MAY 07 1999 DEPT. OF ECOLOGY

REMEDIAL ACTION REPORT

FORMER CHUCK OLSON CHEVROLET FACILITY

17545 AURORA AVENUE NORTH SHORELINE, WASHINGTON

PREPARED FOR:
CHUCK OLSON CHEVROLET

AESI PROJECT NO. BV97011 APRIL 26, 1999

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1.0 INTRODUCTION

This report presents the results of soil remediation activities conducted at the former Chuck Olson Chevrolet facility site (the Site) located in Shoreline, Washington. Soil remediation activities were conducted by West Pac Environmental, Inc. (West Pac), with oversight by Associated Earth Sciences, Inc. (AESI) of Bainbridge Island, Washington. The Site location is shown on Figure 1.

Remedial activities included:

- Decommissioning and removing nine vaulted hydraulic lifts and nine "satellite" hydraulic cylinders;
- Disposing vault and hydraulic cylinder contents and recycling the scrap metal;
- Excavating and treating hydrocarbon-impacted soil from the hydraulic vault areas; and
- Collecting confirmation soil samples from each excavation for laboratory analyses.

This project was conducted in accordance with the Model Toxics Control Act (MTCA), Washington Administrative Code (WAC) chapter 173-340-450, and in general accordance with Washington State Department of Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*, revised October 1992, and the *Interim Interpretive and Policy Statement, Cleanup of Total Petroleum Hydrocarbons*, Ecology Publication ECY-97-600, published January 1997.

1.1 Site Description

The Site is located at 17545 Aurora Avenue North in the city of Shoreline, Washington. A site vicinity map is presented as Figure 1, and a site plan is presented as Figures 2a and 2b. The remediation area is located within the auto service shop, which occupies the southern portion of the facility complex. The immediate area around the Site includes commercial businesses and parking/auto sales lots. Land use in the Site vicinity is primarily high density commercial and light industrial.

The Site is located at the crest of a north-south trending topographic ridge that is underlain by Quaternary glacial and inter-glacial sediments. Subsurface soils encountered at the Site consisted of several feet of medium dense, moist, silty sandy gravels (fill and weathered glacial lodgement till) overlying gray, very dense, dry to moist, silty sandy gravels (glacial

lodgement till) deposited beneath glacial ice. Regionally, this uppermost till unit is known as the Vashon Till. The thickness of the Vashon Till generally varies from a few feet to as much as 40 feet thick.

Geologic information from nearby water supply wells and deep environmental soil borings indicates that Quaternary sediments beneath the Vashon Till generally consist of less consolidated sandy deposits laid down by pro-glacial meltwater streams as the Vashon ice sheet advanced south through the area. Regionally, the uppermost portion of these advance outwash deposits underlying the Vashon Till is known as the "Esperance Sand". The uppermost perennial unconfined aquifer is generally found in these "advance outwash" deposits.

Ground water was not encountered during site exploration or excavation activities. A review of available water well logs for the Site vicinity indicates that the uppermost perennial aquifer beneath the Site likely occurs within the advance outwash at a depth of over 150 feet below ground surface (bgs). Additional information of ground water in the Site area is available in the *Ground Water Occurrence Report in the Vicinity of the Former Chuck Olson Facility*, by AESI dated April 26, 1999.

The closest surface water body to the Site is a small wetland known as Ronald Bog, located approximately 3,000 to the east-southeast. Hidden Lake is located approximately 1 mile southwest of the Site.

1.2 Summary of Investigation and Remediation Activities

Two phases of site investigation activities were conducted at the Site prior to the initiation of remedial activities. Figures 2a and 2b are site plans that include the locations of all pre-remediation soil borings. The initial phase consisted of Geoprobe soil borings (IB-series borings) installed at the Site in April and May of 1997. This work was conducted to evaluate potential environmental impacts at the Site from past site activities. During this initial exploration phase, soil impacted with total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs) was noted around the hydraulic cylinder equipment vaults in the main service shop area. A second phase of hollow-stem auger soil borings (EB-series borings) was conducted in October 1998. The primary purpose of this second exploratory phase was to further define the extent of TPH-impacted soils around the hydraulic vaults, and to evaluate site-specific TPH cleanup standards.

The remediation phase of work began on December 14, 1998 and concluded on January 20, 1999. Pre-remediation excavation site work included decommissioning all existing hydraulic equipment, and then rinsing, cleaning and demolishing the hydraulic equipment vaults.

The concrete floor slab above areas where impacted soil was present was also removed at this time.

Soil remediation was accomplished by excavation and subsequent off-site treatment by thermal desorption. A total of 1,213 tons of impacted soil was excavated from nine of the former hydraulic equipment vault areas. The soil was loaded directly into trucks and transported to CSR Associated in Everett, Washington for thermal desorption. Excavation of impacted soil was limited in some areas by the maximum practical depth of excavation, and/or the proximity of the excavation to structural members of the building such as footings or load-bearing walls. No saturated soil or ground water was encountered during excavation activities.

A total of 81 confirmation soil samples were collected from the floor (bottom) and sidewalls of the remedial excavation and submitted for laboratory analysis. The confirmation sample results indicate that excavation was effective at removing the majority of TPH-impacted soil, with TPH concentrations above the calculated site-specific cleanup level of 7,000 milligrams/kilogram (mg/kg). Three "pockets" of impacted soil with TPH concentrations above the site-specific cleanup level remain in areas where additional excavation was impractical. The estimated cumulative volume of remaining impacted soil with TPH concentrations above 7,000 mg/kg is 195 cubic yards.

Based on the maximum vertical extent of TPH impacts noted at the Site, the minimum vertical separation between TPH-impacted soil and ground water at the Site is in excess of 100 feet.

2.0 EQUIPMENT DECOMMISSIONING

2.1 Hydraulic Cylinder Removal and Vault Demolition

Decommissioning of hydraulic cylinders and associated vaults was performed by West Pac in December 1998. The locations of the former hydraulic cylinders and vaults are shown on Figures 2a and 2b. The hydraulic cylinder vaults were approximately 8 feet deep, with cinderblock walls and poured concrete floor slabs.

Initially, all hydraulic cylinders were removed, drained of free hydraulic oil, and then transported off site for metal recycling. A sample of accumulated oil and sludge in the vaults was collected for disposal permitting. This sample was analyzed by Friedman & Bruya, Inc. of Seattle, Washington for VOCs and polychlorinated biphenyls (PCBs). No VOCs or PCBs were detected in this sample. Sample results are included in Appendix A.

Accumulated oil and sludge was removed from the vaults using a vacuum truck, and then the vaults were cleaned with high-pressure water. The accumulated rinsate was pumped from the vaults using a vacuum truck. All oil and rinsate were transported to Emerald Petroleum in Seattle, Washington for treatment/recycling. The Emerald Petroleum disposal certificate is included in Appendix B.

After cleaning and rinsing, each concrete vault was demolished using a backhoe-mounted hydraulic breaker. Non-impacted concrete was transported off site for landfilling. Any concrete that appeared impacted (i.e., had visible staining or a hydrocarbon odor) was mixed with the impacted soil and subsequently treated by thermal desorption.

3.0 SOIL EXCAVATION AND CONFIRMATION SAMPLING

3.1 Soil Excavation

Between December 22, 1998 and January 20, 1999, West Pac excavated a total of 1,213 tons of TPH-impacted soil from the locations of the former hydraulic cylinder vaults. Excavation was accomplished using a Case 580K backhoe and Komatsu PC60 excavator. The extent of the excavated areas is shown on Figures 3a and 3b.

Excavation activities were directed by on-site AESI personnel. During excavation, periodic soil samples were collected by AESI and field-screened for TPH and VOCs using visual and sheen testing methods. In addition, soil samples were also screened for VOCs using a photoionization detector (PID) calibrated to isobutylene.

TPH-impacted soil was removed from each remedial excavation until either:

- 1. Field screening indicators were negative,
- 2. Residual TPH levels were inferred to be below the anticipated site-specific TPH cleanup level; or
- 3. Further excavation was precluded due to the depth of the excavation, or due to the proximity of the excavation to the building foundation or footings.

Excavated soil was trucked on a daily basis to the CSR Associated plant in Everett, Washington for treatment by thermal desorption. No long-term, on-site stockpiling of soil occurred during the excavation process.

3.2 Soil Confirmation Sampling

A total of 81 confirmation soil samples were collected from the floor and walls of the remedial excavations. The sample locations and corresponding TPH analytical results are shown on Figures 3a and 3b. The confirmation samples were collected directly from sampling locations using the trackhoe bucket. Samples were transferred from the trackhoe bucket to laboratory-supplied glass jars that were subsequently, sealed with Teflon-lined lids, labeled, and placed on ice in a cooler. Samples were shipped by courier to Friedman & Bruya Inc. in Seattle for analysis. Sample custody was maintained at all times and documented by chain-of-custody forms. Laboratory-reported analytical testing results and chain-of-custody forms are included in Appendix A.

All confirmation samples were analyzed for TPH by Ecology Method NWTPH-Dx (NWTPH-Dx). This method reports a single concentration for combined diesel and motor-

oil range hydrocarbons. The NWTPH-Dx results for all confirmation samples are summarized in Tables 1 through 9.

Nine selected confirmation samples were analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method 8260B. The results of the VOC analyses are summarized in Table 10.

Six selected confirmation samples were analyzed for volatile and extractable hydrocarbon fractions by Ecology Method EPH/VPH. Three of these samples were also analyzed for "target" polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270 Modified. Results of the EPH/VPH and PAH analyses (including results of two samples collected during the October 1998 site investigation phase) are summarized in Tables 11 through 18.

3.3 Discussion of Confirmation Soil Sample Results

Figures 3a and 3b present plan views of the remedial excavation areas showing the locations and NWTPH-Dx concentrations for confirmation soil samples. The results for the confirmation samples are also documented in Tables 1 though 9. NWTPH-Dx concentrations in the confirmation samples ranged from non-detect (<50 mg/kg) to 27,000 mg/kg. Significantly elevated residual NWTPH-Dx concentrations were generally present only in limited portions of the Bay #1, Bay #5, and Bay #12 excavation areas.

Nine confirmation samples with elevated residual NWTPH-Dx concentrations were also analyzed for VOCs, the results of which are summarized in Table 10. A total of seventeen individual VOC compounds were detected in these confirmation samples. Some of the detected VOCs compounds are compounds normally found in TPH fractions (i.e., 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene). Other compounds, such a tetrachloroethene, were likely originated from non-hydrocarbon sources such as commercial solvent or degreaser products. None of the VOC compounds were detected at concentrations exceeding the compound-specific maximum allowable MTCA Method B Formula Values for soil (see Table 10).

Selected confirmation samples with elevated residual NWTPH-Dx concentrations were also analyzed for "target" PAHs. Low to trace concentrations of non-carcinogenic PAHs (generally naphthalene and 2-methylnapthalene) were detected in these samples. No carcinogenic PAHs were detected in the samples analyzed.

Tables 11 through 18 present the results for all samples analyzed for TPH fractions by Ecology Method EPH/VPH. These results indicate that a high proportion of the TPH fraction in each sample analyzed consisted of heavy aliphatic hydrocarbons in the C-21 to

C-34 range. These results are consistent with releases of hydraulic fluid from the hydraulic lift cylinders or associated equipment.

The EPH/VPH analytical results in Tables 11 through 18 are presented in Ecology's "worksheet" format. These worksheets provide calculations for non-carcinogenic and carcinogenic direct contact human health hazards for each sample, as well as provide a calculated ground water TPH concentration sourced from the sample through leaching from soil to ground water. The worksheet calculations indicate that the maximum allowable residential "hazard quotient" of 1 for the direct contact pathway was exceeded for TPH in one confirmation sample from Bay #1 (BAY1NSW), one confirmation sample from Bay #5 (BAY5SSW), and two confirmation samples from Bay #12 (BAY12NSW4, BAY12SSW3). The calculated ground water concentrations for all confirmation soil samples analyzed by Method EPH/VPH were well below the allowable limit of 1 milligram per liter (mg/l).

3.4 Assessment of Site-Specific TPH Cleanup Level for Soil

The confirmation samples analyzed by Ecology Method EPH/VPH provide the framework for calculation of a site-specific cleanup level for TPH. Tables 19 through 26 provide calculations of sample-specific maximum allowable TPH levels for both the EPH/VPH and NWTPH-Dx analytical methods. The calculations for each sample were made as follows: first, the maximum allowable TPH concentration by Method EPH/VPH (i.e., when the residential "hazard quotient" equals 1) was calculated for each Method EPH/VPH analysis using the reported sample-specific ratio of aliphatic to aromatic hydrocarbon fraction data. The calculated maximum allowable TPH concentration by Method EPH/VPH was then adjusted to reflect the presence of the C-21 through C-34 range aliphatics, which are reported by the EPH/VPH method, but are not used in "hazard quotient" calculation. The resulting concentration of TPH is the sample-specific, maximum allowable TPH (including the C-21 to C-34 aliphatics) by the EPH/VPH method that will not result in a residential "hazard quotient" of greater than 1. Finally, the "retrofitted" sample-specific maximum allowable TPH concentration for Method NWTPH-Dx was calculated by adjusting the calculated maximum allowable TPH concentration (by Method EPH/VPH) using the ratio between the corresponding TPH concentration reported for each analytical method.

Table 27 provides a summary of the calculated maximum allowable TPH concentrations for both the EPH/VPH and NWTPH-Dx analytical methods. For the EPH/VPH method, the calculated maximum allowable residential scenario TPH concentration ranged from 7,980 mg/kg to 15,625 mg/kg. For the NWTPH-Dx Method, the calculated maximum allowable residential scenario TPH concentration ranged from 7,355 mg/kg to 33,250 mg/kg. The calculated maximum allowable residential scenario NWTPH-Dx concentration of 33,250 mg/kg for sample BAY6NSW (see Table 21) is not considered valid. This very high

allowable NWTPH-Dx concentration resulted from an abnormally low ratio of TPH (by Method EPH/VPH) to TPH (by Method NWTPH-Dx) that was likely caused by heterogeneity within the soil sample.

The range of calculated maximum allowable residential soil TPH concentrations presented in Table 27 indicates general agreement between both the EPH/VPH and NWTPH-Dx analytical methods. The most conservative calculated maximum allowable TPH concentration using either method is 7,355 mg/kg by Method NWTPH-Dx. Rounding down this number results in a conservative, site-specific concentration of 7,000 mg/kg for the maximum allowable residential NWTPH-Dx concentration.

Figures 4 and 5 present the estimated lateral and vertical extent of areas at the Site where TPH remains in soil above the calculated, site-specific NWTPH-Dx cleanup level of 7,000 mg/kg. These areas include a "pocket" located beneath the north end of Bay #1 at the north end of the service shop, a "pocket" located beneath the central portion of the service shop (Bay #5), and a "pocket" beneath Bay #12 at the south end of the service shop. The estimated volumes of soil exceeding the site-specific NWTPH-Dx cleanup level of 7,000 mg/kg for each of the areas are as follows:

Bay #1 "Pocket" - Approximately 30 cubic yards

Bay #5 "Pocket" - Approximately 15 cubic yards

Bay #12 "Pocket" - Approximately 150 cubic yards

4.0 MANAGEMENT OF TPH-IMPACTED SOIL

A formal application for soil treatment was submitted to CSR Associated of Everett, Washington prior to the initiation of excavation activities. Information submitted in support of the TPH-impacted soil treatment application included all analytical data from both pre-remediation site investigation phases. In addition, at the request of CSR, two additional samples of stockpiled soil cuttings from the October 1998 soil borings were submitted to Friedman & Bruya, Inc. for analysis of tetrachloroethene by EPA Method 8260B. Tetrachloroethene was not detected in any of these samples at concentrations above the laboratory reporting limit of 0.4 mg/kg. The laboratory analytical data sheets and chain-of-custody records for these samples are included in Appendix A.

Excavated TPH-impacted soil was transported on a daily basis to CSR Associated for treatment by thermal desorption. A total of 1,213 tons of soil was treated. Soil scale tickets and a certificate of treatment are provided in Appendix B.

5.0 SITE RESTORATION

Excavation backfilling and site restoration activities were conducted coincident with excavation of TPH-impacted soil. Backfill consisted of either clean, imported granular pit run sand or controlled density fill (CDF) supplied by CSR Associated of Everett, Washington. All pit run material consisted of sand with not more than 5 percent of fines passing through a No. 200 sieve (wet sieve analysis).

Compaction of backfill material was accomplished using a backhoe-mounted hydraulic vibratory compactor. The backfill was placed in 18-inch lifts to a depth of 4 feet bgs, and in 12-inch lifts from 4 feet bgs to grade. Compaction specifications were verified by AESI field personnel using a Troxler® nuclear densometer and manually using a ½-inch-diameter stainless steel probe. Backfill was placed to the base of the former concrete slab elevation.

At the conclusion of site restoration activities, a letter summarizing the Site excavation and backfilling work was submitted to Mr. Philip Vartanian, the City of Shoreline Plan Examiner. A copy of this letter is included in Appendix C.

6.0 SUMMARY AND CONCLUSIONS

TPH-impacted soil was excavated from nine hydraulic cylinder vault areas within the service shop area of the former Chuck Olson Chevrolet facility. Soil excavation was accomplished to the maximum extent practical without risking damage to the footings or foundations of the service shop building. Approximately 1,213 tons of excavated TPH-impacted soil was treated by thermal desorption at CSR Associated in Everett, Washington. No saturated soils or ground water were encountered during excavation activities, or during earlier site investigation activities.

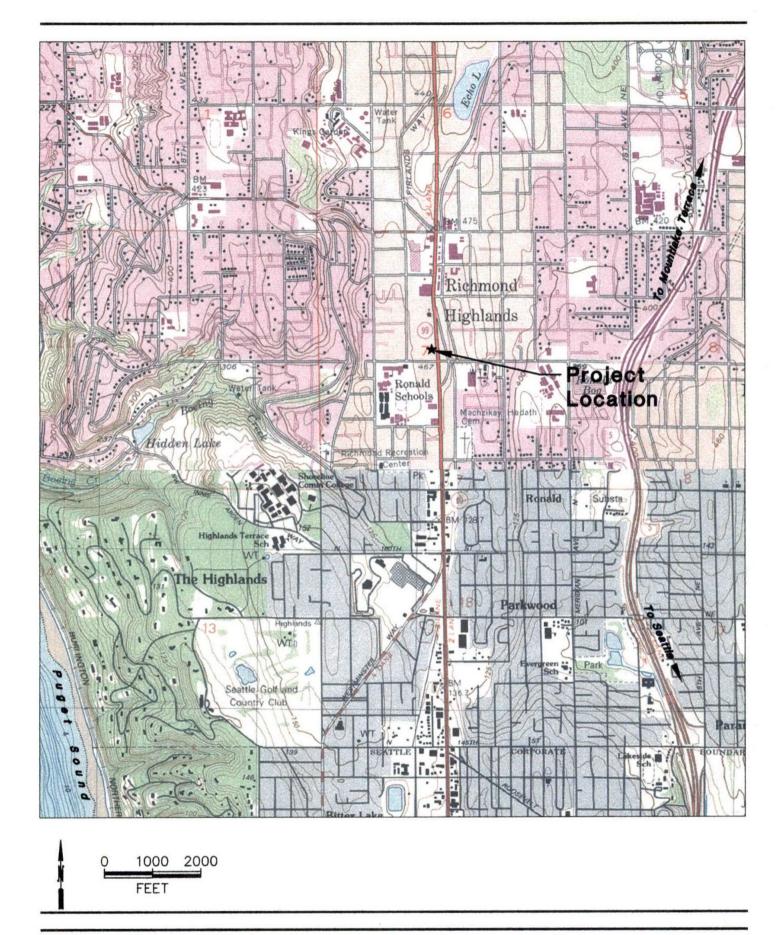
A total of 81 confirmation soil samples were collected from the excavation sidewalls and floors to confirm the adequacy of the remedial action. A conservative, site-specific residential TPH-Dx soil cleanup level of 7,000 mg/kg was calculated using data from eight soil samples analyzed for hydrocarbon fractions by Ecology Method EPH/VPH. This represents the lower end of calculated TPH-Dx cleanup levels that ranged from 7,355 mg/kg to 17,529 mg/kg. The calculated site-specific residential soil TPH-Dx concentration of 7,000 mg/kg is also adequately protective of the soil-to-ground-water pathway.

Impacted soil with NWTPH-Dx concentrations above the calculated site-specific residential cleanup level of 7,000 mg/kg was successfully remediated in all areas of the Site except for three "pockets" of limited extent. These pockets are located beneath and/or adjacent to Bay #1, Bay #5, and Bay #12 in the service shop area. Additional excavation could not be accomplished in these areas due to either the depth of excavation, the proximity of the impacted soil to the building foundation, or both. The estimated cumulative volume of remaining impacted soil with NWTPH-Dx concentrations above 7,000 mg/kg is 195 cubic yards.

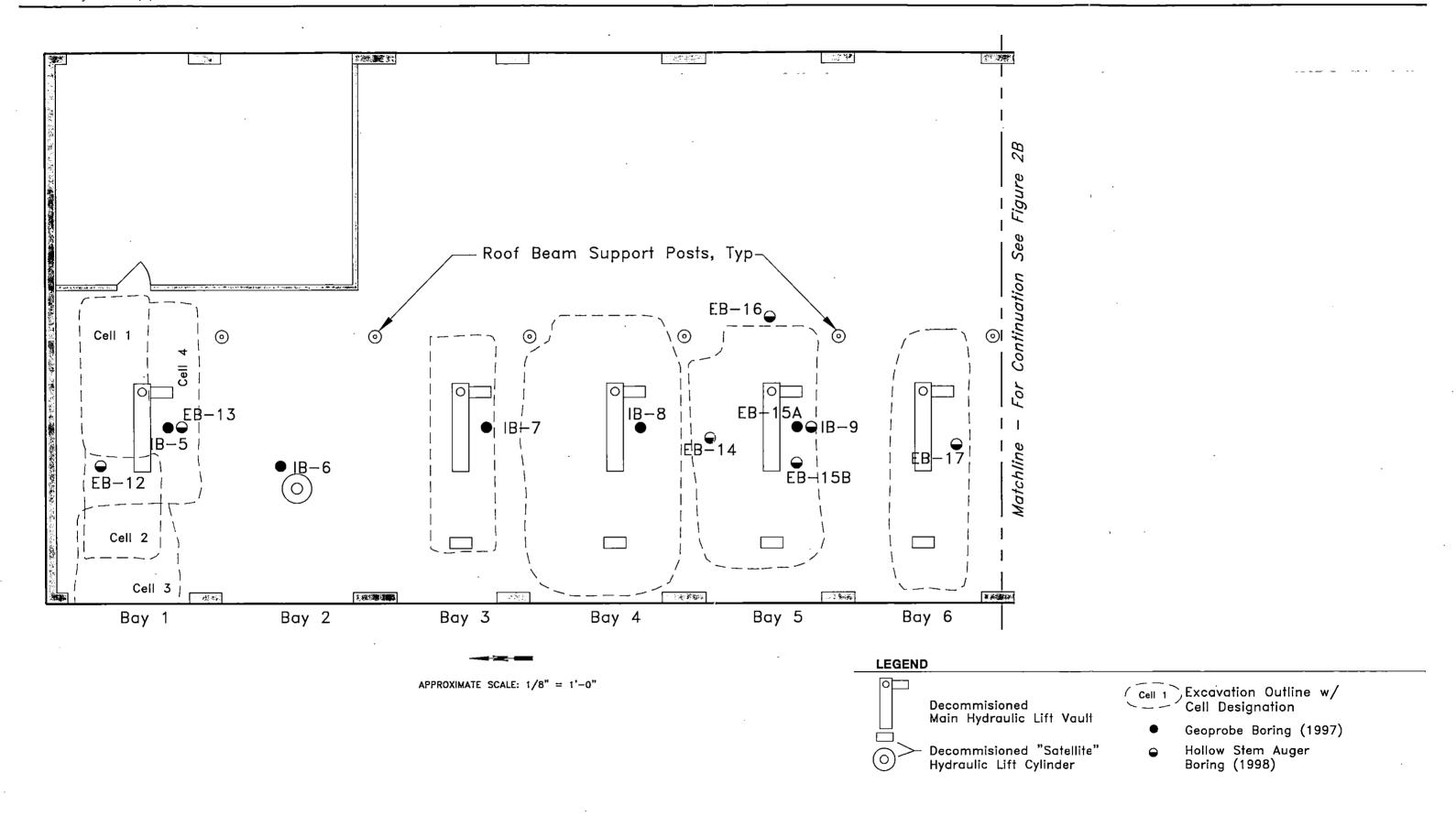
Review of local water well and soil boring information indicates that the first perennial aquifer beneath the Site likely occurs in "advance outwash" sands at a depth of greater than 150 feet bgs. The maximum vertical extent of TPH-impacts noted at the Site were in the Bay #12 area, where trace concentrations of TPH (60 mg/kg) were detected in exploration boring EB-24 at a depth of 32 feet bgs. This suggests that the minimum vertical separation between TPH-impacted soil and ground water at the Site is in excess of 100 feet. The impermeable asphalt/concrete surface at the Site, coupled with the presence of low permeability glacial till beneath the Site, should effectively impede further vertical migration of the remaining TPH.

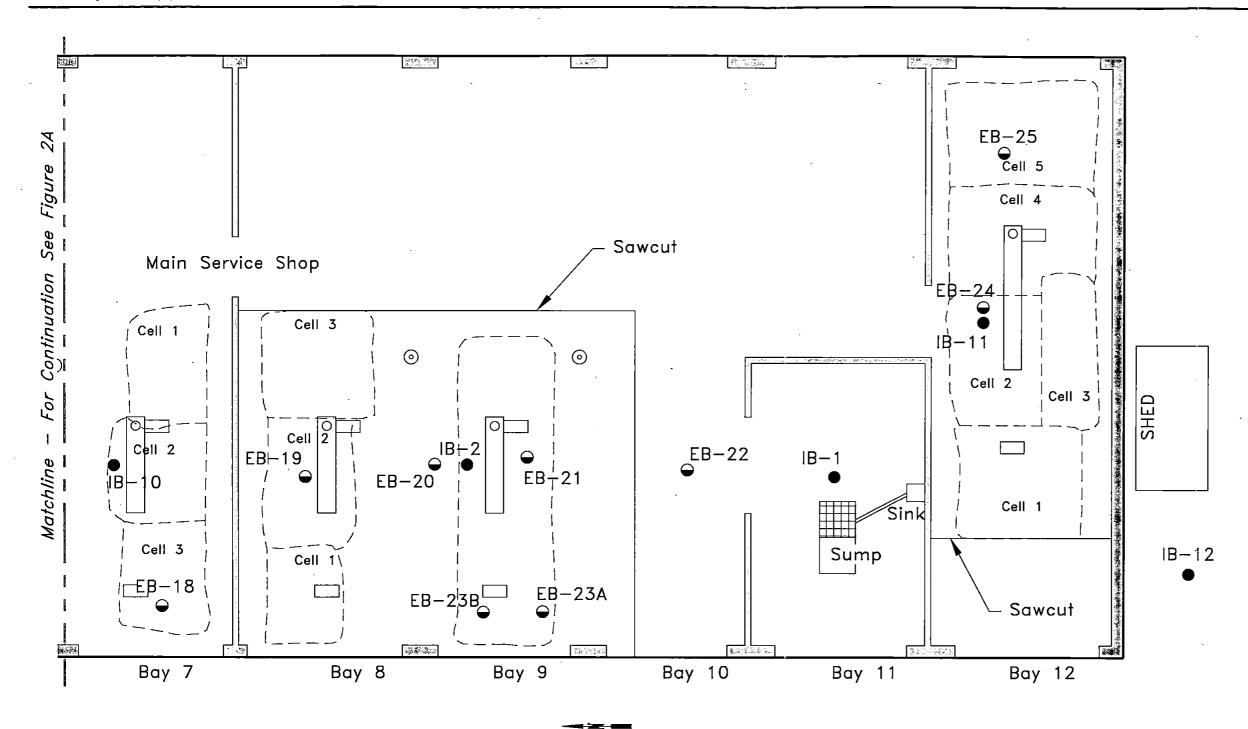
7.0 LIMITATIONS

This report has been prepared solely for the use of Chuck Olson Chevrolet and its agents as it pertains to the former Chuck Olson Chevrolet Facility located at 17545 Aurora Avenue North in Shoreline, Washington. Any reliance on this report by third parties shall be at such party's sole risk. Our services have been performed in accordance with applicable federal, state and local ordinances and generally accepted practices in the geosciences. No other warranty, either expressed or implied, is made.

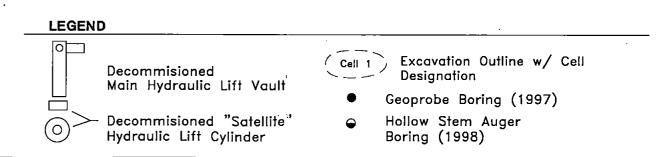


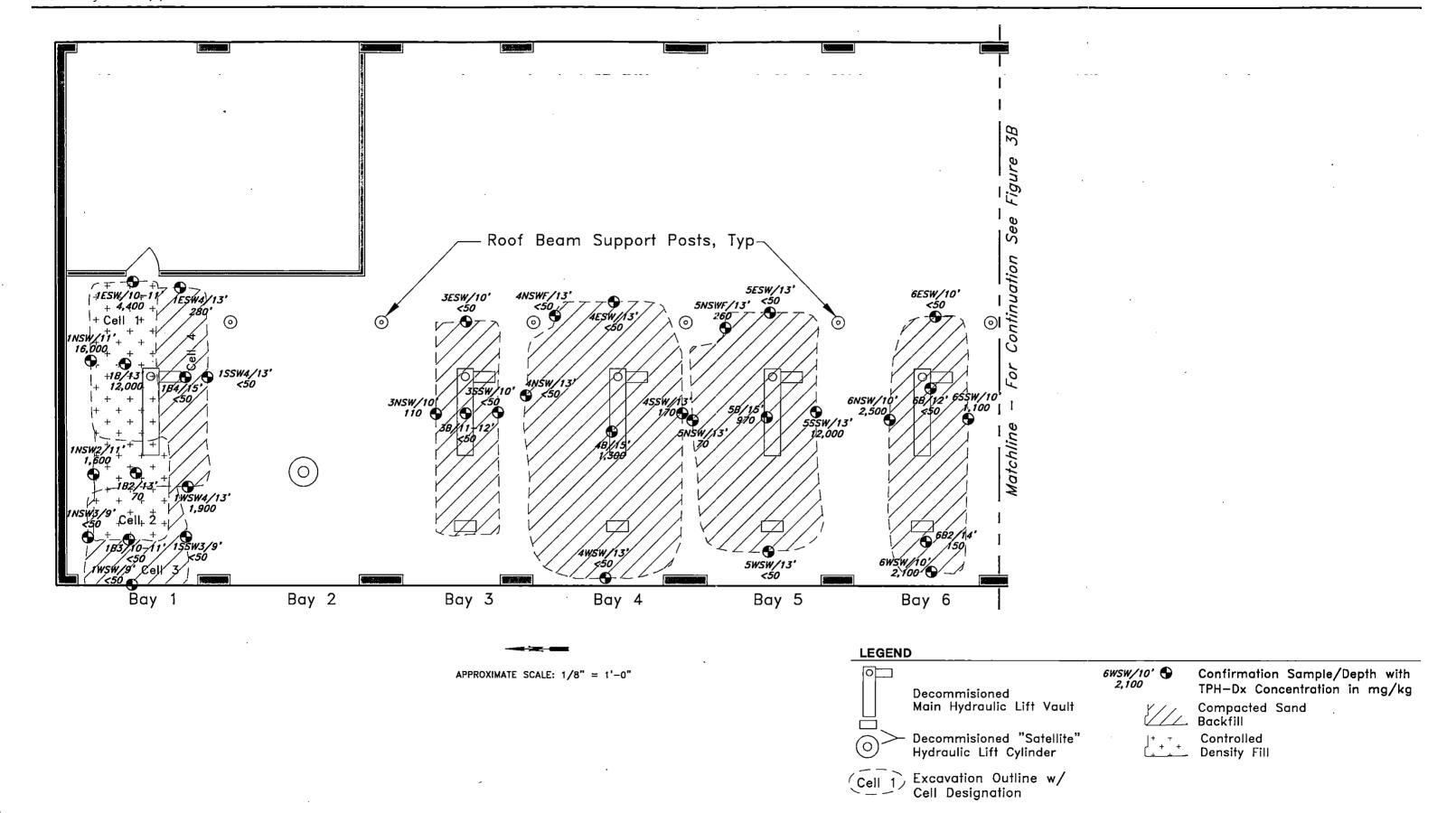


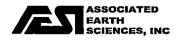




APPROXIMATE SCALE: 1/16" = 1'-0"







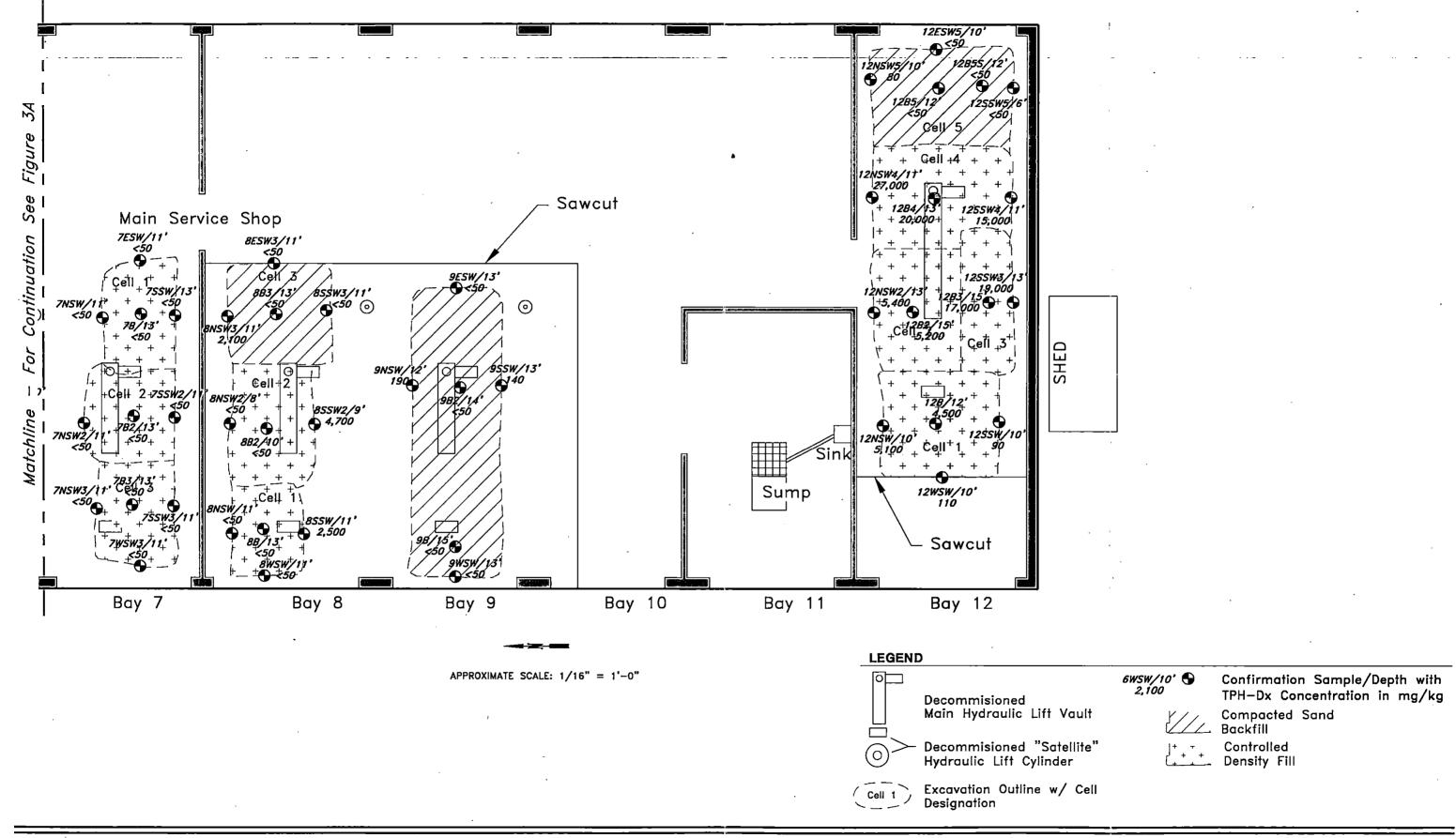




Table 1 Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons Bay #1 Remedial Excavation Former Chuck Olson Chevrolet Facility Shoreline, Washington

