SUPPLEMENTAL EXPLORATION & FURTHER REMEDIATION FEASIBILITY STUDY

Former Glitsa, Inc. Property 327 South Kenyon Street Seattle, Washington

TENOR COMPANY, LLC.



ENVIRONMENTAL ASSOCIATES, INC.

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June 11, 2009

Mr. Duane Bartel Tenor Company, LLC. 1313 Washington Street Sumner, Washington 98390

Subject: Supplemental Exploration & Further Remediation Feasibility Study Former Glitsa, Inc. Property 327 South Kenyon Street Seattle, Washington

Dear Mr. Bartel:

Environmental Associates, Inc. (EAI) has observed the completion of additional subsurface explorations on the subject property following completion of the mineral spirits underground storage tank (UST) removal and limited cleanup action in March 2009 at the above referenced property located in Seattle, Washington. This report summarizes our approach to the project along with results and conclusions, and additionally provides discussions regarding remediation feasibility and approximate costs.

Scope of Work

On April 1, 2009 EAI presented the Client with a proposal to provide supplemental soil and groundwater plume evaluation, based upon the findings of the recently completed UST removal and limited cleanup action. As an evolving project, the Client subsequently requested EAI's assistance with the completion of additional explorations and installation of vapor extraction / groundwater wells intended to be utilized in an attempt to further remediate soil and groundwater impacted by the mineral spirt release. The following tasks were implemented as part of this next phase of site exploration / remediation feasibility study:

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- Install two (2) additional groundwater monitoring wells (MW-5 and MW-6) to the south and west of the UST area.
- Complete a single boring (LAR1) in the northwest quadrant of the property, where an auto wrecking yard may have historically operated and within more recent times, where a reportedly small volume (<1 cubic yard) of petroleum, surface-stained soil had been removed from a former equipment maintenance area.
- Complete a single boring (LAR2) inside the Glitsa warehouse in an attempt to further assess the western lateral limit of the mineral-spirit impacted soil left in place against / underlying the Glitsa building's east wall and foundation footings.
- Upon encountering soil and groundwater at LAR2 with significantly high concentrations of mineral spirits, EAI further assisted the Client in the completion of six (6) additional borings (HA/VES-1 through HA/VES-6) intended to further evaluate the extent of soil and groundwater impairments. These additional borings were completed as potential vapor and/or groundwater extraction wells.
- Analyze the data from the site findings to date and develop a remediation feasibility plan.
- Prepare a summary letter report documenting the methodology employed along with findings, conclusions, and recommendations.

Site Location

The subject property is located in the South Park industrial district south of downtown Seattle, Washington at the approximate location depicted on Plate 1, Vicinity / Topographic Map. Plate 2, Site Plan, depicts the general layout of the subject and surrounding parcels. The property is bounded to the north by South Kenyon Street and to the east by a gravel-pavement extension of 5th Avenue South. The parcel is bounded on the west by Highway 99. An asphalt roofing contractor occupies the south-adjacent parcel.

Land use in the vicinity of the subject site is commercial / industrial.

Supplemental Soil and Groundwater Sampling and Testing

On April 20, 2009, EAI observed the advancement of four (4) additional borings on the subject property. Two (2) of these borings were completed as groundwater monitoring wells MW-5 and MW-6 at the locations depicted on Plates 2 and 3, attached. Additionally "grab-sample" borings LAR-1 and LAR-2 were completed with a limited-access drill rig in an effort to perform a one-time collection of soil and/or groundwater at those locations, which are also depicted on Plates 2 and 3. Monitoring wells MW-5 and MW-6 were installed to further access the southerly and westerly lateral extent of mineral-spirit impacted groundwater associated with the recently removed leaking underground storage tank. As briefly discussed in the Scope of Work section, grab sample boring LAR1 was completed in an accessible area of the northwest quadrant of the subject property. This area had been identified in two (2) earlier Phase-I reports as an area where equipment maintenance had occurred. A small volume (<1 cubic yard) of surface-impacted soil was reported by the Client to have been removed from that area, as was documented in EAI's recently completed Phase-I report dated May 8, 2009. Boring LAR2 was completed inside the Glitsa warehouse in an effort to further constrain the lateral limits of mineral spirit impacted soil and groundwater.

In addition to the direct-push borings, a composite soil sample was collected on April 20, 2009 from a stockpile of topsoil on the southern portion of the subject property, where a current tenant (excavation contractor) operates an equipment and materials storage yard. The composite soil stockpile sample (designated SS-1) was collected with hand tools. The field composite was made by combining soil from three separate areas of the pile.

In an attempt to reduce project costs, the Client elected to pursue additional site explorations using his own labor to core through the Glitsa warehouse floor slab in several locations and including two outdoor locations around the pad-mounted transformer pad. These locations are designated HA1 (VES-1) through HA-6 (VES-6) on the various site plans and data tables within this report. The client further began explorations in these areas utilizing a post-hole digger to explore the upper 3 to 4 feet of soil. EAI was then invited to visit the site and collect soil samples and in some locations advance the exploratory borings deeper, utilizing a manual-powered geoprobe soil coring/sampling device. Each of these exploration efforts is further summarized below.

On April 24, 2009, the Client cored a hole through the concrete floor slab at location HA-1 (VES-1) depicted on the attached site plans (Plates 2 and 3)in an attempt to further characterize the extent of the impacted soil underlying the subject building. This location was selected as the possible center of the "hot-spot" of impacted soil, as it was in close proximity to where the mineral-spirt product line entered the building. The client subsequently used a post hole digger to make an exploratory boring down to a depth of 3 to 4 feet below the ground surface. EAI was on-site to collect a sample from the base of the shallow boring at approximately 4 feet below the ground surface. EAI collected the soil sample, designating it HA1-4.

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On April 27, 2009, the Client had completed two (2) additional shallow explorations HA/VES-2 and HA/VES-3). The purpose of these borings was to further explore the environmental quality of soil in the vicinity of the pad-mounted electrical transformer, the presence of which had precluded closer excavation to the subject building during the March 2009 tank removal project. EAI was again brought on-site to collect soil samples at depths of approximately 4 feet from the base of each of these additional exploration locations (samples HA2-4 and HA3-4).

On May 1, 2009, three (3) more exploratory holes had been made by the client inside the warehouse in an effort to further delineate the lateral extent of mineral spirit impacted soil underlying the Glitsa building. These borings were designated HA-4 through HA-6 (eventually becoming VES-4 through VES-6). While the Client independently explored the upper 3 to 4 feet of soil with a post-hole digger, EAI was retained to advance the borings deeper with a manual-powered geoprobe soil coring device. EAI used the geoprobe to collect soil samples from 6 and 8 feet below the ground surface at each boring location.

On May 14, 2009, the Client retained EAI to observe the installation of six (6) permanent wells, designated VES-1 through VES-6, corresponding to the former exploration locations HA-1 through HA-6). The wells were drilled / installed by ESN, Northwest, who independently contracted with the Client. Wells VES-1 and VES-3, intended to solely be used later for vapor extraction, were completed to 7 feet below the ground service and screened between 2 and 5 feet. The remaining wells were completed to 15 feet below the ground surface and were screened between 5 and 15 feet below the ground surface. These remaining wells may be utilized for multiple purposes, including vapor extraction, groundwater pumping / product recovery, and monitoring.

