	**106**	**2**		5	80	120	9.2	10/21/13	RAL
Chromium - BSD	SW6020	**104**	**1**		5	80	120	9.6	10/21/13	RAL
Lead - BSD	SW6020	**104**	**2**		5	80	120	9.36	10/21/13	RAL

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
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http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

EV131001.10 (Laboratory Use Only)

ALS Job# EV13090063

Date 9/9/13 Page 1 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: Geo Engineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ si gel CU	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B1-1-3-20130908	9/8/13	1025	S	1		X	X				X				X	X	X				5	
2. B1-2-5.5-20130908	9/8/13	1027		2		X	X				X				X	X	X				5	
3. B1-3-8-20130908	9/8/13	1029		3																	5	
4. B1-4-10.5-20130908	9/8/13	1031		4																	5	
5. B2-1-3-20130908	9/8/13	1104		5																	5	
6. B2-2-5.5-20130908	9/8/13	1107		6		X	X				X				X	X	X				5	
7. B2-3-8-20130908	9/8/13	1110		7		X	X				X				X	X	X				5	
8. B2-4-10.5-20130908	9/8/13	1112		8																	5	
9. B3-1-3-20130908	9/8/13	935		9																	5	
10 B3-2-5.5-20130908	9/8/13	940	S	10		X	X									X	X				5	

LABORATORY COPY

SPECIAL INSTRUCTIONS send invoice to Ron Bek, he will forward to Snohomish County PUD
X - Added 9/10/13 BR

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Bek, GEI, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ Standard ☐ 5 ☐ 3 ☐ 2 ☐ 1 ☐ SAME DAY

Fuels & Hydrocarbon Analysis: ☒ Standard ☐ 3 ☐ 1 ☐ SAME DAY

OTHER:
Specify: hold until Ron sends addendum CoC

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
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Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
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Chain Of Custody/ Laboratory Analysis Request

EV1310011D

ALS Job# (Laboratory Use Only)

EV1309063

Date 9/9/13 Page 2 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 360647 5044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No.1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ silica cl	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B3-3-8-20130908	9/8/13	945	S	11																	5	
2. B3-4-10.5-20130908	9/8/13	956		12																	5	
3. B4-1-3-20130908	9/8/13	821		13																	5	
4. B4-2-5.5-20130908	9/8/13	826		14																	5	
5. B4-3-8-20130908	9/8/13	837		15		X	X				X				X	X	X				5	
6. B4-4-10.5-20130908	9/8/13	847		16		X	X				X				X	X	X				5	
7. B4-5-13-20130908	9/8/13	852		17																	5	
8. B5-1-3-20130908	9/8/13	736		18																	5	
9. B5-2-5.5-20130908	9/8/13	740		19		X	X										X				5	
10. B5-3-8-20130908	9/8/13	743	S	20																	5	

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Bek, GEZ, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Rickman ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ Standard 10 | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: ☒ Standard 5 | 3 | 1 | SAME DAY

OTHER:
Specify:

* Turnaround request less than standard may incur Rush Charges

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Everett, WA 98208
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Fax (425) 356-2626
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Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1310011O (EV1309063)

Date _____ Page 3 Of 3

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Belk
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 360 647 5049
P.O. #: 2320 CA ST E-MAIL: rbelk@geoengineers
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: Po Box 1107
Everett WA 98206

ANALYSIS REQUESTED

OTHER (Specify)

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Silgel CU	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	Chromium VI			TCLP LEAD					NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B5-4-10.5-20130908	9/8/13	746	S	21																								5	
2. B5-5-13-20130908	9/8/13	749		22																								5	
3. B5-6-15.5-20130908	9/8/13	755		23																								5	
4. B6-1-3-20130908	9/9/13	912		24		X	X										X											5	
5. B6-2-5.5-20130908	9/8/13	915		25																								5	
6. B6-3-8-20130908	9/8/13	917		26																								5	
7. B7-1-3-20130907	9/7/13	1632	1	~~27~~		X	X				X				X	X	X			X				(X)				5	
8. B7-2-5.5-20130907	9/7/13	1636		28		X	X				X				X	X	X											5	
9. B7-3-8-20130907	9/7/13	1640		29																								5	
10. B7-4-10.5-20130907	9/7/13	1646	S	30																								5	

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [illegible], GEI, 9/10/13, 0800
Received By: _____
2. Relinquished By: _____
Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: ☒ Standard 5 3 2 1 SAME DAY
Fuels & Hydrocarbon Analysis: ☒ Standard 3 1 SAME DAY
OTHER: (X) 10/15/13 Specify: Ron added on Std TAT
(X) 10/21/13 Ron cancelled TCLP Sn