Sample Identification	Sample Date	Sample Location	Sample Depth, feet	Fleid Screening (Odors/Stain)	Reading (ppm)	NWTPH-Dx Diesel and Oil (mg/kg)	Run	TARGET SVOCs Run (Yes/No)	VOCs - 8260B Run (Ves/No)
BAY1B	1/7/99	Bottom, cell #1	13	Moderate	NA	12,000	NO	NO	YES
BAY1NSW	1/7/99	North sidewall, cell #1	· 11	Moderate	NA	16,000	YES	YES	YES
BAYISSW	1/7/99	South sidewall, cell #1	11	Moderate	NA	18,000	NO	NO	NO
BAY1ESW	1/7/99	East sidewall, cell #1	10 to 11	Moderate	16	4,400	NO	NO	NO
BAYISSW2	1/8/99	South sidewall, cell #2	11	Moderate	NA	13,000	NO	NO	NO
BAY1B2	1/8/99	Bottom, cell #2	13	Moderate	NA	70	NO	NO	NO
BAY1NSW2	1/8/99	North sidewall, cell #2	11	Moderate	NA	1,600	NO	NO	NO
BAY1B3	1/12/99	Bottom, cell #3	10 to 11	ND	0	< 50	NO	NO	NO
BAY1SSW3	1/12/99	South sidewall, cell #3	9	ND	. NA	< 50	NO	NO	NO
BAY1WSW	1/12/99	West sidewall, cell #3	9	ND	NA	< 50	NO	NO	NO
BAY1NSW3	1/12/99	North sidewall, cell #3	9	ND	NA	< 50	NO	NO	NO
BAY1B4	1/14/99	Bottom, cell #4	15	ND	0	< 50	NO	NO	NO
BAY1WSW4	1/14/99	West sidewall, cell #4	13	Slight	0	1,900	NO	NO	NO
BAY1SSW4	1/14/99	South sidewall, cell #4	13	ND	0	< 50	NO	NO	NO
BAY1ESW4	1/14/99	East sidewall, cell #4	13	ND	NA	280	NO	NO	NO

< 50

Not detected at reporting limit indicated

NA

Not analyzed

BAYISSW

Indicates sample area was subsequently excavated

Table 2
Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons
Bay #3 Remedial Excavation
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

Sample Identification	Sample Date	Sample Location	Samplé Depth, feet	Field Screening (Odors/Stain)	PID Reading (ppm)	NWTPH-Dx Diesel and Oil (mg/kg)	EPH/VPH Run (Yes/No)	TARGET SVOCs Run (Yes/No)	VOCs - 8260B Run (Yes/No)
BAY3B	1/6/99	Bottom	11 to 12	ND	. 0	< 50	NO	NO	NO
BAY3NSW	1/6/99	North sidewall	10	ND	0	110	NO	NO	NO
BAY3ESW	1/6/99	East sidewall	10	ND	0	< 50	NO	NO	NO
BAY 3SSW	1/6/99	South sidewall	10	ND	0	< 50	NO	NO	NO

<50 N

Not detected at reporting limit indicated

NA

Not analyzed

Table 3
Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons
Bay #4 Remedial Excavation
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

Sample Identification	Sample Date	Sample Location	Sample Depth, feet	Field Screening (Odors/Stain)	PID Reading (ppm)	NWTPH-Dx Diesel and Oil (mg/kg)	EPH/VPH Run (Yes/No)	TARGET SVOCs Run (Yes/No)	VOCs - 8260B Run (Yes/No)
BAY4WSW	1/5/99	West sidewall	13	ND	, 11	< 50	NO	NO	NO
BAY4NSW	1/5/99	North sidewall	13	ND	0	< 50	NO	NO	NO
BAY4NSWF	1/5/99	North sidewall beneath footing	13	Slight	28	< 50	NO	NO ·	NO
BAY4ESW	1/5/99	East sidewall	13	ND	NA	< 50	NO	NO	NO
BAY4SSW	1/5/99	South sidewall	13	ND	0	170	NO ·	NO	NO
BAY4B	1/5/99	Bottom	15	Slight	24	1,300	NO	NO	NO

< 50 Not detected at reporting limit indicated

NA Not analyzed

Table 4
Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons
Bay #5 Remedial Excavation
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

Sample	Sample:	Sample Location	Sample.	Field .	PID Reading	NWTPH-Dx	EPH/VPH	TARGET SVOCs	* 8260B ::
Identification	Date		Depth, feet	(Odors/Stain)	4 12 12 X 2 3 X 3 X 3 X 3 X 3 X 3 X 3 X 3 X 3	Diesel and Oil (mg/kg)	Run (Yes/No)	Run (Yes/No)	Run (Yes/No)
BAY5NSWF	12/29/98	North sidewall beneath footing	13	ND	39	260	NO	NO	NO
BAY5NSW	12/29/98	North sidewall	13	ND	0	70	NO	NO	NO
BAY5WSW	12/29/98	West sidewall	13	ND	0	< 50	NO	NO	NO
BAY5B	12/29/98	Bottom	15	Slight	65	970	NO	NO	NO
BAY5ESW	12/29/98	East sidewall	13	ND	0.1	< 50	NO	NO	NO
BAY5SSW	12/29/98	South sidewall	13	ND	0	12,000	YES	YES	YES

< 50

Not detected at reporting limit indicated

NA

Not analyzed

Table 5
Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons
Bay #6 Remedial Excavation
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

Sample Identification	Sample Date	Sample Location	Sample Depth, feet	Field Screening (Odors/Stain)	PID Reading (ppm)	NWTPH-Dx Diesel and Oil (mg/kg)	EPH/VPH Run (Yes/No)	TARGET SVOCs Run (Yes/No)	VOCs - 8260B Run (Yes/No)
BAY6NSW	12/22/98	North sidewall	10	ND	NA	2,500	YES	NO	YES
BAY6SSW	12/22/98	South sidewall	10	ND	NA	1,100	NO	NO	NO
BAY6ESW	12/22/98	East sidewall	10	ND	NA	< 50	NO	NO	NO
BAY6WSW	12/22/98	West sidewall	11	ND	NA	2,100	NO	NO	NO
BAY6B	12/22/98	Floor (East end)	12	ND	NA	< 50	NO	NO	NO
BAY6B2	12/23/98	Floor (West end)	14	ND	NA	150	NO	NO	NO

< 50

Not detected at reporting limit indicated

NA

Not analyzed

Table 6
Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons
Bay #7 Remedial Excavation
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

Sample	Sample Sample Sample Screening Read		PID Reading	NWTPH-Dx	EPH/VPH	TARGET SVOCs	VOCs - 8260B		
Identification	Date		Depth, feet	(Odors/Stain)	(ppm)	Diesel and Oil (mg/kg)	Run (Yes/No)	Run (Yes/No)	Run (Yes/No)
BAY7B	1/4/99	Bottom, cell #1	13	Slight	NA	<50	NO	NO	NO
BAY7NSW	1/4/99	North sidewall, cell #1	11	Slight	29	< 50	NO	NO	NO
BAY7SSW	1/4/99	South sidewall, cell #1	11	Slight	0	< 50	NO	NO	NO
BAY7ESW	1/4/99	East sidewall, cell #1	11	Slight	28	<50	NO	NO	NO
BAY7NSW2	1/5/99	North sidewall, cell #2	11	ND	NA	<50	NO	NO	NO
BAY7SSW2	1/5/99	South sidewall, cell #2	11	ND	NA	< 50	NO	NO	NO
BAY7B2	1/5/99	Bottom, cell #2	13	Slight	11	< 50	NO	NO	NO
BAY7B3	1/6/99	Bottom, cell #3	13	ND	0	< 50	NO	NO	NO
BAY7NSW3	1/6/99	North sidewall, cell #3	11	ND	NA	< 50	NO	NO	NO
BAY7SSW3	1/6/99	South sidewall, cell #3	11	ND	3	< 50	NO	NO	NO
BAY7WSW	1/6/99	West sidewall, cell #3	11	ND	NA	< 50	NO	NO	NO

< 50 Not detected at reporting limit indicated

NA Not analyzed

Table 7
Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons
Bay #8 Remedial Excavation
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

Sample	Sample	Sample Location	Sample	Field	PID Reading	NWTPH-Dx	EPH/VPH	TARGET SVOCs	VOCs - 8260B
Identification	. Date	Sample Location	Depth, feet	Screening (Odors/Stain)	(ppm)	Diesel and Oil (mg/kg)	Run (Yes/No)	Run (Yes/No)	Run (Yes/No)
BAY8B	1/7/99	Bottom, cell #1	13	ND	0	< 50	NO	NO	NO
BAY8WSW	1/7/99	West sidewall, cell #1	11	ND	NA	< 50	NO	NO	NO
BAY8SSW	1/7/99	South sidewall, cell #1	11	ND	NA	2,500	NO	NO	NO
BAY8NSW	1/7/99	North sidewall, cell #1	11	ND	NA -	< 50	NO	NO	NO
BAY8B2	1/8/99	Bottom, cell #2	· 10	ND	0	< 50	NO	NO	NO
BAY8SSW2	1/8/99	South sidewall, cell #2	9	ND	NA	4,700	YES	YES	YES
BAY8NSW2	1/8/99	North sidewall, cell #2	8	ND	NA	< 50	NO	NO	NO
BAY8B3	1/12/99	Bottom, cell #3	13	ND	0	< 50	NO	NO	NO
BAY8SSW3	1/12/99	South sidewall, cell #3	11	ND	NA	< 50	NO	NO	NO
BAY8ESW	1/12/99	East sidewall, cell #3	11	ND	NA	< 50	NO	NO	NO
BAY8NSW3	1/12/99	North sidewall, cell #3	11	ND	NA	2,100	NO	NO	NO

< 50 Not detected at reporting limit indicated

NA Not analyzed

Table 8 Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons Bay #9 Remedial Excavation Former Chuck Olson Chevrolet Facility Shoreline, Washington

Sample Identification	Sample Date	Sample Location	Sample Depth, feet	Field Screening (Odors/Stain)	PID Reading (ppm)	NWTPH-Dx Diesel and Oil (mg/kg)	Run	TARGET SVOCs Run (Yes/No)	8260B Run
BAY9B	1/13/99	Bottom (west end)	15	ND	NA	<50	NO	NO	NO
BAY9WSW	1/13/99	West sidewall	13	ND	4	< 50	NO	NO	NO
BAY9NSW	1/13/99	North sidewall	12	ND	0	190	NO	NO	NO
BAY9B2	1/13/99	Bottom (east end)	14	ND	NA	< 50	NO	NO	NO
BAY9SSW	1/13/99	South sidewall	13	ND	0	140	NO	NO	NO
BAY9ESW	1/13/99	East sidewall	13	ND	NA	< 50	NO	NO	NO

< 50 Not de

Not detected at reporting limit indicated

NA

Not analyzed

Table 9 Summary of Confirmation Soil Sample Results - Total Petroleum Hydrocarbons Bay #12 Remedial Excavation Former Chuck Olson Chevrolet Facility Shoreline, Washington

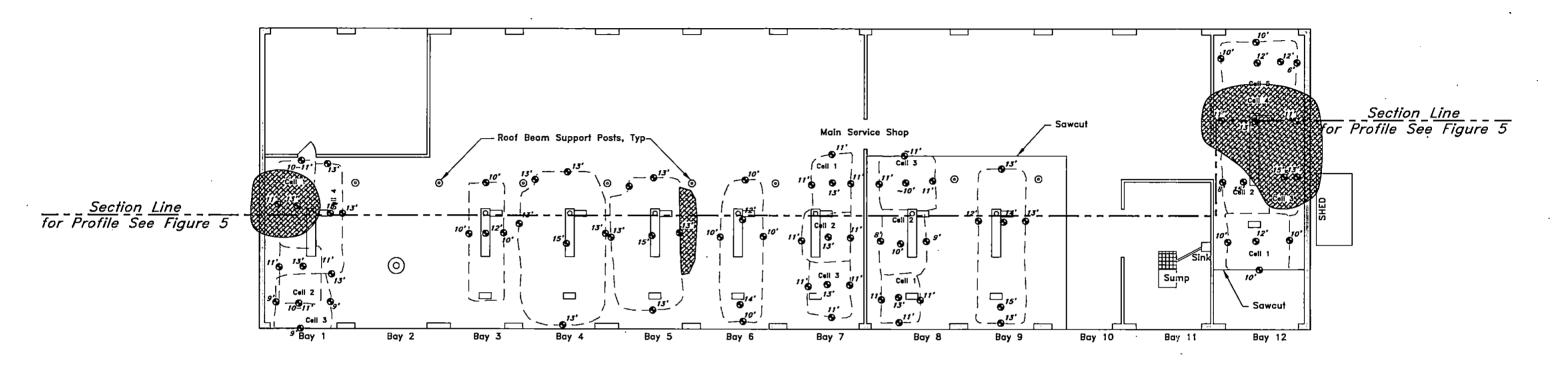
Sample	Sample	Sample Location	Sample Field PID			NWTPH-Dx	EPH/YPH	TARGET SVOCs	VOCs - 8260B
Identification	Date		Depth, feet	(Odors/Stain)	(ppm)	Diesel and Oil (mg/kg)	Run (Yes/No)	Run (Yes/No)	Run (Yes/No)
BAY12B	1/8/99	Bottom, cell #1	12	Strong	93	4,500	NO	NO	NO
BAY12NSW	1/8/99	North sidewall, cell #1	10	Mild	NA	5,100	NO ·	NO	NO
BAY12SSW	1/8/99	South sidewall, cell #1	10	Mild	NA	90	NO	NO	NO
BAY12WSW	1/8/99	West sidewall, cell #1	10	ND	0	110	NO	NO	NO
BAY12B2	1/14/99	Bottom, cell #2	15	Moderate	281	5,200	NO	NO	NO
BAY12NSW2	1/14/99	North sidewall, cell #2	13	Moderate	NA	5,400	NO	NO	NO
BAY12B3	1/15/99	Bottom, cell #3	15	Moderate	NA	17,000	NO	NO	NO
BAY12SSW3	1/15/99	South sidewall, cell #3	13	Moderate	NA	19,000	YES	NO	YES
BAY12B4	1/18/99	Bottom, cell #4	13	Moderate	NA	20,000	NO	NO	NO
BAY12NSW4	1/18/99	North sidewall, cell #4	11	Moderate	NA	27,000	YES	YES	YES
BAY12SSW4	1/18/99	South sidewall, cell #4	11	Moderate	NA	15,000	NO	NO	NO
BAY12B5	1/19/99	Bottom, cell #5, north of pipe	12 [.]	ND	0	<50	NO	NO	NO
BAY12SSW5	1/19/99	South sidewall, cell #5	6	Strong	>600	< 50	NO	NO	YES
BAY12B5S	1/19/99	Bottom, cell #5, south of pipe	12	Strong	>700	< 50	NO	NO	YES
BAY12NSW5	1/19/99	North sidewall, cell #5	10	ND	NA	80	NO	NO	NO
BAY12ESW5	1/19/99	East sidewall, cell #5	10	ND	3	<50	NO	NO	NO

< 50

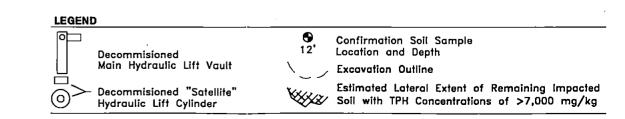
Not detected at reporting limit indicated

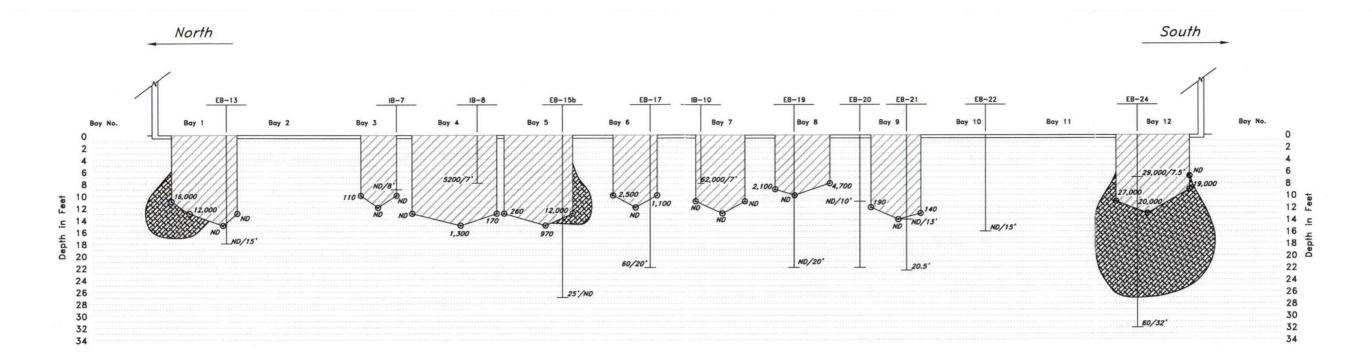
NA

Not analyzed



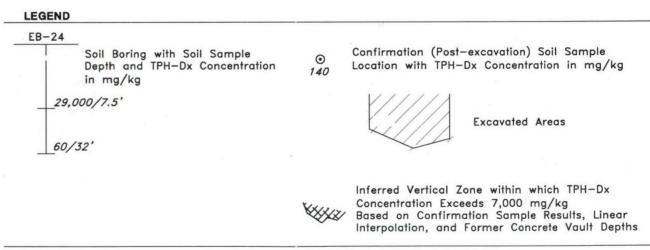
APPROXIMATE SCALE: 1/16" = 1'-0"





North-South Profile
See Figure 4 for Plan View

APPROXIMATE SCALE: 1/16" = 1'-0"



NOTES:

- Where multiple sample locations are present, the sample with the highest TPH concentration is shown.
- 2. ND = Non Detect



Table 10
Summary of Confirmation Soil Sample Results - Volatile Organic Compounds
Former Chuck Olson Chevrolet Facility
Shoreline, Washington

The second secon	Bay #1	Bay #1	Bay #5	Bay #6	Bay #12	Bay #12	Bay #12	Bay #12	Bay #12	CLARC II	Method B	Comments on Source
Sample Identification:	BAY1B	BAY1NSW	BAY5SSW	BAY6NSW	BAY8SSW2	BAY12SSW3	BAY12NSW4	BAY12SSW5	BAY12B5S	Database	Formula Value	
Sample Depth, feet:	13]	13	- 10	· • • • • • • • • • • • • • • • • • • •	13	11	6	12	(2/28/96)	for Soil	
Sample Date:	1/7/99	1/7/99	12/29/98	12/22/98	1/8/99	1/15/99	1/18/99	1/19/99	1/19/99		(mg/kg)	
sec-Butylbenzene	<0.4	< 0.4	< 0.04	< 0.04	<0.4	- 0.6	1.3.	< 0.04	< 0.04	nl	none	ingredient in naptha, asphalt
Ethylbenzene	< 0.4	<0.4	< 0.04	< 0.04	< 0.4	<u></u>	1.4	< 0.04	< 0.04	listed	8,000 (n)	hydrocarbon component counted in eph/vph
Isopropylbenzene	<0.4	<0.4	< 0.04	< 0.04	<0.4	0.6		< 0.04	< 0.04	nl	none	ingredient in motor fuel, naptha, asphalt
p-Isopropyltoluene	<0.4	<0.4	0.06	< 0.04	<0.4	0.8	1.7	< 0.04	0.04	nl	none	?
Naphthalene	<0.4	< 0.4	.52 (lb)	< 0.04	<0.4	2.6	5.2	< 0.04	0.12	listed	3,200 (n)	hydrocarbon component counted in eph/vph
n-Propylbenzene	<0.4	< 0.4	0.04	< 0.04	< 0.4	1.5,	2.4	< 0.04	< 0.04	nl	none	solvent?
Tetrachloroethene	<0.4	< 0.4	0.07	< 0.04	<0.4	4.2	5.1	< 0.04	0.12	listed	19.6 (c)	degreaser, solvent
Toluene	< 0.4	<0.4	< 0.04	< 0.04	<0.4	1.5	2.1	< 0.04	< 0.04	listed	16,000 (n)	hydrocarbon component counted in eph/vph
1,1,1-Trichloroethane	< 0.4	<0.4	< 0.04	< 0.04	<0.4	6	2 158.7	< 0.04	0.06	listed	72,000 (n)	degreaser, solvent
1,2,4-Trimethylbenzene	0.7	< 0.4		< 0.04	<0.4	3 11 11	. 24	< 0.04	0:54	nl	none	hydrocarbon component counted in eph/vph
1,3,5-Trimethylbenzene	<0.4	< 0.4	0.15	< 0.04	<0.4	3.6	6.8	< 0.04	0.17	nl	none	hydrocarbon component counted in eph/vph
1,3-Dichlorobenzene	<0.4	< 0.4	: <0.04	< 0.04	< 0.4	<0.4	<0.4	0.4	< 0.04	nl	none	solvent/fumigant/insecticide
1,4-Dichlorobenzene	<0.4	< 0.4	< 0.04	< 0.04	<0.4	<0.4	<0.4	1.6	0.04	listed	41.7 (c)	solvent/fumigant/insecticide
1,2-Dichlorobenzene	<0.4	<0.4	< 0.04	< 0.04	<0.4	<0.4	<0.4	8.2		listed	7,200 (n)	solvent/fumigant/insecticide
1,2,4-Trichlorobenzene	<0.4	< 0.4	<0.04	< 0.04	<0.4	<0.4	<0.4	0.24	< 0.04	listed	800 (n)	solvent?
o-Xylene	<0.4	<0.4	2.80.0	<0.04	<0.4	3.2	1.7.	< 0.04	0.12	listed	160,000 (n)	hydrocarbon component counted in eph/vph
m,p-Xylene	<0.4	<0.4	32 0.04 G	<0.04	< 0.4	2.4	4.3	< 0.04	0.08	listed	160,000 (n)	hydrocarbon component counted in eph/vph

Results reported only for compounds detected in one or more samples

All results in milligrams/kilogram

(lb) - Analyte also detected in laboratory blank

(n) - Non-carcinogen

(c) - Carcinoger

Shaded results indicate detections above laboratory reporting limit

Table 11
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Bay 1 - Sample BAY1NSW

TPH by EPH/VPH =	13,777
C21-C34 Aliphatics =	9,600
% of C21-C34 Aliphatics =	69.7%
% of non C21-C34 Aliphatics =	30.3%
TPH by TPH-Dx =	16,000
TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	0.86

								,				
1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Resid	ential	Сотп	nercial	Indu	strial	Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics												
EC 5 - 6	· 0									0,00	0.0	0.000
EC >6 - 8	0	-								0.00	0.00	0.000
EC >8-10	8.5									0.00	0.001	0.0001
EC > 10 -12	21						•			0.01	0.0002	0.00001
EC > 12 - 16	130									0.04	0.00002	0.00000
EC > 16 - 21	1000							-		0.21	0.0000002	0.000000
Total aliphatic	1160	0.06		0.24		0.06		0.01				
Aromatics												
EC >8 - 10	3									0.00	0.1	0.005
EC > 10 - 12	0				,					0.00	0.0	0.000
EC > 12 - 16	14					4				0.01	0.03	0.002
EC > 16 - 21	400									0.12	0.061	0.0030
EC >21 - 35	2600									0.62	0.00406	0.0002
Total aromatic	## 301 7	0.03								,		
Benzene	0.21		0.029		6.09E-09		1.52E-09		4.64E-10	0.00	0.3	0.01
c-PAHs	0.06		7.3		4.38E-07		1.10E-07		3.34E-08			
Ethylbenzene	0	0.10		0.00		0.00		0.00				
Toluene	0	0.20		0.00		0.00		0.00		0.00	0.0	0.000
Xylenes	0			0.00		0.00		0.00	ļ <u></u>			
Total aromatic: + B-E-X	3017	0.03		1.26		0.31		0.03				
Total	4177			1.50	4,44E-07	0.37	1.11E-07	0.03	3.38E-08	1.00000		0.023

Table 12
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Bay 5 - Sample BAY5SSW

TPH by EPH/VPH =	20,622
C21-C34 Aliphatics =	17,000
% of C21-C34 Aliphatics =	82.4%
% of non C21-C34 Aliphatics =	17.6%
TPH by TPH-Dx =	12,000
TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	1.72

11	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Resid	ential	Comn	iercial	Indus	trial	Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics							·					
EC 5 - 6	. 0	·			•					0.00	0.0	0,000
EC >6 - 8	3									0.00	0.01	0.000
EC >8 -10	0									0.00	0.000	0.0000
EC > 10 -12	24					,				0.01	0.0003	0.00001
EC > 12 -16	85									0.03	0.00002	0.00000
EC > 16 - 21	790	L .						i -		0.19	0.0000002	0.000000
Total aliphatic	902	0.06		0.19		0.05		0.00				
Aromatics					_						-	
EC >8 - 10	4									0.00	0.2	0.008
EC > 10 - 12	3									0.00	0.0	0.002
EC > 12 - 16	12	,			٠			-	_	0.01	0.03	0.002
EC > 16 - 21	200								-	0.07	0.035	0.0018
EC >21 - 35	2500				٠					0.69	0.00454	0.0002
Total aromatic	2719	0.03										
Benzene	0.2		0.029		5.80E-09	-	1.45E-09		4.42E-10	0.00	0.3	0.02
c-PAHs	0.63		7.3		4.60E-06		1.15E-06		3.50E-07			
Ethylbenzene	. 0	0.10		0.00		0.00		0.00			¢	
Toluene	. 0	0.20		0.00		0.00		0.00		0.00	0.0	0.000
Xylenes	0	2.00		0.00		0.00		0.00		<u> </u>		
Total aromatic: + B-E-X	2720	0.03		1.13		0.28		0.03				
Tôtal	3622			1.32	4.60E-06	0.33	1.15E-06	0.03	3.51E-07	1.00000	rijanili (dr. 14	0.029

Table 13
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Bay 6 - Sample BAY6NSW

TPH by EPH/VPH =	602
C21-C34 Aliphatics =	350
% of C21-C34 Aliphatics =	58.1%
% of non C21-C34 Aliphatics =	41.9%
TPH by TPH-Dx =	2,500
TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	0.24

1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Resid		Comn	nercial	Indu		Mol. Frac.		Conc.@ well
	2011 001101					Comm					23,000, 201	Concing wen
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ .	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics												
EC 5 - 6						_				0.00	0.0	0.000
EC >6 - 8	0	_								0.00	0.00	0.000
EC >8 -10	2.5									0.02	0.006	0,0003
EC > 10 -12	0]							•	0.00	0.0000	0.00000
EC > 12 -16	9.5									0.05	0.00003	0.00000
EC > 16 - 21	130					-				0.46	0.0000005	0.000000
Total aliphatic	142	0.06		0.03		0.01		0.00				
Aromatics												
EC >8 - 10	0		Ì		-					0.00	0.0	0.000
EC > 10 - 12	0				,					0.00	0.0	0.000
EC > 12 - 16	0									0.00	0.00	0.000
EC > 16 - 21	25									0.13	0.065	0.0032
EC >21 - 35	85						<u> </u>			0.34	0.00226	0.0001
Total aromatic	110	0.03										
Benzene	0.2		0.029		5.80E-09		1.45E-09		4.42E-10	0.00	4.4	0.22
c-PAHs		ĺ	7.3		0.00E+00		0.00E+00		0.00E+00	ĺ		
Ethylbenzene	0	0.10		0.00		. 0.00		0.00				
Toluene	0	0.20		0.00		0.00		0.00		0.00	0.0	0.000
Xylenes	0	2.00		0.00		0.00		0.00				
Total aromatic:+B-E-X	110	0.03		0.05		0.01		0.00				
Total		i		0.08	5.80E-09	0.02	1:45E-09	0.00	4.42E-10	1.00000	and the	0.224

Table 14
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Bay 8 - Sample BAY8SSW2

TPH by EPH/VPH =	4,719
C21-C34 Aliphatics =	3,300
% of C21-C34 Aliphatics =	69.9%
% of non C21-C34 Aliphatics =	30.1%
TPH by TPH-Dx =	4,700
TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	1.00

1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Resid			nercial	Indu		Mol. Frac.	1	Conc.@ well
	Son Cone.	KID _	OCFF	Resid	entiai	Comi	ierciai	Indu	striai	Moi. Frac.	Effect. Soi.	Conc.@ wen
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics											-	_
EC 5 - 6	0									0.00	0.0	0.000
EC >6-8	0									0.00	0.00	0.000
EC >8 -10	5.5								-	0.01	0.002	0.0001
EC > 10 -12	0									0.00	0.0000	0.00000
EC > 12 -16	74.0									0.06	0.00004	0.00000
EC > 16 - 21	690		,							0.44	0.0000004	0.000000
Total aliphatic	770 77 0	0.06		0.16		0.04	·	0.00				
Aromatics										i		
EC >8 - 10	0									0.00	0.0	0.000
EC > 10 - 12	0									0.00	0.0	0.000
EC >12 - 16	3									0.00	0.02	0.001
EC > 16 - 21	76									0.07	0.035	0.0018
EC >21 - 35	570									0.41	0.00272	0.0001
Total aromatic	649	0.03										
Benzene	. 0.2		0.029		5.80E-09		1.45E-09		4.42E-10	0.00	0.8	0.04
c-PAHs	0.67		7.3		4.89E-06		1.22E-06		3.73E-07			
Ethylbenzene	0	0.10		0.00		0.00		0.00				
Toluene	0	0.20		0.00		0.00		0.00		0.00	0.0	0.000
Xylenes	. 0	2.00		0.00		0.00		0.00				
Total aromatic: + B-E-X	649	0.03		0.27		0.07		0.01				
Total				0.43	4.90E-06	0:11	1.22E-06	26 ₹ 0.01	3.73E-07	1.00000	ALERUSE DISTRICT	

Table 15
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Bay 12 - Sample BAY12SSW3

TPH by EPH/VPH =	16,063
C21-C34 Aliphatics =	12,000
% of C21-C34 Aliphatics =	74.7%
% of non C21-C34 Aliphatics =	25.3%
TPH by TPH-Dx =	19,000
TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	0.85

1									10	1 44	10	42
	2	3	4	. 5	6	7	8	9	10	11	12	13
·	Soil Conc.	RfD	OCPF	Resid	ential	Comn	nercial	Indu	strial	Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics	<u> </u>											
EC 5 - 6	0									0.00	0.0	0.000
EC >6 - 8	5.5									0.00	0.01	0.001
EC >8-10	160									0.07	0.022	0.0011
EC > 10 -12	100			_						0.03	0.0009	0.00004
EC > 12 -16	100									0.03	0.00002	0.00000
EC > 16 - 21	1300									0.26	0.0000003	0.000000
Total aliphatic	1666	0.06		0.35	_	0.09		0.01		<u> </u>		
Aromatics			<u> </u>							<u> </u>		
EC >8 - 10	87									0.04	2.6	0.129
EC > 10 - 12	. 39									0.02	0.4	0.021
EC > 12 - 16	. 35									0.01	0.07	0.004
EC > 16 - 21	340									0.10	0.050	0.0025
EC >21 - 35	1900									0.43	0.00287	0.0001
Total aromatic	2401	0.03										
Benzene	0.22		0.029		6.38E-09		1.60E-09		4.86E-10	0.00	0.3	0.01
c-PAHs			7.3		0.00E+00		0.00E+00		0.00E+00			
Ethylbenzene	1.6	0.10		0.00		0.00		0.00				
Toluene	2.3	. 0.20		0.00		0.00		0.00		0.00	0.7	0.036
Xylenes	2.3	2.00		0.00		0.00		0.00				
Total aromatic: + B-E-X	2397	0.03		1.00		0.25		0.02				
Tõtal	4067			1.35	6.38E-09	0.34	1.60E-09		4.86E-10	1.00000	idiji etili.	0.208

Table 16
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Bay 12 - Sample BAY12NSW4

TPH by EPH/V	/PH =	15,758
C21-C34 Aliph	atics =	11,000
% of C21-C34		69.8%
% of non C21-	C34 Aliphatics =	30.2%
TPH by TPH-I	Ox =	27,000
TPH (EPH/VP)	H) to TPH (TPH-Dx) Ratio =	0.58

1	2	3	4	5	6	7	8	9	10	11	12	13
-	Soil Conc.	RfD	OCPF	Resid	ential	Comn	nercial	Indu	strial	Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	нQ	Risk	HQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics				_		•						
EC 5 - 6	0									0.00	0.0	0.000
EC >6 - 8	6.0									0.00	0.01	0.001
EC >8-10	230									0.08	0.026	0.0013
EC > 10 -12	200									0.06	0.0014	0.00007
EC > 12 -16	300						* •			0.07	0.00004	0.00000
EC > 16 - 21	1300									0.21	0.0000002	0.000000
Total aliphatic	2036	0.06		0.42		0.11		0.01				
Aromatics												
EC >8 - 10	160						-			0.06	3.8	0.192
EC > 10 - 12	76									0.03	0.6	0.032
EC > 12 - 16	120									0.04	0.21	0.010
EC > 16 - 21	470			•						0.11	0.056	0.0028
EC >21 - 35	1900									0.35	0.00232	0.0001
Total aromatic	2726	0.03										
Benzene	0.21		0.029		6.09E-09		1.52E-09		4.64E-10	0.00	0.2	0.01
c-PAHs	0.63		7.3		4.60E-06	-	1.15E-06		3.50E-07			
Ethylbenzene	2.4	0.10		0.00		0.00		0.00				
Toluene	1.8	0.20		0.00		0.00		0.00		0.00	0.5	0.023
Xylenes	2.1	2.00		0.00		0.00		0.00				-
Total aromatic:+B-E-X	2722	0.03		1.13		0.28		0.03		L		
Total	4762			1.56	4.61E-06	0.39	1.15E-06	0.04	3.51E-07	1.00000		0.273

Table 17
Former Chuck Olson Chevrolet Facility
Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)
Boring EB-15 - Sample EB-15-7.5-9.5

I	TPH by EPH/VPH =	26,532
ı	C21-C34 Aliphatics =	20000
ı	% of C21-C34 Aliphatics =	75.4%
ı	% of non C21-C34 Aliphatics =	24.6%
l		
	TPH by TPH-Dx =	17,090
		•
	TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	1.55

1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RſD	OCPF	Resid	ential	Comn	nercial	Indu	strial	Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	НО	Risk	НQ	Risk	HQ	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics		((1.8 (1.3),12.6)				24.514		- Table	(percent)	(5/.5/	\6/··/
EC 5 - 6	0	ĺ	·							0.00	0.0	0.000
EC >6 - 8	. 0				-					0.00	0.00	
EC >8-10	31		_							0.01	0.003	0.0001
EC > 10 -12	89								-	0.02	0.0005	0.00003
EC > 12 -16	190									0.03	0.00002	0.00000
EC > 16 - 21	1800									0.24	0.0000002	0.000000
	2110	0.06		0.44		0.11		0.01				
Aromatics				_					<u></u>			
EC >8 - 10	23	 								0.01	0.4	0.022
EC >10 - 12	20								÷	0.01	0.1	0,007
EC >12 - 16		-					*			0.01	0.05	0.003
EC >16 - 21	540	.								0.10		0.0026
EC >21 - 35	3800									0.57	0.00377	0.0002
	4422	0.03										
Benzene	0.21		0.029		6.09E-09		1.52E-09		4.64E-10		0.2	0.01
c-PAHs	0.6		7.3		4.38E-06		1.10E-06		3.34E-07			
Ethylbenzene	0			0.00		0.00		0.00		2.22		
Toluene	0 10	9:20		0.00	ļ	0.00		0.00		0.00	0.0	0.000
Xylenes	0.49			0.00	<u> </u>	0.00		0.00				
Total aromatic: + B-E-X				1.84	No social Lagran - 2	0.46		0.04		J. 15. 00000		
Total	6532	1		2.28	4.39E-06	0.57	1.10E-06	0.05	3.34E-07	1.00000		0.044

Table 18

Former Chuck Olson Chevrolet Facility

Calculations Using the Interim TPH Policy (Two Pathways: Human Health and Soil-to-Groundwater)

Boring EB-24 - Sample EB-24-7.5-9.5

TPH by EPH/VPH =	37,040
C21-C34 Aliphatics =	28,000
% of C21-C34 Aliphatics =	75.6%
% of non C21-C34 Aliphatics =	24.4%
TPH by TPH-Dx =	29,290
TPH (EPH/VPH) to TPH (TPH-Dx) Ratio =	1.26

1	2	3	4	5	6	7	8	9	10	11	12	13
	Soil Conc.	RfD	OCPF	Resid	ential	Comn	iercial	Indus	strial	Mol. Frac.	Effect. Sol.	Conc.@ well
Compound	(mg/kg)	(mg/kg*day)	(kg*day/mg)	HQ	Risk	HQ	Risk	но	Risk	(percent)	(mg/l)	(mg/l)
Aliphatics		3 3 4								•	, ,	, ,
EC 5 - 6	3						· · · · · · · · · · · · · · · · · ·			0.00	0.0	0.001
EC >6 - 8	3									0.00	0.00	0.000
EC >8 -10	72		Ì							0.01	0.005	0.0002
EC > 10 -12	130									0.02	0.0006	0.00003
EC > 12 -16	260		1							0.03	0.00002	0.00000
EC > 16 - 21	4400			•						0.43	0.0000004	0.000000
Total aliphatic	<i>≨(-)</i>	0.06		1.01		0.25		0.02				
Aromatics						,						
EC >8 - 10	40									0.01	0.6	0.029
EC > 10 - 12	31									0.01	0.2	0.008
EC > 12 - 16	66								-	0.01	0.07	0.003
EC > 16 - 21	740									0.10	0.053	0.0026
EC >21 - 35	3300								•	0.36	0.00241	0.0001
Total aromatic	4177	0.03										
Benzene	0.21		0.029		6.09E-09		1.52E-09		4.64E-10	0.00	0.1	0.01
c-PAHs	0,6		7.3		4.38E-06		1.10E-06		3.34E-07			
Ethylbenzene	0.78	0.10		0.00		0.00		0.00				
Toluene	2.2	0.20		0.00		0.00		0.00		0.00	0.3	0.016
Xylenes	4.7	2.00		0.00		0.00		0.00				
Total aromatic: + B-E-X	4172	0.03		1.74		0.43		0.04				
Total	9045			2.75	4.39E-06	0.69	1.10E-06	0.06	3.34E-07	1.00000	inggapper	0.067