Subsurface Conditions

All borings were completed with a combination of manual and powered, limited access, and directpush drill equipment. Soils underlying the site at the locations explored were similar to those encountered during earlier studies, consisting primarily of an upper 6 to 7 feet of silty, clayey, sand, which occasionally contains brick and other debris suggesting that this soil may be fill. Underlying the fill, a five to 6 foot layer of fine black sand with occasional interbedded silt and clayey-silt lenses. From previous site explorations, a clayey-silt layer appears to underlie the sand. Groundwater was consistently encountered at a depth of approximately 9.5 feet below the ground surface.

On April 27, 2009, a water table survey was performed utilizing monitoring wells MW-2 through MW-6. The relative elevations for the tops of each monitoring well casing were established utilizing a builders level. The designated relative casing elevations along with corresponding depths to groundwater below the casing tops are presented in Table 5, Water Table Survey. From this data, a general northeasterly groundwater flow direction is deduced as graphically depicted on Plate 3, Exploration Plan.

Laboratory Analysis

Petroleum Hydrocarbons (mineral spirits & BTEX).

Eleven (11) select soil samples, as listed in Table 1 were analyzed for mineral spirts (stoddard solvent) and BTEX compounds (benzene, toluene, ethylbenzene, xylene) by Washington State Department of Ecology test methods NWTPH-Gx (modified).

Additionally, two (2) soil samples including the shallow soil sample from boring LAR-1 (LAR1-3-4) and the field composite stockpile grab-sample (SS-1) were screened by the project laboratory for the presence of petroleum hydrocarbon by test method NWTPH-HCID. The HCID analysis provides a qualitative "detected" or "not-detected" response for the various petroleum hydrocarbon fractions (gasoline, diesel, heavy oil). When "detected" further analysis is required to quantify the actual concentration of petroleum detected.

Six (6) groundwater samples recovered from probe boring LAR2 and wells MW-5, MW-6, and VES-4 through VES-6 were also analyzed for mineral spirits and BTEX.

Metals, PCBs, and Chlorinated VOCs.

In addition to expanded site explorations relating to the mineral spirit tank release, some limited additional exploration and testing was also performed as follow-up to recognized environmental conditions discussed in EAI's recently completed Phase-I along with past recommendations from earlier environmental consultants. Specific recognized environmental conditions that were further evaluated included potential environmental impairments associated with the past operation of an auto wrecking yard in the northwest quadrant of the property and the former operation of Farwest Paint on the main Glitsa portion of the property.

In regard to the former auto wrecking yard, due to the current tenant's occupancy clutter, very limited areas were accessible for subsurface explorations. However, as discussed earlier, boring LAR1 was completed in the general area where past tenants had reportedly conducted equipment / machinery maintenance and was furthermore within the larger "foot-print" of the property where the auto wrecking business may have historically operated. A shallow soil sample from Boring LAR1 was, further analyzed for heavy metals (arsenic, cadmium, chromium, lead, and mercury) and for PCBs, as well as for petroleum hydrocarbons.

The potential for subsurface contamination by metals and solvents associated with former paint manufacturing had been identified in past environmental audits of the subject property. As a preliminary evaluation, shallow soil samples from borings HA-4 through HA-6 (VES-4 to VES-6) were selected to be analyzed for heavy metals and for chlorinated volatile organic compounds (CVOCs). Additionally, groundwater samples from MW-5, MW-6, and VES-4 through VES-6 were analyzed for CVOCs.

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Laboratory Results & Discussion

Mineral Spirits - Soil

As presented in Table 1, mineral spirits (stoddard solvent) were detected in several of the soil samples collected from the borings completed within the Glitsa building and the immediate vicinity of the electrical transformer. Four (4) of the samples contained stoddard solvent at concentrations exceeding the Washington State Department of Ecology's target compliance level of 100 parts per million (ppm). Two (2) of the soil samples (LAR2-5-6 and HA4-7-8) contained significantly elevated concentrations, suggesting that pure/raw stoddard solvent may be present in the soil pore space.

Based upon field observations along with the laboratory results developed to date, Plates 3 and 4 present a conceptualization of potential lateral and vertical extent of stoddard-solvent impacted soil. In regard to Plate 3, the gradational red to orange tinted area depicts the lateral distribution of the impacted soil, with dark red representing where the stoddard-solvent impacted soil begins at the shallowest depths, and orange where the impacted soil is primarily encountered within a foot of the water table. A west to east cross-section view through this impacted area is presented as Plate 4.

Additional discussions regarding soil volume and contaminant mass estimates are provided in the Remediation Feasibility discussion section of this report.

MTCA-5 Metals, PCBs, and Chlorinated VOCs - Soil

As presented in Table 2, of the four (4) soil samples analyzed for heavy metals, none were detected above WDOE target compliance levels. The concentrations of detected metals appeared to be consistent with natural background concentrations for western Washington soils.

The single soil sample analyzed from the boring completed within the portion of the property formerly occupied by a auto wrecking yard, did not contain PCBs above minimum laboratory detection limits.

The three (3) shallow soil samples collected below the floor of the Glitsa building (formerly occupied by Farwest Paint) did not contain concentrations of chlorinated volatile organic compounds above the laboratory's minimum detection limits.

Mineral Sprits - Groundwater

Table 3 presents the laboratory findings from the analysis of groundwater samples collected from six (6) of the recently completed borings / monitoring wells. With the exception of monitoring wells MW-5 and MW-6 the remaining samples all contained significantly elevated concentrations of stoddard solvent well above the WDOE target compliance level of 800 ppb. The concentrations ranged from 57,000 parts per billion (ppb) to 170,000 ppb. Acknowledging that the solubility of stoddard solvent is approximately 45,000 ppb, the concentrations detected in the groundwater samples suggest that phase-separated solvent (free-product) may possibly be present floating along the top of the water table.

On May 22, 2009, an interface probe was used to measure the thickness of "free-product" (if any). Wells VES-4, VES-5, and VES-6 were all found to contain a thin film of free-product measuring approximately 0.01 inches in thickness.

Chlorinated VOCs - Groundwater

Chlorinated solvents were detected in two (2) groundwater samples, LAR2 (collected below the Glitsa building and MW-6 along the west-side (up-gradient side) of the Glitsa building. At MW-6 trichloroethene (TCE) was detected in the groundwater sample at a concentration of 1.5 parts per billion (ppb). For reference the WDOE's target compliance level for TCE is 5 ppb. TCE was a commonly used solvent with numerous industrial applications. It is conceivable that TCE may have historically been utilized by past site occupants, most notably the formerly on-site auto wrecking company and/or the former on-site paint manufacturing facility. Off-site sources, such as the nearby South Park landfill (which reportedly received industrial wastes), and/or other nearby potentially up-gradient parcels may also conceivably account for the detection.

The groundwater sample LAR2 collected from the temporary boring completed inside the Glitsa warehouse contained a trace concentration (1.3 ppb) of cis-1,2 dichloroethene (cis-DCE), <u>below</u> the WDOE's target compliance level of 80 ppb, and a somewhat elevated concentration of vinyl chloride (3.9 ppb), which is <u>above</u> the WDOE's target compliance level of 0.2 ppb. Both cis-DCE and vinyl chloride are common degradation products associated with the breakdown of primary chlorinated solvents such as TCE.