* Turnaround request less than standard may incur Rush Charges

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Everett, WA 98208
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Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): ~~EV1309063~~ EV1310110

Date 9/9/13 Page 4 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Beil
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032519 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbeil@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Si Sel Cu *	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B7-5-13-20130907	9/7/13	1651	S	31																	5	
2. B7-6-15.5-20130907		1657		32																	5	
3. B8-1-3-20130907		1311		33																	1	
4. B8-2-5.5-20130907		1316		34																	1	
5. B8-3-8-20130907		1318		35																	1	
6. B8-4-10.5-20130907		1321	3	~~36~~		X										X					1	
7. B8-5-13-20130907		1327	4	~~37~~		X															1	
8. B9-1-3-20130907		1428		38																	1	
9. B9-2-5.5-20130907		1432		39																	1	
10. B9-3-8-20130907	9/7/13	1436	5	~~40~~		X															1	

LABORATORY COPY

SPECIAL INSTRUCTIONS * quantified to mineral oil

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: Ron Bei, GEI, 9/10/13, 0800
Received By:
2. Relinquished By:
Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis
☒ Standard 10 | 5 | 3 | 2 | 1 | SAME DAY
Fuels & Hydrocarbon Analysis
☒ Standard 5 | 3 | 1 | SAME DAY
OTHER: Specify: ☒ Ron added 10/17/13 on std TAT.

* Turnaround request less than standard may incur Rush Charges

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Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/
Laboratory Analysis Request

ALS Job# (Laboratory Use Only): ~~EV1310410~~ ~~EV13090063~~

Date 9/9/13 Page 5 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Belk
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA 5-T E-MAIL: rbelk@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No. 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ si gel cu *	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B9-4-10.5-20130907	9/7/13	1438	S	41																	1	
2. B10-1-3-20130907		1246		42																	1	
3. B10-2-5.5-20130907		1248		43																	1	
4. B10-3-8-20130907		1250	6	~~44~~		X											◇				1	
5. B10-4-10.5-20130907		1254	7	~~45~~		X											◇				1	
6. B11-1-3-20130907		1356		46																	1	
7. B11-2-5.5-20130907		1358	8	~~47~~		X											◇				1	
8. B11-3-8-20130907		1403	9	~~48~~		X											◇				1	
9. B11-4-10.5-20130907		1408		49																	1	
10. B12-1-3-20130907	9/7/13	1500	S	50																	1	

SPECIAL INSTRUCTIONS * quantified to mineral oil

LABORATORY COPY

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: Tim Rice, GEI, 9/10/13, 0800
Received By:
2. Relinquished By:
Received By: Shawn Rokusan ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis
~~10~~ Standard 5 3 2 1 SAME DAY
Fuels & Hydrocarbon Analysis
~~5~~ Standard 3 1 SAME DAY
OTHER: Specify: ◇ Ron added on 10/17/13 Std TAT.

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
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Fax (425) 356-2626
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Chain Of Custody/
Laboratory Analysis Request

ALS Job# (Laboratory Use Only)
EV1310011D
EV1309063

Date 9/6/13 Page 6 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Bek
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD No 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

OTHER (Specify)

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Si gel cu *	NWTPH-GX w/ BTEX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	NWTPH-Dx w/ Si gel CU	Total Copper		TCLP LEAD			NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B12-2-5.5-20130907	9/7/13	1503	S	51																						1	
2. B12-3-8-20130907		1506		52																						1	
3. B12-4-10.5-20130907		1512	10	~~53~~		X											⊗									1	
4. B12-5-11.5-20130907		1514	11	~~54~~		X											⊗									1	
5. B13-1-3-20130907		1056		55																						2	
6. B13-2-5.5-20130907		1102		56																						2	
7. B13-3-8-20130907		1106	2	~~57~~			X									X	X			X	X		⊗			2	
8. B13-4-10.5-20130907		1111		58			X										X			X	X					2	
9. B13-5-13-20130907		1116		59																						2	
10. B13-6-15.5-20130907	9/7/13	1120	S	60																						2	