Table 19 Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation BAY 1 - Sample BAY1NSW

$\frac{\text{TPH by EPH/VPH}}{\text{TPH (ave. } C21-C34 \text{ Alignstics})} = 13,777$		- 1 177								
TPH (exc. C21-C34 Aliphatics) by EPH/VPH = 4,177										
% of TPH by EPH/VPH as non-C21-C34 aliphatics = 30%										
Aliphatic/Aromatic Ratio of '	TPH by EPH/V	/PH (exc. C21 - C	C34 aliphatics) = .28	3						
$\underline{\text{TPH by TPH-Dx}} = 16,000$										
AAAA WY AAAA AAA										
EPH/VPH Fractions	Percent	Calculated								
	of	Soil Conc.	RfD	Residential						
·	TPH		,							
		(mg/kg)	(mg/kg*day)	HQ						
Total aliphatic	2,8	784	0.06	0.16						
Total-aromatic: +B-E-X	72	2,016	0.03	0.84						
TPH (exc. C21-C34 alipha	tics)	2,800		1.00						
Multiplier =	28									
Calculated Max. Allowable The	•	•	aliphatics) =	2,800						
	n-C21-C34 alip	1	•	30%						

Correction Factor for EPH/VPH to TPH-Dx Ratio Conversion = Calculated Maximum Allowable TPH by TPH-Dx =

Table 20

Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation BAY 5 - Sample BAY5SSW

$\frac{\text{TPH by EPH/VPH}}{\text{EPH/VPH}} = 20,62$	22									
TPH (exc. C21-C34 Aliphatics) by EPH/VPH = 3,622										
% of TPH by EPH/VPH as non-C21-C34 aliphatics = 18%										
Aliphatic/Aromatic Ratio of TPH by EPH/VPH (exc. C21 - C34 aliphatics) = .25										
$\underline{\text{TPH by TPH-Dx}} = 12,000$										
EPH/VPH Fractions	Percent	Calculated		·						
	of	Soil Conc.	RfD	Residential						
·	TPH									
		(mg/kg)	(mg/kg*day)	HQ						
Total aliphatic	25	(mg/kg) 688	(mg/kg*day) 0.06							
Total aliphatic Total aromatic: +B-E-X										
The state of the s	25 75	688	0.06	0.14						
Total aromatic:+B-E-X	25 75	688 2,063	0.06	0.14 0.86						
Total aromatic: +B-E-X Calculated Total Allowabl Multiplier =	25 75 IE TPH 27.5	688 2,063 2,750	0.06	0.14 0.86 1.00						
Total aromatic: +B-E-X Calculated Total Allowabl Multiplier = Calculated Max. Allowable T	25 75 le TPH 27.5 PH by EPH/VPI	688 2,063 2,750 H (exc. C21-C34	0.06	0.14 0.86 1.00						
Total aromatic: +B-E-X Calculated Total Allowabl Multiplier = Calculated Max. Allowable T % of TPH by EPH/VPH as no	25 75 le TPH 27.5 PH by EPH/VPH on-C21-C34 alip	688 2,063 2,750 H (exc. C21-C34 hatics =	0.06 0.03 aliphatics) =	0.14 0.86 1.00 2,750 18%						
Total aromatic: +B-E-X Calculated Total Allowabl Multiplier = Calculated Max. Allowable T	25 75 le TPH 27.5 PH by EPH/VPI on-C21-C34 alip PH by EPH/VP	688 2,063 2,750 4 (exc. C21-C34 hatics = H (inc. C21-C34	0.06 0.03 aliphatics) =	0.14 0.86 1.00						

Calculated Maximum Allowable TPH by TPH-Dx = 9,084

Table 21 Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation BAY 6 - Sample BAY6NSW

) by EPH/VPH	= 252		
•			
TPH by EPH/V	/PH (exc. C21 - C	C34 aliphatics) = .56	,
Percent	Calculated		<u>.</u>
of	Soil Conc.	RfD	Residential
TPH			
	(mg/kg)	(mg/kg*day)	HQ
56	1915	0.06	0.40
42	1,436	0.03	0.60
tics)	3,352		1.00
34		,	
'H by EPH/VPH	H (exc. C21-C34 a	aliphatics) =	3,352
n-C21-C34 alip	1	-	42%
	Percent of TPH 56 42 tics) 34	Percent of TPH Calculated Soil Conc. TPH (mg/kg) 56 1915 42 1,436 tics) 3,352 34	Percent Calculated of Soil Conc. RfD (mg/kg) (mg/kg*day)

Correction Factor for EPH/VPH to TPH-Dx Ratio Conversion = Calculated Maximum Allowable TPH by TPH-Dx =

Table 22

Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation BAY 8 - Sample BAY8SSW2

$\frac{\text{TPH by EPH/VPH}}{\text{TPH by EPH/VPH}} = 4,719$				
TPH (exc. C21-C34 Aliphatic	s) by EPH/VPH	= 1,418		
% of TPH by EPH/VPH as no	on-C21-C34 alip	hatics $= 30\%$		
Aliphatic/Aromatic Ratio of	TPH by EPH/\	/PH (exc. C21 -	<u>C34 aliphatics</u>) = .54	1
_				
$\underline{\text{TPH by TPH-Dx}} = 4,700$				
			· ·	
EPH/VPH Fractions	Percent	Calculated		•
	of	Soil Conc.	RfD	Residential
	TPH			
		(mg/kg)	(mg/kg*day)	HQ
Total aliphatic	54	1,782	0.06	0.37
Total aromatic: + B-E-X	46	1,518	0.03	0.63
TPH (exc. C21-C34 alipha	itics)	3,300		1.00
Multiplier =	. 33			
Calculated Max. Allowable T	PH by EPH/VPI	H (exc. C21-C34	aliphatics) =	3,300
% of TPH by EPH/VPH as no	on-C21-C34 alip	hatics =		30%

Calculated Max. Allowable TPH by EPH/VPH (inc. C21-C34 aliphatics) =

Correction Factor for EPH/VPH to TPH-Dx Ratio Conversion =

Calculated Maximum Allowable TPH by TPH-Dx =

Table 23 Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation BAY 12 - Sample BAY12SSW3

$\frac{\text{TPH by EPH/VPH}}{\text{TPH by EPH/VPH}} = 16,063$

TPH (exc. C21-C34 Aliphatics) by EPH/VPH = 4,067 % of TPH by EPH/VPH as non-C21-C34 aliphatics = 25%

Aliphatic/Aromatic Ratio of TPH by EPH/VPH (exc. C21 - C34 aliphatics) = .41

 $\underline{TPH \ by \ TPH-Dx} = 19,000$

EPH/VPH Fractions	Percent of TPH	Calculated Soil Conc.	RfD	Residential
	_	(mg/kg)	(mg/kg*day)	HQ
Total aliphatic	41	1238	0.06	0.26
Total aromatic: + B-E-X	59	1,782	0.03	0.74
TPH (exc. C21-C34 alipha	tics)	3,020		1.00
Multiplier =	30	· · · · · · · · · · · · · · · · · · ·		
Calculated Max. Allowable Tl	PH by EPH/VPI	H (exc. C21-C34	aliphatics) =	3,020
% of TPH by EPH/VPH as no	n-C21-C34 alip	hatics =		25%
Calculated Max. Allowable T	PH by EPH/VP	H (inc. C21-C34	1 aliphatics) = :	12,080
Correction Factor for EPH/VI	PH to TPH-Dx I	Ratio Conversion	1 =	0.85
Calculated Maximum Alloy	vable TPH by	TPH-Dx =		14,212

Table 24 Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation BAY 12 - Sample BAY12NSW4

$\underline{\text{TPH by EPH/VPH}} = 15,758$
TPH (exc. C21-C34 Aliphatics) by EPH/VPH = 4,762
% of TPH by EPH/VPH as non-C21-C34 aliphatics = 30%
Aliphatic/Aromatic Ratio of TPH by EPH/VPH (exc. C21 - C34 aliphatics) = .43
$\underline{\text{TPH by TPH-Dx}} = 27,000$

EPH/VPH Fractions	Percent	Calculated		
	of	Soil Conc.	RfD	Residential
	TPH			
_		(mg/kg)	(mg/kg*day)	HQ
Total aliphatic	43	1312	0.06	0.27
Total aromatic: + B-E-X	57	1,739	0.03	0.72
TPH (exc. C21-C34 alipha	tics)	3,050		1.00
Multiplier =	31		· .	
Calculated Max. Allowable T	PH by EPH/VPI	H (exc. C21-C34	l aliphatics) =	3,050
% of TPH by EPH/VPH as no	on-C21-C34 alip	hatics =		30%
Calculated Max. Allowable T	PH by EPH/VP	H (inc. C21-C34	4°aliphatics) =::::;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	. 10,167
Correction Factor for EPH/V	PH to TPH-Dx I	Ratio Conversion	n =	0.58
Calculated Maximum Allo	vable TPH by	TPH-Dx =		17,529

Table 25 Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation Boring EB-15 - Sample EB-15-7.5-9.5

$\frac{\text{TPH by EPH/VPH}}{\text{TPH by EPH/VPH}} = 26,53$	2			
TPH (exc. C21-C34 Aliphatic	s) by EPH/VPH	= 6,532		
% of TPH by EPH/VPH as no	on-C21-C34 alip	hatics $= 25\%$		
Aliphatic/Aromatic Ratio of	TPH by EPH/V	/PH (exc. C21 -	C34 aliphatics) = .32	2
$\frac{\text{TPH by TPH-Dx}}{\text{TPH by TPH-Dx}} = 17,090$				
EPH/VPH Fractions	Percent	Calculated		
	of	Soil Conc.	RfD	Residential
	TPH			
	j	(mg/kg)	(mg/kg*day)	HQ
Total aliphatic	32	912	0.06	0.19
Total aromatic: + B-E-X	68	1,938	0.03	0.81
TPH (exc. C21-C34 alipha	tics)	2,850	·	1.00
Multiplier =	28.5			
Calculated Max. Allowable Tl	PH by EPH/VPH	H (exc. C21-C34	aliphatics) =	2,850
% of TPH by EPH/VPH as no	_	•	•	25%
Calculated Max. Allowable T	PH by EPH/VP	H (inc. C21_C34	alinhatics) =	11,400

Correction Factor for EPH/VPH to TPH-Dx Ratio Conversion =

Calculated Maximum Allowable TPH by TPH-Dx =

Table 26 Former Chuck Olson Chevrolet Facility Residential Scenario Maximum TPH Calculation Boring EB-24 - Sample EB-24-7.5-9.5

TPH by	EPH/VPH	= 3	37,039
--------	---------	-----	--------

TPH (exc. C21-C34 Aliphatics) by EPH/VPH = 9,039

% of TPH by EPH/VPH as non-C21-C34 aliphatics = 25%

Aliphatic/Aromatic Ratio of TPH by EPH/VPH (exc. C21 - C34 aliphatics) = .24

 $\underline{\text{TPH by TPH-Dx}} = 28,000$

EPH/VPH Fractions	Percent of TPH	Calculated Soil Conc.	RfD	Residential
		(mg/kg)	(mg/kg*day)	HQ
Total aliphatic	54	1782	0.06	0.37
Total aromatic: + B-E-X	46	1,518	0.03	0.63
TPH (exc. C21-C34 alipha	tics)	3,300		1.00
Multiplier =	33			
Calculated Max. Allowable Tl	PH by EPH/VPI	H (exc. C21-C34	aliphatics) =	3,300
% of TPH by EPH/VPH as no	on-C21-C34 alip	hatics =		24%
Calculated Max. Allowable T	PH by EPH/VP	H (inc. C21-C34	f aliphatics) = 🐃 📉	13,750
Correction Factor for EPH/VI	PH to TPH-Dx I	Ratio Conversion	ı =	1.26
Calculated Maximum Alloy	vable TPH by	TPH-Dx =		10,913

Table 27
Former Chuck Olson Chevrolet Facility
Summary of Hazard Quotients and Calculated Maximum Allowable TPH Soil Concentrations
(Human Health Pathway)

Soil Boring and Post-Excavation Confirmation Samples

Sample #	Bay #	Total TPH by Method EPH/VPH (exc. C21-C34 aliphatics)	Residential Hazard Quotient	Total TPH by Method NWTPH-Dx	Calculated Maximum Allowable TPH by Method EPH/VPH (inc. C21-C34 aliphatics)	Calculated Maximum Allowable TPH by Method NWTPH-Dx
BAY1NSW	Bay #1	4,177	1.50	16,000	9,333	10,853
EB-15-7.5-9.5	Bay #5	6,532	2.28	17,090	11,400	7,355
BAY5SSW	Bay #5	3,622	1.32	12,000	15,625	9,084
BAY6NSW	Bay #6	252	0.08	2,500	7,980	33,250*
BAY8SSW2	Bay #8	1,418	0.43	4,700	11,000	11,000
EB-24-7.5-9.5	Bay #12	9,045	2.75	28,000	13,750	10,913
BAY12SSW3	Bay #12	4,067	1.35	19,000	12,080	14,212
BAY12NSW4	Bay #12	4,762	1.56	27,000	10,167	17,529
All TPH concentrations in milligrams/kilogram (mg/kg).			Maximum	15,625	33,250*	
<i>EB-15-7.5-9.5</i> - Area	EB-15-7.5-9.5 - Areas of exploration borings were subsequently excavated.			Minimum	7,980	7,355
* Calculated result of 33,250 mg/kg not considered valid and is not			Average	11,417	10,118	

^{*} Calculated result of 33,250 mg/kg not considered valid and is not used in calculation of average.

APPENDIX A

LABORATORY-REPORTED ANALYTICAL TESTING RESULTS

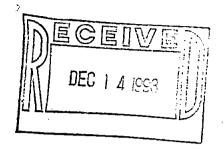
DISPOSAL PERMITTING SAMPLES - ANALYTICAL RESULTS

DISPOSAL PARMITTING

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

December 11, 1998

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on December 4, 1998 from your BY 97011B project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES1211R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 12/11/98 Date Received: 12/04/98 Project: BY 97011B

Date Extracted: 12/09/98 Date Analyzed: 12/10/98

RESULTS FROM THE ANALYSIS OF THE PRODUCT SAMPLE FOR PCBs AS AROCHLORS BY METHOD 8082 (GC/ECD)

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>PCB</u>	<u>Surrogate</u> (% Recovery)
Hydraulic Vault Fluid 812030-01	<25	. <mark>70</mark> d
Method Blank	<5	84

d - The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Hydraulic Vault Fluid Sample	Client:	AESI
Date Received:	12/04/98	Project:	BY97011B
Date Extracted:	12/09/98	Lab ID:	812030-01 P
Date Analyzed:	12/10/98	Data File:	120914.D
Matrix:	Product	Instrument:	GCMS1
Units:	ug/g (ppm)	Operator:	YA

		rower	Opper
Surrogates:	% Recovery	Limit	Limit
Dibromofluoromethane	93	55	121
1,2-Dichloroethane-d4	72	61	120
Toluene-d8	86	58	121
4-Bromofluorobenzene	116	57	. 123
	Concentration		

	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	<100	Tetrachloroethene	<100
Chloromethane	<100	Dibromochloromethane	<100
Vinyl chloride	<100	1,2-Dibromoethane (EDB)	<100
Bromomethane	<100	Chlorobenzene	<100
Chloroethane	<100	Ethylbenzene	<100
Trichlorofluoromethane	<100	1,1,1,2-Tetrachloroethane	<100
Acetone	<1000	m,p-Xylene	<100
1,1-Dichloroethene	<100	o-Xylene	<100
Methylene chloride	<500	Styrene	<100
trans-1,2-Dichloroethene	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
2,2-Dichloropropane	<100	n-Propylbenzene	<100
cis-1,2-Dichloroethene	<100	Bromobenzene	<100
Chloroform	<100	1,3,5-Trimethylbenzene	<100
2-Butanone (MEK)	<1000	1,1,2,2-Tetrachloroethane	<100
1,2-Dichloroethane (EDC)	<100	1,2,3-Trichloropropane	<100
1,1,1-Trichloroethane	<100	2-Chlorotoluene	<100
1,1-Dichloropropene	<100	4-Chlorotoluene	<100
Carbon Tetrachloride	<100	tert-Butylbenzene	<100
Benzene	<100	1,2,4-Trimethylbenzene	<100
Trichloroethene	<100	sec-Butylbenzene	<100
1,2-Dichloropropane	<100	p-Isopropyltoluene	<100
Bromodichloromethane	<100	1,3-Dichlorobenzene	<100
Dibromomethane	<100	1,4-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1000	1,2-Dichlorobenzene	<100
cis-1,3-Dichloropropene	<100	1,2-Dibromo-3-chloropropane	<100
Toluene	<100	1,2,4-Trichlorobenzene	<100
trans-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
1,1,2-Trichloroethane	<100 .	Naphthalene	<100
2-Hexanone	<1000	1,2,3-Trichlorobenzene	<100
1,3-Dichloropropane	<100		

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method $8260\mathrm{B}$

Client Sample ID:	Method Blank	Client:	AESI
Date Received:	12/04/98	Project:	BY97011B
Date Extracted:	12/09/98	Lab ID:	O8-703 mb2
Date Analyzed:	12/10/98	Data File:	120913.D
Matrix:	Product	Instrument:	GCMS1
Units:	ug/g (ppm)	Operator:	YA

		TOMET	Obber
Surrogates:	% Recovery	Limit	Limit
Dibromofluoromethane	96	55	121
1,2-Dichloroethane-d4	81	61	120
Toluene-d8	87	58	121
4-Bromofluorobenzene	113	57	123

4-Dromondonenzene	110	01 120	
	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	<100	Tetrachloroethene	<100
Chloromethane	<100	Dibromochloromethane	<100
Vinyl chloride	<100	1,2-Dibromoethane (EDB)	<100
Bromomethane	<100	Chlorobenzene	<100
Chloroethane	<100	Ethylbenzene	<100
Trichlorofluoromethane	<100	1,1,1,2-Tetrachloroethane	<100
Acetone	<1000	m,p-Xylene : .	<100
1,1-Dichloroethene	<100	o-Xylene	<100
Methylene chloride	<500	Styrene	<100
trans-1,2-Dichloroethene	<100	Isopropylbenzene	<100
1,1-Dichloroethane	<100	Bromoform	<100
2,2-Dichloropropane	<100	n-Propylbenzene	<100
cis-1,2-Dichloroethene	<100	Bromobenzene	<100
Chloroform	<100	1,3,5-Trimethylbenzene	<100
2-Butanone (MEK)	<1000	1,1,2,2-Tetrachloroethane	<100
1,2-Dichloroethane (EDC)	<100	1,2,3-Trichloropropane	<100
1,1,1-Trichloroethane	<100	2-Chlorotoluene	<100
1,1-Dichloropropene	<100	4-Chlorotoluene	<100
Carbon Tetrachloride	<100	tert-Butylbenzene	<100
Benzene	<100	1,2,4-Trimethylbenzene	<100
Trichloroethene	<100	sec-Butylbenzene	<100
1,2-Dichloropropane	<100	p-Isopropyltoluene	<100
Bromodichloromethane	<100	1,3-Dichlorobenzene	<100
Dibromomethane	<100	1,4-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1000	1,2-Dichlorobenzene	<100
cis-1,3-Dichloropropene	<100	1,2-Dibromo-3-chloropropane	<100
Toluene	<100	1,2,4-Trichlorobenzene	<100
trans-1,3-Dichloropropene	<100	Hexachlorobutadiene	<100
1,1,2-Trichloroethane	<100	Naphthalene	<100
2-Hexanone	<1000	1,2,3-Trichlorobenzene	<100
1,3-Dichloropropane	<100	;	

ENVIRONMENTAL CHEMISTS

Date of Report: 12/11/98 Date Received: 12/04/98 Project: BY 97011B

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCHLOR 1016/1260 BY GC/ECD

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Arochlor 1016	μg/g (ppm)	50	104	106	65-161	2
Arochlor 1260	μg/g (ppm)	50	100	102	65-161	2

ENVIRONMENTAL CHEMISTS

Date of Report: 12/11/98 Date Received: 12/04/98 Project: BY 97011B

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF PRODUCT SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 810133-01 (Duplicate)

	Reporting	Sample	Duplicate		Acceptance
Analyte	Units	Result	Result	RPD	Criteria
1,1-Dichloroethene	μg/g (ppm)	<100	<100	nm	0-20
Benzene	μg/g (ppm)	4,600	4,300	7	0-20
Trichloroethene	μg/g (ppm)	<100	<100	nm	0-20
Toluene	μg/g (ppm)	47,000	45,000	4	0-20
Chlorobenzene	μg/g (ppm)	<100	<100	nm	0-20

Laboratory Code: 810133-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD
1,1-Dichloroethene	μg/g (ppm)	5,000	<100	87	86	65-135	1
Benzene	μg/g (ppm)	5,000	4,600	97	88	65-135	9 -
Trichloroethene	μg/g (ppm)	5,000	<100	92	90	65-135	2
Toluene	μg/g (ppm)	5,000	47,000	ai	ai	65-135	ai
Chlorobenzene	μg/g (ppm)	5,000	<100	93	91	65-135	2

Laboratory Code: Laboratory Control Sample

	Reporting	\mathbf{Spike}	% Recovery	% Recovery	Acceptance	
Analyte	Units	Level	LCS	LCSD	Criteria	RPD
1,1-Dichloroethene	μg/g (ppm)	5,000	110	99	65-135	10
Benzene	μg/g (ppm)	5,000	102	99	65-135	2
Trichloroethene	μg/g (ppm)	5,000	99	99	65-135	1
.Toluene	μg/g (ppm)	5,000	71	84	65-135 ·	17
Chlorobenzene	μg/g (ppm)	5,000	95	100	65-135	5

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

ai - The amount spiked was insufficient to give meaningful recovery data.

@ 17037 Wedla AV. 812030

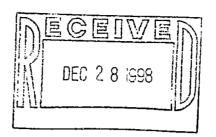
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SPURPILE SAMPLES FOR DISPOSAL PRINTING

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

December 23, 1998

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on December 17, 1998 from your Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES1223R.DOC

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: STOCK-1 Client: Associated Earth Sciences Project: Chuck Olson Date Received: 12/17/98 12/22/98 Lab ID: 812107-01 1/10 Date Extracted: 122215.D Data File: 12/22/98 Date Analyzed: Instrument: GCMS1 Soil Matrix: Units: ug/g (ppm) Operator: YA

		Lower	Opper
Surrogates:	% Recovery	Limit	Limit
Dibromofluoromethane	78	54·	121
1,2-Dichloroethane-d4	139 vo	61	120
Toluene-d8	79	58	121
4-Bromofluorobenzene	· 75	56	124

Concentration

Compounds: ug/g (ppm)

Tetrachloroethene <0.4

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

STOCK-2		Client:	Associated Earth Sciences
12/17/98		Project:	Chuck Olson
12/22/98		Lab ID:	812107-02 1/10
12/22/98		Data File:	122216.D
Soil		Instrument:	GCMS1
ug/g (ppm)		Operator:	YA
		Lower	Upper
	% Recovery	Limit	${f Limit}$
nane	74	54	121
e-d4	63	61	120
	74	58	121
	12/17/98 12/22/98 12/22/98 Soil	12/17/98 12/22/98 12/22/98 Soil ug/g (ppm) % Recovery hane 74 2-d4 63	12/17/98 Project: 12/22/98 Lab ID: 12/22/98 Data File: Soil Instrument: ug/g (ppm) Operator: Lower Kecovery Limit hane 74 54 63 61

76

< 0.4

4-Bromofluorobenzene Concentration Compounds: ug/g (ppm)

Tetrachloroethene

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

56

124

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: Method Blank
Date Received: 12/17/98
Date Extracted: 12/22/98
Date Analyzed: 12/22/98
Matrix: Soil
Units: ug/g (ppm)

Client: Associated Earth Sciences
Project: Chuck Olson
Lab ID: mb3 08-716
Data File: 122214.D
Instrument: GCMS1
Operator: YA

		Lower	Upper
Surrogates:	% Recovery	${f Limit}$	Limit
Dibromofluoromethane	86	54	121
1,2-Dichloroethane-d4	77	61	120
Toluene-d8	75	58	121
4-Bromofluorobenzene	68	56	124

Concentration ug/g (ppm)

Compounds:
Tetrachloroethene

< 0.04

ENVIRONMENTAL CHEMISTS

Date of Report: 12/23/98 Date Received: 12/17/98 Project: Chuck Olson

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

Laboratory Code: 812017-08 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units_	Result	Result	Difference	Criteria
1,1-Dichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Benzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Trichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Toluene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Chlorobenzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20

Laboratory Code: 812017-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	Acceptance Criteria
1,1-Dichloroethene	μg/g (ppm)	2	< 0.04	73	35-120
Benzene	μg/g (ppm)	2	< 0.04	58	45-116
Trichloroethene	μg/g (ppm)	2	< 0.04	. 58	39-114
Toluene	μg/g (ppm)	2	< 0.04	78	40-113
Chlorobenzene	μg/g (ppm)	2	< 0.04	79	46-114

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	μg/g (ppm)	2	119	116	54-133	. 2
Benzene	μg/g (ppm)	··· 2	. 77	75	61-126	. 3
Trichloroethene	μg/g (ppm)	2	78	75	57 - 122	3
Toluene	μg/g (ppm)	2	89	88	60-118	2
Chlorobenzene	μg/g (ppm)	2	83	83	67-119	20

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

(206) 285-8282

CONTAMINATED STOCKPICE FROM

FRIEDMAN & BRUYA, INC. EB- SERIES BRINGS 3012 16th Avenue West Seattle, WA 98119-2029

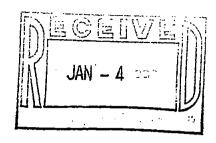
SAMPLE CHAIN OF CUSTODY

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City, Sale, Zip. Sandle of the Phone of Tob 9810 FAX # 7810 PROJECT NAME PURCHASE ORDER # SAMPLERS (signature) SAMPLERS (signature) While I for a for	Address 176		4416		Contact	CMP GOSPAUL	<u> </u>
Phone # 73 - 7310 FAX # 780 - 94/3 E PROJECT NAME PROJECT LOCATION SAMPLE DISPOSAL INFORMATION NOTICE 12/17 12:00 1	City, State, Zin 84	PROME TS					·
STEENO. PROJECT NAME PURCHASE ORDER # CANCIL OLSON SAMPLERS (signature) PROJECT LOCATION PROJECT LOCATION SHORELING WA REMARKS SAMPLE DISPOSAL INFORMATION Dispose after 30 days Return Sample & Sample # Sa	Phone # $730 - 6$	310	EAY#	7 80	- G4/20	D-4: 12 /	(24)
SAMPLERS GIRNAULE SAMPLERS GIRNAULE White V for st REMARKS Note lessists BY 12/23, 12:00 PM Dispose after 30 days Returns Sample # Sampled Sample Jars Sample # Returns Returns Sample # Returns Return			rnn	700	<u> </u>	DateDate	798
SAMPLES (Ignature) PROJECT LOCATION PROJECT LOCATION SAMPLE DISPOSAL INFORMATION Dispose after 30 days Return Samples Call for Instructions Requested STOCK - 1 12/17 10:02 501C 1 0/ 8260B # STOCK - 2 12/17 10:02 501C 1 0/ 8260B # SIGNATURE PRINT NAME COMPANY Date Time Relinguished by: Why An V Goodhi A25I 13/1/5: 11/6 Resigned by: Resigned by	SITE NO.		PROJ	ECT NAME	· · · · · · · · · · · · · · · · · · ·	PURCHASE ORD	DER#
REMARKS REMARKS NEED LESSIES BY 12/23, 12:00 PM. Dispose after 30 days Return Samples Call for Instructions Sample # Sampled Sample Jars Sample # Sampled Sample Jars Sample # B260B ** STOCK - 1 12/17 10:00 SOIL 1 0/ 8260B ** STOCK - 2 12/17 10:00 SOIL 1 0/ 8260B ** STOCK - 2 12/17 10:00 SOIL 1 0/ 8260B ** SIGNATURE Relinguished by: Multiplicated by: Multiplicat	SAMPLEDO ()		WILL OUS	N			
REMARKS NEED RESIDENTS BY 12/23, 12:00 PM. Dispose after 30 days Return Samples Sample # Sampled Sample Jars Sound I Plan Bridge Requested STOCK - 1 19/17 10:02 SOIL I PRINT NAME STOCK - 2 12/17 10:02 SOIL I PRINT NAME SIGNATURE PRINT NAME PRINT NAME COMPANY Date Time Relinquished by: Well and Tarricical Chair proa 1 12/17 11:45 Received by: Keering b					·	PROJECT LOCA	TION
SAMPLE DISPOSAL INFORMATION NEED RESOLUTES BY 12/23, 12:00 PM. Disposa after 30 days Return Samples Sample # Sampled Sample Jars Sample # Requested STOCK - 1 12/17 10:02 50K 1 0/ 8260B ** STOCK - 2 12/17 10:02 50K 1 0/ 8260B ** STOCK - 2 12/17 10:02 50K 1 0/ 8260B ** STOCK - 2 12/17 10:02 50K 1 0/ 8260B ** STOCK - 2 12/17 10:02 50K 1 0/ 8260B ** SIGNATURE PRINT NAME COMPANY Date Time Relincipled by: Which Works Wooden Abstract Relincipled by: April 1:16 Reserved by: Rese		£				MORELINE WA	; [
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EXCAVATION CONFIRMATION SAMPLES HYDROCARBONS AND VOC ANALYTICAL RESULTS

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

December 30, 1998

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on December 22, 1998 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES1230R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 12/30/98 Date Received: 12/22/98

Project: Chuck Olson, BV97011C

Date Extracted: 12/28/98 Date Analyzed: 12/29/98

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	Surrogate (% Recovery)
BAY6NSW 812133-01	2,500	96
BAY6SSW 812133-02	1,100	94
BAY6ESW 812133-03	<50	90
BAY6B 812133-04	<50	94
BAY6WSW 812133-05	2,100	91
Method Blank	<50	95

ENVIRONMENTAL CHEMISTS

Date of Report: 12/30/98 Date Received: 12/22/98

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 812120-03 (Duplicate)

			•	Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result _	Difference	Criteria
Diesel Extended	μg/g (ppm)	<50	<50	nm	0-20

Laboratory Code: 812120-03 (Matrix Spike)

•		-					Relative
	Reporting	Spike	Sample	% Recovery	% Recovery	Acceptance	Percent
Analyte	Units	Level	Result	MS	MSD	Criteria	Difference
Diesel Extended	μg/g (ppm)	500	< 50	138	131	41-170	5

Laboratory Code: Laboratory Control Sample

	Reporting	Spike	% Recovery	Acceptance
Analyte	Units	Level	LCS	<u>Criteria</u>
Diesel Extended	μg/g (ppm)	500	116	59-138

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Scattle, WA 98119-2029 (206) 285-8282

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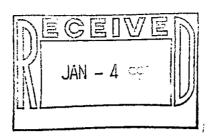
12/27/98 12/27/98

SAMPLE CHAIN OF CUSTODY

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

December 30, 1998

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on December 23, 1998 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. --- --

Charlene Jensen

Chemist

Enclosures AES1230R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 12/30/98 Date Received: 12/23/98

Project: Chuck Olson, BV97011C

Date Extracted: 12/28/98 Date Analyzed: 12/29/98

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
BAY6B2 812137-01	150	96
Method Blank	<50	95

ENVIRONMENTAL CHEMISTS

Date of Report: 12/30/98 Date Received: 12/23/98

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 812120-03 (Duplicate)

-			Relative			
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria	
Diesel Extended	μg/g (ppm)	<50	<50	nm	0-20	

Laboratory Code: 812120-03 (Matrix Spike)

<u> </u>	·	- K		•			Relative
Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Percent Difference
rillary te	OHIU5_	130701	1000 010	21220			
Diesel Extended	μg/g (ppm)	500	< 50	138	131	41-170	5

Laboratory Code: Laboratory Control Sample

,	Reporting	Spike	% Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	μg/g (ppm)	500	116	59-138	

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

#812137

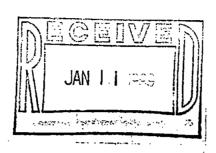
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06/09/97

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FORMS/COC					•	

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 7, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on December 30, 1998 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. --- --

Charlene Jensen

Chemist

Enclosures AES0107R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/07/99 Date Received: 12/30/98

Project: Chuck Olson, BV97011C

Date Extracted: 12/31/98

Date Analyzed: 12/31/98 & 01/04/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	Surrogate (% Recovery)	
BAY5NSWF 812158-01	260	114	
BAY5NSW 812158-02	70	113	
BAY5WSW 812158-08	<50	116	
BAY5B 812153-04	970	121	
BAY5ESW 812153-05	<50	118	
BAY5SSW 812153-06	6,800	123	
Method Blank	<50	110	
ا ک	UBSEQUENTLY DICUTED - SEE	1/29/99 LABORATOL	/ DATA
	DIUT	1/29/99 LABORATOLY RT FOR MANYSIS DI LO SANICE - WYB - 4/2	26/49

ENVIRONMENTAL CHEMISTS

Date of Report: 01/07/99
Date Received: 12/30/98

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 812153-04 (Duplicate)

				Relative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	970	920	5	0-20

Laboratory Code: 812153-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	970	ai	ai	41-170	ai

Laboratory Code: Laboratory Control Sample

	Reporting	Spike	% Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	99	59-138

ai- The amount spiked was insufficient to give meaningful recovery and RPD data.

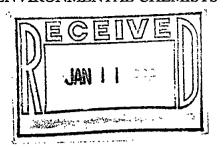
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5:15 pm

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 8, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 4, 1999 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0108R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/08/99 Date Received: 01/04/99

Project: Chuck Olson, BV97011C

Date Extracted: 01/05/99
Date Analyzed: 01/05/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds Results Reported on a Dry Weight Basis

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY7B 901005-01	<50	104
BAY7NSW 901005-02	<50	102
BAY7SSW 901005-03	<50	103
BAY7ESW 901005-04	<50	101
Method Blank	<50	102

ENVIRONMENTAL CHEMISTS

Date of Report: 01/08/99 Date Received: 01/04/99

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 812153-04 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
Diesel Extended	μg/g (ppm)	970	920	5	0-20

Laboratory Code: 812153-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	970	ai	ai	41-170	ai

Laboratory Code: Laboratory Control Sample

	Reporting	Spike	% Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	μg/g (ppm)	500	99	59-138	

ai- The amount spiked was insufficient to give meaningful recovery and RPD data.