Conclusions / Recommendations

Relying upon the results of the expanded soil and groundwater explorations and laboratory testing performed to date, the following summary is offered for consideration:

- A "hot-spot of stoddard solvent impacted soil and groundwater appears to exist directly west of the former UST location, underlying a portion of the Glitsa building and eastern perimeter bearing wall. Further remediation action appears warranted in an effort to reduce and stabilize the stoddard solvent contaminant mass. Additional discussions regarding remediation feasibility are presented in the forthcoming section of this report.
- A source of chlorinated solvents may exist on the subject property and/or up-gradient from the subject property based upon the detections of chlorinated solvents (at trace levels) at MW-6 and temporary boring LAR2. Further exploration of soil and groundwater to the west of MW-6 may be warranted. At present, that area of the property is rather inaccessible due to the significant volume of shipping containers and equipment being stored on-site by JV Constructors./In the interim, in view of these findings, it may be advisable to include testing for chlorinated solvents in as part of ongoing groundwater monitoring.
- Lastly, to achieve lawful compliance with Washington State environmental regulations (Chapter 173-340-300, WAC), copies of this report along with any previous / future reports regarding the environmental conditions thus far encountered should be forwarded to the Department of Ecology by the property owner/facility operator.

Remediation Feasibility

Contaminant Mass / Distribution

As briefly discussed earlier, Plates 3 and 4 present a conceptualization of the inferred lateral and horizontal extent of stoddard solvent impacted soil, based upon site observations / explorations completed to date. From this conceptualization, some preliminary approximations of impacted soil volumes and contaminant masses have been derived.

In terms of soil volumes, a preliminary estimate is that approximately 345 tons of stoddard solvent impacted soil may exist <u>above</u> the water table within the red to orange tinted area presented on Plate 3, Exploration Plan. Applying a range of average contaminant concentrations to that soil volume yields an estimate that approximately 725 gallons (2,114 kilograms) of stoddard solvent may be bound up (sorbed) within the soil mass above the water table.

Additional contaminant mass is anticipated to be bound up within the underlying "smear-zone," which comprises an approximate 2-foot thick zone of soil at the soil / groundwater interface in close proximity to the source area. Soil pore space within the smear-zone may contain a mixture of water, air, and phase-separated stoddard solvent. The top and bottom of this zone are defined by the average seasonal high and low elevations of the water table and associated capillary fringe.

On Plate 3, Exploration Plan the lateral extent of the "smear-zone" is depicted by an orange, dashed line. The placement of the dashed line on Plate 3 is somewhat speculative, but takes into account the lack of noticeable smear zone at previous soil boring location B5 and observations made at MW-3 and MW-5. The smear-zone depicted on Plates 3 and 5 may account for an additional 470 tons of stoddard impacted soil. Again, applying average contaminant concentrations within the smear-zone, an additional 425 gallons (1,242 kilograms) of stoddard solvent may be bound up within the smear-zone.

A thin veneer of phase-separated stoddard solvent also appears to be floating on top of the water table directly below the source area hot spot. Thicknesses of this later as measured at VES-4, VES-5, and VES-6 on May 22, 2009 all measured approximately 0.01 of an inch. This translates to a residual volume estimate of approximately 85 gallons.

Area	Kilograms (Kg)	Gallons	Percent
Vadose Zone (above water table)	2,114	725	59
Smear-Zone	1,242	425	34
Phase Separated Solvent (free product)	248	85	7
Dissolved in Groundwater	3	1	<1

The table below presents the currently deduced contaminant mass / volume distribution of stoddard solvent in gallons and kilograms (Kg).

Totals: 3,607 Kg 1,236 Gallons

The above contaminant mass/volume estimates have been deduced for conceptual planning purposes only, the actual mass/volume, and areas of extent may of course vary, and will only be known upon successful completion of site characterization and remediation efforts.

An examination of the contaminant mass distribution table suggests that the greatest percentage of mass may exist at and above the water table, with considerably less than 1 percent of the contaminant mass dissolved into the shallow groundwater table. The relatively low solubility of stoddard solvent combined with low gradients appear to be primary mechanisms limiting vertical migration and subsequent down-gradient transport of the solvent bound up and/or existing as free-phase liquid within the smear-zone/overlying soil. While this source area remains, groundwater may likely remain impacted for the foreseeable future. Acknowledging these findings, it may be reasonable to first focus remediation efforts on soil remediation and free-product recovery, prior to aggressively remediating groundwater.

Tentative Remediation Plan

Acknowledging the earlier discussed contaminant mass distribution, along with foreseeable plans to keep the existing subject building, the tentative remediation / site stabilization plan favored by the Client, includes a two-pronged approach, combining vapor extraction with groundwater / free-phase solvent recovery. Plate 5 presents a conceptualization of the remediation approach.

The Client intends to install and operate a vapor extraction system (VES), utilizing the network of recently installed wells designated VES-1 through VES-6. Additionally, the perforated piping that was placed within the former stoddard-solvent UST excavation may also be incorporated into the system. By way of a simplistic explanation, a VES system operates by inducing a vacuum that draws air through the permeable soil. This process strips out the stoddard solvent as it volatilizes into the "fresh air" drawn through the system.

Primary vapor extraction wells will likely include VES-1 and VES-3, with the remaining VES wells open to allow passive venting (air-intake) into the system. The VES system is anticipated to process the exhaust through twin carbon canisters prior to discharging the airstream to the atmosphere. At various times, the outlying VES wells may also serve as vacuum wells to increase the area of influence. Acknowledging the Client's desire to control costs, the Client has elected to independently install and operate the VES system and as such the Client will be responsible for its design, permits, installation, operation, and results.

In conjunction with the VES, the Client also intends to recover the phase separated liquid (free product) by setting up a series of wick-pumps and/or groundwater total-fluids pumps in the various VES wells VES-2, and VES-4 through VES-6. The fluids pumped from these wells are anticipated to be processed through a series of above ground tanks set up to recover free product and then through the use of bubble diffusion, strip out the dissolved contaminants from the process water. The water may then be discharged back into the former UST removal excavation through the perforated piping, where it will infiltrate back into the subsurface creating a somewhat closed-loop treatment system. As with the VES system, the Client also intends to independently design, permit, install, and operate this system as well.

Both VES and traditional groundwater "pump and treat" systems are typically most cost effective during the first few months of operation, after which further reductions in contaminant mass are achieved at higher and higher unit costs. During this later stage on-going performance monitoring will be key in evaluating the point at which it may make economic sense to end active remediation. Part of this evaluation process would also likely include the necessity to collect and analyze soil samples from the "source area" to verify that reductions in contaminant mass have been achieved.

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Limitations

This report has been prepared for the exclusive use of Tenor Company, LLC., along with their several representatives, for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal PR-28275-3 dated April 7, 2009. The opinions expressed in this report are based upon interpretations, observations and testing made at separated sampling locations and conditions may of course vary between those localities or at other locations, media, or depths. Discussions regarding tentative potential future assessment / remediation costs and time lines have been provided for conceptual planning purposes only and do not constitute a bid from EAI to complete the work, nor do they constitute a warranty as to actual costs which may be incurred. No other warranty, expressed or implied, is made. If new information is developed in future site work that may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this report and to provide amendments as required.