SPECIAL INSTRUCTIONS * quantified to mineral oil

LABORATORY COPY

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: Ron Bek, GEI, 9/10/13, 0800
Received By:
2. Relinquished By:
Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*
Organic, Metals & Inorganic Analysis: ☒ 10 Standard ☐ 5 ☐ 3 ☐ 2 ☐ 1 ☐ SAME DAY
Fuels & Hydrocarbon Analysis: ☒ 5 Standard ☐ 3 ☐ 1 ☐ SAME DAY
OTHER: Specify: ⊗ 10/15/13 - Ron added TCLP Pb on Std TAT
⊗ Ron added 10/17/13 Std TAT
* Turnaround request less than standard may incur Rush Charges
⊗ 10/21/13 - Ron cancelled TCLP. SR

ALS Environmental
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Everett, WA 98208
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Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

EV1310011O

ALS Job# (Laboratory Use Only)
~~EV1309006S~~

Date 9/9/13 Page 7 Of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: Geo Engineers
PROJECT MANAGER: Ron Bell
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA-ST E-MAIL: rbek@geoengineers.com
INVOICE TO COMPANY: Snohomish County PUD NO 1
ATTENTION: Doug Wilson
ADDRESS: PO Box 1107
Everett WA 98206

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ SG cu	NWTPH-GX w/ BTEX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify) Copper	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B14-1-3-20130907	9/7/13	1003	S	61																	2	
2. B14-2-5.5-20130907		1007		62		X	X								X		X				2	
3. B14-3-8-20130907		1011		63		X	X								X		X				2	
4. B14-4-10.5-20130907		1015		64																	2	
5. B14-5-13-20130907		1019		65																	2	
6. B14-6-15.5-20130907		1024		66																	2	
7. B15-1-3-20130907		855		67											X		X	X			2	
8. B15-2-5.5-20130907		900		68																	2	
9. B15-3-8-20130907		904		69																	2	
10. B15-4-10.5-20130907		911	S	70																	2	

LABORATORY COPY

SPECIAL INSTRUCTIONS ~~Ron Bell, GEI~~

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Ron Bell, GEI, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Robinson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: ☒ 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

EV1309011O

ALS Job# (Laboratory Use Only)

~~EV1309006S~~

Date 9/9/13 Page 8 of 8

PROJECT ID: 0482-043-01
REPORT TO COMPANY: GeoEngineers
PROJECT MANAGER: Ron Beck
ADDRESS: 600 Dupont ST
Bellingham WA 98225
PHONE: 3603032819 FAX: 3606475044
P.O. #: 2320 CA ST E-MAIL: rbeck@geoengineers.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX w/ Si gel Cu	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☒	PCB ☒ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☒ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. B15-5-13-20130907	9/7/13	916	S	71																2	
2. B15-6-15.5-20130907	9/7/13	920	S	72																2	
3. B16-1-3-20130907		753		73											X		X			2	
4. B16-2-5.5-20130907		758		74																2	
5. B16-3-8-20130907		804		75																2	
6. B16-4-10.5-20130907		810		76																2	
7. B16-5-13-20130907		817		77																2	
8. B16-6-15.5-20130907	9/7/13	819	S	78																2	
9.																					
10.																					

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Jon Bu, GE, 9/10/13, 0800
   Received By:
2. Relinquished By:
   Received By: Shawn Roberson ALS 9/10/13 2:05

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: (10 Standard) 5 3 2 1 SAME DAY

Fuels & Hydrocarbon Analysis: (5 Standard) 3 1 SAME DAY

OTHER: Specify:

* Turnaround request less than standard may incur Rush Charges

APPENDIX C
Report Limitations and Guidelines for Use

APPENDIX C
REPORT LIMITATIONS AND GUIDELINES FOR USE[2]

This appendix provides information to help you manage your risks with respect to the use of this report.

Environmental Services are Performed for Specific Purposes, Persons and Projects

This report has been prepared for use by the PUD No. 1 of Snohomish County. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except PUD No. 1 of Snohomish County should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the property located at 2320 California Street located in Everett, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

If a lending agency or other parties intend to place legal reliance on the product of our services, we require that those parties indicate in writing their acknowledgement that the scope of services provided, and the general conditions under which the services were rendered including the limitation of professional liability, are understood and accepted by them. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

---

[2] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

Environmental Regulations are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Subsurface Conditions can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Most Environmental Findings are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Report Limitations and Guidelines for Use” apply to your project or site.

Geotechnical, Geologic and Geoenvironmental Reports Should Not Be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention, or assessment of the presence of Biological Pollutants in or around any structure. Accordingly, this report includes no interpretations, recommendations, findings, or conclusions for the purpose of detecting, preventing, assessing, or abating Biological Pollutants. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

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