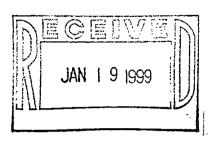
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 13, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 5, 1999 from your BV97011C Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. --- --

Charlene Jensen

Chemist

Enclosures AES0113R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/13/99 Date Received: 01/05/99

Project: BV97011C Chuck Olson

Date Extracted: 01/07/99 Date Analyzed: 01/08/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID	<u>Diesel Extended</u>	Surrogate
Laboratory ID	.**	(% Recovery)
BAY4WSW 901011-01	<50	104
BAY4NSW 901011-02	<50	107
BAY4NSWF 901011-03	<50	99
BAY4SSW 901011-04	170	101
BAY4ESW 901011-05	<50	110
BAY4B 901011-06	1,300	104
BAY7NSW2	<50	110
BAY7SSW2 901011-08	<50	105
BAY7B2 901011-09	<50	112
Method Blank	<50	109

ENVIRONMENTAL CHEMISTS

Date of Report: 01/13/99 Date Received: 01/05/99

Project: BV97011C Chuck Olson

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901011-04 (Duplicate)

				Relative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	170	380	76 vo	0-20

Laboratory Code: 901011-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	170	114	113	41-170	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria	
Diesel Extended	μg/g (ppm)	500	96	59-138	•

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

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

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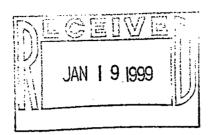
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 13, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr Goodhue:

Included are the results from the testing of material submitted on January 6, 1999 from your BV97011C Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. ----

Charlene Jensen

Mene

Chemist

Enclosures AES0113R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/13/99 Date Received: 01/06/99

Project: BV97011C Chuck Olson

Date Extracted: 01/07/99 Date Analyzed: 01/07/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
BAY7B3 901016-01	<50	106
BAY7NSW3 901016-02	<50	106
BAY7SSW3 901016-03	<50	108
BAY7WSW 901016-04	<50	109
Method Blank	<50	108

ENVIRONMENTAL CHEMISTS

Date of Report: 01/13/99 Date Received: 01/06/99

Project: BV97011C Chuck Olson

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901010-04 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	<u>Result</u>	Result	Difference	<u>Criteria</u>
Diesel Extended	μg/g (ppm)	<50	<50	nm	0-20

Laboratory Code: 901010-04 (Matrix Spike)

Analyte	Reporting	Spike	Sample	% Recovery	Acceptance
	Units	Level	Result	_MS	Criteria
Diesel Extended	μg/g (ppm)	500	<50	127	41-170

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	101	59-138

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

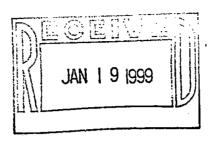
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 13, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr Goodhue:

Included are the results from the testing of material submitted on January 6, 1999 from your BV97011C Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0113R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/13/99 Date Received: 01/06/99

Project: BV970111C Chuck Olson

Date Extracted: 01/07/99 Date Analyzed: 01/07/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY3B 901015-01	<50	107
BAY3NSW 901015-02	110	110
BAY3ESW 901015-03	<50	108
BAY3SSW 901015-04	<50	97
Method Blank	<50	108

ENVIRONMENTAL CHEMISTS

Date of Report: 01/13/99 Date Received: 01/06/99

Project: BV970111C Chuck Olson

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901010-04 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
Diesel Extended	μg/g (ppm)	<50	<50	$\mathbf{n}\mathbf{\dot{m}}$	0-20

Laboratory Code: 901010-04 (Matrix Spike)

Analyte	Reporting	Spike	Sample	% Recovery	Acceptance
	Units	Level	Result	MS	Criteria
Diesel Extended	μg/g (ppm)	500	<50	127	41-170

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	101	59-138

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

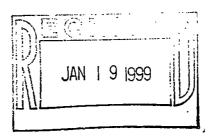
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CJ 1.6.99 EO,

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 15, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 7, 1999 from your Chuck Olson Site #BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0115R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/07/99

Project: Chuck Olson Site #BV97011C

Date Extracted: 01/12/99

Date Analyzed: 01/13/99 & 01/14/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	Surrogate (% Recovery)
BAY1B 901023-01	12,000	85 d
BAY1NSW 901023-02	16,000	127 d
BAY1SSW 901023-03	18,000	110 d
BAY1ESW 901023-04	4,400	114
Method Blank	<50	115

d - The sample was diluted due to the presence of high levels of material. Surrogate recoveries may not be meaningful.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/07/99

Project: Chuck Olson Site #BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901024-01 (Duplicate)

				Relative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	<50	110	nm	0-20

Laboratory Code: 901024-01 (Matrix Spike)

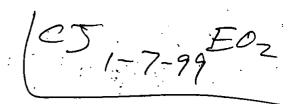
·					1		Relative
	Reporting	Spike	Sample	% Recovery	% Recovery	Acceptance	Percent
Analyte	Units	Level	Result	MS	MSD	Criteria	Difference
Diesel Extended	μg/g (ppm)	500	<50	101	106	41-170	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	98	59-138

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

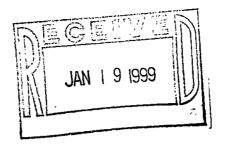
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 15, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue

Included are the results from the testing of material submitted on January 7, 1999 from your Chuck Olson Site #BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. ---

Charlene Jensen

Chemist

Enclosures AES0115R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/07/99

Project: Chuck Olson Site #BV97011C

Date Extracted: 01/12/99 Date Analyzed: 01/14/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
BAY8B 901024-01	<50	114
BAY8WSW 901024-02	<50	116
BAY8SSW 901024-03	2,500	116
BAY8NSW 901024-04	<50	116
Method Blank	<50	115

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/07/99

Project: Chuck Olson Site #BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901024-01 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
Diesel Extended	μg/g (ppm)	<50	110	nm	0-20

Laboratory Code: 901024-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	. %	Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	<50	101	!	106	41-170	5

Laboratory Code: Laboratory Control Sample

	•	Reporting	Spike	% Recovery	Acceptance
	Analyte	Units	Level_	LCS	Criteria
- ,	Diesel Extended	μg/g (ppm)	500	98	59-138

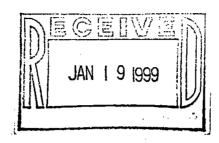
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

(25) 1-7-99 EOZ

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	BY97011C CHUCK OLSON							
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 15, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue

Included are the results from the testing of material submitted on January 8, 1999 from your Chuck Olson Site #BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. ---

Charlene Jensen

Chemist

Enclosures AES0115R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/08/99

Project: Chuck Olson Site #BV97011C

Date Extracted: 01/11/99 Date Analyzed: 01/14/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
BAY1SSW2 901038-01	13,000	109 d
BAY1B2 901038-02	70	104
BAY1NSW2 901038-03	1,600	109
Method Blank	<50	128

d - The sample was diluted due to the presence of high levels of material. Surrogate recoveries may not be meaningful.

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/08/99

Project: Chuck Olson Site #BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901032-04 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
Diesel Extended	μg/g (ppm)	60	60	.0	0-20

Laboratory Code: 901032-04 (Matrix Spike)

	•						Relative
•	Reporting	Spike	Sample	% Recovery	% Recovery	Acceptance	Percent
Analyte	Units	Level	Result	MS	MSD	Criteria	Difference
Diesel Extended	μg/g (ppm)	500	60	114	112	41-170	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Criteria
Diesel Extended	ug/g (ppm)	500	122	59-138

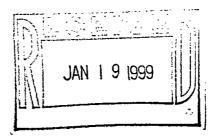


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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 15, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue

Included are the results from the testing of material submitted on January 8, 1999 from your Chuck Olson Site #BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. --- -

Charlene Jensen

Chemist

Enclosures AES0115R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/08/99

Project: Chuck Olson Site #BV97011C

Date Extracted: 01/12/99 Date Analyzed: 01/14/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	Surrogate (% Recovery)
BAY8B2 901039-01	<50	121
BAY8SSW2 901039-02	4,700	114
BAY8NSW2 901039-03	<50	116
Method Blank	<50	115

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/08/99

Project: Chuck Olson Site #BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901024-01 (Duplicate)

				Relative	
Analyte	Reporting Units	Sample Result_	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	<50	110	nm	0-20

Laboratory Code: 901024-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	<50	101	106	41-170	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS_	Acceptance Criteria	
Diesel Extended	μg/g (ppm)	500	98	59-138	-

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

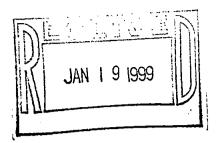
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 15, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 8, 1999 from your Chuck Olson, Site #BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0115R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/08/99

Project: Chuck Olson, Site #BV97011C

Date Extracted: 01/12/99 Date Analyzed: 01/14/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	Surrogate (% Recovery)
BAY12B 901040-01	4,500	129
BAY12NSW 901040-02	5,100	117
BAY12SSW 901040-03	90	126
BAY12WSW 901040-04	110	. 117
Method Blank	<50	115

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 01/08/99

Project: Chuck Olson, Site #BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901024-01 (Duplicate)

•				Relative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	<50	110	nm	0-20

Laboratory Code: 901024-01 (Matrix Spike)

•	·	_					Relative
A I	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Percent Difference
Analyte	Units	rever	nesun	IVID		Officera	DIMOLORICO
Diesel Extended	μg/g (ppm)	500	<50	101	106	41-170	5 _

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	98	59-138

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

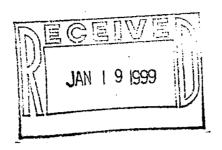
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 15, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the additional testing of material submitted on December 22, 1998 from your BV97011C, Chuck Olson project. Sample Bay6NSW was sent to Sound Analytical for EPH/VPH analysis. Results are enclosed.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0115R.DOC

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	BAY6NSW	Client:	Associated Earth Sciences
Date Received:	12/22/98	Project:	Chuck Olson
Date Extracted:	12/31/98	Lab ID:	812133-01
Date Analyzed:	12/31/98	Data File:	123119.D
Matrix:	Soil	Instrument:	GCMS1
Units:	ug/g (ppm)	Operator:	YA
		Lower	Upper

Surrogates:	% Recovery	Limit	Limit
Dibromofluoromethane	93	54	121
1,2-Dichloroethane-d4	86	61	120
Toluene-d8	88	58	121
4-Bromofluorobenzene	76	56	124
	Concentration		
O 1		Commanda	

	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	< 0.04	Tetrachloroethene	< 0.04
Chloromethane	< 0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	< 0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	< 0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	< 0.4	m,p-Xylene	< 0.04
1,1-Dichloroethene	< 0.04	o-Xylene	< 0.04
Methylene chloride	< 0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	< 0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	< 0.04	Bromoform	< 0.04
2,2-Dichloropropane	< 0.04	n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	< 0.04	Bromobenzene	< 0.04
Chloroform	< 0.04	1,3,5-Trimethylbenzene	< 0.04
2-Butanone (MEK)	< 0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	< 0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	< 0.04	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	< 0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	< 0.04	tert-Butylbenzene	< 0.04
Benzene	< 0.04	1,2,4-Trimethylbenzene	< 0.04
Trichloroethene	, <0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	< 0.04	p-Isopropyltoluene	< 0.04
Bromodichloromethane	< 0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	< 0.04	1,4-Dichlorobenzene	< 0.04
4-Methyl-2-pentanone	< 0.4	1,2-Dichlorobenzene	< 0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	<0,04
Toluene	< 0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	< 0.04	Hexachlorobutadiene	< 0.04
1,1,2-Trichloroethane	< 0.04	Naphthalene	< 0.04
2-Hexanone	< 0.4	1,2,3-Trichlorobenzene	< 0.04
1,3-Dichloropropane	< 0.04		

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Associated Earth Sciences
Date Received:	12/22/98	Project:	Chuck Olson
Date Extracted:	12/31/98	Lab ID:	08-701 mb3
Date Analyzed:	12/31/98	Data File:	123116.D
Matrix:	Soil	Instrument:	GCMS1
Units:	ug/g (ppm)	Operator:	YA
		т	T.T

	rower	Opper
% Recovery	Limit	Limit
102	54	121
100	61	120
89	58	121
86	56	124
	102 100 89	% Recovery Limit 102 54 100 61 89 58

4-Diomondobenzene	00	•••	
	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	< 0.04	Tetrachloroethene	<0.04
Chloromethane	< 0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	<0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	<0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	<0.4	m,p-Xylene	< 0.04
1,1-Dichloroethene	<0.04	o-Xylene	< 0.04
Methylene chloride	<0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	<0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	<0.04	Bromoform	< 0.04
2,2-Dichloropropane	<0.04	n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	<0.04	Bromobenzene	< 0.04
Chloroform	<0.04	1,3,5-Trimethylbenzene	< 0.04
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	<0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	<0.04	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	<0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	<0.04	tert-Butylbenzene	< 0.04
Benzene	<0.04	1,2,4-Trimethylbenzene	< 0.04
Trichloroethene	<0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	~0.0 4 ~<0.04	p-Isopropyltoluene	< 0.04
Bromodichloromethane	<0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	<0.04	1,4-Dichlorobenzene	< 0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	< 0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	< 0.04
Toluene	<0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	< 0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	< 0.04
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04	1,2,0-111011010001120116	-0.01
1,5-Dichioropropane	~U.U 4		

ENVIRONMENTAL CHEMISTS

Date of Report: 01/15/99 Date Received: 12/22/98

Project: BV97011C, Chuck Olson

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

Laboratory Code: 811045-02 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	<u>Units</u>	Result	Result	Difference	Criteria
1,1-Dichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Benzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Trichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Toluene	μg/g (ppm)	< 0.04	< 0.04	$\mathbf{n}\mathbf{m}$	0-20
Chlorobenzene	μg/g (ppm)	< 0.04	< 0.04	\mathbf{nm}	0-20

Laboratory Code: 811045-02 (Matrix Spike)

Relative Percent Sample % Recovery % Recovery Acceptance Reporting Spike Difference Result MS MSD Criteria Analyte Units Level 3 2 < 0.04 54 56 35-120 1,1-Dichloroethene μg/g (ppm) 1 2 70 71 45-116 < 0.04 Benzene μg/g (ppm) 0 2 57 57 39-114 Trichloroethene < 0.04 μg/g (ppm) 3 2 48 49 40-113 < 0.04 Toluene μg/g (ppm) 1 61 46-114 Chlorobenzene 2 < 0.04 62 μg/g (ppm)

Laboratory Code: Laboratory Control Sample

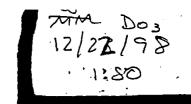
Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Differ <u>ence</u>
1,1-Dichloroethene	μg/g (ppm)	2	126	84	54-133	40 vo
Benzene	μg/g (ppm)	2	78	80	61-126	3
Trichloroethene	μg/g (ppm)	2	75	77	57-122	. 2
Toluene	μg/g (ppm)	2	78	76	60-118	2
Chlorobenzene	μg/g (ppm)	2	79	79	67-119	1

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

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

#812133

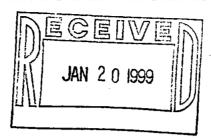
FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282



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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 19, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 13, 1999 from your BV97011C, Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0119R.DOC

ENVIRONMENTAL CHEMISTS :

Date of Report: 01/19/99 Date Received: 01/13/99

Project: BV97011C, Chuck Olson

Date Extracted: 01/14/99 Date Analyzed: 01/15/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY1B3 901053-01	<50	101
BAY1SSW3 901053-02	<50	92
BAY1WSW 901053-03	<50	89
BAY1NSW3 901053-04	<50	88
BAY8B3 901053-05	<50	88
BAY8SSW3 901053-06	<50	90
BAY8ESW 901053-07	<50	89
BAY8NSW3 901053-08	2,100	93
Method Blank	<50	91

ENVIRONMENTAL CHEMISTS

Date of Report: 01/19/99 Date Received: 01/13/99

Project: BV97011C, Chuck Olson

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901053-04 (Duplicate)

				Relative	`
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	<50	<50	'nm	. 0-20

Laboratory Code: 901053-04 (Matrix Spike)

	Reporting	Spike	Sample	% Recovery	% Recovery	Acceptance	Relative Percent
Anal <u>yte</u>	Units	Level	Result	MS	MSD	Criteria	Difference
Diesel Extended	μg/g (ppm)	500	<50	95	99	41-170	4

Laboratory Code: Laboratory Control Sample

A 7 .	Reporting	Spike	% Recovery	Acceptance
_Analyte	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	91	59-138

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

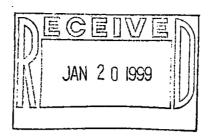
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 19, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 15, 1999 from your BV97011C, Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0119R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/19/99 Date Received: 01/15/99

Project: BV97011C, Chuck Olson

Date Extracted: 01/15/99 Date Analyzed: 01/15/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY1B4 901073-01	<50	92
BAY1WSW4 901073-02	1,900	90
BAY1SSW4 901073-03	<50	93
BAY1ESW4 901073-04	280	95
BAY12B2 901073-05	5,200	96
BAY12NSW2 901073-06	5,400	88
Method Blank	<50	94

ENVIRONMENTAL CHEMISTS

Date of Report: 01/19/99 Date Received: 01/15/99

Project: BV97011C, Chuck Olson

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901052-10 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
Diesel Extended	μg/g (ppm)	240	190	23 a	0-20

Laboratory Code: 901052-10 (Matrix Spike)

A. a. landa	Reporting	Spike	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Analyte	Units	Level	nesun	MP	עמאו	Criteria	Difference
Diesel Extended	μg/g (ppm)	500	240	112	112	41-170	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Cri <u>teria</u>
Diesel Extended	μg/g (ppm)	500	99	59-138

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

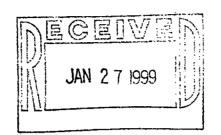
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ENVIRONMENTAL CHEMISTS

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



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3012 16th Avenue West Seattle, WA 98149-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

January 22, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 14, 1999 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

-FRIEDMAN & BRUYA, INC. --- --

Charlene Jensen

Chemist

Enclosures AES0122R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/22/99 Date Received: 01/14/99

Project: Chuck Olson, BV97011C

Date Extracted: 01/14/99 Date Analyzed: 01/15/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY9B 901063-01	<50	93
BAY9WSW 901063-02	<50	90
BAY9NSW 901063-03	190	92
BAY9B2 901063-04	<50	92
BAY9SSW 901063-05	140	93
BAY9ESW 901063-06	<50	91
•	-	
Method Blank	<50	89

ENVIRONMENTAL CHEMISTS

Date of Report: 01/22/99 Date Received: 01/14/99

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901063-05 (Duplicate)

				Kelative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	140	130	7	0-20

Laboratory Code: 901063-05 (Matrix Spike)

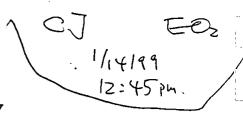
Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	140	102	113	41-170	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria	_
Diesel Extended	μg/g (ppm)	500	92	59-138	

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

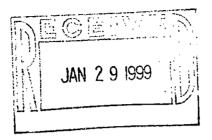
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 27, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 15, 1999 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC. ---

Charlene Jensen

Chemist

Enclosures AES0127R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 01/15/99

Project: Chuck Olson, BV97011C

Date Extracted: 01/19/99 Date Analyzed: 01/22/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds
Results Reported on a Dry Weight Basis
Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
BAY12B3 901077-01	17,000	. 111
BAY12SSW3 901077-02	19,000	118
Method Blank	<50	100

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 01/15/99

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901083-03 (Duplicate)

				Relative	
Analyte	Reporting Units	Sample Result	Duplicate Result	Percent Difference	Acceptance Criteria
Diesel Extended	μg/g (ppm)	15,000	26,000	53 h	0-20

Laboratory Code: (Matrix Spike)

·	Reporting	Spike	Sample	% Recovery	% Recovery	Acceptance	Relative Percent
Analyte	Units	Level	Result	MS	MSD	Criteria	Difference
Diesel Extended	μg/g (ppm)	500	15,000	ai	ai	41-170	ai

Laboratory Code: Laboratory Control Sample

	Reporting	Spike	% Recovery	Acceptance
Analyte	Units	Level	LCS	<u>Criteria</u>
Diesel Extended	μg/g (ppm)	500	93	59-138

ai- The amount spiked was insufficient to give meaningful recovery data..

h - RPD results are outside of control limits due to sample inhomogeneity.

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

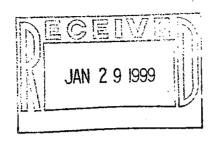
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HUL ANDL UMS AR FUTURE AND SECOND Dispose after 30 days Return Samples Call for Instructions							
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Received by:						_	

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 27, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 18, 1999 from your Chuck Olson, BV97011C project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.----

Charlene Jensen

Chemist

Enclosures AES0127R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 01/18/99

Project: Chuck Olson, BV97011C

Date Extracted: 01/19/99 Date Analyzed: 01/22/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	Surrogate (% Recovery)
BAY12B4 901083-01	20,000	120
BAY12NSW4 901083-02	27,000	96
BAY12SSW4 901083-03	15,000	116
Method Blank	<50	100

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 01/18/99

Project: Chuck Olson, BV97011C

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901083-03 (Duplicate)

				Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
Diesel Extended	ug/g (ppm)	15,000	26,000	54 h	0-20

Laboratory Code: 901083-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	μg/g (ppm)	500	15,000	ai	ai	41-170	ai

Laboratory Code: Laboratory Control Sample

Analyte	Reporting	Spike	% Recovery	Acceptance
	Units	Level	LCS	Criteria
Diesel Extended	μg/g (ppm)	500	93	59-138

ai- The amount spiked was insufficient to give meaningful recovery data.

h - RPD results are outside of control limits due to sample inhomogeneity.

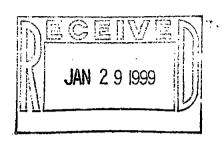
FRIEDMAN & BRUYA, INC.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 (206) 285-8282

401083 CJ Acri 1-18-99 2pm

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Sample #	Date/Time Sampled	Type of Sample	# of Jars	Lab Sample <i>f</i>	/	Analyses Requested	
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 27, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the additional testing of material submitted on December 30, 1998 from your BV97011C, Chuck Olson project. Sample Bay5SSW was sent to Sound Analytical for EPH/VPH analysis. Results are enclosed.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0127R.DOC

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

1 may 515 x 51 1 0		-			
Client Sample ID:	BAY5SSW		Client:	Associated Earth Sc	iences
Date Received:	12/30/98		Project:	Chuck Olson	
Date Extracted:	01/08/99		Lab ID:	812153-06	
Date Analyzed:	01/12/99		Data File:	011233.D	
Matrix:	Soil		Instrument:	GCMS1	
Units:	ug/g (ppm)		Operator:	YA	
			Lower	Upper	
Surrogates:		% Recovery	Limit	Limit	
Dibromofluorometl	nane	36 vo	54	121	
1,2-Dichloroethane		67	61	120	
Toluene-d8		61	58	121	
4-Bromofluorobenz	ene	75	56	124	
1 210111011110101010101		Concentration			Concentration
Compounds:		ug/g (ppm)	Compou	nds:	ug/g (ppm)
Compounds.			_		
Dichlorodifluorome	ethane	< 0.04		loroethene	0.07
Chloromethane		< 0.04		ochloromethane	< 0.04
Vinyl chloride		< 0.04		romoethane (EDB)	< 0.04
Bromomethane		< 0.04	Chlorob		< 0.04
Chloroethane		< 0.04	Ethylbe		< 0.04
Trichlorofluoromet	hane	< 0.04		Fetrachloroethane	< 0.04
Acetone		< 0.4	m,p-Xyl		-0.08
1,1-Dichloroethene)	< 0.04	o-Xylen		0.04
Methylene chloride		< 0.2	Styrene		< 0.04
trans-1,2-Dichloro		< 0.04		ylbenzene	< 0.04
1,1-Dichloroethane		< 0.04	Bromofo	orm	< 0.04
2,2-Dichloropropar		< 0.04		lbenzene	< 0.04
cis-1,2-Dichloroeth		< 0.04	Bromob		< 0.04
Chloroform	•	< 0.04		rimethylbenzene	-0.15
2-Butanone (MEK))	< 0.4	1,1,2,2-7	<u> Fetrachloroethane</u>	< 0.04
1,2-Dichloroethane		< 0.04		richloropropane	< 0.04
1,1,1-Trichloroetha		< 0.04		otoluene	< 0.04
1,1-Dichloroproper		< 0.04		otoluene	< 0.04
Carbon Tetrachlor		< 0.04		tylbenzene	< 0.04
Benzene		< 0.04		rimethylbenzene	0.50
Trichloroethene		< 0.04		ylbenzene	< 0.04
		Ö 0.4	_ T		. 0.06

< 0.04

< 0.04

< 0.04

< 0.4

< 0.04

< 0.04

< 0.04

< 0.04

< 0.4

< 0.04

1,2-Dichloropropane

Dibromomethane

Toluene

2-Hexanone

Bromodichloromethane

4-Methyl-2-pentanone

1,1,2-Trichloroethane

1,3-Dichloropropane

cis-1,3-Dichloropropene

trans-1,3-Dichloropropene

p-Isopropyltoluene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

1,2,3-Trichlorobenzene

Hexachlorobutadiene

Naphthalene

1,2-Dibromo-3-chloropropane

-0.06

< 0.04

< 0.04

< 0.04

< 0.04

< 0.04

< 0.04

< 0.04

-0.52 fb

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

fb - The analyte indicated was found in the blank. A small percentage of the material present may be due to laboratory contamination.

ENVIRONMENTAL CHEMISTS

61

120

Analysis For Volatile Compounds By EPA Method 8260B

1,2-Dichloroethane-d4

1,3-Dichloropropane

Client Sample ID: Date Received:	Method Blar 12/30/98	ık .	Client: Project:	Associated Earth Sciences Chuck Olson
Date Extracted:	01/08/99		Lab ID:	09-108 mb
Date Analyzed:	01/12/99		Data File:	011221.D
Matrix:	Soil		Instrument:	GCMS1
Units:	ug/g (ppm)	,	Operator:	YA
			Lower	Upper
Surrogates:		% Recovery	Limit	Limit
Dibromofluoromethane		80	54	121

71

< 0.04

1,2-Dichioroethane-04	<i>(</i> 1	01 120	
Toluene-d8	67	58 . 121	
4-Bromofluorobenzene	76	56 124	
	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
•		_	• • • • • • • • • • • • • • • • • • • •
Dichlorodifluoromethane	<0.04	Tetrachloroethene	< 0.04
Chloromethane	< 0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	< 0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	< 0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	< 0.4	m,p-Xylene	< 0.04
1,1-Dichloroethene	< 0.04	o-Xylene	< 0.04
Methylene chloride	< 0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	< 0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	< 0.04	Bromoform	< 0.04
2,2-Dichloropropane	< 0.04	n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	< 0.04	Bromobenzene	< 0.04
Chloroform	< 0.04	1,3,5-Trimethylbenzene	< 0.04
2-Butanone (MEK)	< 0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	< 0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	< 0.04	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	< 0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	< 0.04	tert-Butylbenzene	< 0.04
Benzene	< 0.04	1,2,4-Trimethylbenzene	< 0.04
Trichloroethene	< 0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	< 0.04	p-Isopropyltoluene	< 0.04
Bromodichloromethane	< 0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	< 0.04	1,4-Dichlorobenzene	< 0.04
4-Methyl-2-pentanone	< 0.4	1,2-Dichlorobenzene	< 0.04
cis-1,3-Dichloropropene	< 0.04	1,2-Dibromo-3-chloropropane	< 0.04
Toluene	< 0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	< 0.04	Hexachlorobutadiene	0.04
1,1,2-Trichloroethane	< 0.04	Naphthalene	0.06
2-Hexanone	< 0.4	1,2,3-Trichlorobenzene	<0.04

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 12/30/98

Project: BV97011C, Chuck Olson

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

Laboratory Code: 812153-06 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
1,1-Dichloroethene	μg/g (ppm)	<0.04	<0.04	nm	0-20
Benzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Trichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Toluene	μg/g (ppm)	< 0.04	< 0.04	\mathbf{nm}	0-20
Chlorobenzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20

Laboratory Code: 812153-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	μg/g (ppm)	2	<0.04	63	68	30-118	8
Penzene	μg/g (ppm)	2	< 0.04	58	63	44-113	9 ,
Trichloroethene	μg/g (ppm)	2	< 0.04	54	59	40-107	9
Toluene	μg/g (ppm)	2	< 0.04	54	62	34-113	14
Chlorobenzene	μg/g (ppm)	2	< 0.04	68	62	46-109	10

Laboratory Code: Laboratory Control Sample

			•	1		Relative	
	Reporting	Spike	% Recovery	% Recovery	Acceptance	Percent	
Analyte	Units	Level	LCS	LCSD	Criteria	Difference	
1,1-Dichloroethene	μg/g (ppm)	2	54	46	41-131	20	
Benzene	μg/g (ppm)	2	69	74	55-125	. 7	
Trichloroethene	μg/g (ppm)	2	66 _.	69	50-118	4	
Toluene	μg/g (ppm)	2	78	80	55-119	3 .	
Chlorobenzene	μg/g (ppm)	2	81	81	58-117	0	

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

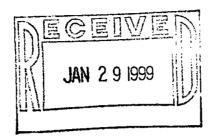
812153

D 204 12-30-98 S:15pm

Send Report To: Company AEST	•.		1 -		Conta	ct. CHÝ	GOOSHUE	•				
Address 179 MADRONE LW												
City, Staté, Zip Prin 121017 SLIPNIS Phone # 200-780-9370												
Filone # 2(36 750)		<u> </u>	FAX #_			D	ate 12 - 30 - 7	<u> </u>				
SITE NO. PROJECT NAME							PURCHASE ORDER #					
PSV97011C CHUCK OLSON												
SAMPLERS (signature)	-	PROJECT LOCATION										
Meliela G. May							Some, NA					
REMARKS SAMPLE DISPOSAL INFORMATION												
HOLD MIC HOSTI		- uars	FOZ POSS	Apre 1	rusuke.							
HUL ALL ADDITIONAL JARS FOR POSSIBLE FUTURE. 8260B & EPH/YPH ANALYSES							Return Samples					
							all for Instructions					
Sample #		te/Time impled	Type of Sample	# of Jars			Analyses Requested					
	12.29.	7	S&L	3	O \		NWTPH-DX					
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 27, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on January 19, 1999 from your BV97011C, Chuck Olson project. 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0127R.DOC

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 01/19/99

Project: BV97011C, Chuck Olson

Date Extracted: 01/21/99 Date Analyzed: 01/22/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	<u>Diesel Extended</u>	<u>Surrogate</u> (% Recovery)
BAY12B5 901098-01	<50	102
BAY12SSW5 901098-02	<50	103
BAY12B5S 901098-03	<50	77
BAY12NSW5 901098-04	80	104
BAY12ESW5 901098-05	<50	116
Method Blank	<50	106

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Analysis For vor	-		i Memou 020		
Client Sample ID:	BAY12SSW	75	Client:	Associated Earth Scie	
Date Received:	01/19/99		Project:	BV97011C, Chuck Ols	son
Date Extracted:	01/20/99		Lab ID:	901098-02	
Date Analyzed:	01/20/99		Data File:	012007.D	
Matrix:	Soil		Instrument:	GCMS1	
Units:	ug/g (ppm)		Operator:	YA	
			Lower	Upper	
Surrogates:		% Recovery	Limit	Limit	
Dibromofluorometha	ane	71	54	121	
1,2-Dichloroethane-		66	61	120	
Toluene-d8		69	58	121	
4-Bromofluorobenze	me	90	56	124	
T DIOMONGOI OBCINZO	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Concentration		•	Concentration
O J			Compou	nde:	ug/g (ppm)
Compounds:		ug/g (ppm)	Compon	nus.	agig (ppm)
Dichlorodifluoromet	hane	< 0.04	Tetrachl	oroethene	< 0.04
Chloromethane		<0.04	Dibromo	chloromethane	< 0.04
Vinyl chloride		< 0.04	1,2-Dibr	omoethane (EDB)	< 0.04
Bromomethane		< 0.04	Chlorobe	enzene	< 0.04
Chloroethane		< 0.04	Ethylber	nzene	< 0.04
Trichlorofluorometh	ane	< 0.04	1,1,1,2-7	etrachloroethane	< 0.04
Acetone		< 0.4	m,p-Xyle	ene .	< 0.04
1,1-Dichloroethene		< 0.04	o-Xylene)	< 0.04
Methylene chloride		< 0.2	Styrene		< 0.04
trans-1,2-Dichloroet	hene	< 0.04	Isopropy	lbenzene	< 0.04
1,1-Dichloroethane		< 0.04	Bromofo	rm '	< 0.04
2,2-Dichloropropane	Э	< 0.04	n-Propy	lbenzene	< 0.04
cis-1,2-Dichloroethe		< 0.04	Bromobe		< 0.04
Chloroform		< 0.04	1,3,5-Tri	imethylbenzene	< 0.04
2-Butanone (MEK)		< 0.4	1,1,2,2-T	etrachloroethane	< 0.04
1,2-Dichloroethane	(EDC)	< 0.04	1,2,3-Tri	ichloropropane	< 0.04
1,1,1-Trichloroethar		< 0.04	2-Chloro	otoluene	< 0.04
1,1-Dichloropropene		< 0.04	4-Chloro		< 0.04
Carbon Tetrachloric	le	< 0.04		ylbenzene	< 0.04
Benzene		< 0.04		imethylbenzene	< 0.04
Trichloroethene		< 0.04		lbenzene	< 0.04
1,2-Dichloropropane	•	< 0.04		pyltoluene	< 0.04
Bromodichlorometh	ane	< 0.04		lorobenzene	-0.40
Dibromomethane		< 0.04	•	lorobenzene	- 1.6
4-Methyl-2-pentano	ne	< 0.4		lorobenzene	∼11 ve
cis-1,3-Dichloroprop	ene	< 0.04	•	omo-3-chloropropane	<0.04
Toluene		< 0.04	, ,	ichlorobenzene	-0.24
trans-1,3-Dichloropa	ropene	< 0.04		orobutadiene	< 0.04
1,1,2-Trichloroethar	1e	< 0.04	Naphtha		< 0.04
2-Hexanone		< 0.4	1,2,3-Tri	ichlorobenzene ·	< 0.04

< 0.04

1,3-Dichloropropane

 $^{{\}bf ve}$ - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	BAY12SSW 01/19/99 01/20/99 01/20/99 Soil ug/g (ppm)	5	Client: Project: Lab ID: Data File: Instrument: Operator:	Associated Earth Scie BV97011C, Chuck OI 901098-02 1/10 rr 012013.D GCMS1 YA	
			Lower	Upper	
Surrogates:		% Recovery	Limit	Limit	
Dibromofluorometh	nane	49 vo	54	121	•
1,2-Dichloroethane		53 vo	61	120	
Toluene-d8		56 vo	58	121	
4-Bromofluorobenz	ene	71	56	124	
•		Concentration			Concentration
Compounds:		ug/g (ppm)	Compou	nds:	ug/g (ppm)
Dichlorodifluorome	thane	<0.4	Tetrachl	loroethene	< 0.4
Chloromethane	. • • • • • • • • • • • • • • • • • • •	< 0.4	Dibromo	ochloromethane	< 0.4
Vinyl chloride		< 0.4	1,2-Dibr	omoethane (EDB)	< 0.4
Bromomethane		<0.4	Chlorobe		< 0.4
Chloroethane		< 0.4	Ethylber	nzene	< 0.4
Trichlorofluoromet	hane	< 0.4	1,1,1,2·T	Cetrachloroethane	< 0.4
Acetone		<4	m,p-Xyle	ene	< 0.4
1,1-Dichloroethene		< 0.4	o-Xylene		< 0.4
Methylene chloride		<2	Styrene		< 0.4
trans-1,2-Dichloroe		< 0.4	Isopropy	dbenzene	<0.4
1,1-Dichloroethane		< 0.4	Bromofo	rm	< 0.4
2,2-Dichloropropan		< 0.4	n-Propy	lbenzene	< 0.4
cis-1,2-Dichloroeth		< 0.4	Bromobe		< 0.4
Chloroform		< 0.4	$1,3,5$ - Tri	imethylbenzene	< 0.4
2-Butanone (MEK)		<4	1,1,2,2-T	Cetrachloroethane	< 0.4
1,2-Dichloroethane		< 0.4	1,2,3- Tri	ichloropropane	< 0.4
1,1,1-Trichloroetha		< 0.4	2-Chloro	otoluene	< 0.4
1,1-Dichloropropen	.e	< 0.4	4-Chlore	otoluene	< 0.4
Carbon Tetrachlori	de	< 0.4		ylbenzene	< 0.4
Benzene		< 0.4		imethylbenzene	< 0.4
Trichloroethene		< 0.4		⁷ lbenzene	< 0.4
1,2-Dichloropropan	ıe	< 0.4		pyltoluene	< 0.4
Bromodichlorometh	nane	<0.4		lorobenzene	<0.4
Dibromomethane		< 0.4		lorobenzene	1.2
4-Methyl-2-pentane		< 0.4		lorobenzene	8.2
cis-1,3-Dichloropro	pene	< 0.4		omo-3-chloropropane	<0.4
Toluene		< 0.4	, ,	ichlorobenzene	<0.4
trans-1,3-Dichlorop		<0.4		orobutadiene	<0.4
1,1,2-Trichloroetha	ne	< 0.4	Naphtha		<0.4
2-Hexanone		<4	1,2,3-Tri	ichlorobenzene	<0.4
1,3-Dichloropropan	e	<0.4			

Note: The sample was diluted due to the presence of high levels of material. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

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

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	BAY12B5S	Client:	Associated Earth Sciences
Date Received:	01/19/99	Project:	BV97011C, Chuck Olson
Date Extracted:	01/20/99	Lab ID:	901098-03 rr
Date Analyzed:	01/20/99	Data File:	012012.D
Matrix:	Soil	Instrument:	GCMS1
Units:	ug/g (ppm)	Operator:	YA
		Torrow	TImmon

	TOMET		Obber
% Recovery	Limit		Limit
69	54	,	121
70	61	1	120
68	58		121
81	56		124
	69 70	% Recovery Limit 69 54 70 61 68 58	% Recovery Limit 69 54 70 61 68 58

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04	Tetrachloroethene	0.12
Chloromethane	< 0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	< 0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	< 0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	<0.4	m,p-Xylene	0.12
1,1-Dichloroethene	< 0.04	o-Xylene	0.08
Methylene chloride	< 0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	< 0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	< 0.04	Bromoform	< 0.04
2,2-Dichloropropane	< 0.04	n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	< 0.04	Bromobenzene	< 0.04
Chloroform	< 0.04	1,3,5-Trimethylbenzene	0.17
2-Butanone (MEK)	< 0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	< 0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	0.06	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	< 0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	< 0.04	tert-Butylbenzene	< 0.04
Benzene	< 0.04	1,2,4-Trimethylbenzene	0.54
Trichloroethene	< 0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	< 0.04	p-Isopropyltoluene	_0.04
Bromodichloromethane	< 0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	< 0.04	1,4-Dichlorobenzene	0.04
4-Methyl-2-pentanone	< 0.4	1,2-Dichlorobenzene	0.14
cis-1,3-Dichloropropene	< 0.04	1,2-Dibromo-3-chloropropane	< 0.04
Toluene	< 0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	< 0.04
1,1,2-Trichloroethane	< 0.04	Naphthalene :	0.12
2-Hexanone	< 0.4	1,2,3-Trichlorobenzene	< 0.04
1.3-Dichloropropane	<0.04		•

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Associated Earth Sciences
Date Received:	01/19/99	Project:	BV97011C, Chuck Olson
Date Extracted:	01/20/99	Lab ID:	09-108 mb2
Date Analyzed:	01/21/99	Data File:	012114.D
Matrix:	Soil	Instrument:	GCMS1
Units:	ug/g (ppm)	Operator:	YA
		Lower	Upper

Surrogates:	% Recovery	Limit	Limit
Dibromofluoromethane	66	54	121
1,2-Dichloroethane-d4	79	61	120
Toluene-d8	69	58	121
4-Bromofluorobenzene	79	56	124
	Concentration		
Compounds	uala (nnm)	Compounds	

	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	< 0.04	Tetrachloroethene	< 0.04
Chloromethane	< 0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	< 0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	< 0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	< 0.4	m,p-Xylene	< 0.04
1,1-Dichloroethene	< 0.04	o-Xylene	< 0.04
Methylene chloride	< 0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	< 0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	< 0.04	Bromoform	< 0.04
2,2-Dichloropropane	< 0.04	. n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	< 0.04	Bromobenzene	< 0.04
Chloroform	< 0.04	1,3,5-Trimethylbenzene	< 0.04
2-Butanone (MEK)	< 0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	< 0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	< 0.04	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	< 0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	< 0.04	tert-Butylbenzene	< 0.04
Benzene	< 0.04	1,2,4-Trimethylbenzene	< 0.04
Trichloroethene	< 0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	< 0.04	p-Isopropyltoluene	< 0.04
Bromodichloromethane	< 0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	< 0.04	1,4-Dichlorobenzene	< 0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	< 0.04
cis-1,3-Dichloropropene	< 0.04	1,2-Dibromo-3-chloropropane	<0.04
Toluene	< 0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	< 0.04	Hexachlorobutadiene	< 0.04
1,1,2-Trichloroethane	< 0.04	Naphthalene	< 0.04
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	< 0.04
1,3-Dichloropropane	<0.04	· · · · ·	

ENVIRONMENTAL CHEMISTS .*.