We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

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ATTACHMENTS

Tables

Table 1: Petroleum Hydrocarbons - Soil Sampling Results
Table 2: MTCA-5 Metals - PCBs - Chlorinated VOCs
Table 3: Petroleum Hydrocarbons - Groundwater Sampling Results
Table 4: Chlorinated VOCs - Groundwater Sampling Results
Table 5: Water Table Survey

Plates

Plate 1: Vicinity / Topographic Map

Plate 2: Site Plan-Overview

Plate 3: Exploration Plan

Plate 4: West-East Cross-Section

Plate 5: West-East Cross-Section (Proposed Remediation Concept)

Appendix

Appendix-A Laboratory Reports

Boring / Sample Name	Location & Depth	Stoddard Solvent (mineral spirits)	Benzene	Toluene	Ethylbenzene	Total Xylenes
LAR-1	3-4 feet	ND^{6}	NA	NA	NA	NA
LAR-2	3-4 feet	10	< 0.02	< 0.05	< 0.05	< 0.15
	5-6 feet	92,000	< 0.02	< 0.05	4.3	20
SS1	Stockpile Sample (Composite)	ND^{6}	NA	NA	NA	NA
HA1 (VES-1)	3-4 feet	980	< 0.02	< 0.02	4.4	18
HA2 (VES-2)	3-4 feet	<50	< 0.02	< 0.02	0.23	0.43
HA3 (VES-3)	3-4 feet	1,500	< 0.02	0.04	5.6	4.2
HA4 (VES-4)	5-6 feet	<50	< 0.02	< 0.02	0.1	0.09
	7-8 feet	15,000	< 0.02	0.27	38	38
HA5 (VES-5)	5-6 feet	<50	< 0.02	< 0.02	0.12	0.41
	7-8 feet	<50	< 0.02	< 0.02	0.11	0.21
HA6 (VES-6)	5-6 feet	<50	< 0.02	< 0.02	0.06	< 0.06
	7-8 feet	<50	< 0.02	< 0.02	1.8	2.2
	Reporting Limit ³		0.02	0.02	0.02	0.06
	WDOE Target Compliance Level ⁴	100	0.03	7	6	9

Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A soil cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

5- The MTCA gasoline (stoddard) TPH cleanup level is 30 ppm for soils with benzene otherwise it is 100 ppm.

6- Samples screened for the presence of petroleum hydrocarbons (gasoline, diesel, and heavy oil) by test method NWTPH-HCID. HD indicates no petroleum fractions were detected.

Bold and Italics denotes concentrations above MTCA Method A soil cleanup levels.

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TABLE 2 - MTCA-5 Metals - PCBs - Chlorinated VOCs Soil Sampling Results All results and limits in parts per million (ppm)								
Boring Name & Sample Depth	Arsenic	Cadmium	Chromium	Lead	Mercury	PCBs ⁶	cvocs ⁶	
LAR1 at 3-4 feet	<5	<1	5	<5	< 0.5	ND	NA	
HA4 at 3 to 4 feet	1.96	<1	7.34	4.54	< 0.2	NA	ND	
HA5 at 3 to 4 feet	2.9	<1	9.15	5.19	< 0.2	NA	ND	
HA6 at 3 to 4 feet	2.68	<1	9.75	9.91	< 0.2	NA	ND	
Reporting Limit ³	1	1	1	1	0.2			
WDOE-Method-A Cleanup Level (unrestricted land use)	20	2	2000 ⁽⁵⁾	250	2			
WDOE-Method-A Cleanup Level (industrial property)	20	2	2000 ⁽⁵⁾	1000	2			

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A or B cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

5- Results reported as total chromium. The Method A target compliance level for chromium III is 2,000 ppm, while the Method-A compliance level for chromium VI is 19 ppm.

6- Please refer to the laboratory reports in Appendix-B for a list of specific PCB and chlorinated VOC compouds tested for. ND indicates that no compounds were detected above laboratory minimum reporting limits.

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.

MW-1 MW-2 MW-3 MW-4 B-5

	TABLE 3 - Petroleum Hydrod All results and li				ig Resu	lts	
Monitoring Well	Sample Obtained From	Sample Date	Gasoline (Stoddard)	Benzene	Toluene	Ethylbenzene	Total Xylenes
eviously Installed W	/ells / Borings		-				
MW-1	Probe boring prior to well installation	12/2/2008	11,000	<5	<1	5	14
MW-2	Permanent Well	12/16/2008	92	<1	<1	<1	<3
MW-3	Permanent Well	12/16/2008	71	<1	<1	<1	<3
MW-4	Permanent Well	12/16/2008	2,500	1	<1	5	<3

<50

<1

<1

<1

Resently Installed Wells / Borings

LAR2	Probe boring grab sample	4/20/2009	170,000	29	1.5	28	<3
MW-5	Permanent well	4/20/2009	<100	<1	<1	<1	<3
MW-6	Permanent well	4/20/2009	<100	<1	<1	<1	<3
VES-4	Permanent well	5/14/2009	86,000	7.9	<1	7.5	7.8
VES-5	Permanent well	5/14/2009	57,000	4.7	<1	<1	<3
VES-6	Permanent well	5/14/2009	65,000	4.4	<1	1.2	<3

12/16/2008

Reporting Limit ³	100	1	1	1	3
MTCA-Method-A Cleanup Levels ⁴	800 or 1000 ⁵	5	1000	700	1000

Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

Probe boring grab sample

5- The MTCA gasoline TPH cleanup level is 800 ppb for groundwater with benzene. Otherwise, the cleanup level is 1000 ppb.

Bold and Italics denotes concentrations above existing or proposed MTCA Method A groundwater cleanup levels.

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TABLE 4 - Chlorinated VOCs - Groundwater Sampling Results All results and limits in parts per billion (ppb)									
Boring / Monitoring Well	Sample Date	Tetrachloroethene	Trichloroethene (T	(cis) 1,2 Dichloroetf	(trans) 1,2 Dichloro	Vinyl Chloride			
LAR2	4/20/2009	<1	<1	1.3	<1	3.9			
MW-5	4/20/2009	<1	<1	<1	<1	<0.2			
MW-6	4/20/2009	<1	1.5	<1	<1	<0.2			
Reporting Linuit ³		1	1	1	1	0.2			
Existing Cleanup Level ⁴		<u>5 (A)</u>	5 (A)	80 (B)	160 (B)	0.2 (A)			

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.
 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

Environmental Associates, Inc.

Monitoring Well Number	TOC Elevation	Depth to Water Below TOC	Net Change	Elevation of Water Table
MW-2 Apr-09	15.00	9.42		5.58
MW-3 Apr-09	15.85	9.66		6.19
MW-4 Apr-09	15.88	9.45		6.43
MW-5 Apr-09	15.25	9.04		6.21
MW-6 Apr-09	16.14	9.43		6.71











APPENDIX -A

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Laboratory Reports

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April 29, 2009

Robert Roe Environmental Associates 1380 112th Avenue NE, Suite 300 Bellevue, WA 98004

Dear Mr. Roe:

Please find enclosed the analytical data report for the Glitsa Project in Seattle, Washington. Direct Push services were conducted on April 20, 2009. Soil and water samples were analyzed for Hydrocarbon Identification by NWTPH-HCID; Gasoline by NWTPH-Gx, BTEX by Method 8260; PCB's by EPA Method 8082, and MTCA 5 Metals by Method 6020 on April 21 – 28, 2009.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. The invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Environmental Associates for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael a Korone

Michael A. Korosec President

cc: Derek Pulvino, Environmental Associates, Bellevue WA

1210 Eastside Street SE, Suite 200 II Olympia, Washington 98501 II 360.459.4670 II FAX 360.459.3432 Web Site: www.esnnw.com

Environmental Associates, Inc. GLITSA PROJECT Client Project #EAI-28275-3 Seattle, Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Hydrocarbon Identification by NWTPH-HCID for Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (mg/kg)	Diesel (mg/kg)	Heavy Oil (mg/kg)
Method Blank	4/21/2009	85	nd	nd	nd
LAR1 - 3-4	4/21/2009	102	nd	nd	nd
SS1	4/21/2009	99	nd	nd	nd
Method Detection	Limits		20	50	100

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"nd" Indicates not detected at listed detection limits.

"D" Indicates detected above the listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

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Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260) in Soil

Sample	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Stoddard Solvent	Surrogate
Number	Analyzed	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Recovery (%)
Method Blank	4/21/2009	nd	nd	nd	nd	nd	91
LCS	4/21/2009	97%	106%	103%	95%		96
LAR2-3-4	4/21/2009	nd	nd	nd	nd	10	94
LAR2-5-6	4/21/2009	nd	nd	4.3	20	92000	INT
LAR2-5-6 DUP	4/21/2009	nd	nd	3.6	16	78000	INT
MS	4/21/2009	84%	81%	79%	86%		93
MSD	4/21/2009	86%	83%	88%	91%		91
Method Detection L	imits	0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%

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ESN NORTHWEST CHEMISTRY LABORATORY

Environmental Associates, Inc. GLITSA PROJECT Client Project #EAI-28275-3 Seattle, Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analyses of Gasoline & BTEX in Water by Method NWTPH-Gx/8260

Sample	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Stoddard Solvent	Surrogate
Number	Analyzed	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	Recovery (%)
Method Blank	4/28/2009	nd	nd	nd	nd	nd	105
LCS	4/28/2009	93%	84%	86%	93%		105
MW-5	4/28/2009	nd	nd	nd	nd	nd	102
MW-6	4/28/2009	nd	nd	nd	nd	nd	94
LAR2	4/28/2009	29	1.5	28	nd	170000	int
Method Detection	Limits	1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits. "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS: 65% TO 135%

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Analytical Results

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8260B Halogenated, µg/L Matrix	Reporting	MTH BLK Water	LCS	MW-5	<u>MW-6</u>	LAF
Date analyzed	Limits	04/28/09	Water 04/28/09	Water 04/28/09	Water 04/28/09	Wat 04/28/0
		0 11 20107	04/20/07	04/20/09	04/20/09	04/20/0
Dichlorodifluoromethane	1.0	nd		nd	nd	1
Chloromethane	1.0	nd		nđ	nd	ť
Vinyl chloride	0.2	nđ	87%	nd	nd	3
Bromomethane	1.0	nd		nd	nd	r
Chloroethane	1.0	nd		nd	nd	ſ
Trichlorofluoromethane	1.0	nd		nd	nd	1
I, I-Dichloroethene	1.0	nđ	82%	nd	nd	1
Methylene chloride	1.0	nd		nd	nd	I
trans-1,2-Dichloroethene	1.0	nđ		nd	nd	I
i,1-Dichloroethane	1.0	nd		nd	nd	r
cis-1,2-Dichloroethene	1.0	nd		nd	nd	1
2,2-Dichloropropane	1.0	nd		nd	nd	1
Chloroform	1.0	nd	98%	nd	nd	1
Bromochloromethane	1.0	nd		nd	nd	-
I, I, I-Trichloroethane	1.0	nđ		nd	nd	ſ
,2-Dichloroethane (EDC)	1.0	nd		nd	nd	1
, I-Dichloropropene	1.0	nd		nd	nd	1
Carbon tetrachloride	1.0	nđ	97%	nd	nd	1
Frichloroethene (TCE)	1.0	nd	94%	nd	1.5	r
,2-Dichloropropane	1.0	nd		nd	nd	r T
Dibromomethane	1.0	nd		nd	nd	I
Bromodichloromethane	1.0	nd		nd	nd	ı t
sis-1,3-Dichloropropene	1.0	nd		nd	nd	t t
rans-1,3-Dichloropropene	1.0	nd		nd	nd	r
1,2-Trichloroethane	1.0	nd		nd	nđ	r
,3-Dichloropropane	1.0	nd		nd	nd	r
Dibromochloromethane	1.0	nd		nd	nd	r. r.
fetrachloroethene (PCE)	1.0	nd	99%	nd	nd	n n
,2-Dibromoethane (EDB)	1.0	nd	7970	nd	nd	
Chlorobenzene	1.0	nd	98%	nd	nd	n
,1,1,2-Tetrachloroethane	1.0	nd	2070	nd		n
Bromoform	1.0	nd			nd	n
,1,2,2-Tetrachloroethane	1.0	nd		nd	nd	n
Bromobenzene	1.0	nd		nd	nd	n
,2,3-Trichloropropane	1.0	nd		nd	nd	n
-Chlorotoluene	1.0			nd	nd	n
-Chlorotoluene	1.0	nd		nd	nd	n
,3-Dichlorobenzene	1.0	nd nd		nd	nd	n
,4-Dichlorobenzene	1.0		1000/	nd	nd	n
,2-Dichlorobenzene	1.0 I.0	nd	100%	nd	nd	n
2-Dibromo-3-Chloropropan	1.0	nd		nđ	nd	n
,2,4-Trichlorobenzene		nd		nd	nd	n
exachloro-1,3-butadiene	1.0 1.0	nd		nd	nd	n
,2,3-Trichlorobenzene		nd		nd	nd	n
	1.0	nd		nd	nd	n
urrogate recoveries		101%	98%	96%	1000/	
oluene-d8		98%			102%	110%
-Bromofluorobenzene		105%	103%	115%	112%	120%
		10,570	105%	102%	96%	IN'

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

Environmental Associates, Inc. **GLITSA PROJECT** Client Project #EAI-28275-3 Seattle, Washington

ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

<u> </u>			
Sample Description		Method	LARI-3-4
		Blank	
Date Extracted		4/21/2009	4/21/2009
Date Analyzed	MDL	4/21/2009	4/21/2009
	(ug/kg)	(ug/kg)	(ug/kg)
Arolcor-1016	200	nd	nd
Arolclor-1221	200	nd	nd
Aroclor-1232	200	nd	nd
Aroclor-1242	200	nd	nd
Aroclor-1248	200	nd	
Aroclor-1254	200		
Aroclor-1260	200	nd	nd
— •			
Total		0.0	0.0
Surrogate Recovery (T)	Blank 4/21/2009 4/21/2009 MDL 4/21/2009 4/21/2009 (ug/kg) (ug/kg) (ug/kg) 200 nd nd 0.0 0.0 0.0	74	
			• •
Surrogate Recovery (D	<u>(%)</u>		72

PCB Analyses of Soil (EPA Method 8082)

"nd" Indicates not detected at listed detection limit. "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (TCMX) AND (DCBP): 65% - 135%

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QA/QC Data - PCB Analyses - Soils

		Matrix Spike		Ma	RPD		
	Spiked Conc. (ug/kg)	Conc. Conc. Recover		Spiked Conc. (ug/kg)	Measured Conc. (ug/kg)	Spike Recovery (%)	(%)
Arolcor-1016 Aroclor-1260	2000 2000	1700 1800	85 90	2000 2000	1900 2000	95 100	11
TCMX DCBP		84 99			93 105		

	Ćonc.	Conc.	Spike Recovery (%)							
Arolcor-1016 Aroclor-1260	2000 2000	1500 2000	75 100							
TCMX DCBP		87 114	·							

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 60%-140% ACCEPTABLE RPD IS 20%

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Total Metals in Soil by EPA-6020 Method

Sample	Date	Lead (Pb)	Cadmium (Cd)	Chromium (Cr)	Arsenic (As)	Mercury (Hg)
Number	Analyzed	zed (mg/kg) (r 009 nd		(mg/kg)	(mg/kg)	(mg/kg)
Method Blank	4/21/2009	nd	nd	nd	nd	nd
LARI-3-4	4/21/2009	nd	nd	5.0	nd	nd
Method Detection	Limits	5.0	1.0	5.0	5.0	0.5

"nd" Indicates not detected at listed detection limits.