Date of Report: 01/27/99 Date Received: 01/19/99

Project: BV97011C, Chuck Olson

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)

Laboratory Code: 901063-05 (Duplicate)

•				Relative	
•	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	$_$ Result $__$	Difference	Criteria
Diesel Extended	μg/g (ppm)	140	130	7	0-20

Laboratory Code: 901063-05 (Matrix Spike)

	D	O - 11	Cl-	0/ Daggrager	% Recovery	Acceptance	Relative Percent
Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	MSD	Acceptance Criteria	Difference
Diesel Extended	μg/g (ppm)	500	140	102	113	41-170	10

Laboratory Code: Laboratory Control Sample

	Reporting	Spike	% Recovery	Acceptance
Analyte	$\underline{ ext{Units}}$	Level	LCS	Criteria :
Diesel Extended	μg/g (ppm)	500	92	59-138

ENVIRONMENTAL CHEMISTS

Date of Report: 01/27/99 Date Received: 01/19/99

Project: BV97011C, Chuck Olson

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

Laboratory Code: 812153-06 (Duplicate)

			•	Relative	
	Reporting	Sample	Duplicate	Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
1,1-Dichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Benzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Trichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Toluene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Chlorobenzene	μg/g (ppm)	<0.04	< 0.04	nm	0-20

Laboratory Code: 812153-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent <u>Difference</u>
1,1-Dichloroethene	μg/g (ppm)	2	<0.04	63	68	30-118	8
Benzene	μg/g (ppm)	2	< 0.04	58	63	44-113	9
Trichloroethene	μg/g (ppm)	2	< 0.04	54	59	40-107	9
Toluene	μg/g (ppm)	2	< 0.04	54	62	34-113	14
Chlorobenzene	μg/g (ppm)	2	< 0.04	68	62 _,	46-109	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	μg/g (ppm)	2	54	46	41-131	20
Benzene	μg/g (ppm)	2	69	74	55-125	. 7
Trichloroethene	μg/g (ppm)	2	66	69	50-118	4
Toluene	μg/g (ppm)	2	78	80	55-119	3
Chlorobenzene	μg/g (ppm)	. 2	81	. 81	58-117	0

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

January 29, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the amended results from the testing of material submitted on December 30, 1998 from your Chuck Olson, BV97011C project. The result for sample BAY5SSW has been flagged as an estimate due to the value being above the calibration range. The sample was reextracted, diluted and reanalyzed. This result is included. We have reviewed all other data from your Chuck Olson, BV97011C project and no errors were found.

We appologize for any inconvenience that this error may have caused. We will be crediting you for this analysis on your next invoice. Please call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures

c: Jeff Hancock, Chuck Olson Chevrolet

ENVIRONMENTAL CHEMISTS

Date of Report: 01/07/99 Date Received: 12/30/98

Project: Chuck Olson, BV97011C

Date Extracted: 12/31/98

Date Analyzed: 12/31/98 & 01/04/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

Results Reported on a Dry Weight Basis Results Reported as μg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY5NSWF 812153-01	260	114
BAY5NSW 812153-02	70	113
BAY5WSW 812153-03	<50	. 116
BAY5B 812153-04	970	121
BAY5ESW 812153-05	<50	118
BAY5SSW 812153-06	6,800 ve	123
Method Blank	<50	110

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

ENVIRONMENTAL CHEMISTS

Date of Report: 01/29/99 Date Received: 12/30/98

Project: Chuck Olson, BV97011C

Date Extracted: 01/29/99 Date Analyzed: 01/29/99

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (NWTPH-Dx)

Extended to Include Motor Oil Range Compounds

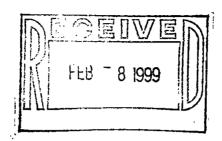
Results Reported on a Dry Weight Basis Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Extended	<u>Surrogate</u> (% Recovery)
BAY5SSW	12,000	114 d

d - The sample was diluted due to the presence of high levels of material. Surrogate recoveries may not be meaningful.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

February 4, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the additional testing of material submitted on January 7 and 8, 1999 from your BV97011C, Chuck Olson project. Samples Bay1NSW and Bay8SSW2 were sent to Sound Analytical for EPH/VPH analysis. Results are enclosed.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0204R.DOC

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

1,2-Dichloroethane (EDC)

1,1,1-Trichloroethane

Carbon Tetrachloride

1,1-Dichloropropene

1,2-Dichloropropane

Bromodichloromethane

4-Methyl-2-pentanone

1,1,2-Trichloroethane

1,3-Dichloropropane

cis-1,3-Dichloropropene

trans-1.3-Dichloropropene

Trichloroethene

Dibromomethane

Benzene

Toluene

2-Hexanone

	Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	BAY1B 01/07/99 01/21/99 01/22/99 Soil ug/g (ppm)		Client: Project: Lab ID: Data File: Instrument: Operator:	Associated Earth Sci BV97011C, Chuck O 901023-01 1/10 012206.D GCMS1 YA	
	Onits.	ug/g (ppm)		-		
	Surrogates: Dibromofluorometh 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenze	-d4	% Recovery 35 vo 36 vo 37 vo 50 vo	Lower Limit 54 61 58 56	Upper Limit 121 120 121 124	
	•		Concentration			Concentration
	Compounds:		ug/g (ppm)	Compou	nds:	ug/g (ppm)
	Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethacetone 1,1-Dichloroethene Methylene chloride trans-1,2-Dichloroe	nane	<0.4 <0.4 <0.4 <0.4 <0.4 <0.4 <4 <0.4 <2 <0.4	Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy	nzene Cetrachloroethane ene e Vlbenzene	<0.4 <0.4 <0.4 <0.4 <0.4 <0.4 <0.4 <0.4
	1,1-Dichloroethane	_	<0.4	Bromofo		<0.4 <0.4
	2,2-Dichloropropan		<0.4 <0.4	Bromobe	lbenzene	<0.4
	cis-1,2-Dichloroethe Chloroform	:11 C	<0.4 <0.4		imethylbenzene	<0.4
	2-Butanone (MEK)		<4		Cetrachloroethane	<0.4
•	P-Datamone (MIBIL)		**	~, _, _, _		0.1

1,2,3-Trichloropropane

1,2,4-Trimethylbenzene

2-Chlorotoluene

4-Chlorotoluene

tert-Butylbenzene

sec-Butylbenzene

p-Isopropyltoluene 1,3-Dichlorobenzene

1,4-Dichlorobenzene

1,2-Dichlorobenzene

1,2,4-Trichlorobenzene

1,2,3-Trichlorobenzene

Hexachlorobutadiene

Naphthalene

1,2-Dibromo-3-chloropropane

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

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0.7

Note: The sample was diluted due to the presence of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

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

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

< 0.4

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ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Analysis For Vo.		pounus by Err		עטט	
Client Sample ID:	BAY1NSW		Client:	Associated Earth Scient	
Date Received:	01/07/99		Project:	BV97011C, Chuck Ol	son
Date Extracted:	01/21/99		Lab ID:	901023-02 1/10	•
Date Analyzed:	01/21/99		Data File:	012117.D	
Matrix:	Soil		Instrument:	GCMS1	
Units:	ug/g (ppm)		Operator:	YA	
			Lower	Upper	
Surrogates:		% Recovery	Limit	Limit	
Dibromofluorometh	iane	68	54	121	
1,2-Dichloroethane		71	61	120	
Toluene-d8		· 75	58	121	
4-Bromofluorobenz	ene	75	56	124	
	•	Concentration	•		Concentration
Compounds:		ug/g (ppm)	Compou	nds:	ug/g (ppm)
Dichlorodifluorome	thane	<0.4	Tetrachl	oroethene	< 0.4
Chloromethane		<0.4	Dibromo	chloromethane	< 0.4
Vinyl chloride		< 0.4	1,2-Dibr	omoethane (EDB)	< 0.4
Bromomethane		<0.4	Chlorobe	enzene	< 0.4
Chloroethane		< 0.4	Ethylber	nzene	< 0.4
Trichlorofluoromet	hane	< 0.4	1,1,1,2 - T	etrachloroethane	< 0.4
Acetone		<4	m,p-Xyle		< 0.4
1,1-Dichloroethene		< 0.4	o-Xylene		< 0.4
Methylene chloride		<2	Styrene		< 0.4
trans-1,2-Dichloroe		< 0.4	-	lbenzene	< 0.4
1,1-Dichloroethane		< 0.4	Bromofo		< 0.4
2,2-Dichloropropan		<0.4	n-Propy	lbenzene	< 0.4
cis-1,2-Dichloroeth		< 0.4	Bromobe		< 0.4
Chloroform		< 0.4	1,3,5-Tri	imethylbenzene	< 0.4
2-Butanone (MEK)		<4		etrachloroethane	< 0.4
1,2-Dichloroethane		<0.4		ichloropropane	< 0.4
1,1,1-Trichloroetha		< 0.4	2-Chloro	otoluene	< 0.4
1,1-Dichloropropen		< 0.4	4-Chloro	otoluene	< 0.4
Carbon Tetrachlori		< 0.4	tert-But	ylbenzene	< 0.4
Benzene		< 0.4	1,2,4-Tr	imethylbenzene	< 0.4
Trichloroethene		< 0.4	sec-Buty	lbenzene	< 0.4
1,2-Dichloropropan	.e	<0.4	p-Isopro	pyltoluene	<0.4
Bromodichlorometh		<0.4	1,3-Dich	lorobenzene	< 0.4
Dibromomethane		< 0.4	1,4-Dich	lorobenzene	< 0.4
4-Methyl-2-pentane	one	<4	1,2-Dich	lorobenzene	< 0.4
cis-1,3-Dichloropro		< 0.4	1,2-Dibr	omo-3-chloropropane	<0.4
Toluene	-	< 0.4	1,2,4-Tri	ichlorobenzene	<0.4
trans-1,3-Dichlorop	ropene	< 0.4	Hexachl	orobutadiene	< 0.4
1,1,2-Trichloroetha		< 0.4	Naphtha	alene	< 0.4
OTT		-4	1 o o m	ahlanahannana	~ 0.4

Note: The sample was diluted due to the presence of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

1,2,3-Trichlorobenzene

<4

< 0.4

2-Hexanone

1,3-Dichloropropane

< 0.4

ENVIRONMENTAL CHEMISTS

Concentration

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	BAY8SSW2		Client:	Associated Earth Sciences
Date Received:	01/08/99		Project:	BV97011C, Chuck Olson
Date Extracted:	01/21/99		Lab ID:	901039-02 1/10
Date Analyzed:	01/22/99		Data File:	012209.D
Matrix:	Soil		Instrument:	GCMS1
Units:	ug/g (ppm)		Operator:	YA
			Lower	Upper
a .		0/ D	T ::4	T

		Lower	Upper	
Surrogates:	% Recovery	Limit	Limit	
Dibromofluoromethane	57	54	121	
1,2-Dichloroethane-d4	. 58 vo	61	120	
Toluene-d8	60	58	121	
4-Bromofluorobenzene	73	56	124	
	Concentration			
Compounds:	ug/g (ppm)	Compounds:		
Dichlorodifluoromethane	< 0.4	Tetrachloroethene		
Chloromethane	< 0.4	Dibromochlorom	ethane	
Vinyl chloride	< 0.4	1,2-Dibromoetha	ne (EDB)	
	-0.4	Ol 11		

Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	< 0.4	Tetrachloroethene	< 0.4
Chloromethane	< 0.4	Dibromochloromethane	< 0.4
Vinyl chloride	< 0.4	1,2-Dibromoethane (EDB)	< 0.4
Bromomethane	< 0.4	Chlorobenzene	< 0.4
Chloroethane	< 0.4	Ethylbenzene	< 0.4
Trichlorofluoromethane	< 0.4	1,1,1,2-Tetrachloroethane	< 0.4
Acetone	<4	m,p-Xylene	< 0.4
1,1-Dichloroethene	< 0.4	o-Xylene	< 0.4
Methylene chloride	<2	Styrene	< 0.4
trans-1,2-Dichloroethene	< 0.4	Isopropylbenzene	< 0.4
1,1-Dichloroethane	< 0.4	Bromoform	< 0.4
2,2-Dichloropropane	< 0.4	n-Propylbenzene	< 0.4
cis-1,2-Dichloroethene	< 0.4	Bromobenzene	< 0.4
Chloroform	< 0.4	1,3,5-Trimethylbenzene	< 0.4
2-Butanone (MEK)	<4	1,1,2,2-Tetrachloroethane	< 0.4
1,2-Dichloroethane (EDC)	< 0.4	1,2,3-Trichloropropane	< 0.4
1,1,1-Trichloroethane	<0.4	2-Chlorotoluene	< 0.4
1,1-Dichloropropene	<0.4	4-Chlorotoluene	. <0.4
Carbon Tetrachloride	< 0.4	tert-Butylbenzene	< 0.4
Benzene	< 0.4	1,2,4-Trimethylbenzene	< 0.4
Trichloroethene	< 0.4	sec-Butylbenzene	< 0.4
1,2-Dichloropropane	< 0.4	p-Isopropyltoluene	< 0.4
Bromodichloromethane	< 0.4	1,3-Dichlorobenzene	< 0.4
Dibromomethane	< 0.4	1,4-Dichlorobenzene	< 0.4
4-Methyl-2-pentanone	<4	1,2-Dichlorobenzene	< 0.4
cis-1,3-Dichloropropene	< 0.4	1,2-Dibromo-3-chloropropane	<0.4
Toluene	< 0.4	1,2,4-Trichlorobenzene	< 0.4
trans-1,3-Dichloropropene	< 0.4	Hexachlorobutadiene	< 0.4
1,1,2-Trichloroethane	< 0.4	Naphthalene	<0.4
2-Hexanone	<4	1,2,3-Trichlorobenzene	<0.4
1,3-Dichloropropane	< 0.4		

Note: The sample was diluted due to the presence of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

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

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Method Blar 01/07/99 01/21/99 01/21/99 Soil	ık	Client: Project: Lab ID: Data File: Instrument:	Associated Earth Sciences BV97011C, Chuck Olson O9-108 mb3 012105.D GCMS1
Units:	ug/g (ppm)		Operator:	YA
	0011	•	Lower	Upper
Surrogates		% Recovery	Limit	Limit

	201102	- PP U
% Recovery	Limit	Limit
98	54	121
91	61	120
80	58	121
105	56	124
Concentration ug/g (ppm)	Compounds:	
	98 91 80 105 Concentration	% Recovery Limit 98 54 91 61 80 58 105 56 Concentration

4-Dromonuoropenzene	. 100	124	
	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	< 0.04	Tetrachloroethene	< 0.04
Chloromethane	<0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	< 0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	< 0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	< 0.4	m,p-Xylene	< 0.04
1,1-Dichloroethene	< 0.04	o-Xylene	< 0.04
Methylene chloride	< 0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	< 0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	< 0.04	Bromoform	< 0.04
2,2-Dichloropropane	< 0.04	n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	< 0.04	Bromobenzene	< 0.04
Chloroform	< 0.04	1,3,5-Trimethylbenzene	< 0.04
2-Butanone (MEK)	< 0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	< 0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	< 0.04	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	< 0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	< 0.04	tert-Butylbenzene	< 0.04
Benzene	< 0.04	1,2,4-Trimethylbenzene	<0.04,
Trichloroethene	< 0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	< 0.04	p-Isopropyltoluene	< 0.04
Bromodichloromethane	< 0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	< 0.04	1,4-Dichlorobenzene	< 0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	< 0.04
cis-1,3-Dichloropropene	< 0.04	1,2-Dibromo-3-chloropropane	< 0.04
Toluene	< 0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	< 0.04	Hexachlorobutadiene	< 0.04
1,1,2-Trichloroethane	< 0.04	Naphthalene	< 0.04
2-Hexanone	< 0.4	1,2,3-Trichlorobenzene	< 0.04
1,3-Dichloropropane	< 0.04	- ,	
• •			

ENVIRONMENTAL CHEMISTS

Date of Report: 02/04/99

Date Received: 01/07/99 and 01/08/99 Project: BV97011C, Chuck Olson

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

Laboratory Code: 812153-06 (Duplicate)

	Reporting	Sample	Duplicate	Relative Percent	Acceptance
Analyte	Units	Result	<u>Result</u>	Difference	Criteria
1,1-Dichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Benzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Trichloroethene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Toluene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Chlorobenzene	μg/g (ppm)	< 0.04	< 0.04	nm	· 0-20

Laboratory Code: 812153-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	μg/g (ppm)	2	< 0.04	63	68	30-118	8
Benzene	μg/g (ppm)	2	< 0.04	58	63	44-113	. 9
Trichloroethene	μg/g (ppm)	2	< 0.04	54	59	40-107	9
Toluene	μg/g (ppm)	2	< 0.04	54	62	34-113	14
Chlorobenzene	μg/g (ppm)	2	< 0.04	68	62	46-109	10

Laboratory Code: Laboratory Control Sample

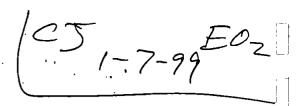
Amaluta	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Analyte	Units	Lievei	מטע	LOSD	Officeria	
1,1-Dichloroethene	μg/g (ppm)	2	54	4 6	41-131	20
Benzene	μg/g (ppm)	2	69	74	55-125	. 7
Trichloroethene	μg/g (ppm)	2	66	69	50-118	4
Toluene	μg/g (ppm)	2	78	80	55-119	3
Chlorobenzene	μg/g (ppm)	2	81	81	58-117	0

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

3012 16th Avenue West Seattle, WA 98119-2029

(206) 285-8282

901023



SAMPLE CHAIN OF CUSTODY

Send Report To: Company AEST					Contac	Cup 1	SOOHIUE .	
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City, State, Zip Brink		ہج)جب	AND NA					
Phone # 20 - 780 - 9	<u>370</u>		FAX #_			D	ate 1-7-47	
SITE NO.			PROJ	ECT NAME		F	URCHASE ORDER	R#
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FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

#901039

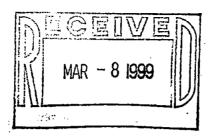
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SAMPLE CHAIN OF CUSTODY

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City, State, Zip Ban	<u> 4526</u>	RE R		}					
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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

February 25, 1999

Chip Goodhue, Project Manager Associated Earth Sciences, Inc. 179 Madrone Lane North Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the additional testing of material submitted on January 15 and 18, 1999 from your BV97011C, Chuck Olson project. Samples Bay12SSW3 and Bay12NSW4 were sent to Sound Analytical for EPH/VPH analysis. Results are enclosed.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen

Chemist

Enclosures AES0225R.DOC

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Analysis For Vo.	tame comi	ounus by EFF	i internor oze	מטכ	
Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	BAY12SSW 01/15/99 01/29/99 01/29/99 Soil ug/g (ppm)		Client: Project: Lab ID: Data File: Instrument: Operator:	Associated Earth Sc BV97011C, Chuck C 901077-02 1/10 012940.D GCMS1 YA	
			Lower	Upper	
Surrogates:		% Recovery	Limit	Limit	
Dibromofluorometh	ane	61	43	122	
1,2-Dichloroethane	-d4	58	35	125	
Toluene-d8		70	28	130	
4-Bromofluorobenz	ene	90	42	136	
Compounds:		Concentration ug/g (ppm)	Compou	nds:	Concentration ug/g (ppm)
Dichlorodifluorome	thane	< 0.4	Tetrachl	loroethene	 4.2
Chloromethane		< 0.4	Dibromo	ochloromethane	< 0.4
Vinyl chloride		< 0.4	1,2-Dibr	omoethane (EDB)	< 0.4
Bromomethane		< 0.4	Chlorob	enzene	< 0.4
Chloroethane		< 0.4	Ethylber	nzene ·	0.8
Trichlorofluorometh	hane	< 0.4	1,1,1,2-7	Cetrachloroethane	<0.4
		. A	V1	A	9 9

Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	<0.4	Tetrachloroethene	4.2
Chloromethane	< 0.4	Dibromochloromethane	< 0.4
Vinyl chloride	< 0.4	1,2-Dibromoethane (EDB)	< 0.4
Bromomethane	< 0.4	Chlorobenzene	< 0.4
Chloroethane	< 0.4	Ethylbenzene ·	 0.8
Trichlorofluoromethane	< 0.4	1,1,1,2-Tetrachloroethane	< 0.4
Acetone	<4	m,p-Xylene	3.2
1,1-Dichloroethene	< 0.4	o-Xylene	2.4
Methylene chloride	<2	Styrene	< 0.4
trans-1,2-Dichloroethene	< 0.4	Isopropylbenzene	0.6
1,1-Dichloroethane	< 0.4	Bromoform	< 0.4
2,2-Dichloropropane	< 0.4	n-Propylbenzene	1.5
cis-1,2-Dichloroethene	< 0.4	Bromobenzene	< 0.4
Chloroform	< 0.4	1,3,5-Trimethylbenzene	3.6
2-Butanone (MEK)	<4	1,1,2,2-Tetrachloroethane	< 0.4
1,2-Dichloroethane (EDC)	< 0.4	1,2,3-Trichloropropane	< 0.4
1,1,1-Trichloroethane	6.0	2-Chlorotoluene	<0.4
1,1-Dichloropropene	< 0.4	4-Chlorotoluene	< 0.4
Carbon Tetrachloride	< 0.4	tert-Butylbenzene	< 0.4
Benzene	< 0.4	1,2,4-Trimethylbenzene	11
Trichloroethene .	< 0.4	sec-Butylbenzene	0.6
1,2-Dichloropropane	<0.4	p-Isopropyltoluene	0.8
Bromodichloromethane	< 0.4	1,3-Dichlorobenzene	< 0.4
Dibromomethane	< 0.4	1,4-Dichlorobenzene	<0.4
4-Methyl-2-pentanone	<4	1,2-Dichlorobenzene	<0.4
cis-1,3-Dichloropropene	<0.4	1,2-Dibromo-3-chloropropane	<0.4
Toluene	1.5	1,2,4-Trichlorobenzene	<0.4
trans-1,3-Dichloropropene	< 0.4	Hexachlorobutadiene	<0.4
1,1,2-Trichloroethane	< 0.4	Naphthalene	- 2.6
2-Hexanone	<4	1,2,3-Trichlorobenzene	<0.4
1,3-Dichloropropane	< 0.4	,	
			•

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Analysis For Vo.	rame Comp	ounds by EFA	i memon ozo	OD	
Client Sample ID:	BAY12NSW	7 4	Client:	Associated Earth Scient	ences
Date Received:	01/18/99		Project:	BV97011C, Chuck Ol	son
Date Extracted:	01/29/99	•	Lab ID:	901083-02 1/10	
Date Analyzed:	02/01/99		Data File:	020107.D	
Matrix:	Soil		Instrument:	GCMS1	
Units:	ug/g (ppm)		Operator:	YA	
	004.		Lower	Upper	
Surrogates:		% Recovery	Limit	Limit	
Dibromofluorometh	iane	76	43	122	
1,2-Dichloroethane		78	35	125	
Toluene-d8	4.	69	28	130	
4-Bromofluorobenz	ene	101	42	136	
12.011.011.01.01.01.01.01.01		Concentration			Concentration
Compounds:		ug/g (ppm)	Compou	nds:	ug/g (ppm)
-	th on o	<0.4	Totrochl	oroethene	5,1
Dichlorodifluorome	tnane	<0.4		ochloromethane	<0.4
Chloromethane	•	<0.4		omoethane (EDB)	<0.4
Vinyl chloride		<0.4	Chlorobe	• •	<0.4
Bromomethane		<0.4	Ethylber		1.4
Chloroethane Trichlorofluoromet	L	<0.4		Cetrachloroethane	<0.4
	name	<0.4 <4	m,p-Xyle		7.7
Acetone		<0.4	o-Xylene		4.3
1,1-Dichloroethene Methylene chloride		<2	Styrene	,	<0.4
trans-1,2-Dichloroe		<0.4	•	lbenzene	1
1,1-Dichloroethane		<0.4	Bromofo		< 0.4
2,2-Dichloropropan		<0.4	n-Propy		2.4
cis-1,2-Dichloroeth		<0.4	Bromobe		<0.4
Chloroform	cire	<0.4		imethylbenzene	6.8
2-Butanone (MEK)		<4		etrachloroethane	<0.4
1,2-Dichloroethane		<0.4		ichloropropane	< 0.4
1,1,1-Trichloroetha		-8.7	, .	otoluene.	<0.4
1,1-Dichloropropen		<0.4	4-Chloro		< 0.4
Carbon Tetrachlori		<0.4		ylbenzene	< 0.4
Benzene		<0.4		imethylbenzene	24
Trichloroethene		<0.4		elbenzene e	1.3
1,2-Dichloropropan	.e	<0.4		pyltoluene	1.7
Bromodichlorometh		< 0.4		lorobenzene	< 0.4
Dibromomethane		< 0.4	1,4-Dich	lorobenzene	< 0.4
4-Methyl-2-pentano	one ·	<4	1,2-Dich	lorobenzene	< 0.4
cis-1,3-Dichloropro		<0.4	•	omo-3-chloropropane	<0.4
Toluene	•	-2.1		ichlorobenzene	< 0.4
trans-1,3-Dichlorop	ropene	< 0.4	Hexachl	orobutadiene	< 0.4
1,1,2-Trichloroetha	_	< 0.4	Naphtha	alene '	<u>_5.2</u>
2-Hexanone	_	<4	1,2,3-Tri	ichlorobenzene	< 0.4

Note: The sample was diluted due to high levels of interfering compounds. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

1,3-Dichloropropane

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Imalysis For Vo	1 mary sis for volume compounds by 211111200200 00000									
Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blan 01/18/99 01/29/99 01/29/99 Soil ug/g (ppm)	ık	Client: Project: Lab ID: Data File: Instrument: Operator:	Associated Earth Sciences BV97011C, Chuck Olson O9-108 mb5 012910.D GCMS1 YA						
Surrogates: Dibromofluorometh	nane	% Recovery 49 48	Lower Limit 43 35	Upper Limit 122 125						
Toluene-d8 4-Bromofluorobenz	ene	70 93	$\begin{array}{c} 28 \\ 42 \end{array}$	130 136						

4-Bromotiuorobenzene	93	42 150	
	Concentration		Concentration
Compounds:	ug/g (ppm)	Compounds:	ug/g (ppm)
Dichlorodifluoromethane	< 0.04	Tetrachloroethene	< 0.04
Chloromethane	< 0.04	Dibromochloromethane	< 0.04
Vinyl chloride	< 0.04	1,2-Dibromoethane (EDB)	< 0.04
Bromomethane	< 0.04	Chlorobenzene	< 0.04
Chloroethane	< 0.04	Ethylbenzene	< 0.04
Trichlorofluoromethane	< 0.04	1,1,1,2-Tetrachloroethane	< 0.04
Acetone	< 0.4	m,p-Xylene	< 0.04
1,1-Dichloroethene	< 0.04	o-Xylene	< 0.04
Methylene chloride	< 0.2	Styrene	< 0.04
trans-1,2-Dichloroethene	< 0.04	Isopropylbenzene	< 0.04
1,1-Dichloroethane	< 0.04	Bromoform	< 0.04
2,2-Dichloropropane	< 0.04	n-Propylbenzene	< 0.04
cis-1,2-Dichloroethene	< 0.04	Bromobenzene	< 0.04
Chloroform	< 0.04	1,3,5-Trimethylbenzene	< 0.04
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	< 0.04
1,2-Dichloroethane (EDC)	< 0.04	1,2,3-Trichloropropane	< 0.04
1,1,1-Trichloroethane	< 0.04	2-Chlorotoluene	< 0.04
1,1-Dichloropropene	< 0.04	4-Chlorotoluene	< 0.04
Carbon Tetrachloride	< 0.04	tert-Butylbenzene	< 0.04
Benzene	< 0.04	1,2,4-Trimethylbenzene	< 0.04
Trichloroethene	< 0.04	sec-Butylbenzene	< 0.04
1,2-Dichloropropane	<0.04	p-Isopropyltoluene	< 0.04
Bromodichloromethane	< 0.04	1,3-Dichlorobenzene	< 0.04
Dibromomethane	< 0.04	1,4-Dichlorobenzene	< 0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	< 0.04	1,2-Dibromo-3-chloropropane	< 0.04
Toluene	< 0.04	1,2,4-Trichlorobenzene	< 0.04
trans-1,3-Dichloropropene	< 0.04	Hexachlorobutadiene	< 0.04
1,1,2-Trichloroethane	< 0.04	Naphthalene	< 0.04
2-Hexanone	< 0.4	1,2,3-Trichlorobenzene	< 0.04
1,3-Dichloropropane	< 0.04		

ENVIRONMENTAL CHEMISTS

Date of Report: 02/25/99

Date Received: 01/15/99 and 01/18/99 Project: BV97011C, Chuck Olson

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

Laboratory Code: 812153-06 (Duplicate)

	Reporting	Sample	Duplicate	Relative Percent	Acceptance
Analyte	Units	Result	Result	Difference	Criteria
1,1-Dichloroethene	μg/g (ppm)	< 0.04	<0.04	nm	0-20
Benzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Trichloroethene	μg/g (ppm)	< 0.04	< 0.04	\mathbf{nm}	0-20
Toluene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20
Chlorobenzene	μg/g (ppm)	< 0.04	< 0.04	nm	0-20

Laboratory Code: 812153-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Percent Difference
1,1-Dichloroethene	μg/g (ppm)	2.	< 0.04	63	- 68	30-118	8
Benzene	μg/g (ppm)	2	< 0.04	58	63	44-113	9
Trichloroethene	μg/g (ppm)	2	< 0.04	54	.59	40-107	9 -
Toluene	μg/g (ppm)	2	< 0.04	54	62	34-113	14.
Chlorobenzene	μg/g (ppm)	2	< 0.04	68	62	46-109	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units_	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	μg/g (ppm)	2	54	46	41-131	20
Benzene	μg/g (ppm)	2	69	74	55-125	7
Trichloroethene	μg/g (ppm)	2	66	69	50-118	4
Toluene	μg/g (ppm)	2	78	80	55-119	3 .
Chlorobenzene	μg/g (ppm)	2	81	81	58-117	0

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

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

#901077

CJ A01 1-18-99 2:35

SAMPLE CHAIN OF CUSTODY

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BV97811C			CHUCK C	(١١٥١)				
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FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 901083 CJ A01 1-18-99 Zpm

SAMPLE CHAIN OF CUSTODY

Send Report To: Company 1851	۸	·		Contac	<u>: Сн</u>	12 Coophret	· 				
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Afrika A. May. SEATTE, WA											
REMARKS SAMPLE DISPOSAL INFORMATION											
HOLD ALO'L JARS FOR PLITURE ANALYSIS Dispose after 30 days											
Return Samples											
].		Call for Instructions					
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SOIL BORING AND EXCAVATION CONFIRMATION SAMPLES EPH/VPH ANALYTICAL RESULTS

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Jensen, 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

	TRANSMITTAL
DATE: 12- TO: Union	4-98 Doodhue
COMPANY:	AESI PROJECT ID: BV 97011B
FAX#: FROM:	lene reman
We are sending you # Pages (including cover sheet)	the following: Description
(including cover sneet)	EPH/VPH routs from downal
These are transmitt	ed as indicated: For review and comment For your signature and return
As requested Remarks:	As noted Other
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Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy East • Tacoma, WA 98424 (253) 922-2310 • FAX (253) 922-5047 e-mail: SoundL@aol.com



TRANSMITTAL MEMORANDUM

DATE: November 25, 1998

TO: Charlene Jensen Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

PROJECT: 810182

REPORT NUMBER: 76773

Enclosed are the test results for two samples received at Sound Analytical Services on November 3, 1998.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Tom Watson Project Manager

SOUND ANALYTICAL EPH / VPH SAMPLE SUMMARY REPORTS AND WORKSHEETS

SOUND ANALYTICAL EPH / VPH SUMMARY REPORT

Client Sample ID: EB-15-7.5-9.5' Work Order 76773 76773-01 Laboratory ID: Date Received: 11/3/98 11/3/98 Date Sampled: VPH Date Prepared: EPH 11/7/98 **PAHs** 11/7/98 11/10/98 **EPH PAHs** 11/20/98 **VPH** 11/11/98 Date Analyzed: 11/16/98 Matrix: % Solids: 94.56 solid

ANALYTICAL RESULTS:

Non-Carcinogen - Human Health Hazard Index Compounds

Compound	mg/kg
Total Aliphatics	2100
Total Aromatics *	4400
Benzene	ND
Ethylbenzene	ND
Toluene	ND
Xvlenes	0.49

^{*} Total aromatics is aromatic fractions + benzene - ethylbenzene, toluene & xylenes

Carcinogen - Human Health Risk Compounds

<u>Compound</u>	<u>mg/ka</u>	<u>PQL</u>
Benzene *	0.21	0.41
Total cPAHs *	0.60	1.20

^{*} For compounds not detected, 1/2 PQL values are Substituted

Soil to Groundwater - Fate and Transport Fractions

Aliphatic	<u>Fractions</u>	mg/kg
C5 - C6		ND
>C6 - C8		ND
>C8 - C1	o	31
>C10 - C	12	89
>C12 - C	16	190
>C16 - C	21	<u> 1800</u>
Total Alia	hatic Fractions	2100
i Utai Aij	onalic Fractions	2100
	Fractions	<u>mg/kg</u>
•	Fractions	
Aromatic	Fractions 0*	mg/kg
Aromatic >C8 - C1	Fractions 0* 12	<u>mg/kg</u> 23
Aromatic >C8 - C1 >C10 - C	Fractions 0* 12 16	mg/kg 23 20
Aromatic >C8 - C1 >C10 - C	Fractions 0* 12 16 21	mg/kg 23 20 39

^{*} Does not include ethylbenzene and xylenes

HUMAN HEALTH SOILS CONTACT WORKSHEETS

CLIENT ID EB-15-7.5-9.5 LAB ID 76773-01

Non-Carcinogen--Hazard Index

	,	<u>Residential</u>			<u>Commercial</u>			<u>Industrial</u>				
Compound	Soil ppm	ORfD	Factor	Res. Mult.	HQ	Factor	Com. Mult	HQ	Factor	Ind. Mult.	HQ	
Total aliphatic	2100	0.06	1.25E-05	2.08E-04	0.44	3.13E-06	5.21E-05	0.11	2.86E-07	4.77E-06	0.01	
Total aromatic*	4400	0.03	1.25E-05	4.17E-04	1.83	3.13E-06	1.04E-04	0.46	2.86E-07	9.53E-06	<u>0.04</u>	
Benzene	0.0			•								
Ethylbenzene	0.0	0.10	1.25E-05	1.25E-04	0.00	3.13E-06	3.13E-05	0.00	2.86E-07	2.86E-06	0.00	
Toluene	0.0	0.20	1.25E-05	6.25E-05	0.00	3.13E-06	1.56E-05	0.00	2.86E-07	1.43E-06	0.00	
Xylenes	0.5	2.00	1.25E-05	6.25E-06	<u>0.00</u>	3.13E-06	1.56E-06	<u>0.00</u>	2.86E-07	1.43E-07	<u>0.00</u>	
Hazard Index				. ,	2.27			0.57			0.05	

^{*} Total aromatic is total of aromatic fractions plus benzene minus ethylbenzene, toluene and xylenes

Carcinogen Risk

			Residential	Commercial	<u>Industrial</u>
Compound	Soil ppm	OCPF	Res. Mult. Risk	Com. Mult Risk	Ind. Mult. Risk
Benzene *	0.21	0.029	1.00E-06 6.09E-09	2.50E-07 1.52E-09	7.62E-08 4.64E-10
Total cPAHs *	0.60	7.30	1.00E-06 4.34E-06	2.50E-07 1.09E-06	7.62E-08 3:31E-07

^{*} For parameters not detected 1/2 PQL values are substituted

FATE AND TRANSPORT - SOIL TO GROUNDWATER

"Raoult's Law" Worksheet

CLIENT ID EB-15-7.5-9.5'

LAB ID 76773-01

COMPOUND	Soil mg/kg	MW g/mol	Moles mmol/kg	Mol Frac.	Solubility mg/l	Effect. Sol mg/l	DF	Well Conc. mg/l
Aliphatics EC 5 - 6	0	81	0.0	0.00	2.8E+01	0.0E+00	20	0.0E+00
EC >6 - 8	0	100	0.0	0.00	4.2E+00	0.0E+00	20	0.0E+00
EC >8 - 10	31	130	0.2	0.01	3.3E-01	2.8E-03	20	1.4E-04
EC >10 - 12	89	160	0.6	0.02	2.6E-02	5.2E-04	20	2.6E-05
EC >12 - 16	190	200	1.0	0.03	5.9E-04	2.0E-05	20	1.0E-06
EC >16 - 21	1800	270	6.7	0.24	1.0E-06	2.4E-07	20	1.2E-08
Aromatics								
Benzene	0.0	78	0.0	0.00	1.8E+03	0.0E+00	20	0.0E+00
Toluene	0.0	92	0.0	0.00	5.2E+02	0.0E+00	20	0.0E+00
EC >8 - 10*	23	120	0.2	0.01	6.5E+01	4.6E-01	20	2.3E-02
EC >10 - 12	20	130	0.2	0.01	2.5E+01	1.4E-01	20	6.9E-03
EC >12 - 16	39	150	0.3	0.01	5.8E+00	5.4E-02	20	2.7E-03
EC >16 - 21	540	190	2.8	0.10	5.1E-01	5.2E-02	20	2.6E-03
EC >21 - 35	3800	240	<u>15.8</u>	0.57	6.6E-03	3.8E-03	20	1.9E-04
			27.7	1.00				0.0

^{*} Includes ethylbenzene & xylenes

Well Conc. must be 1 mg/l or less for soil concentrations to be protective of Method A drinking water standard.