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QA/QC Data - Total Metals EPA-6020

Sample Number: B-1-7

		Matrix Spike	:	M	RPD		
	Spiked Measured Conc. Conc. (mg/kg) (mg/kg)	Conc. Recovery		Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	(%)
Lead	100	106	106	100	107	107	0.94
Cadmium	100	97	97	100	98	98	1.03
Chromium	100	93	93	100	92	92	1.08
Arsenic	100	70	70	100	72	72	2.82
Mercury	10	9.7	97	10	10.2	102	5.03

	. La	oratory Control Sample						
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)					
Lead	100	96	96					
Cadmium	100	100	100					
Chromium	100	109	109					
Arsenic	100	101	101					
Mercury	10	9.7	97					

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135% ACCEPTABLE RPD IS 35%

M - Matrix Spike recovery failed due to matrix interference.

ESN NORTHWEST, INC		ronmen ics Nerw		C E	Dlympia Sellevue	: (36): (30	i0) 45 60) 95	9-467 67-987	0 2				-			_	Cł	ΗA	, IN	I-C)F-	CL	pchur JSTC	DD']]])/ / R l	EC(JF DF	ςα ₹ [
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

April 29, 2009

Rob Roe, Project Manager Environmental Associates, Inc. 1380 112th Ave. NE, 300 Bellevue, WA 98004

Dear Mr. Roe:

Included are the results from the testing of material submitted on April 24, 2009 from the Glitsa 28275-3, F&BI 904255 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EAI0429R.doc
CASE NARRATIVE

This case narrative encompasses samples received on April 24, 2009 by Friedman & Bruya, Inc. from the Environmental Associates, Inc. Glitsa 28275-3, F&BI 904255 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Environmental</u>
904255-01	HA1-4

Environmental Associates, Inc. HA1-4

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/29/09 Date Received: 04/24/09 Project: Glitsa 28275-3, F&BI 904255 Date Extracted: 04/27/09 Date Analyzed: 04/27/09

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Surrogate (<u>% Recovery)</u> (Limit 50-150)
HA1-4 d 904255-01 1/10	<0.02	<0.02	4.4	18	ip
Method Blank	<0.02	< 0.02	< 0.02	<0.06	97

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ENVIRONMENTAL CHEMISTS

Date of Report: 04/29/09 Date Received: 04/24/09 Project: Glitsa 28275-3, F&BI 904255 Date Extracted: 04/24/09 Date Analyzed: 04/25/09

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RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS STODDARD SOLVENT USING METHOD NWTPH-Dx Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	Stoddard Solvent Range (C8-C11)	Surrogate <u>(% Recovery)</u> (Limit 67-127)
HA1-4 904255-01	980	95
Method Blank	<50	84

ENVIRONMENTAL CHEMISTS

Date of Report: 04/29/09 Date Received: 04/24/09 Project: Glitsa 28275-3, F&BI 904255

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B

Laboratory Code: 904257-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	0.06	0.15	a
Toluene	mg/kg (ppm)	< 0.02	0.03	nm
Ethylbenzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Xylenes	mg/kg (ppm)	< 0.06	<0.06	nm

Laboratory Code: Laboratory Control Sample

1 1

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	88	70-130
Toluene	mg/kg (ppm)	0.5	90	70-130
Ethylbenzene	mg/kg (ppm)	0.5	82	70-130
Xylenes	mg/kg (ppm)	1.5	89	70-130

ENVIRONMENTAL CHEMISTS

Date of Report: 04/29/09 Date Received: 04/24/09 Project: Glitsa 28275-3, F&BI 904255

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS STODDARD SOLVENT USING METHOD NWTPH-Dx

Laboratory Code: 904255-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)	
Stoddard Solvent	mg/kg (ppm)	5,000	880	99	123	50-150	22 vo	
Laboratory Code: Laboratory Control Sample Percent								
	Reporting	Spike	Recovery	y Accepta	ance			
Analyte	Units	Level	LCS	Crite	ria			
Stoddard Solvent	mg/kg (ppm)	5,000	110	70-13	30			

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y The pattern of peaks present is not indicative of motor oil.

Send Report To Duan	e Bartel			SAMPLERS	14/1		····	11	To the second seco					, ,	<u> </u>		 IAROUN	of D TIME
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Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Dicsel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Stoddaro						Notes
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Seattle, WA 98119- 2000 Ph. (206) 285-8282	Relinquished by	Ð	D		ichee l				<u></u>			EB	· · ·			<i>7</i> / u/	124/09 24109	14:45
Fax (206) 283-5044	Received by:		<u> </u>	<u> </u>														

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

April 30, 2009

Rob Roe, Project Manager Environmental Associates, Inc. 1380 112th Ave. NE, 300 Bellevue, WA 98004

Dear Mr. Roe:

Included are the results from the testing of material submitted on April 28, 2009 from the Glitsa PO 28275-3, F&BI 904273 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EAI0430R.DOC

CASE NARRATIVE

1

This case narrative encompasses samples received on April 28, 2009 by Friedman & Bruya, Inc. from the Environmental Associates, Inc. Glitsa PO 28275-3, F&BI 904273 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Environmental Associates, Inc.
904273-01	HA2-4
904273-02	HA3-4

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/30/09 Date Received: 04/28/09 Project: Glitsa PO 28275-3, F&BI 904273 Date Extracted: 04/28/09 and 04/29/09 Date Analyzed: 04/28/09 and 04/29/09

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Surrogate (<u>% Recovery)</u> (Limit 50-150)
HA2-4 904273-01	<0.02	<0.02	0.23	0.43	141
HA3-4 d 904273-02 1/20	<0.02	0.04	5.6	4.2	ip
Method Blank	< 0.02	<0.02	< 0.02	<0.06	100

ENVIRONMENTAL CHEMISTS

Date of Report: 04/30/09 Date Received: 04/28/09 Project: Glitsa PO 28275-3, F&BI 904273 Date Extracted: 04/28/09 Date Analyzed: 04/28/09

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS STODDARD SOLVENT USING METHOD NWTPH-Dx Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	Stoddard Solvent Range (C8-C11)	Surrogate <u>(% Recovery)</u> (Limit 67-127)
HA2-4 904273-01	<50	85
HA3-4 904273-02	1,500	88
Method Blank	<50	99

ENVIRONMENTAL CHEMISTS

Date of Report: 04/30/09 Date Received: 04/28/09 Project: Glitsa PO 28275-3, F&BI 904273

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B

Laboratory Code: 904258-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	< 0.02	nm
Toluene	mg/kg (ppm)	< 0.02	< 0.02	nm
Ethylbenzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	88	70-130
Toluene	mg/kg (ppm)	0.5	88	70-130
Ethylbenzene	mg/kg (ppm)	0.5	82	70-130
Xylenes	mg/kg (ppm)	1.5	88	70-130

ENVIRONMENTAL CHEMISTS

Date of Report: 04/30/09 Date Received: 04/28/09 Project: Glitsa PO 28275-3, F&BI 904273

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS STODDARD SOLVENT USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Stoddard Solvent	mg/kg (ppm)	5,000	102	121	70-130	17

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

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			·			Sam	ner	-4	<u>)</u>	18-		LYSE	CS R	FOU	EST							
	. Sample ID	Lab	Date	Time -	Sample Type	# of containers	1'PH-Diosol	TPH-Gasoline	BTEX by 8021B	VOCa hy 8260	SVOCa by 8270		Stallatenck							Ň	iores	;
	HA2-4 .	A-C	4/27/09		50.7	3			X				×									
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Send Report To		SAMPLERS (sign			Page # of TURNAROUND TIME
	nental Associates. Inc.	PROJECT NAME	NO.	PO #	U Standard (2 Weeks) RUSH_24-6 Rush charges authorized by:
	^h Ave, NE. #300	- 6litsa		28275-3	Rush charges authorized by:
Address1380_1124 City, State, ZIPBellevue. Phone #(425)_455-9025	WA 98004	REMARKS Brill - REMARKS Brill - I313 - Sum	to Ducine Bartel or (Unipuny, LLC Washington St Wer WH 18390	(204) 321-5565	SAMPLE DISPOSAL Dispose after 30 days Return samples Will call with instructions
			ANAL	YSES REQUESTE	D
Sample ID	Lab ID Date Time	≓ of Sample Type container	² 'I'PH-Diesed 'I'PH-Gasoline BTEX hy 8021B VOCs hy 8260 SYOCa hy 8270	11178 Stadeberch	Notes
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Friedman & Bruya, Inc.	SIGNATURE	<u> </u>	PRINT NAME	COMPA	NY DATE TIM
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

May 8, 2009

Rob Roe, Project Manager Environmental Associates, Inc. 1380 112th Ave. NE, 300 Bellevue, WA 98004

Dear Mr. Roe:

Included are the results from the testing of material submitted on May 4, 2009 from the JN-28275-3, F&BI 905022 project. There are 18 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EA10508R.doc

CASE NARRATIVE

This case narrative encompasses samples received on May 4, 2009 by Friedman & Bruya, Inc. from the Environmental Associates, Inc. JN-28275-3, F&BI 905022 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> 905022-01	<u>Environmental Associates, Inc.</u> HA4-4
905022-02	HA4-6
905022-03	HA4-8
905022-04	HA5-4
905022-05	HA5-6
905022-06	HA5-8
905022-07	HA6-4
905022-08	HA6-6
905022-09	HA6-8

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022 Date Extracted: 05/05/09 Date Analyzed: 05/05/09

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Surrogate (<u>% Recovery)</u> (Limit 50-150)
HA4-6 905022-02	<0.02	<0.02	0.1	0.09	118
HA4-8 d 905022-03 1/40	<0.2	0.27	38	38	ip
HA5-6 905022-05	<0.02	< 0.02	0.12	0.41	137
HA5-8 905022-06	< 0.02	<0.02	0.11	0.21	126
HA6-6 905022-08	<0.02	< 0.02	0.06	<0.06	111
HA6-8 905022-09	<0.02	<0.02	1.8	2.2	ip
Method Blank	< 0.02	< 0.02	< 0.02	<0.06	112

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022 Date Extracted: 05/05/09 Date Analyzed: 05/05/09 and 05/06/09

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS STODDARD SOLVENT USING METHOD NWTPH-Dx Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	Stoddard Solvent Range (C8-C11)	Surrogate <u>(% Recovery)</u> (Limit 67-127)
HA4-6 905022-02	<50	91
HA4-8 905022-03	15,000	90
HA5-6 905022-05	<50	102
HA5-8 905022-06	<50	92
HA6-6 905022-08	<50	90
HA6-8 905022-09	<50	94
Method Blank	<50	95

Analysis For Total Metals By EPA Method 200.8

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	HA4-4 05/04/09 05/05/09 05/06/09 Soil mg/kg (ppm)		Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 905022-01 905022-01.016 ICPMS1 hr
Internal Standard: Germanium Indium Holmium		% Recovery: 102 99 100	Lower Limit: 60 60 60	Upper Limit: 125 125 125
Analyte: Chromium Arsenic	(Concentration mg/kg (ppm) 7.34 1.96		
Cadmium Lead		<1 4.54		

Analysis For Total Metals By EPA Method 200.8

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Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	HA5-4 05/04/09 05/05/09 05/06/09 Soil mg/kg (ppm)		Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 905022-04 905022-04.017 ICPMS1 hr
Internal Standard: Germanium Indium Holmium	,	% Recovery: 97 96 99	Lower Limit: 60 60 60	Upper Limit: 125 125 125
Analyte: Chromium	•	oncentration ng/kg (ppm) 9.15		
Arsenic Cadmium Lead		2.90 <1 5.19		

Analysis For Total Metals By EPA Method 200.8

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	HA6-4 05/04/09 05/05/09 05/06/09 Soil mg/kg (ppm)		Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 905022-07 905022-07.018 ICPMS1 hr
Internal Standard: Germanium Indium Holmium		% Recovery: 100 98 96	Lower Limit: 60 60 60	Upper Limit: 125 125 125
Analyte:	-	Concentration mg/kg (ppm)		
Chromium Arsenic Cadmium Lead		9.75 2.68 <1 9.91		

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

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Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank NA 05/05/09 05/06/09 Soil mg/kg (ppm)	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 I9-181 mb I9-181 mb.014 ICPMS1 hr
Internal Standard: Germanium Indium Holmium	% Recovery: 99 103 100	Lower Limit: 60 60 60	Upper Limit: 125 125 125
Analyte:	Concentration mg/kg (ppm)		
Chromium Arsenic Cadmium Lead	<1 <1 <1 <1 <1		

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022 Date Extracted: 05/05/09 Date Analyzed: 05/05/09

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Total Mercury</u>
HA4-4 905022-01	<0.2
HA5-4 905022-04	<0.2
HA6-4 905022-07	<0.2

Method Blank

< 0.2

Analysis For Volatile Compounds By EPA Method 8260C

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Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	HA4-4 05/04/09 05/05/09 05/05/09 Soil mg/kg (ppm)	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 905022-01 050522.D GCMS5 MB
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 128 131 149	Lower Limit: 42 36 50	Upper Limit: 152 149 150
Compounds:		Concentration mg/kg (ppm)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroe 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	thene ene (EDC)	<0.05 <0.5 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.03 <0.025		

Analysis For Volatile Compounds By EPA Method 8260C

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Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	HA5-4 05/04/09 05/05/09 05/06/09 Soil mg/kg (ppm)	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 905022-04 050523.D GCMS5 MB
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 128 129 154 ip	Lower Limit: 42 36 50	Upper Limit: 152 149 150
Compounds:		Concentration mg/kg (ppm)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethene 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane (EDC) 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene		<0.05 <0.5 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.03 <0.025		

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Analysis For Volatile Compounds By EPA Method 8260C

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Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	HA6-4 05/04/09 05/05/09 05/06/09 Soil mg/kg (ppm)	Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 905022-07 050524.D GCMS5 MB
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 127 129 163 ip	Lower Limit: 42 36 50	Upper Limit: 152 149 150
Compounds:		Concentration mg/kg (ppm)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	ethene ene (EDC)	<0.05 <0.5 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.03 <0.025		·