SOUND ANALYTICAL EPH / VPH SUMMARY REPORT

Client Sample ID: EB-24-7.5-9.0' 76773 Work Order 76773-02 Laboratory ID: Date Received: 11/3/98 Date Sampled: 11/3/98 **VPH** EPH **PAHs** 11/7/98 11/10/98 Date Prepared: 11/7/98 **VPH** 11/11/98 11/16/98 **PAHs** 11/20/98 Date Analyzed: EPH

Matrix: solid % Solids:

ANALYTICAL RESULTS:

Non-Carcinogen - Human Health Hazard Index Compounds

Compound	mg/kg
Total Aliphatics	4900
Total Aromatics *	4200
Benzene	ND
Ethylbenzene	0.78
Toluene	2.2
Xvienes	4.7

93.78

Carcinogen - Human Health Risk Compounds

Compound	<u>mg/kg</u>	<u>PQL</u>
Benzene *	0.21	0.41
Total cPAHs *	0.60	1.20

^{*} For compounds not detected, 1/2 PQL values are Substituted

Soil to Groundwater - Fate and Transport Fractions

•	
Aliphatic Fractions	mg/kg
C5 - C6	2.8
>C6 - C8	3.1
>C8 - C10	72
>C10 - C12	130
>C12 - C16	260
>C16 - C21	<u>4400</u>
Total Aliphatic Fractions	4900
Aromatic Fractions	<u>ma/ka</u>
>C8 - C10*	40
>C10 - C12	31
>C12 - C16	66
>C16 - C21	740
>C21 - C34	<u>3300</u>
Total Aromatic Fractions	4200

^{*} Does not include ethylbenzene and xylenes

^{*} Total aromatics is aromatic fractions + benzene - ethylbenzene, toluene & xylenes

HUMAN HEALTH SOILS CONTACT WORKSHEETS

CLIENT ID EB-24-7.5-9.0'

LAB ID 76773-02

Non-Carcinogen--Hazard Index

			Residentia	<u>al</u>		Commerc	<u>ial</u>		<u>Industrial</u>		
Compound	Soil ppm	ORfD	Factor	Res. Mult.	HQ	Factor	Com. Mult	HQ	Factor	Ind. Mult.	HQ
Total aliphatic	4900	0.06	1.25E-05	2.08E-04	1.02	3.13E-06	5.21E-05	0.26	2.86E-07	4.77E-06	0.02
Total aromatic*	4200	0.03	1.25E-05	4.17E-04	1.75	3.13E-06	1.04E-04	0.44	2.86E-07	9.53E-06	0.04
Benzene	0.0										
Ethylbenzene	0.8	0.10	1.25E-05	1.25E-04	0.00	3.13E-06	3.13E-05	0.00	2.86E-07	2.86E-06	0.00
Toluene	2.2	0.20	1.25E-05	6.25E-05	0.00	3.13E-06	1.56E-05	0.00	2.86E-07	1.43E-06	0.00
Xylenes	4.7	2.00	1.25E-05	6.25E-06	0.00	3.13E-06	1.56E-06	0.00	2.86E-07	1.43E-07	0.00
Hazard Index					2.77			0.69		1	0.06

^{*} Total aromatic is total of aromatic fractions plus benzene minus ethylbenzene, toluene and xylenes

Carcinogen Risk

			<u>Residential</u>	Commercial	<u>Industrial</u>
Compound	Soil ppm	OCPF	Res. Mult. Risk	Com. Mult Risk	Ind. Mult. Risk
Benzene *	0.21	0.029	1.00E-06 6.09E-09	2.50E-07 1.52E-09	7.62E-08 4.64E-10
Total cPAHs *	0.60	7.30	1.00E-06 4.34E-06	2.50E-07 1.09E-06	7.62E-08 3.31E-07

^{*} For parameters not detected 1/2 PQL values are substituted

FATE AND TRANSPORT - SOIL TO GROUNDWATER

"Raoult's Law" Worksheet

CLIENT ID	EB-24-7.5-9.0							
LAB ID	76773-02							
COMPOUND	Soil mg/kg	MW g/mol	Moles mmol/kg	Mol Frac.	Solubility mg/l	Effect. Sol mg/l	DF	Well Conc.
		•						
Aliphatics	_	0.4	0.0	0.00	0.05.04	0.05.00	-00	4.05.00
EC 5 - 6	3	81	0.0	0.00	2.8E+01	2.6E-02	20	1.3E-03
EC >6 - 8	3	100	0.0	0.00	4.2E+00	3.4E-03	20	1.7E-04
EC >8 - 10	72	130	0.6	0.01	3.3E-01	4.8E-03	20	2.4E-04
EC >10 - 12	130	160	8.0	0.02	2.6E-02	5.6E-04	20	2.8E-05
EC >12 - 16	260	200	1.3	0.03	5.9E-04	2.0E-05	20	1.0E-06
EC >16 - 21	4400	270	16.3	0.43	1.0E-06	4.3E-07	20	2.2E-08
Aromatics								
		70	0.0	0.00	1 0= 102	0.0E+00	20	0.0E+00
Benzene	0.0	78	0.0	0.00	1.8E+03		20	
Toluene	2.2	92	0.0	0.00	5.2E+02	3.3E-01	20	1.6E-02
EC >8 - 10*	45	120	0.4	0.01	6.5E+01	6.5E-01	20	3.3E-02
EC >10 - 12	31	130	0.2	0.01	2.5E+01	1.6E-01	20	7.9E-03
EC >12 - 16	66	150	0.4	0.01	5.8E+00	6.8E-02	20	3.4E-03
EC >16 - 21	740	190	3.9	0.10	5.1E-01	5.3E-02	20	2.6E-03
EC >21 - 35	3300	240	<u>13.8</u>	<u>0.36</u>	6.6E-03	2.4E-03	20	1.2E-04

^{*} Includes ethylbenzene & xylenes

Well Conc. must be 1 mg/l or less for soil concentrations to be protective of Method A drinking water standard.

1.00

37.8

SOUND ANALYTICAL EPH/VPH VOLATILE PETROLEUM HYDROCARBONS

ALIPHATIC AND AROMATIC FRACTIONS TARGET INDICATOR COMPOUNDS

 Client Name
 Friedman & Bruya, Inc.

 Client ID:
 EB-15-7.5-9.5'

 Lab ID:
 76773-01

 Date Received:
 11/3/98

 Date Prepared:
 11/10/98

 Date Analyzed:
 11/11/98

 % Solids
 94.56

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ry Limits
Surrogate	% Recovery 106	Flags	Low	High
a.a.aTrifluorotoluene	100		60	140

	Result		
Analyte .	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	1.2	
EC >6-8 Aliphatics	ND	0.83	
EC >8-10 Aliphatics	ND	2.5	J
EC >8-10 Aromatics	23	2.1	
MTBE	ND	0.41	
Benzene	ND	0.41	
Toluene	ND	0.41	
Ethylbenzene	ND	0.41	
m- & p-Xylene	ND	0.83	•
o-Xylene	0.49	0.41	

 Client Name
 Friedman & Bruya, Inc.

 Client ID:
 EB-24-7.5-9.0'

 Lab ID:
 76773-02

 Date Received:
 11/3/98

 Date Prepared:
 11/10/98

 Date Analyzed:
 11/11/98

 % Solids
 93.78

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	Recovery Limits		
Surrogate	% Recovery	Flags	Low	High		
a.a.aTrifluorotoluene	. 104		60	140		

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	2.8	1.2	
EC >6-8 Aliphatics	3.1	0.82	
EC >8-10 Aliphatics	ND	2.5	J
EC >8-10 Aromatics	40	2	
MTBE	ND	0.41	
Benzene ·	ND	0.41	
Toluene	2.2	0.41	
Ethylbenzene	0.78	0.41	
m- & p-Xylene	2.7	0.82	
o-Xylene	.2	0.41	

Lab ID:

Method Blank - GB1608

Date Received:

Date Prepared:

Date Analyzed:

% Solids

11/10/98

11/11/98

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
a.a.aTrifluorotoluene	105		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	1.2	
EC >6-8 Aliphatics	ND	8.0	
EC >8-10 Aliphatics	· ND	2.4	
EC >8-10 Aromatics	ND	2	
MTBE	ND	0.4	
Benzene	ND ·	. 0.4	
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	8.0	
o-Xylene .	ND	0.4	

Duplicate Report

 Client Sample ID:
 EB-15-7.5-9.5'

 Lab ID:
 76773-01

 Date Prepared:
 11/10/98

 Date Analyzed:
 11/11/98

 QC Batch ID:
 GB1608

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
EC 5-6 Aliphatics	0	0	NC	
EC >6-8 Aliphatics	0	0	, NC	
EC >8-10 Aliphatics	-6.1	-4.8	NC	
EC >8-10 Aromatics	23	19	19.0	
MTBE	0	. 0	, NC	
Benzene	0	. 0	NC	
Toluene	0	0	NC	
Ethylbenzene	0	0	NC	
m- & p-Xylene	0	0	NC	
o-Xylene	0.49	0.42	15.0	

Matrix Spike Report

 Client Sample ID:
 EB-15-7.5-9.5'

 Lab ID:
 76773-01

 Date Prepared:
 11/10/98

 Date Analyzed:
 11/11/98

 QC Batch ID:
 GB1608

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	7.9	5.1	64	
EC >6-8 Aliphatics	.0	4	1.7	43	
EC >8-10 Aliphatics	-6.1	4	-12	-148	X7
EC >8-10 Aromatics	23	4	25	38	X7a
MTBE	0	4	3.6	89	
Benzene	0	4	3.5	87	
Toluene	0	4	3.8	95	
Ethylbenzene	0	4	3.7	93	
m- & p-Xylene	0	7.9	7.9	100	
o-Xylene	0.49	4	4.2	95	

Blank Spike Report

 Lab ID:
 GB1608

 Date Prepared:
 11/10/98

 Date Analyzed:
 11/11/98

 QC Batch ID:
 GB1608

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8	9.4	117	
EC >6-8 Aliphatics	0	4	5.2	131	
EC >8-10 Aliphatics	0	4	3.6	90	
EC >8-10 Aromatics	0	4	0.61	15	
MTBE	0	4	3.2	81	
Benzene	0	4	4	99	4
Toluene	0	4	4.2	104	
Ethylbenzene	0	4	4.3	107	
m- & p-Xylene	. 0	8	8.7	109	
o-Xylene	0 -	4	3.9	97	

SOUND ANALYTICAL EPH / VPH EXTRACTABLE PETROLEUM HYDROCARBONS ALIPHATIC AND AROMATIC FRACTIONS

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc. EB-15-7.5-9.5' 76773-01 11/3/98 11/7/98 11/16/98 94.56

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	· 51	X9	60	140
ortho-terphenyl	85		60	140

	Result		
Analyte	_(mg/kg)	PQL	Flags
C8-C10 Aliphatics	31	2.2	_
C10-C12 Aliphatics	·89	2.2	
C12-C16 Aliphatics	190	2.2	
C16-C21 Aliphatics	1800	44	D
C21-C34 Aliphatics	20000	88	D
C10-C12 Aromatics	20	2.2	
C12-C16 Aromatics	. 39	2.2	
C16-C21 Aromatics	540	4.4	
C21-C34 Aromatics	3800	4.4	

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc. EB-24-7.5-9.0' 76773-02 11/3/98 11/7/98 11/16/98 93.78

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	. 70		60	140
ortho-terphenyl	88		60	140 -

	Result		
Analyte	-(mg/kg)	PQL	Flags
C8-C10 Aliphatics	72	2.2	
C10-C12 Aliphatics	130	2.2	•
C12-C16 Aliphatics	260	2.2	
C16-C21 Aliphatics	4400	440	. D
C21-C34 Aliphatics	28000	860	. D
C10-C12 Aromatics	. 31	2.2	
C12-C16 Aromatics	66	2.2	
C16-C21 Aromatics	740	4.3	•
C21-C34 Aromatics	3300	4.3	

Lab ID:

Method Blank - EP074

Date Received: Date Prepared:

11/7/98 11/16/98

Date Analyzed: % Solids

Extractable Petroleum Hydrocarbons (EPH)

	·		Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	94	•	60 .	140
ortho-terphenyl	95		60	140

Sample results are on an as received basis.

	Result	·	
Analyte	(mg/kg)	PQL'	Flags
C8-C10 Aliphatics	ND	2.5	
C10-C12 Aliphatics	-ND	2.5	
C12-C16 Aliphatics	ND	2.5	
C16-C21/Aliphatics	ND	.# 2 :5	
C21-C34 Aliphatics	· · ·ND	5	
C10-C12 Aromatics	ND	2.5	
C12-C16 Aromatics	ND	2.5	
C16-C21 Aromatics	ND	5	
C21-C34 Aromatics	ND	.5	

Blank Spike Report

Lab ID: EP074
Date Prepared: 11/7/98
Date Analyzed: 11/16/98
QC Batch ID: EP074

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	0	20	14	72	
C10-C12 Aliphatics	0	20	16	79	
C12-C16 Aliphatics	0	20	17	86	
C16-C21 Aliphatics	0	20	19	97	
C21-C34 Aliphatics	0	20	23	117	
C10-C12 Aromatics	0	20	17	84	
C12-C16 Aromatics	0	20	18	. 89	
C16-C21 Aromatics	0	20	20	100	
C21-C34 Aromatics	0	20	19	96	

Duplicate Report

 Client Sample ID:
 EB-15-7.5-9.5'

 Lab ID:
 76773-01

 Date Prepared:
 11/7/98

Date Analyzed: 11/16/98
QC Batch ID: EP074

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
C8-C10 Aliphatics	31	29	6.7	_
C10-C12 Aliphatics	89	80	11.0	
C12-C16 Aliphatics	190	170	11.0	
C16-C21 Aliphatics	1800	1600	12.0	
C21-C34 Aliphatics	20000	17000	16.0	
C10-C12 Aromatics	20	20	0.0	
C12-C16 Aromatics	39	35	11.0	
C16-C21 Aromatics	540	530	1.9	
C21-C34 Aromatics	3800	3400	11.0	

Matrix Spike Report

 Client Sample ID:
 EB-15-7.5-9.5'

 Lab ID:
 76773-01

 Date Prepared:
 11/7/98

 Date Analyzed:
 11/16/98

 QC Batch ID:
 EP074

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	31	17	36	27	X7
C10-C12 Aliphatics	89	17	84	-34	X7
C12-C16 Aliphatics	190	17	190	-26	X7a
C16-C21 Aliphatics	1800	17	1900	646	X7a
C21-C34 Aliphatics	20000	17	18000	-14100	X7a
C10-C12 Aromatics	20	17	31	68	X7
C12-C16 Aromatics	39	17	48	57	X7
C16-C21 Aromatics	540	17	630	514	X7a
C21-C34 Aromatics	3800	17	3700	-221	X7a

SOUND ANALYTICAL EPA 8270 MOD. EXTRACTABLE PETROLEUM HYDROCARBONS TARGET PAH COMPOUNDS

Client Name	Friedman & Bruya, Inc.
Client ID:	EB-15-7.5-9.5'
Lab ID:	76773-01
Date Received:	11/3/98
Date Prepared:	11/7/98
Date Analyzed:	11/20/98
% Solids	94.56
Dilution Factor	200

Targeted PAH Analytes by Method 8270 Modified.

	•		Recove	ery Limits
Surrogate o-Terphenyl	% Recovery 80	Flags	Low 50	High 150
o respiration				.00

		Result			
Analyte		(mg/kg)	PQL	MDL	Flags
Naphthalene		1	0.17	0.17	
2-Methylnaphthalene		0.52	0.17	0.16	
Acenaphthylene	ND		0.17	0.17	
Acenaphthene	.ND		0.17	0.15	
Fluorene	ND		0.17	0.13	
Phenanthrene	ND		0.17	0.12	
Anthracene	ND		0.17	0.14	
Fluoranthene	ND		0.17	0.1	
Pyrene	ND		0.17	0.096	
Benzo(a)anthracene	ND-	•	0.17	0.077	
Chrysene	ND		0.17	0.094	
Benzo(b)fluoranthene	ND		0.17	0.091	
Benzo(k)fluoranthene	ND		0.17	0.14	
Benzo(a)pyrene	ND		0.17	0.072	
Indeno(1,2,3-cd)pyrene	ND		0.17	0.14	
Dibenz(a,h)anthracene	ND.		0.17	0.098	
Benzo(g,h,i)perylene	ND		0.17	0.11	

Client Name	Friedman & Bruya, Inc.
Client ID:	EB-24-7.5-9.0'
Lab ID:	76773-02
Date Received:	11/3/98
Date Prepared:	11/7/98
Date Analyzed:	11/20/98
% Solids	93.78
Dilution Factor	200

Targeted PAH Analytes by Method 8270 Modified.

•			Recov	ery Limits
Surrogate	% Recovery	Flags	Low	High
o-Terphenyl	93		50	150

		Result			
Analyte		(mg/kg)	PQL	MDL	Flags
Naphthalene		3	0.17	0.17	
2-Methylnaphthalene		5.5	0.17	0.15	
Acenaphthylene	ND		0.17	0.17	
Acenaphthene	∃ND		0.17	0.15	
Fluorene	ND		0.17	0.13	
Phenanthrene		0.9	0.17	0.12	
Anthracene	ND		0.17	0.14	
Fluoranthene	ND		0.17	0.1	
Pyrene	ND		0.17	0.095	
Benzo(a)anthracene	ND		0.17	0.076	
Chrysene	ND		0.17	0.093	
Benzo(b)fluoranthene	ND		0.17	0.09	
Benzo(k)fluoranthene	ND		0.17	0.14	
Benzo(a)pyrene	ND		0.17	0.071	
Indeno(1,2,3-cd)pyrene	ND		0.17	0.14	
Dibenz(a,h)anthracene	ND		0.17	0.096	
Benzo(g,h,i)perylene	ND		0.17	0.11	

Lab !D:

Method Blank - EP074

Date Received:

Date Prepared: Date Analyzed: % Solids 11/7/98 11/17/98

% Solids
Dilution Factor

20

Targeted PAH Analytes by Method 8270 Modified.

			Recovery Lis		
Surrogate o-Terphenyl	% Recovery 90	Flags	Low 50	High 150	
-	•				

Sample results are on an as received basis.

	Resi	ult		
Analyte	(mg/l	(g) PQL	MDL	Flags
Naphthalene	ND	0.02	0.02	
2-Methylnaphthalene	ND	0.02	0.018	
Acenaphthylene	ND	· 0.02	0.019	
Acenaphthene	.ND	0.02	0.017	
Fluorene	∍ND	0.02 [.]	0.015	
Phenanthrene	ND	0.02	0.014	
Anthracene	ND	0.02	0.016	
Fluoranthene	ND	0.02	0.012	
Pyrene	ND	0.02	0.011	
Benzo(a)anthracene	ND	0.02	0.0088	
Chrysene	ND	0.02	0.011	
Benzo(b)fluoranthene	ND	0.02	0.01	
Benzo(k)fluoranthene	ND	0.02	0.016	
Benzo(a)pyrene	ND	0.02	0.0082	
Indeno(1,2,3-cd)pyrene	ND	0.02	- 0.016	
Dibenz(a,h)anthracene	ND	0.02	0.011	
Benzo(g,h,i)perylene	ND	0.02	0.012	

Blank Spike Report

Lab ID: EP074
Date Prepared: 11/7/98
Date Analyzed: 11/17/98
QC Batch ID: EP074

Targeted PAH Analytes by Method 8270 Modified.

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
Naphthalene	0	20	15	73	
Acenaphthene	0	20	20	99	
Pyrene	0	20	16	81	
Benzo(g,h,i)perylene	0	20	14	68	

Duplicate Report

 Client Sample ID:
 EB-15-7.5-9.5'

 Lab ID:
 76773-01

 Date Prepared:
 11/7/98

 Date Analyzed:
 11/20/98

 QC Batch ID:
 EP074

Targeted PAH Analytes by Method 8270 Modified.

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
Naphthalene	1	1	0.0	
2-Methylnaphthalene	0.52	0.49	5.9	
Acenaphthylene	0	0	NC	
Acenaphthene	0	0	NC	
Fluorene	0 .	0	NC	
Phenanthrene	0 .	0	NC	
Anthracene	0	0	NC	
Fluoranthene	0	0	NC	
Pyrene	0	0	NC	
:Benzo(a)anthracene	0	0	NC	
Chrysene	0	0	NC	
Benzo(b)fluoranthene	0	0	NC	
Benzo(k)fluoranthene	0	0	NC	
Benzo(a)pyrene	0	0	NC	
Indeno(1,2,3-cd)pyrene	0	0	NC	
Dibenz(a,h)anthracene	0	0	NC	
Benzo(g,h,i)perylene	0 -	0	NC	

Matrix Spike Report

Client Sample ID:

EB-15-7.5-9.5'

Lab ID:

76773-01 11/7/98

Date Prepared:

11/20/98

Date Analyzed: QC Batch ID:

EP074

Targeted PAH Analytes by Method 8270 Modified.

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Naphthalene	1	17	13	73	_
Acenaphthene	0	17	14	81	
Pyrene	0	17	16	91	
Benzo(g,h,i)perylene	0	17	13	76	

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.
- C2. Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.
- M: GC/MS confirmation was performed. The result derived from the original analysis was reported.
- D: The reported result for this analyte was calculated based on a secondary dilution factor.
- E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- PQL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be ______.
- X2: Contaminant does not appear to be "typical" product.
- X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
- X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike recovery was not determined due to the required dilution.
- X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was reanalyzed with similar results.
- X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
- X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
- X8: Surrogate recovery was not determined due to the required dilution.
- X9: Surrogate recovery outside advisory QC limits due to matrix interference.

29

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

76773

SAMPLE CHAIN OF CUSTODY

Address	iedman	+ Brey.	g I	Contact_C	harlene Johnson
City, State, Zip_Phone #	5-8282	FAX# 2	205-28	3-5044	Date 1/-3-98
SITE NO.		_	CT NAME		
			100	7	PURCHASE ORDER #
SAMPLERS (signature)		810	180		PROJECT LOCATION "
REMARKS			-	N SAI	MPLE DISPOSAL INFORMATION
			**		Dispose after 30 days Return Samples Call for Instructions
Sample #	Date/Time Sampled	Type of Sample	# of Jars	Lab Sample #	Analyses Requested
EB-15-7,5-9,5'		soil	1		SPA & VPH
EB-24-7,5-9,0'	10-30 10-20	(1	/		EPH + VPH
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Relinquisted by Muy W	- Fo	ha Planght	1	= + B Fuc	11-3-8 10124an
Solf alm	X Joe	PALMQUIS 1		SAS	11/3/28 10:25A
Relinguished by	P Joe 1	ALMRITE T	. 3	3A8	11/3/98 11:150
Received by: Hodens	in M	Hodgman		SAS	11/3/98 /1:15

FORMS/COC

7--

06/09/97

Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy East • Tacoma, WA 98424 (253) 922-2310 • FAX (253) 922-5047

e-mail: SoundL@aol.com



TRANSMITTAL MEMORANDUM

JAN 15 1999

DATE: January 14, 1999

TO: Charlene Jensen Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

PROJECT: 812133

REPORT NUMBER: 78064

Enclosed are the test results for one sample received at Sound Analytical Services on December 30, 1998.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Analytical Narrative: The percent recovery of the first aliphatic region in the blank spike associated with the EPA Method data exceeded the quality control limits due to a baseline anomaly. No action was taken on this outlier based acceptable recoveries in all of the other regions.

Low level contamination was present in the method blank associated with the EPH analyses. The contaminant is not typical petroleum product, but due to difficulties presented with area grouping methods.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Tom Watson
Project Manager

Client Name Friedman & Bruya, Inc.
Client ID: BAY 6 NSW
Lab ID: 78064-01

Date Received: 12/30/98

Date Prepared: 1/4/99

Date Analyzed: 1/5/99
% Solids 91.33

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ry Limits
Surrogate	% Recovery	Flags	· Low	High
a.a.aTrifluorotoluene	. 83		60	140

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2	
EC >6-8 Aliphatics	ND	0.81	
EC >8-10 Aliphatics	ND	2.4	
EC >8-10 Aromatics	ND	0.4	
MTBE	ND	0.4	
Benzene	ND	0.4	
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	0.81	
o-Xylene	ND	0.4	

 Client Name
 Friedman & Bruya, Inc.

 Client ID:
 BAY 6 NSW

 Lab ID:
 78064-01

 Date Received:
 12/30/98

 Date Prepared:
 1/5/99

 Date Analyzed:
 1/8/99

 % Solids
 91.33

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	105		60	140
ortho-terphenyl	113		60	140

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	2.5	2.4	B1
C10-C12 Aliphatics	ND	2.4	
C12-C16 Aliphatics	9.5	2.4	
C16-C21 Aliphatics	130	2.4	
C21-C34 Aliphatics	350	4.8	
C10-C12 Aromatics	ND	2.4	
C12-C16 Aromatics	ND	2.4	
C16-C21 Aromatics	25	4.8	
C21-C34 Aromatics	85	4.8	

Lab ID:

Method Blank - GB1655

Date Received:

Date Prepared:

1/4/99

Date Analyzed:

1/5/99

% Solids

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recovery Limits		
Surrogate	% Recovery	Flags	Low	High	
a.a.aTrifluorotolueņe	87		60	140	

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	·2	
EC >6-8 Aliphatics	ND	0.8	
EC >8-10 Aliphatics	ND	. 2.4	
EC >8-10 Aromatics	ND	0.4	
MTBE	ND	0.4	
Benzene	ND	0.4	
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND ´	0.8	
o-Xylene	ND	0.4	

Blank Spike Report

 Lab ID:
 GB1655

 Date Prepared:
 1/4/99

 Date Analyzed:
 1/5/99

 QC Batch ID:
 GB1655

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8	2.4	30	
EC >6-8 Aliphatics	0	4	2.6	65	
EC >8-10 Aliphatics	0	4	1.6	40	
EC >8-10 Aromatics	0	4	4.4	109	
MTBE	0	4	3.7	92	
Benzene	0	4	3.9	96	
Toluene	0	4	4.4	111	
Ethylbenzene	0	4	4.6	115	
m- & p-Xylene	0	8	9.4	117	
o-Xylene	0	4	4.6	115	

Duplicate Report

 Client Sample ID:
 BAY 6 NSW

 Lab ID:
 78064-01

 Date Prepared:
 1/4/99

 Date Analyzed:
 1/5/99

 QC Batch ID:
 GB1655

Sample Result	Duplicate Result	RPD	
(mg/kg)	(mg/kg)	%	Flag
0	0	NC	
0	0	NC	
. 0	2.6	-200.0	X4a
0	0	NC	
0	. 0	NC	
0	0	NC	
	Result (mg/kg) 0 0 0 0 0 0	Result (mg/kg) (mg/kg) 0 0 0 0 0 2.6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Result (mg/kg) Result (mg/kg) RPD 0 0 NC 0 0 NC 0 2.6 -200.0 0 0 NC 0 0 NC

Matrix Spike Report

 Client Sample ID:
 BAY 6 NSW

 Lab ID:
 78064-01

 Date Prepared:
 1/4/99

 Date Analyzed:
 1/5/99

 QC Batch ID:
 GB1655

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8.1	2.5	31	
EC >6-8 Aliphatics	0	4.1	2.5	61	
EC >8-10 Aliphatics	0	4.1	2.9	72	
EC >8-10 Aromatics	0	4.1	4.1	101	
MTBE	0	4.1	3.6	89	
Benzene	0	4.1	3.7	90	
Toluene	0	4.1	4.1	101	
Ethylbenzene	0	4.1	4.2	104	
m- & p-Xylene	0	8.1	8.6	105	
o-Xylene	0	4.1	4.2	104	

Lab ID:

Method Blank - EP082

Date Received:

Date Prepared:

Date Analyzed:

1/5/99

% Solids

1/8/99

Extractable Petroleum Hydrocarbons (EPH)

		•	Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	118		60	140
ortho-terphenyl	114		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	5.4	2.3	N
C10-C12 Aliphatics	3.3	2.3	N
C12-C16 Aliphatics	ND	2.3	
C16-C21 Aliphatics	ND	2.3	
C21-C34 Aliphatics	ND	4.5	
C10-C12 Aromatics	ND	2.3	
C12-C16 Aromatics	ND	2.3	
C16-C21 Aromatics	ND	4.5	
C21-C34 Aromatics	ND	4.5	

Blank Spike Report

Lab ID:	EP082
Date Prepared:	1/5/99
Date Analyzed:	1/8/99
QC Batch ID:	EP082

	Blank	Spike	BS		
	Result	Amount	Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	5.4	18	17	62	N
C10-C12 Aliphatics	3.3	18	20	90	
C12-C16 Aliphatics	. 0	18	19	107	
C16-C21 Aliphatics	0	18	21	115	
C21-C34 Aliphatics	0	18	20	110	
C10-C12 Aromatics	0	18	16	89	
C12-C16 Aromatics	0	18	19	104	
C16-C21 Aromatics	0	18	22	122	
C21-C34 Aromatics	0	18	24	130	

Matrix Spike Report

 Client Sample ID:
 812210-1

 Lab ID:
 78104-01

 Date Prepared:
 1/5/99

 Date Analyzed:
 1/8/99

 QC Batch ID:
 EP082M

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	4.1	24	21	71	_
C10-C12 Aliphatics	0	24	25	104	
C12-C16 Aliphatics	0	24	25	104	
C16-C21 Aliphatics	0	24	31	127	
C21-C34 Aliphatics	23	24	63	163	X7
C10-C12 Aromatics	0	24	19	78	
C12-C16 Aromatics	0	24	23	96	
C16-C21 Aromatics	0	24	31	126	
C21-C34 Aromatics	21	24	55	142	X7

Duplicate Report

 Client Sample ID:
 812210-1

 Lab ID:
 78104-01

 Date Prepared:
 1/5/99

 Date Analyzed:
 1/8/99

 QC Batch ID:
 EP082

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
C8-C10 Aliphatics	4.1	3.7	10.0	
C10-C12 Aliphatics	0	0	NC	
C12-C16 Aliphatics	0	0	NC	
C16-C21 Aliphatics	0	3.3	-200.0	X4a
C21-C34 Aliphatics	23	26	-12.0	
C10-C12 Aromatics	0	0	NC	
C12-C16 Aromatics	0	0	NC	
C16-C21 Aromatics	0	6.3	-200.0	X4a
C21-C34 Aromatics	21	24	-13.0	•

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.
- C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.
- M: GC/MS confirmation was performed. The result derived from the original analysis was reported.
- D: The reported result for this analyte was calculated based on a secondary dilution factor.
- E. The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- PQL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be
- X2: Contaminant does not appear to be "typical" product.
- X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
- X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike recovery was not determined due to the required dilution.
- X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was reanalyzed with similar results.
- X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
- X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
- X8: Surrogate recovery was not determined due to the required dilution.
- X9: Surrogate recovery outside advisory QC limits due to matrix interference.