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Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blar NA 05/05/09 05/05/09 Soil mg/kg (ppm)		Client: Project: Lab ID: Data File: Instrument: Operator:	Environmental Associates, Inc. JN-28275-3, F&BI 905022 090598 mb 050504.D GCMS5 MB
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 92 96 109	Lower Limit: 42 36 50	Upper Limit: 152 149 150
Compounds:		Concentration mg/kg (ppm)		
Vinyl chloride Chloroethane 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroeth 1,1-Dichloroethane cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane Trichloroethene Tetrachloroethene	ene (EDC)	<0.05 <0.5 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.03 <0.025		

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS STODDARD SOLVENT USING METHOD NWTPH-Dx

Laboratory Code: 905017-01 (Duplicate)								
		Sample	Duplicate	e Relati	ve `			
	Reporting	\mathbf{Result}	Result	Perce	-			
Analyte	Units	(Wet wt)	(Wet wt)	Differe	nce Crite	ria		
Stoddard Solvent	mg/kg (ppm)	<50	<50	nm	0-2	0		
Laboratory Code: Laboratory Control Sample								
			Percent	Percent				
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD		
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)		
Stoddard Solvent	mg/kg (ppm)	5,000	101	115	70-130	13		

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B

Laboratory Code: 905022-06 (Duplicate)

				Relative Percent
	Reporting	Sample	Duplicate	Difference
Analyte	Units	Result	Result	(Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Toluene	mg/kg (ppm)	< 0.02	< 0.02	nm
Ethylbenzene	mg/kg (ppm)	0.11	0.09	20
Xylenes	mg/kg (ppm)	0.21	0.21	0

		Percent					
	Reporting	Spike	Recovery	Acceptance			
Analyte	Units	Level	LCS	Criteria			
Benzene	mg/kg (ppm)	0.5	104	70-130			
Toluene	mg/kg (ppm)	0.5	108	70-130			
Ethylbenzene	mg/kg (ppm)	0.5	108	70-130			
Xylenes	mg/kg (ppm)	1.5	107	70-130			

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 905019-05 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	mg/kg (ppm)	11.5	9.76	16	0-20
Arsenic	mg/kg (ppm)	1.28	<1	nm	0-20
Cadmium	mg/kg (ppm)	<1	<1	nm	0-20
Lead	mg/kg (ppm)	1.37	1.23	11	0-20

Laboratory Code: 905019-05 (Matrix Spike)

-		Spike	Sample	Percent Recovery	Acceptance
Analyte	Reporting Units	Level	Result	MS	Criteria
Chromium	mg/kg (ppm)	50	11.5	89 b	50-150
Arsenic	mg/kg (ppm)	10	1.28	100	50-150
Cadmium	mg/kg (ppm)	10	<1	98	50-150
Lead	mg/kg (ppm)	20	1.37	99	50-150

-	-	Spike	Percent Recovery	Acceptance
Analyte	Reporting Units	Level	LCS	Criteria
Chromium	mg/kg (ppm)	50	107	70-130
Arsenic	mg/kg (ppm)	10	99	70-130
Cadmium	mg/kg (ppm)	10	105	70-130
Lead	mg/kg (ppm)	20	105	70-130

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 905019-05 (Matrix Spike)

				$\mathbf{Percent}$	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Mercury	mg/kg (ppm)	0.125	<0.2	110	103	50-150	7

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Mercury	mg/kg (ppm)	0.125	102	70-130	

ENVIRONMENTAL CHEMISTS

Date of Report: 05/08/09 Date Received: 05/04/09 Project: JN-28275-3, F&BI 905022

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 905019-12 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Vinyl chloride	mg/kg (ppm)	< 0.05	< 0.05	nm
Chloroethane	mg/kg (ppm)	<0.5	<0.5	nm
1,1-Dichloroethene	mg/kg (ppm)	<0.05	<0.05	nm
Methylene chloride	mg/kg (ppm)	<0.5	<0.5	nm
trans-1,2-Dichloroethene	mg/kg (ppm)	< 0.05	< 0.05	nm
1,1-Dichloroethane	mg/kg (ppm)	< 0.05	< 0.05	nm
cis-1,2-Dichloroethene	mg/kg (ppm)	< 0.05	< 0.05	nm
1,2-Dichloroethane (EDC)	mg/kg (ppm)	<0.05	<0.05	nm
1,1,1-Trichloroethane	mg/kg (ppm)	<0.05	<0.05	nm
Trichloroethene	mg/kg (ppm)	<0.03	<0.03	' nm
Tetrachloroethene	mg/kg (ppm)	<0.025	<0.025	nm

Laboratory Code: Laboratory Control Sample

		а ·1	Percent	Percent	A ,	חחת
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	92	91	57-125	1
Chloroethane	mg/kg (ppm)	2.5	115	126	43-152	9
1,1-Dichloroethene	mg/kg (ppm)	2.5	87	96	60-123	10
Methylene chloride	mg/kg (ppm)	2.5	80	81	57-130	1
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	101	102	78-118	1
1,1-Dichloroethane	mg/kg (ppm)	2.5	101	102	81-116	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	98	98	82-118	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	95	96	82-120	1
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	102	103	79-120	1
Trichloroethene	mg/kg (ppm)	2.5	96	94	79-115	2
Tetrachloroethene	mg/kg (ppm)	2.5	104	104	79-119	0

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

 ${\rm nm}$ - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

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Ph. (206) 285-8282

Fax (206) 283-5044

Relinquished by CAOZOLS Champion 5-4.9 History March 1:55 Received by CAOZOLS Champion 5-4.9 1:55 Relinquished by CAOZOLS Champion 5-4.9 Hioz Received by CAOZOLS Champion 1:02 Received by CAOZOLS CHAMPION 1:02

ESN	Environmental
NORTHWEST	Services Network

May 20, 2009

Robert Roe Environmental Associates 1380 112th Avenue NE, Suite 300 Bellevue, WA 98004

Dear Mr. Roe:

Please find enclosed the analytical data report for the Glitsa Project in Seattle, Washington. Direct Push services were conducted on May 14, 2009. Water samples were analyzed for Gasoline by NWTPH-Gx and BTEX by Method 8260 on May 19 2009.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The invoice for this work was sent to Duane Bartel.

ESN Northwest appreciates the opportunity to have provided analytical services to Environmental Associates for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Stephen I oague Lab Manager

ESN NORTHWEST CHEMISTRY LABORATORY

Duane Bartel GLITSA PROJECT Client Project #EA1-28275 Seattle, Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analyses of Gasoline & BTEX in Water by Method NWTPH-Gx/8260

Sample	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Gasoline	Surrogate
Number	Analyzed	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	Recovery (%)
Method Blank	5/19/2009	nd	nd	nd	nd	nd	122
LCS	5/19/2009	106%	118%	135%	103%		93
LCSD	5/19/2009	101%	105%	131%	100%		103
VES-4	5/19/2009	7.9	nd	7.5	7.8	86000*	114
VES-5	5/19/2009	4.7	nd	nd	nd	57000*	102
VES-6	5/19/2009	4.4	nđ	1.2	nd	65000*	102
VES-6 DUP	5/19/2009	3.0	nd	nd	nd	41000*	105
Method Detection	n Limits	1.0	1.0	1.0	3.0	100	

* Samples contained Stoddard Solvent

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"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS: 65% TO 135%

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