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282



SAMPLE CHAIN OF CUSTODY

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Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy East • Tacoma, WA 98424 (253) 922-2310 • FAX (253) 922-5047

e-mail: SoundL@aol.com



TRANSMITTAL MEMORANDUM

JAN 27 1999

DATE: January 26, 1999

TO: Charlene Jensen

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

PROJECT: 812153

REPORT NUMBER: 78252

Enclosed are the test results for one sample received at Sound Analytical Services on January 8, 1999.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Analytical Narrative: N flag on EPH duplicate report: The relative percent difference (RPD) between sample 78252-1 and its duplicate analysis exceeded the QC limits. Matrix effects are indicated, based on the acceptable RPD for the other regions, and the lack of recovery of the matrix spike for this region.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Tom Watson
Project Manager

SOUND ANALYTICAL EPH / VPH SUMMARY REPORT

Client Sample ID: Bay 5 SSW 78252 Work Order 78252-01 Laboratory ID: 1/8/99 1/8/99 Date Sampled: Date Received: **VPH** EPH Date Prepared: 1/12/99 PAHs 1/12/99 1/12/99 VPH 1/13/99 **EPH** 1/14/99 **PAHs** 1/19/99 Date Analyzed: % Solids: Matrix: 95.83 solid

ANALYTICAL RESULTS:

Non-Carcinogen - Human Health Hazard Index Compounds

<u>Compound</u>	<u>mg/kg</u>
Total Aliphatics	900
Total Aromatics *	2700
Benzene	ND
Ethylbenzene	ND
Toluene	ND
Xvienes	ND

Xylenes
* Total aromatics is aromatic fractions + benzene - ethylbenzene, toluene & xylenes

Carcinogen - Human Health Risk Compounds

<u>Compound</u>	<u>mg/kg</u>	<u>PQL</u>
Benzene *	0.2	0.4
Total cPAHs *	0.63	1.30
Tan assessment and defected 1/2 DOL value	ice are Substituted	

Soil to Groundwater - Fate and Transport Fractions

Aliphatic Fractions	<u>mg/kg</u>
C5 - C6	ND
>C6 - C8	3.4
>C8 - C10	ND
>C10 - C12	24
>C12 - C16	85
>C16 - C21	<u>790</u>
Total Aliphatic Fractions	900
Aromatic Fractions	<u>mg/kg</u>
>C8 - C10*	4.2
>C8 - C10* >C10 - C12	4.2 3.1 .
>C10 - C12	3.1.
>C10 - C12 .>C12 - C16	3.1. 12

^{*} Does not include ethylbenzene and xylenes

^{*} For compounds not detected, 1/2 PQL values are Substituted

HUMAN HEALTH SOILS CONTACT WORKSHEETS

CLIENT ID Bay 5 SSW

LAB ID 78252-01

Non-Carcinogen--Hazard Index

			Residentia	<u>al</u>		Commerc	ial		Industrial		
Compound	Soil ppm	ORfD	Factor	Res. Mult.	HQ	Factor	Com. Mult	HQ	Factor	Ind. Mult.	HQ
Total aliphatic	900	0.06	1.25E-05	2.08E-04	0.19	3.13E-06	5.21E-05	0.05	2.86E-07	4.77E-06	0.00
Total aromatic*	2700	0.03	1.25E-05	4.17E-04	1.13	3.13E-06	1.04E-04	0.28	2.86E-07	9.53E-06	0.03
Benzene	0.0										
Ethylbenzene	0.0	0.10	1.25E-05	1.25E-04	0.00	3.13E-06	3.13E-05	0.00	2.86E-07	2.86E-06	0.00
Toluene	0.0	0.20	1.25E-05	6.25E-05	0.00	3.13E-06	1.56E-05	0.00	2.86E-07	1.43E-06	0.00
Xylenes	0.0	2.00	1.25E-05	6.25E-06	0.00	3.13E-06	1.56E-06	0.00	2.86E-07	1.43E-07	0.00
Hazard Index					1.31			0.33			0.03

^{*} Total aromatic is total of aromatic fractions plus benzene minus ethylbenzene, toluene and xylenes

Carcinogen Risk

			Residential	<u>Commercial</u>	<u>Industrial</u>
Compound	Soil ppm	OCPF	Res. Mult. Risk	Com. Mult Risk	Ind. Mult. Risk
Benzene *	0.20	0.029	1.00E-06 5.80E-09	2.50E-07 1.45E-09	7.62E-08 4.42E-10
Total cPAHs *	0.63	7.30	1.00E-06 4.60E-06	2.50E-07 1.15E-06	7.62E-08 3.50E-07

^{*} For parameters not detected 1/2 PQL values are substituted

FATE AND TRANSPORT - SOIL TO GROUNDWATER

"Raoult's Law" Worksheet

 CLIENT ID
 Bay 5 SSW

 LAB ID
 78252-01

COMPOUND	Soil mg/kg	MW g/mol	Moles mmol/kg	Mol Frac.	Solubility mg/l	Effect, Sol mg/l	DF	Well Conc. mg/l
Aliphatics EC 5 - 6 EC >6 - 8	3	81 100	0.0 0.0	0.00 0.00	2.8E+01 4.2E+00	0.0E+00 9.4E-03	20 20	0.0E+00 4.7E-04
EC >8 - 10	0	130	0.0	0.00	3.3E-01	9.4L-03 0.0E+00	20	0.0E+00
EC >10 - 12	24	160	0.2	0.01	2.6E-02	2.6E-04	20	1.3E-05
EC >12 - 16	85	200	0.4	0.03	5.9E-04	1.7E-05	20	8.3E-07
EC >16 - 21	790	270	2.9	0.19	1.0E-06	1.9E-07	20	9.7E-09
Aromatics			,		\$			
Benzene	0.0	78	0.0	0.00	1.8E+03	0.0E+00	20	0.0E+00
Toluene	0.0	92	0.0	0.00 `	5.2E+02	0.0E+00	20	0.0E+00
EC >8 - 10*	4	120	0.0	0.00	6.5E+01	1.5E-01	20	7.5E-03
EC >10 - 12	3	130	0.0	0.00	2.5E+01	3.9E-02	20	2.0E-03
EC >12 - 16	12	150	0.1	0.01	5.8E+00	3.1E-02	20	1.5E-03
EC >16 - 21	200	190	1.1	0.07	5.1E-01	3.5E-02	20	1.8E-03
EC >21 - 35	2500	240	<u>10.4</u>	<u>0.69</u>	6.6E-03	4.5E-03	20	2.3E-04
·			15.1	1.00				0.0

^{*} Includes ethylbenzene & xylenes

Well Conc. must be 1 mg/l or less for soil concentrations to be protective of Method A drinking water standard.

Client Name Friedman & Bruya, Inc.
Client ID: BAY 5 SSW
Lab ID: 78252-01

Date Received: 1/8/99

Date Prepared: 1/12/99

Date Analyzed: 1/13/99
% Solids 95.83

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	89		60	140
Bromofluorobenzene	105		60	140

Sample results are on a dry weight basis.

•	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2	
EC >6-8 Aliphatics	3.4	0.79	
EC >8-10 Aliphatics	ND	2.4	
EC >8-10 Aromatics	4.2	0.4	
MTBE	ND	. 0.4	
Benzene	ND	0.4	
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	0,79	
o-Xylene	ND	0.4	

Lab ID:

Method Blank - GB1665

Date Received:

Date Prepared: Date Analyzed:

1/12/99 1/12/99

% Solids

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	91		60	140
Bromofluorobenzene	106		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2	
EC >6-8 Aliphatics	ND	0.8	
EC >8-10 Aliphatics	ND	2.4	
EC >8-10 Aromatics	ND	0.4	
MTBE	ND	0.4	
Benzene	ND	0.4	
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	0.8	
o-Xylene	ND	0.4	

Blank Spike Report

Lab ID:	GB1665
Date Prepared:	1/12/99
Date Analyzed:	1/12/99
QC Batch ID:	GB1665

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

	Blank	Spike	BS		
	Result	Amount	Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8	8.8	111	
EC >6-8 Aliphatics	0	4	3.5	87	
EC >8-10 Aliphatics	0	4	3	75	
EC >8-10 Aromatics	0	4	5	125	
MTBE	0	4	4.4	109	
Benzene	0	4	4.3	108	
Toluene	0	4	4.9	122	
Ethylbenzene	0	4	5	125	
m- & p-Xylene	0	8	10	130	
o-Xylene	0	4	5.1	128	

(A) 1 "

Duplicate Report

Client Sample ID: BAY 5 SSW
Lab ID: 78252-01
Date Prepared: 1/12/99
Date Analyzed: 1/13/99

QC Batch ID: GB1665

Sample Result	Duplicate Result	RPD %	Flag
(1119/749)	(mg/kg)		riag
U	U	NC	
3.4	3.3	3.0	
. 0	0	NC	
4.2	4.7	-11.0	
0	0	NC	
0 ·	0	NC	
0	0	NC	
	Result (mg/kg) 0 3.4 0 4.2	Result (mg/kg) Result (mg/kg) 0 0 3.4 3.3 0 0 4.2 4.7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Result (mg/kg) Result (mg/kg) RPD 0 0 NC 3.4 3.3 3.0 0 0 NC 4.2 4.7 -11.0 0 0 NC 0 0 NC

Matrix Spike Report

Client Sample ID:

BAY 5 SSW

Lab ID:

78252-01

Date Prepared:

1/12/99

Date Analyzed:

1/13/99

QC Batch ID:

GB1665

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	7.9	7.7	98	_
EC >6-8 Aliphatics	3.4	3.9	2.7	-16	x7
EC >8-10 Aliphatics	0	3.9	4.3	109	
EC >8-10 Aromatics	4.2	3.9	9.7	138	
MTBE	0	3.9	4.1	105	
Benzene	0	3.9	4.1	103	
Toluene	. 0	3.9	4.5	114	
Ethylbenzene	0	3.9	4.7	120	
m- & p-Xylene	0	7.9	9.6	122	
o-Xylene	0	3.9	. 5	126	

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc. BAY 5 SSW 78252-01 1/8/99 1/12/99 1/14/99 95.83

Extractable Petroleum Hydrocarbons (EPH)

		·	Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	66		60	140
ortho-terphenyl	107		60	140

Sample results are on a dry weight basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	ND	2.3	
C10-C12 Aliphatics	24	2.3	
C12-C16 Aliphatics	85	2.3	
C16-C21 Aliphatics	790	2.3	
C21-C34 Aliphatics	17000	46	D
C10-C12 Aromatics	3.1	2.3	
C12-C16 Aromatics	12	2.3	
C16-C21 Aromatics	200	4.6	
C21-C34 Aromatics	2500	4.6	

Lab ID:

Method Blank - EP083

Date Received:

1/12/99

Date Prepared: Date Analyzed:

1/14/99

% Solids

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	113		60	140
ortho-terphenyl	118		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	ND	2.3	
C10-C12 Aliphatics	ND	2.3	
C12-C16 Aliphatics	ND	2.3	
C16-C21 Aliphatics	ND	2.3	
C21-C34 Aliphatics	ND	4.5	
C10-C12 Aromatics	ND	2.3	
C12-C16 Aromatics	ND	2.3	
C16-C21 Aromatics	ND	4.5	
C21-C34 Aromatics	ND	4.5	

Blank Spike Report

Lab ID:	EP083
Date Prepared:	1/12/99
Date Analyzed:	1/14/99
QC Batch ID:	EP083

Extractable Petroleum Hydrocarbons (EPH)

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
C8-C10 Aliphatics	0	18	17	94	9
C10-C12 Aliphatics	Ö	18	19	104	
C12-C16 Aliphatics	0	18	18	97	
C16-C21 Aliphatics	0	18	17	96	
C21-C34 Aliphatics	0	18	18	100	
C10-C12 Aromatics	0	18	20	110	
C12-C16 Aromatics	0	18	21	115	
C16-C21 Aromatics	0	18	23	128	
C21-C34 Aromatics	0	18	23	124	

Matrix Spike Report

 Client Sample ID:
 BAY 5 SSW

 Lab ID:
 78252-01

 Date Prepared:
 1/12/99

 Date Analyzed:
 1/14/99

 QC Batch ID:
 EP083M

Extractable Petroleum Hydrocarbons (EPH)

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	0	19	25	134	X7
C10-C12 Aliphatics	24	19	46	120	
C12-C16 Aliphatics	85	19	110	149	X7
C16-C21 Aliphatics	790	19	870	419	X7a
C21-C34 Aliphatics	17000	19	18000	4490	X7a
C10-C12 Aromatics	3.1	19	22	99	
C12-C16 Aromatics	12	19	33	113	
C16-C21 Aromatics	200	19	230	136	X7a
C21-C34 Aromatics	2500	19	2300	-1090	X7a

Duplicate Report

 Client Sample ID:
 BAY 5 SSW

 Lab ID:
 78252-01

 Date Prepared:
 1/12/99

 Date Analyzed:
 1/14/99

 QC Batch ID:
 EP083

Extractable Petroleum Hydrocarbons (EPH)

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
C8-C10 Aliphatics	0	0	NC	
C10-C12 Aliphatics	24	22	8.7	
C12-C16 Aliphatics	85	80	6.1	
C16-C21 Aliphatics	790	760	3.9	
C21-C34 Aliphatics	17000	17000	0.0	
C10-C12 Aromatics	3.1 ·	0	200.0	X4a
C12-C16 Aromatics	12	10	18.0	
C16-C21 Aromatics	200	150	29.0	Ν
C21-C34 Aromatics	2500	1800	33.0	Ν

Client Name	Friedman & Bruya, Inc.
Client ID:	BAY 5 SSW
Lab ID:	78252-01
Date Received:	1/8/99
Date Prepared:	1/12/99
Date Analyzed:	1/19/99
% Solids	95.83
Dilution Factor	200

Targeted PAH Analytes by Method 8270 Modified.

			Recov	ery Limits
Surrogate	% Recovery	Flags	Low	High
o-Terphenyl	71		50	150

Sample results are on a dry weight basis.

	Result			
Analyte	(mg/kg)	PQL	MDL	Flags
Naphthalene	ND ·	0.18	0.18	
2-Methylnaphthalene	ND	0.18	0.17	
Acenaphthylene	ND	0.18	0.18	
Acenaphthene	ND	0.18	0.16	
Fluorene	ND	0.18	0.13	
Phenanthrene	ND	0.18	0.12	
Anthracene	ND	0.18	0.15	
Fluoranthene	. ND	0.18	0.11	
Pyrene	ND	0.18	0.1	
Benzo(a)anthracene	ND	0.18	0.081	
Chrysene	ND	0.18	0.099	
Benzo(b)fluoranthene	ND	0.18	0.095	
Benzo(k)fluoranthene	ND	0.18	0.15	
Benzo(a)pyrene	ND	0.18	0.075	
Indeno(1,2,3-cd)pyrene	ND	0.18	0.14	
Dibenz(a,h)anthracene	ND	0.18	0.1	
Benzo(g,h,i)perylene	ND	0.18	0.11	ē

Lab ID:

Method Blank - EP083

Date Received:

1/12/99

Date Prepared: Date Analyzed:

1/19/99

% Solids
Dilution Factor

20

Targeted PAH Analytes by Method 8270 Modified.

			Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
o-Terphenyl	82		50	150

Sample results are on an as received basis.

	Result			
Analyte	(mg/kg)	PQL	MDL Flag	gs
Naphthalene	ND	0.02	0.02	
2-Methylnaphthalene	ND	0.02	0.018	
Acenaphthylene	ND	0.02	0.019	
Acenaphthene	ND	0.02	0.017	
Fluorene	ND	0.02	0.015	
Phenanthrene	ND	0.02	0.014	
Anthracene	ND	0.02	0.016	
Fluoranthene	ND	0.02	0.012	
Pyrene	ND	0.02	0.011	
Benzo(a)anthracene	ND	0.02	0.0088	
Chrysene	ND	0.02	0.011	
Benzo(b)fluoranthene	ND	0.02	0.01	
Benzo(k)fluoranthene	ND	0.02	0.016	
Benzo(a)pyrene	ND ·	0.02	0.0082	
Indeno(1,2,3-cd)pyrenė	ND	0.02	0.016	
Dibenz(a,h)anthracene	ND	0.02	0.011	
Benzo(g,h,i)perylene	ND	0.02	0.012	

Blank Spike Report

Lab ID: EP083
Date Prepared: 1/12/99
Date Analyzed: 1/19/99
QC Batch ID: EP083

Targeted PAH Analytes by Method 8270 Modified.

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flag
Naphthalene	0	20	15	74	
Acenaphthene	0	20	20	99	
Pyrene	0	20	15	77	
Benzo(g,h,i)perylene	0	20	17	86	

Matrix Spike Report

Client Sample ID:	BAY 5 SSW
Lab ID:	78252-01
Date Prepared:	1/12/99
Date Analyzed:	1/19/99
QC Batch ID:	EP083

Targeted PAH Analytes by Method 8270 Modified.

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Naphthalene	0	19	16	84	
Acenaphthene	0	19	13	71	
Pyrene	0	19	10	55	•
Benzo(g,h,i)perylene	0	19	11	56	

Duplicate Report

Client Sample ID:	BAY 5 SSW
Lab ID:	78252-01
Date Prepared:	1/12/99
Date Analyzed:	1/19/99
QC Batch ID:	EP083

Targeted PAH Analytes by Method 8270 Modified.

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
Naphthalene	0	0	NC	
2-Methylnaphthalene	0	0	NC	
Acenaphthylene	0	0	NC	
Acenaphthene	0	0	NC	
Fluorene	0	0	NC	
Phenanthrene	0	0	NC	
Anthracene	0	0	NC	
Fluoranthene	0	0	NC	
Pyrene	0	0	NC	
Benzo(a)anthracene	0	0	NC	
Chrysene	0	0	NC	
Benzo(b)fluoranthene	0	0	NC	
Benzo(k)fluoranthene	0	0	NC	
Benzo(a)pyrene	0	0	NC	
Indeno(1,2,3-cd)pyrene	0	0	NC	
Dibenz(a,h)anthracene	0	0	NC	
Benzo(g,h,i)perylene	0	0	NC	

FRIEDMAN & BRUYA, INC.

3012 16th Avenue West

Seattle, WA 98119-2029
(206) 285-8282

SAMPLE CHAIN OF CUSTODY

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Send Report To:	guan	a Bruy	- A	Contact	harlene be	melm
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Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy East • Tacoma, WA 98424 (253) 922-2310 • FAX (253) 922-5047 e-mail: SoundL@aol.com



TRANSMITTAL MEMORANDUM

DATE: January 29, 1999

TO: Charlene Jensen Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

PROJECT: 901023-039

REPORT NUMBER: 78541

Enclosed are the test results for two samples received at Sound Analytical Services on January 21, 1999.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Tom Watson Project Manager

latin

SOUND ANALYTICAL EPH / VPH

SAMPLE SUMMARY REPORTS AND WORKSHEETS

SOUND ANALYTICAL EPH / VPH SUMMARY REPORT

Client Sample ID:	Bay 1 NSW	_				
Work Order	78541	_				
Laboratory ID:	78541-01	_				
Date Sampled:	1/21/99	_	Date Rec	eived:	1/21/99	
Data Danasada	EDII		DALL-			
Date Prepared:	EPH	1/21/99	PAHs	1/21/99	VPH .	1/22/99
Date Analyzed:	EPH	1/23/99	PAHs	1/24/99	VPH	1/23/99
Matrix: solid	% Solids:	93.7	_			

ANALYTICAL RESULTS:

Non-Carcinogen - Human Health Hazard Index Compounds

<u>Compound</u>	mg/kg
Total Aliphatics	1200
Total Aromatics *	3000
Benzene	ND
Ethylbenzene	ND
Toluene	ND
Xvlenes	ND

^{*} Total aromatics is aromatic fractions + benzene - ethylbenzene, toluene & xylenes

Carcinogen - Human Health Risk Compounds

<u>Compound</u>	<u>mg/kg</u>	<u>PQL</u>
Benzene *	0.21	0.42
Total cPAHs *	0.06	0.13

^{*} For compounds not detected, 1/2 PQL values are Substituted

Soil to Groundwater - Fate and Transport Fractions

Aliphatic Fractions	<u>mg/kg</u>
C5 - C6	ND
>C6 - C8	ND
>C8 - C10	8.5
>C10 - C12	21
>C12 - C16	130
>C16 - C21	<u>1000</u>
Total Aliphatic Fractions	1200
•	
Aromatic Fractions	mg/kg
•	<u>ma/ka</u> 3
Aromatic Fractions	
Aromatic Fractions >C8 - C10*	3
Aromatic Fractions >C8 - C10* >C10 - C12	3 ND
Aromatic Fractions >C8 - C10* >C10 - C12 >C12 - C16	3 ND 14

^{*} Does not include ethylbenzene and xylenes

HUMAN HEALTH SOILS CONTACT WORKSHEETS

CLIENT ID Bay 1 NSW

LAB ID 78541-01

Non-Carcinogen--Hazard Index

		<u>Residential</u>		<u>a/</u>	<u>Commercial</u>			<u>Industrial</u>			
Compound	Soil ppm	ORfD	Factor	Res. Mult.	HQ	Factor	Com. Mult	HQ	Factor	Ind. Mult.	HQ
Total aliphatic	1200	0.06	1.25E-05	2.08E-04	0.25	3.13E-06	5.21E-05	0.06	2.86E-07	4.77E-06	0.01
Total aromatic*	3000	0.03	1.25E-05	4.17E-04	1.25	3.13E-06	1.04E-04	0.31	2.86E-07	9.53E-06	<u>0.03</u>
Benzene	0.0										
Ethylbenzene	0.0	0.10	1.25E-05	1.25E-04	0.00	3.13E-06	3.13E-05	0.00	2.86E-07	2.86E-06	0.00
Toluene	0.0	0.20	1.25E-05	6.25E-05	0.00	3.13E-06	1.56E-05	0.00	2.86E-07	1.43E-06	0.00
Xylenes	0.0	2.00	1.25E-05	6.25E-06	<u>0.00</u>	3.13E-06	1.56E-06	0.00	2.86E-07	1.43E-07	0.00
Hazard Index				88	1.50			0.38			0.03

^{*} Total aromatic is total of aromatic fractions plus benzene minus ethylbenzene, toluene and xylenes

Carcinogen Risk

			<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>
Compound	Soil ppm	OCPF	Res. Mult. Risk	Com. Mult Risk	Ind. Mult. Risk
Benzene *	0.21	0.029	1.00E-06 6.09E-09	2.50E-07 1.52E-09	7.62E-08 4.64E-10
Total cPAHs *	0.06	7.30	1.00E-06 4.60E-07	2.50E-07 1.15E-07	7.62E-08 3.50E-08

^{*} For parameters not detected 1/2 PQL values are substituted

FATE AND TRANSPORT - SOIL TO GROUNDWATER

"Raoult's Law" Worksheet

CLIENT ID

Bay 1 NSW

LAB ID

78541-01

COMPOUND	Soil mg/kg	MW g/mol	Moles mmol/kg	Mol Frac.	Solubility mg/l	Effect. Sol mg/l	DF	Well Conc. mg/l
Aliphatics								
EC 5 - 6	0	81	0.0	0.00	2.8E+01	0.0E+00	20	0.0E+00
EC >6 - 8	0	100	0.0	0.00	4.2E+00	0.0E+00	20	0.0E+00
EC >8 - 10	9	130	0.1	0.00	3.3E-01	1.2E-03	20	6.1E-05
EC >10 - 12	21	160	0.1	0.01	2.6E-02	1.9E-04	20	9.7E-06
EC >12 - 16	130	200	0.7	0.04	5.9E-04	2.2E-05	20	1.1E-06
EC >16 - 21	1000	270	3.7	0.21	1.0E-06	2.1E-07	20	1.1E-08
Aromatics		, -		,				
Benzene	0.0	78	0.0	0.00	1.8E+03	0.0E+00	20	0.0E+00
Toluene	0.0	92	0.0	0.00	5.2E+02	0.0E+00	20	0.0E+00
EC >8 - 10*	3	120	0.0	0.00	6.5E+01	9.2E-02	20	4.6E-03
EC >10 - 12	0	130	0.0	0.00	2.5E+01	0.0E+00	20	0.0E+00
EC >12 - 16	14	150	0.1	0.01	5.8E+00	3.1E-02	20	1.5E-03
EC >16 - 21	400	190	2.1	0.12	5.1E-01	6.1E-02	20	3.0E-03
EC >21 - 35	2600	240	<u>10.8</u>	<u>0.62</u>	6.6E-03	4.1E-03	20	2.0E-04
		-	17.6	1.00				0.0

^{*} Includes ethylbenzene & xylenes

Well Conc. must be 1 mg/l or less for soil concentrations to be protective of Method A drinking water standard.

SOUND ANALYTICAL EPH / VPH SUMMARY REPORT

Client Sample ID: Bay 8 SSW2 78541 Work Order 78541-02 Laboratory ID: 1/21/99 Date Received: 1/21/99 Date Sampled: EPH **PAHs** VPH 1/22/99 Date Prepared: 1/21/99 1/21/99 EPH **PAHs** 1/24/99 **VPH** 1/23/99 1/23/99 Date Analyzed: % Solids: Matrix: solid 92.85

ANALYTICAL RESULTS:

Non-Carcinogen - Human Health Hazard Index Compounds

Compound	<u>mg/kg</u>
Total Aliphatics	770
Total Aromatics *	650
Benzene	ND
Ethylbenzene	ND.
Toluene	ND
Xvlenes	ND

^{*} Total aromatics is aromatic fractions + benzene - ethylbenzene, toluene & xylenes

Carcinogen - Human Health Risk Compounds

0.2	0.4
0.07	0.13

^{*} For compounds not detected, 1/2 PQL values are Substituted

Soil to Groundwater - Fate and Transport Fractions

Aliphatic Fractions	<u>mg/kg</u>
C5 - C6	ND
>C6 - C8	ND
>C8 - C10	5.5
>C10 - C12	ND
>C12 - C16	74
>C16 - C21	<u>690</u>
Total Aliphatic Fractions	770
	mg/kg
Aromatic Fractions	<u>mg/kg</u>
Aromatic Fractions >C8 - C10*	<u>ilig/kg</u> ND
>C8 - C10*	ND
>C8 - C10* >C10 - C12	ND ND
>C8 - C10* >C10 - C12 >C12 - C16	ND ND 2.9

^{*} Does not include ethylbenzene and xylenes

HUMAN HEALTH SOILS CONTACT WORKSHEETS

Non-Carcinogen--Hazard Index

		<u>Residential</u>		<u>Commercial</u>			<u>Industrial</u>				
Compound	Soil ppm	ORfD	Factor	Res. Mult.	HQ	Factor	Com. Mult	HQ	Factor	Ind. Mult.	HQ
Total aliphatic	770	0.06	1.25E-05	2.08E-04	0.16	3.13E-06	5.21E-05	0.04	2.86E-07	4.77E-06	0.00
Total aromatic*	650	0.03	1.25E-05	4.17E-04	0.27	3.13E-06	1.04E-04	0.07	2.86E-07	9.53E-06	0.01
Benzene	0.0										
Ethylbenzene	0.0	0.10	1.25E-05	1.25E-04	0.00	3.13E-06	3.13E-05	0.00	2.86E-07	2.86E-06	0.00
Toluene	0.0	0.20	1.25E-05	6.25E-05	0.00	3.13E-06	1.56E-05	0.00	2.86E-07	1.43E-06	0.00
Xylenes	0.0	2.00	1.25E-05	6.25E-06	<u>0.00</u>	3.13E-06	1.56E-06	0.00	2.86E-07	1.43E-07	0.00
Hazard Index					0.43			0.11			0.01

^{*} Total aromatic is total of aromatic fractions plus benzene minus ethylbenzene, toluene and xylenes

Carcinogen Risk

			Residential	Commercial	<u>Industrial</u>
Compound	Soil ppm	OCPF	Res. Mult. Risk	Com. Mult Risk	Ind. Mult. Risk
Benzene *	0.20	0.029	1.00E-06 5.80E-09	2.50E-07 1.45E-09	7.62E-08 4.42E-10
Total cPAHs *	0.07	7.30	1.00E-06 4.85E-07	2.50E-07 1.21E-07	7.62E-08 3.70E-08

^{*} For parameters not detected 1/2 PQL values are substituted

FATE AND TRANSPORT - SOIL TO GROUNDWATER

"Raoult's Law" Worksheet

CLIENT ID	Bay 8 SSW2
LAB ID	78541-02

COMPOUND	Soil mg/kg	MW g/mol	Moles mmol/kg	Mol Frac.	Solubility mg/l	Effect. Sol mg/l	DF	Well Conc., mg/i
Aliphatics EC 5 - 6 EC >6 - 8 EC >8 - 10 EC >10 - 12 EC >12 - 16	0 0 6 0 74	81 100 130 160 200	0.0 0.0 0.0 0.0 0.4	0.00 0.00 0.01 0.00 0.06	2.8E+01 4.2E+00 3.3E-01 2.6E-02 5.9E-04	0.0E+00 0.0E+00 2.4E-03 0.0E+00 3.8E-05	20 20 20 20 20	0.0E+00 0.0E+00 1.2E-04 0.0E+00 1.9E-06
EC >16 - 21	690	270	2.6	0.44	1.0E-06	4.4E-07	20	2.2E-08
Aromatics					•			
Benzene	0.0	78	0.0	0.00	1.8E+03	0.0E+00	20	0.0E+00
Toluene	0.0	92	0.0	0.00	5.2E+02	0.0E+00	20	0.0E+00
EC >8 - 10*	0	120	0.0	0.00	6.5E+01	0.0E+00	20	0.0E+00
EC >10 - 12	0	130	0.0	0.00	2.5E+01	0.0E+00	20	0.0E+00
EC >12 - 16	3	150	0.0	0.00	5.8E+00	1.9E-02	20	9.7E-04
EC >16 - 21	76	190	0.4	0.07	5.1E-01	3.5E-02	20	1.8E-03
EC >21 - 35	570	240	<u>2.4</u>	<u>0.41</u>	6.6E-03	2.7E-03	20	<u>1.4E-04</u>
	•		5.8	1.00				0.0

^{*} Includes ethylbenzene & xylenes

Well Conc. must be 1 mg/l or less for soil concentrations to be protective of Method A drinking water standard.

SOUND ANALYTICAL EPH/VPH VOLATILE PETROLEUM HYDROCARBONS

ALIPHATIC AND AROMATIC FRACTIONS TARGET INDICATOR COMPOUNDS

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc.
BAY 1 NSW
78541-01
1/21/99
1/22/99
1/23/99
93.7

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	110		60	140
Bromofluorobenzene	114		60	140

Sample results are on a dry weight basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2.1	
EC >6-8 Aliphatics	ND	0.84	
EC >8-10 Aliphatics	3.5	2.5	
EC >8-10 Aromatics	3	0.42	
MTBE	ND ,	0.42	
Benzene	ND	0.42	
Toluene	ND	0.42	
Ethylbenzene	ND	0.42	
m- & p-Xylene	ND	0.84	
o-Xylene	ND	0.42	

Client Name
Client ID:
BAY 8 SSW2
Lab ID:
T8541-02
Date Received:
Date Prepared:
Date Analyzed:
Solids
Friedman & Bruya, Inc.
BAY 8 SSW2
T8541-02
T

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

'			Recove	ry Limits
Surrogate	% Recovery .	Flags	Low	High
Trifluorotoluene	111 .		60	140
Bromofluorobenzene	114		60	140

Sample results are on a dry weight basis.

į	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2	
EC >6-8 Aliphatics	ND	0.8	
EC >8-10 Aliphatics	ND	2.4	
EC >8-10 Aromatics	ND	0.4	
MTBE	ND	0.4	
Benzene	ND	0.4	
Toluene	ND	0.4	•
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	8.0 <u>,</u>	
o-Xylene	ND	0.4	•

Lab ID:

Method Blank - GB1675

Date Received:

Date Prepared:

Date Analyzed:

1/22/99 1/22/99

% Solids

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified Recovery Limits

			Recove	ry Linns
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	113		60	140
Bromofluorobenzene	116		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2	
EC >6-8 Aliphatics	ND	8.0	
EC >8-10 Aliphatics	ND .	2.4	
EC >8-10 Aromatics	ND	0.4	
MTBE	ND	0.4	
Benzene	ND	0.4	•
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	8.0	
o-Xylene	ND	0.4	

Blank Spike Report

 Lab ID:
 GB1675

 Date Prepared:
 1/22/99

 Date Analyzed:
 1/22/99

 QC Batch ID:
 GB1675

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8	8.7	109	_
EC >6-8 Aliphatics	0	4	4.4	109	
EC >8-10 Aliphatics	0	4	5.4	134	
EC >8-10 Aromatics	0	4	4.4	111	
MTBE	0	4	4.1	104	
Benzene	0 '	4	4	101	
Toluene	0	4	4.2	105	
Ethylbenzene	0	4	4.3	107	
m- & p-Xylene	0	8	8.7	109	
o-Xylene	0	4 .	4.2	105	

Matrix Spike Report

 Client Sample ID:
 LS-3

 Lab ID:
 78562-03

 Date Prepared:
 1/22/99

 Date Analyzed:
 1/23/99

 QC Batch ID:
 GB1675

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8.3	14	164	
EC >6-8 Aliphatics	0	4.2	6.9	167	
EC >8-10 Aliphatics	0	4.2	9.2	220	
EC >8-10 Aromatics	0	4.2	4.2	101	
, MTBE	0	4.2	3.6	87	
Benzene	0	4.2	3.9	93	
Toluene	0	4.2	4.1	97	
Ethylbenzene	0	4.2	4.2	100	
m- & p-Xylene	0	8.3	8.3	100	
o-Xylene	. 0	4.2	4.1	98	

Duplicate Report

 Client Sample ID:
 LS-3

 Lab ID:
 78562-03

 Date Prepared:
 1/22/99

 Date Analyzed:
 1/23/99

 QC Batch ID:
 GB1675

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
EC 5-6 Aliphatics	0	0	NC	
EC >6-8 Aliphatics	0	0	NC	
EC >8-10 Aliphatics	0	0	NC	
EC >8-10 Aromatics	. 0	0	NC	
MTBE	0	0	NC	
Benzene	0	0	NC	•
Toluene	0	0	NC	
Ethylbenzene	0	0	NC	
m- & p-Xylene	0	0	NC	
o-Xylene	0	0	NC	

SOUND ANALYTICAL EPH / VPH EXTRACTABLE PETROLEUM HYDROCARBONS ALIPHATIC AND AROMATIC FRACTIONS

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc.
BAY 1 NSW
78541-01
1/21/99
1/21/99
1/23/99
93.7

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	120		60	140
ortho-terphenyl	102		60	140

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	8.5	2.3	B1
C10-C12 Aliphatics	21	2.3	
C12-C16 Aliphatics	130	2.3	
C16-C21 Aliphatics	1000	2.3	
C21-C34 Aliphatics	9600	23	D
C10-C12 Aromatics	ND	2.3	
C12-C16 Aromatics	14	2.3	
C16-C21 Aromatics	400	4.6	
C21-C34 Aromatics	2600	4.6	•

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc.
BAY 8 SSW2
78541-02
1/21/99
1/21/99
1/23/99
92.85

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	116		60	140
ortho-terphenyl	113		60	140

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	5.5	2.3	B1
C10-C12 Aliphatics	ND	2.3	
C12-C16 Aliphatics	74	2.3	
C16-C21 Aliphatics	690	2.3	
C21-C34 Aliphatics	3300	4.6	
C10-C12 Aromatics	ND	2.3	
C12-C16 Aromatics	2.9	2.3	
C16-C21 Aromatics	76	4.6	
C21-C34 Aromatics	570	4.6	

Lab ID:

Method Blank - EP084

Date Received: Date Prepared:

1/21/99 1/23/99

Date Analyzed: % Solids

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
chloro-octadecane	122		60	140
ortho-terphenyl	121		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	3.6	2.3	N
C10-C12 Aliphatics	ND	2.3	
C12-C16 Aliphatics	ND	2.3	
C16-C21 Aliphatics	ND	2.3	
C21-C34 Aliphatics	ND	4.5	
C10-C12 Aromatics	ND	2.3	
C12-C16 Aromatics	ND	2.3	
C16-C21 Aromatics	ND	4.5	
C21-C34 Aromatics	ND	4.5	

Blank Spike Report

Lab ID: EP084
Date Prepared: 1/21/99
Date Analyzed: 1/23/99
QC Batch ID: EP084

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	3.6	18	17	75	
C10-C12 Aliphatics	0	18	18	99	
C12-C16 Aliphatics	0	18	19	105	
C16-C21 Aliphatics	0	18	22	123	
C21-C34 Aliphatics	0	18	19	104	
C10-C12 Aromatics	0	18	14	78	
C12-C16 Aromatics	0	18	15	81	
C16-C21 Aromatics	0	18	18	97	
C21-C34 Aromatics	0	18	17	96	

Matrix Spike Report

 Client Sample ID:
 BAY 1 NSW

 Lab ID:
 78541-01

 Date Prepared:
 1/21/99

 Date Analyzed:
 1/23/99

 QC Batch ID:
 EP084M

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	8.5	19	22	71	
C10-C12 Aliphatics	21	19	38	86	
C12-C16 Aliphatics	130	19	160	152	X7a
C16-C21 Aliphatics	1000	19	1100	255	X7a
C21-C34 Aliphatics	9600	19	9800	865	X7a
C10-C12 Aromatics	0	19	14	75	
C12-C16 Aromatics	14	19	32	93	
C16-C21 Aromatics	400	19	500	552	X7a
C21-C34 Aromatics	2600	19	2700	573	X7a

Duplicate Report

Client Sample ID: BAY 1 NSW
Lab ID: 78541-01
Date Prepared: 1/21/99
Date Analyzed: 1/23/99
QC Batch ID: EP084

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
C8-C10 Aliphatics	8.5	7.7	9.9	
C10-C12 Aliphatics	21	20	4.9	
C12-C16 Aliphatics	130	120	8.0	
C16-C21 Aliphatics	1000	960	4.1	
C21-C34 Aliphatics	9600	9000	6.5	
C10-C12 Aromatics	0	0	NC	
C12-C16 Aromatics	14	15	-6.9	•
C16-C21 Aromatics	400	490	-20.0	
C21-C34 Aromatics	2600	2800	-7.4	

SOUND ANALYTICAL EPA 8270 MOD. EXTRACTABLE PETROLEUM HYDROCARBONS TARGET PAH COMPOUNDS

Client Name	Friedman & Bruya, Inc.
Client ID:	BAY 1 NSW
Lab ID:	78541-01
Date Received:	1/21/99
Date Prepared:	1/21/99
Date Analyzed:	1/24/99
% Solids	93.7
Dilution Factor	20

Targeted PAH Analytes by Method 8270 Modified.

			Recov	ery Limits
Surrogate	% Recovery	Flags	Low	High
o-Terphenyl	91		50	150

	R	esuit			
Analyte	(m	ng/kg)	PQL	MDL	Flags
Naphthalene		0.25	0.018	0.018	
2-Methylnaphthalene		0.11	0.018	0.016	
Acenaphthylene	ND		0.018	0.018	
Acenaphthene	ND		0.018	0.016	
Fluorene	ND		0.018	0.013	
Phenanthrene	ND		0.018	0.012	
Anthracene	ND		0.018	0.015	
Fluoranthene	ND		0.018	0.011	
Pyrene	ND		0.018	0.01	
Benzo(a)anthracene	ND		0.018	0.008	
Chrysene	ND		0.018	0.0099	
Benzo(b)fluoranthene	ND		0.018	0.0095	
Benzo(k)fluoranthene	ND		0.018	0.015	
Benzo(a)pyrene	ND		0.018	0.0075	
Indeno(1,2,3-cd)pyrene	ND		0.018	0.014	
Dibenz(a,h)anthracene	ND		0.018	0.01	
Benzo(g,h,i)perylene	ND		0.018	0.011	

Client Name	Friedman & Bruya, Inc
Client ID:	BAY 8 SSW2
Lab ID:	78541-02
Date Received:	1/2/1/99
Date Prepared:	1/2 1/99
Date Analyzed:	1/2/4/99
% Solids	92.85
Dilution Factor	2 0

Targeted PAH Analytes by Method 8270 Modified.

	•			Recov	ery Limits
Surrogate ·		% Recovery	Flags	Low	High
o-Terphenyl	•	90		50	150

	•		- 1			
	Result				•	
Analyte	(mg/kg)	•	PQL	_	MDL	Flags
Naphthalene		0.3	1	0.019	0.019	
2-Methylnaphthalene		0.13		0.019	0.017	
Acenaphthylene	.ND			0.019	0.018	
Acenaphthene	ND			0.019	0.016	
Fluorene	ND			0.019	0.014	
Phenanthrene	ND	•		0.019	0.013	
Anthracene	ND			0.019	0.015	
Fluoranthene	ND			0.019	0.011	
Pyrene	ND			0.019	0.01	
Benzo(a)anthracene	ND			0.019	0.0082	
Chrysene	ND		(0.019	0.01	
Benzo(b)fluoranthene	ND		(0.019	0.0097	
Benzo(k)fluoranthene	ND		l	0.019	0.015	
Benzo(a)pyrene	ND		I	0.019	0.0076	
Indeno(1,2,3-cd)pyrene	ND		(0.019	0.015	
Dibenz(a,h)anthracene	ND .		I	0.019	0.01	
Benzo(g,h,i)perylene	ND		(0.019	0.012	

Lab ID:

Method Blank - EP084

Date Received:

Date Prepared: Date Analyzed: 1/21/99 1/24/99

% Solids

Dilution Factor

20

Targeted PAH Analytes by Method 8270 Modified.

			Recov	ery Limits
Surrogate	% Recovery	Flags	Low	High
o-Terphenyl	105		50	150

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	MDL Flags
Naphthalene	ND	0.018	0.018
2-Methylnaphthalene	ND	0.018	0.016
Acenaphthylene	ND	0.018	0.017
Acenaphthene	ND	0.018	0.016
Fluorene	ND	0.018	0.013
Phenanthrene	ND	0.018	0.012
Anthracene	ND	0.018	0.015
Fluoranthene	ND	0.018	0.011
Pyrene	ND	0.018	0.01
Benzo(a)anthracene	ND	0.018	0.008
Chrysene	ND	0.018	0.0098
Benzo(b)fluoranthene	ND	0.018	0.0095
Benzo(k)fluoranthene	ND	0.018	0.015
Benzo(a)pyrene	ND	0.018	0.0075
Indeno(1,2,3-cd)pyrene	ND	0.018	0.014
Dibenz(a,h)anthracene	ND	0.018	0.01
Benzo(g,h,i)perylene	ND	0.018	0.011

Blank Spike Report

Lab ID:	. EP084
Date Prepared:	1/21/99
Date Analyzed:	1/24/99
QC Batch ID:	EP084

Parameter Name	Blank Result (mg/kg)	Spike Amount	BS Result	BS % Boo	Eloa
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
Naphthalene	0	18	17	92	
Acenaphthene	0	18	16	89	
Pyrene	0	18	17	94	
Benzo(g,h,i)perylene	0	18	19	106	

Matrix Spike Report

Client Sample ID:

Lab ID:

Date Prepared:

Date Analyzed:

QC Batch ID:

BAY 1 NSW
78541-01
1/21/99
1/24/99
EP084

Parameter Name	Sample Result (mg/kg)	Spike Amount (mg/kg)	MS Result (mg/kg)	MS % Rec.	Flag
Naphthalene Acenaphthene	0.25 0	19 19	21 20	108 108	
Pyrene Benzo(g,h,i)perylene	. 0	19 19	13 14	71 75	

Duplicate Report

Client Sample ID: BAY 1 NSW
Lab ID: 78541-01
Date Prepared: 1/21/99
Date Analyzed: 1/24/99
QC Batch ID: EP084

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Fiag
Naphthalene	0.25	0.33	-28.0	
2-Methylnaphthalene	0.11	0.13	-17.0	
Acenaphthylene	0	0	NC	
Acenaphthene	0	0	NC	
Fluorene	0	0	NC	
Phenanthrene	0	0	NC	
Anthracene	0	0	NC	
Fluoranthene	0	. 0	NC	
Pyrene	0	0	NC	
Benzo(a)anthracene	0	0	NC	
Chrysene	0	0	NC	
Benzo(b)fluoranthene	0	0	NC	
Benzo(k)fluoranthene	0	0	NC	
Benzo(a)pyrene	0	0	NC	
Indeno(1,2,3-cd)pyrene	0	0	NC	
Dibenz(a,h)anthracene	0	0	NC	
Benzo(g,h,i)perylene	0	0	NC	

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.
- C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.
- M: GC/MS confirmation was performed. The result derived from the original analysis was reported.
- D: The reported result for this analyte was calculated based on a secondary dilution factor.
- E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- PQL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be
- X2: Contaminant does not appear to be "typical" product.
- X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
- X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike recovery was not determined due to the required dilution.
- X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was reanalyzed with similar results.
- X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
- X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
- X8: Surrogate recovery was not determined due to the required dilution.
- X9: Surrogate recovery outside advisory QC limits due to matrix interference.

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

78541

SAMPLE CHAIN OF CUSTODY

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Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy East • Tacoma, WA 98424 (253) 922-2310 • FAX (253) 922-5047

e-mail: SoundL@aol.com

TRANSMITTAL MEMORANDUM

DATE: February 19, 1999

TO: Charlene Jensen Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029

PROJECT: 901077-83

REPORT NUMBER: 78770

Enclosed are the test results for two samples received at Sound Analytical Services on January 29, 1999.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Analytical Narrative: N flag: The relative percent difference between the sample and its duplicate analysis exceeded the QC acceptance limits for C12 - C16 and C16 - C21 aliphatic ranges in the extractable petroleum hydrocarbon analyses, because the rocky nature of the batch QC sample made it difficult to get representative subsamples.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Tom Watson Project Manager

Client Sample ID:	Bay12NSW4	<u>.</u> .				. *
Work Order	78770	_				
Laboratory ID:	78770-02	-				
Date Sampled:	1/18/99	_	Date Rec	eived:	1/29/99_	
Date Prepared:	EPH	2/1/99	PAHs	2/1/99	VPH	2/4/99
Date Analyzed:	EPH	2/2/99	PAHs	2/9/99	VPH	2/5/99
Matrix: solid	% Solids:	90.99	_		•	

ANALYTICAL RESULTS:

Non-Carcinogen - Human Health Hazard Index Compounds

Compound	<u>mg/kg</u>
Total Aliphatics	2000
Total Aromatics *	2700
Benzene	ND
Ethylbenzene	2.4
Toluene	1.8
Xvlenes	2.1

^{*} Total aromatics is aromatic fractions + benzene - ethylbenzene, toluene & xylenes

Carcinogen - Human Health Risk Compounds

<u>Compound</u>	<u>mg/kg</u>	<u>PQL</u>
Benzene *	0.21	0.41
Total cPAHs *	0.06	0.13
 	~ 1	

^{*} For compounds not detected, 1/2 PQL values are Substituted

Soil to Groundwater - Fate and Transport Fractions

* Does not include ethylbenzene and xylenes

Aliphatic Fractions	mg/kg
C5 - C6	ND
>C6 - C8	6
>C8 - C10	160
>C10 - C12	200
>C12 - C16	300
>C16 - C21	<u>1300</u>
Total Aliphatic Fractions	2000
Aromatic Fractions	<u>mg/kg</u>
>C8 - C10*	160
>C10 - C12	76
>C12 - C16	120.
>C16 - C21	470
>C21 - C34	<u>1900</u>
Total Aromatic Fractions	2700

FATE AND TRANSPORT - SOIL TO GROUNDWATER

"Raoult's Law" Worksheet

CLIENT ID Bay12NSW4

LAB ID 78770-02

COMPOUND	Soil mg/kg	MW g/mol	Moles mmol/kg	Mol Frac.	Solubility mg/l	Effect. Sol mg/l	DF	Well Conc. mg/l
Aliphatics								
EC 5 - 6	0	81	0.0	0.00	2.8E+01	0.0E+00	20	0.0E+00
EC >6 - 8	6	100	0.1	0.00	4.2E+00	1.1E-02	20	5.7E-04
EC >8 - 10	160	130	1.2	0.06	3.3E-01	1.8E-02	20	9.2E-04
EC >10 - 12	200	160	1.3	0.06	2.6E-02	1.5E-03	20	7.4E-05
EC >12 - 16	300	200	1.5	0.07	5.9E-04	4.0E-05	20	2.0E-06
EC >16 - 21	1300	270	4.8	0.22	1.0E-06	2.2E-07	20	1.1E-08
Aromatics			•					
Benzene	0.0	78	0.0	0.00	1.8E+03	0.0E+00	20	0.0E+00
Toluene	1.8	92	0.0	0.00	5.2E+02	4.6E-01	20	2.3E-02
EC >8 - 10*	164	120	1.4	0.06	6.5E+01	4.0E+00	20	2.0E-01
EC >10 - 12	76	130	0.6	0.03	2.5E+01	6.6E-01	20	3.3E-02
EC >12 - 16	120	150	8.0	0.04	5.8E+00	2.1E-01	20	1.1E-02
EC >16 - 21	470	190	2.5	0.11	5.1E-01	5.7E-02	20	2.9E-03
EC >21 - 35	1900	240	<u>7.9</u>	<u>0.36</u>	6.6E-03	2.4E-03	20	1.2E-04
'			22.0	1.00				0.3

^{*} Includes ethylbenzene & xylenes

Well Conc. must be 1 mg/l or less for soil concentrations to be protective of Method A drinking water standard.

HUMAN HEALTH SOILS CONTACT WORKSHEETS

CLIENT ID <u>Bay12NSW4</u>

LAB ID <u>78770-02</u>

Non-Carcinogen--Hazard Index

			Residentia	<u>al</u> .		Commerc	<u>ial</u>		<u>Industrial</u>		
Compound	Soil ppm	ORfD	Factor	Res. Mult.	HQ	Factor	Com. Mult	HQ	Factor	Ind. Mult.	HQ
Total aliphatic	2000	0.06	1.25E-05	2.08E-04	0.42	3.13E-06	5.21E-05	0.10	2.86E-07	4.77E-06	0.01
Total aromatic*	2700	0.03	1.25E-05	4.17E-04	1.13	3.13E-06	1.04E-04	0.28	2.86E-07	9.53E-06	0.03
Benzene	0.0				•						
Ethylbenzene	2.4	0.10	1.25E-05	1.25E-04	0.00	3.13E-06	3.13E-05	0.00	2.86E-07	2.86E-06	0.00
Toluene	1.8	0.20	1.25E-05	6.25E-05	0.00	3.13E-06	1.56E-05	0.00	2.86E-07	1.43E-06	0.00
Xylenes	2.1	2.00	1.25E-05	6.25E-06	<u>0.00</u>	3.13E-06	1.56E-06	0.00	2.86E-07	1.43E-07	<u>0.00</u>
Hazard Index				800	1.54			0.39			0.04

^{*} Total aromatic is total of aromatic fractions plus benzene minus ethylbenzene, toluene and xylenes

Carcinogen Risk

			Residential	<u>Commercial</u>	<u>Industrial</u>
Compound	Soil ppm	OCPF	Res. Mult. Risk	Com. Mult Risk	Ind. Mult. Risk
Benzene *	0.21	0.029	1.00E-06 6.09E-09	2.50E-07 1.52E-09	7.62E-08 4.64E-10
Total cPAHs *	0.06	7.30	1.00E-06 4.60E-07	2.50E-07 1.15E-07	7.62E-08 3.50E-08

^{*} For parameters not detected 1/2 PQL values are substituted

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc. BAY12SSW3 78770-01 1/29/99 2/4/99 2/5/99 90.8

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recovery Limits		
Surrogate	% Recovery	Flags	Low	High	
Trifluorotoluene	93		60	140	
Bromofluorobenzene	120		60	140	

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2.2	
EC >6-8 Aliphatics	5.5	0.86	
EC >8-10 Aliphatics	160	2.6	
EC >8-10 Aromatics	87	0.43	
MTBE	ND	0.43	
Benzene	ND	0.43	
Toluene	2.3	0.43	
Ethylbenzene	1.6	0.43	
m- & p-Xylene	1.7	0.86	
o-Xylene	0.59	0.43	

Client Name
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids

Friedman & Bruya, Inc.
BAY12NSW4
78770-02
1/29/99
2/4/99
2/5/99
90.99

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

			Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	94		60	140
Bromofluorobenzene	126		60	140

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2.1	•
EC >6-8 Aliphatics	6	0.82	
EC >8-10 Aliphatics	230	2.5	
EC >8-10 Aromatics	160	0.41	
MTBE	ND	0.41	
Benzene	ND	0.41	
Toluene	1.8	0.41	
Ethylbenzene	2.4	0.41	
m- & p-Xylene	1.3	0.82	
o-Xylene	0.75	0.41	

Lab ID:

Method Blank - GB1684

Date Received:

Date Prepared:

Date Analyzed:

% Solids

2/4/99

2/4/99

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

•			Recove	ry Limits
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	100		60	140
Bromofluorobenzene	110		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
EC 5-6 Aliphatics	ND	2	
EC >6-8 Aliphatics	· ND	8.0	
EC >8-10 Aliphatics	ND	2.4	
EC >8-10 Aromatics	ND	0.4	
MTBE	ND	0.4	
Benzene	ND	0.4	
Toluene	ND	0.4	
Ethylbenzene	ND	0.4	
m- & p-Xylene	ND	0.8	
o-Xylene	ND	0.4	

Duplicate Report

 Client Sample ID:
 B2 3-4'

 Lab ID:
 78704-01

 Date Prepared:
 2/4/99

 Date Analyzed:
 2/5/99

 QC Batch ID:
 GB1684

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
EC 5-6 Aliphatics	0	0	NC	
EC >6-8 Aliphatics	0	0	NC	
EC >8-10 Aliphatics	0	0	NC	
EC >8-10 Aromatics	0	0	NC	
MTBE	0	0	NC	
Benzene	0 .	0	NC	
Toluene	0	0	NC	
Ethylbenzene	0	0	NC	
m- & p-Xylene	0	0	NC	
o-Xylene	0	0	NC	

Matrix Spike Report

 Client Sample ID:
 B2 3-4'

 Lab ID:
 78704-01

 Date Prepared:
 2/4/99

 Date Analyzed:
 2/5/99

 QC Batch ID:
 GB1684

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	9.8	11	115	
EC >6-8 Aliphatics	0	4.9	5	102	
EC >8-10 Aliphatics	0	4.9	3.3	68	
EC >8-10 Aromatics	0	4.9	4.3	87	
MTBE	0	4.9	4.2	.86	
Benzene	0	4.9	4.1	84	
Toluene	0	4.9	4.2	85	
Ethylbenzene	0	4.9	4.2	86	
m- & p-Xylene	0 .	9.8	8.6	88	
o-Xylene	0	4.9	4.2	87	•

Blank Spike Report

 Lab ID:
 GB1684

 Date Prepared:
 2/4/99

 Date Analyzed:
 2/4/99

 QC Batch ID:
 GB1684

WSDOE Method for Determination of Volatile Petroleum Hydrocarbon Fractions Modified

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
EC 5-6 Aliphatics	0	8	13	159	_
EC >6-8 Aliphatics	0	4	4.9	123	
EC >8-10 Aliphatics	0	4	3.7	91	
EC >8-10 Aromatics	0	4	4.2	105	
MTBE	0	4	4	99	
Benzene	0	4	4	101	
Toluene	0	4	4 .	101	
Ethylbenzene	0	4	4.2	105	
m- & p-Xylene	0	8	8.4	105	
o-Xylene	0	4	4.1	103	

Client Name	Friedman & Bruya, Inc.
Client ID:	BAY12SSW3
Lab ID:	78770-01
Date Received:	1/29/99
Date Prepared:	2/1/99
Date Analyzed:	2/2/99
% Solids	90.8
Dilution Factor	10

Extractable Petroleum Hydrocarbons (EPH)

	·		Recov	ery Limits
Surrogate	% Recovery	Flags	Low	High
Chloro-octadecane	83		√60	140
Ortho-terphenyl	111		60	140
			•	

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	100	2.3	
C10-C12 Aliphatics	100	2.3	
C12-C16 Aliphatics	100	2.3	
C16-C21 Aliphatics	1300	2.3	
C21-C34 Aliphatics	12000	23	D
C10-C12 Aromatics	39	2.3	
C12-C16 Aromatics	35	2.3	
C16-C21 Aromatics	340	4.6	
C21-C34 Aromatics	1900	4.6	

Client Name	Friedman & Bruya, Inc.
Client ID:	BAY12NSW4
Lab ID:	78770-02
Date Received:	1/29/99
Date Prepared:	2/1/99
Date Analyzed:	2/2/99
% Solids	90.99
Dilution Factor	10

Extractable Petroleum Hydrocarbons (EPH)

	r		Recov	ery Limits
Surrogate	∴% Recovery	Flags	Low	High
Chloro-octadecane	86		60	140
Ortho-terphenyl	104		60	140

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	160	2.2	
C10-C12 Aliphatics	200	2.2	
C12-C16 Aliphatics	300	2.2	
C16-C21 Aliphatics	1300	2.2	
C21-C34 Aliphatics	11000	22	, D
C10-C12 Aromatics	76	2.2	
C12-C16 Aromatics	120	2.2	
C16-C21 Aromatics	470	4.5	
C21-C34 Aromatics	1900	4.5	

Lab ID:

Method Blank - EP086

Date Received:

Date Prepared: Date Analyzed: 2/1/99 2/2/99

% Solids

Dilution Factor

10

Extractable Petroleum Hydrocarbons (EPH)

			Recove	ery Limits
Surrogate	% Recovery	Flags	Low	High
Chloro-octadecane	112		60	140
Ortho-terphenyl	107		60	140

Sample results are on an as received basis.

	Result		
Analyte	(mg/kg)	PQL	Flags
C8-C10 Aliphatics	ND .	2.5	
C10-C12 Aliphatics	ND	2.5	
C12-C16 Aliphatics	. ND	2.5	
C16-C21 Aliphatics	ND	2.5	
C21-C34 Aliphatics	ND	5	
C10-C12 Aromatics	ND	2.5	
C12-C16 Aromatics	ND	2.5	
C16-C21 Aromatics	ND	5	
C21-C34 Aromatics	ND	5	

Blank Spike Report

Lab ID: EP086
Date Prepared: 2/1/99
Date Analyzed: 2/16/99
QC Batch ID: EP086

	Blank Result	Spike Amount	BS Result	BS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	0	20	17	83	
C10-C12 Aliphatics	0	20	14	71	
C12-C16 Aliphatics	0	20	15	75	
C16-C21 Aliphatics	0	20	18	91	
C21-C34 Aliphatics	0	20	21	106	
C10-C12 Aromatics	0	20	17	83	
C12-C16 Aromatics	0	20	16	79	
C16-C21 Aromatics	0	20	20	100	
C21-C34 Aromatics	. 0	20	14	70	

Duplicate Report

Client Sample ID:	B2 3-4'
Lab ID:	78704-01
Date Prepared:	2/1/99
Date Analyzed:	2/2/99
QC Batch ID:	EP086

	Sample	Duplicate		
	Result	Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
C8-C10 Aliphatics	Ô	0	NC	
C10-C12 Aliphatics	0	0	NC	
C12-C16 Aliphatics	9.1	7	26.0	. N
C16-C21 Aliphatics	110	85	26.0	Ν
C21-C34 Aliphatics	780	610	24.0	
C10-C12 Aromatics	0	0	NC	
C12-C16 Aromatics	0	0	NC	
C16-C21 Aromatics	29	24	19.0	
C21-C34 Aromatics	230	210	9.1	

Matrix Spike Report

 Client Sample ID:
 BAY12NSW4

 Lab ID:
 78770-02

 Date Prepared:
 2/1/99

 Date Analyzed:
 2/2/99

 QC Batch ID:
 EP086

	Sample	Spike	MS		
Da sa sa sta a Marana	Result	Amount	Result	MS	
Parameter Name	(mg/kg)	(mg/kg)	(mg/kg)	% Rec.	Flag
C8-C10 Aliphatics	160	18	200	207	X7a
C10-C12 Aliphatics	200	18	240	191	X7a
C12-C16 Aliphatics	300	18	340	221	X7a
C16-C21 Aliphatics	1300	18	1400	701	X7a
C21-C34 Aliphatics	11000	18 .	13000	7330	X7a
C10-C12 Aromatics	76	18	100	144	X7
C12-C16 Aromatics	120	18	150	150	X7a
C16-C21 Aromatics	470	18	500	168	X7a
C21-C34 Aromatics	1900	18	1900	-102	X7a

Client Name	Friedman & Bruya, Inc.
Client ID:	BAY12NSW4
Lab ID:	78770-02
Date Received:	1/29/99
Date Prepared:	2/1/99
Date Analyzed:	2/9/99
% Solids	90.99
Dilution Factor	20

Targeted PAH Analytes by Method 8270 Modified.

			Recove	ery Limits
Surrogate o-Terphenyl	% Recovery 119	Flags	Low 50	High 150
o respirently	110			100

	Re	sult			
Analyte	(mg	g/kg)	PQL	MDL	Flags
Naphthalene		3.6	0.018	0.018	
2-Methylnaphthalene		5.5	0.018	0.016	
Acenaphthylene	ND		0.018	0.017	
Acenaphthene	ND		0.018	0.015	
Fluorene		0.66	0.018	0.013	
Phenanthrene		1.5	0.018	0.012	
Anthracene		0.24	0.018	0.014	
Fluoranthene	ND		0.018	0.01	
Pyrene	ND		0.018	0.0097	
Benzo(a)anthracene	ND		0.018	0.0077	
Chrysene	ND		0.018	0.0095	
Benzo(b)fluoranthene	ND		0.018	0.0091	
Benzo(k)fluoranthene	ND		0.018	0.014	
Benzo(a)pyrene	ND		0.018	0.0072	
Indeno(1,2,3-cd)pyrene	ND		0.018	0.014	
Dibenz(a,h)anthracene	ND		0.018	0.0098	
Benzo(g,h,i)perylene	ND		0.018	0.011	

Lab ID:

Method Blank - EP086

Date Received:

Date Prepared: Date Analyzed: 2/1/99 2/9/99

% Solids
Dilution Factor

20

Targeted PAH Analytes by Method 8270 Modified.

			Recovery Limits	
Surrogate	% Recovery	Flags	Low	High
o-Terphenyl	115		50	150

Sample results are on an as received basis.

	Result	•		
Analyte ·	(mg/kg)	PQL	MDL Flag	s
Naphthalene	ND	0.02	0.02	
2-Methylnaphthalene	, ND	0.02	0.018	
Acenaphthylene	ND	0.02	0.019	
Acenaphthene	ND	0.02	0.017	
Fluorene	ND	0.02	0.015	
Phenanthrene	ND	0.02	0.014	
Anthracene	ND	0.02	0.016	
Fluoranthene	ND	0.02	0.012	
Pyrene	ND .	0.02	0.011	
Benzo(a)anthracene	ND	0.02	0.0088	
Chrysene	ND .	0.02	0.011	
Benzo(b)fluoranthene	ND .	0.02	0.01	
Benżo(k)fluoranthene	ND	0.02	0.016	
Benzo(a)pyrene	ND	0.02	0.0082	
Indeno(1,2,3-cd)pyrene	ND	0.02	0.016	
Dibenz(a,h)anthracene	ND	0.02	0.011	
Benzo(g,h,i)perylene	ND	0.02	0.012	

Blank Spike Report

Lab ID:	EP086
Date Prepared:	2/1/99
Date Analyzed:	2/9/99
QC Batch ID:	EP086

Parameter Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	Flaq
Naphthalene	0	20	14	70	_
Acenaphthene	0	20	20	100	
Pyrene	0	20	17	85	
Benzo(g,h,i)perylene	0	20	18	89	

Matrix Spike Report

 Client Sample ID:
 BAY12NSW4

 Lab ID:
 78770-02

 Date Prepared:
 2/1/99

 Date Analyzed:
 2/9/99

 QC Batch ID:
 EP086

	Sample Result	Spike Amount	MS Result	MS	
Parameter Name	(mg/kg)	(mg/kģ)	(mg/kg)	% Rec.	Flag
Naphthalene	3.6	18	16	71	
Acenaphthene	0	. 18	19	110	
Pyrene	0	18	17	98	
Benzo(g,h,i)perylene	0	18	12	66	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

 Client Sample ID:
 B2 3-4'

 Lab ID:
 78704-01

 Date Prepared:
 2/1/99

 Date Analyzed:
 2/9/99

 QC Batch ID:
 EP086

Targeted PAH Analytes by Method 8270 Modified.

	Sample Result	Duplicate Result	RPD	
Parameter Name	(mg/kg)	(mg/kg)	%	Flag
Naphthalene	0	0	NC	
2-Methylnaphthalene	0	0	NC	
Acenaphthylene	0	0	NC	
Acenaphthene	0	0	NC	
Fluorene	0	0	NC	•
Phenanthrene	0	0	NC	
Anthracene	0	0	NC	
Fluoranthene	0	0	NC	
Pyrene	0	. 0	NC	
Benzo(a)anthracene	0	0	NC	
Chrysene	0	0	NC	
Benzo(b)fluoranthene	0	0	NC	
Benzo(k)fluoranthene	0	0	NC	
Benzo(a)pyrene	0	0	NC	
Indeno(1,2,3-cd)pyrene	0	0	NC	
Dibenz(a,h)anthracene	0	0	NC	
Benzo(g,h,i)perylene	0	0	NC	

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.
- C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.
- M: GC/MS confirmation was performed. The result derived from the original analysis was reported.
- D: The reported result for this analyte was calculated based on a secondary dilution factor.
- E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- POL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be ______.
- X2: Contaminant does not appear to be "typical" product.
- X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
- X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike recovery was not determined due to the required dilution.
- X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was reanalyzed with similar results.
- X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
- X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
- X8: Surrogate recovery was not determined due to the required dilution.
- X9: Surrogate recovery outside advisory QC limits due to matrix interference.

FRIEDMAN & BRUYA, INC. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282

78170

SAMPLE CHAIN OF CUSTODY

Send Report To:			ma-	Contac		harlene	- Jensen
City, State, ZipPhone #		FAX#		· · · · · · · · · · · · · · · · · · ·		Date	
SITE NO.			CT NAME			PURCHASE	ORDER #
	(701077-			-	<u>-</u>	
SAMPLERS (signature)		101011-	-02			PROJECT LO	CATION
Orani Bara (Bignaia) by							CATION
DELCA DEC							
REMARKS				· ·		MPLE DISPOSAL	
			•			Dispose after Return Sample	-
						Call for Instru	
	Date/Time	Type of	# of	Lab			alyses
Sample #	Sampled	Sample	Jars	Sample #	}	Rec	juested
Bay1255W3	1-15-99 9:30	soil	}			NOH/EDH	(GC only)
Bay 12 NSW4	1-18-99 10:15	- IX				VPH/EPH	with target PN
			-				
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SIGNATURE	PF	RINT NAME	1	COMPAN	! Y	lDate	Time
Relinquished by:		CHOINIERE	= F	-+BI		1-29	99 815AM
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anti-mark			<u> </u>	as		()	32-40	5404
•			\cap	Assoc	iated		•	Plant #	Ticket #
Customer #	Sold To	West	TR(٥ /				-	4-99
Job	Delivery Address	-V •	— ,					Project #	/ Time Batched
P. O. #	Instructions								Due Time
Zone							_	Leave Plant	Arrive Job
				-,		·			[A-star Dlain
Order #	Truck#354	Driver/Hauler	nilly			· · · · · · · · · · · · · · · · · · ·		Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code)		ESCRIPTION	وعانيه والمقتلين	Unit بنونید Price	AMOUNT
		85	260	P	CS				
		330	40.						
		50,	020				\ \		,
								·	· · · · · · · · · · · · · · · · · · ·
SUB-TOTAL	ভিন্তা (১৯৮৮) করে। ১৮	TAX	95 1465 be a teste	gold fall from the state	TICKET TOTAL	ropelitativi i se se. George		ORDER 2	SI Proposition of
attorney's fees, inc	urred in collecting a	costs, including reas ny sums owed. of delivery will bear i	onable re-	ear Customer: The drh ay possibly cause dam u in every way that we sponsibility from any da this material and that y ditional consideration,	rer of this truck is pro age to the premises ocan, but in order to umage that may occu rou also agree to hel the undersigned agre	and/or adjacent propert of this the driver is re- or to the premises and/or p him remove mud from ees to indemnify and he	to you for your si y if he places the questing that you if adjacent propert in the wheels of his old harmless the o	gnature is of the opinion to material in this load where sign this RELEASE reliev y, buildings, sidewalks, dri s vehicle so that he will no	that the size and weight of his truck you desire it. It is our wish to help you do this supplier from any yee-ways, curbs, etc. by the delivery titrer the public street. Further, as supplier for any and all damage to

170728

LOAD RECEIVED BY:

X CUSTOMER SIGNATURE

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be

collected on all Returned Checks.

		·			· · · · · · · · · · · · · · · · · · ·	-	•
	*		GS		Q	32-45	406
		1/	Assoc	iated		Plant #	Ticket #
Sustomer #	Sold To	MUSTA	(()				Date 4.
ob	Delivery Address	7			P	roject #	Time Batched
. O. #	Instructions				· · · · ·		Due Time
Zone						Leave Plant	Arrive Job
1	11122				•	,	
Order #	Truck#	Briver/Hauler				Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Pro Quantity	oduct ode	PRODUCT DESCRIF	TION	Unit مرتب Price مرتب	AMOUNT
[: : : : : : : : : : : : : : : : : : :			PC	·S	-		
		19	440	•			
<u> </u> 		37/	240			*	5%, . :
<u> </u>		HE	200				
¹GUB-TOTAL		TAX	:	TICKET TOTAL	C T	ORDER OTAL	グ・10

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

All accounts not paid within 30 days of delivery will bear interest

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

at the rate of 18% per annum.

PHOPEHTY DAMAGE HELEASE (TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE CURB LINE)

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck
may possibly cause damage to the premises and/or adjacent properly if he places the material in this load where you desire it. It is our wish to help
you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any
responsibility from any dramage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery
of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as
additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to
the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

NOTICE: MY SIGNATURE P. LOWINDICATES THAT THAY EREAD THE HEALTH WARNING NOTICE AND SUPPLIES WILL NOT USE RESPONSIVE FOR ANY DAVIAGE CAUSED WHEN DELIVERING INSIDE CURB LINE.

X CUSTOMER SIGNATURE

170664

CUSTOMER COR

		 /			_/ \		
***		Ò	C	S R	O	Plant #	Ticket #
·			Asso	ociated			TIORET #
Customer # Sold :	То	11051	+60	/		12-	Date,
Job Deliv	very Address		100		P	oject #	Time Batched
P.O.# Instr	uctions						Due Time
Zone Zone	<u> </u>			•		Leave Plant	Arrive Job
·							<u> </u>
			;			·. ·	
Order # Truc	k#プラブ Driv	ver/Hauter) M	x.6/2			Leave Job	Arrive Plant
	cumulative Quantity		duct (PRODUCT DESCRIP	TION	Unit Price	AMOUNT
1-15. COS 2.7.3	##Y	33/4	10 1 20 1	, √ TICKET	,	ADER 2	
SUB-TOTAL		TAX		TOTAL		RDER DY	<u>(e.20</u>
The undersigned promise attorney's fees, incurred in All accounts not paid with at the rate of 18% per ann Not Responsible for Rea Claim Allowed Unless Ma A \$40.00 Service Charge collected on all Returned	n collecting any sunin 30 days of delinum. active Aggregate of deat Time Materia and Loss of the Co	ms owed. very will bear interest or Color Quality. No all is Delivered.	Dear Customer: Tr may possibly cause you in every way th responsibility from a of this material and additional considera the premises and/or SIGNED		ELEASE to you for your signal property if he places the mat yer is requesting that you sign es and/or adjacent property, br mud from the whoels of his vel y and hold harmless the drive by anyone to have arisen out o	ure is of the opinion that the arial in this load where you this FIELEASE relieving hiddings, sidewalks, drive-walcies on that he will not fifter of this truck and this supplif delivery of this order.	desire it. It is our wish to help m and this supplier from any ys. curbs, etc. by the delivery the public street. Further, as ler for any and all damage to
Tonosco on an Hotalieu	oneong.		X CUSTOMER	SIGNATURE	 .		162634

		<u> </u>	~ <u>`</u>			
, , , ,				GSIR	Plant	# Ticket #
		, 1	i E	Associated	i	
Customer #	Sold To	WYSI	MAC		1-	2-3 Date 78
Job	Delivery Address				Project #	Time Batched
P.O.# 32-454120	Instructions					Due Time
Zone 7 37110					Leave Plant	Arrive Job
	·		 (*			
Order #	Truck#	Driver/Hauler	LUM		Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESCRIPTION	Unit Price	AMOUNT
		50,	560 160	PRS		
	160 HG	30/2	100	-		
		26,	500			
SUB-TOTAL	र्गात कर्तु १ <u>५ छन्।</u> स्थित	TAX		TICKET TOTAL	ORDER TOTAL	3.40
		-	PROP	RTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO	D BE MAGE INSIDE CURB LINE)	

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this LELEASE releving thim and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not later the public street. Further, as additional consideration, the undersigned agrees to indemnity and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

X CUSTOMER SIGNATURE 162642	Notice of the natural decoming and that that the pear the pearth war. We not decide a superior of the pear the	ING NOTICE AND SUPPLIER
× CUSTOMER SIGNATURE 162642	LOAD RECEIVED BY:	
	X CUSTOMER SIGNATURE	162642

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			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Associ	ated		Plant #	Ticket #
Customer #	Sold To	MCS	· Pa(12	2 Date
Job 32.45466 P.O.#	Delivery Address			-			Project #	Time Batched
P. O. #	Instructions							Due Time
Zone					,		Leave Plant	Arrive Job
			10	·.				
Order #	Truck#	Driver/Hauler	Mr. S.	· · · · · · · · · · · · · · · · · · ·			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	J F	PRODUCT DES	CRIPTION	Unit Price	AMOUNT
		737	100	70	5	5,01,7	100d	
		5 2	×20					
·	·	-19	540	}				
	, , , , , , , , , , , , , , , , , , ,							
SUB-TOTAL	in a second	TAX	•		TICKET TOTAL		ORDER TOTAL	7.77

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40,00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAMAGE RELEASE, TO BE SIGNED IF DELIVERY IS TO BE MADE MISIDE CURB LINE)

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this LEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	162213

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				Associated		Plant #	Ticket #
Customer #	Sold To	UA				\	Date - (1)
Job	Delivery Address		··· *1.		Pro	ject #	Time Batched
D. 45416	Instructions						Due Time
Zone						Leave Plant	Arrive Job
	-					<u>-</u>	
Order #	Truck #	Driver/Hauler	W/W/			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESCRIPTION		Unit Price	AMOUNT
		73	120 240	POS		·	
SUB-TOTAL		TAX		TICKET TOTAL	OR TO	DER TAL '	25.14
			PROPE	RECT & CANAGE RELEASE TO BE SIGNED IF DELIVERY IS TO BE	MADE INSIDE C	.78 LINE,	

113 11 TET 1 BY

The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to like premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order. SIGNED

LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	162258

	Associated		Plant #	Ticket #
5 THU			12-	Date 5-9
		Project #		Time Batched
				Due Time

Leave Plant

Arrive Job

Arrive Plant Order # Driver/Haulen Leave Job Truck # Load Cumulative Unit Ordered Product PRODUCT DESCRIPTION **AMOUNT** Quantity Quantity Quantity Code Price TICKET ORDER SUB-TOTAL TAX **TOTAL** TOTAL

The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

Delivery Address

Instructions

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO BE MADE HISIDE CURBILINE)

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not fiter the public street. Further, as additional consideration, the undersigned agrees to indemnity and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

NVIII DEN VERHALINGERE OM NUVITES HAT I VAVETE AT TIE HEA AVIII AKT HIERTES ROUSIEDET OR KNY DALWEE CAUSE AVIIE (DE IVERII LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	— 162270

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Customer #

Zone

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4		ي. منهون				Plant #	Ticket #
Customer # Sok	d To	<u> </u>	21 + 3	Associated		l : つ	Date Con
ob Del	ivery Address	\ <i>\\\</i> ^	45177		Project #	2	Date Time Bat¢he
. Dei	ivery Address				Froject #		Time Balene
~)_	tructions						Due Time
52-45404					Leav	e Plant	Arrive Job
•							
Order # Tru	第5 1	Driver/Hauler	EWI		Leav	e Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESCRIPTION	Un Prio	it :e	AMOUNT
				 .			
		453	40	pe 5			
	•	ر د. س	100				
	•	21,6	00				
	.						

TAX

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

TOTAL

PROPERT COMMAGE RECEASE TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE CURB LINE.

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, building sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

TOTAL

	ICATESTINA VIIAVEDE ALTIIETEATIIV ZOAMAGE CAUSELVATEVOETVETVESIV	VARNIGERANICE AND GUERNER
LOAD RECEIVED BY:	•	
X CUSTOMER SIGNATURE	·	162246

SUB-TOTAL "

	<u> </u>						
		O		CERT		Plant #	Ticket #
		<i>)</i> :	A = A	Associated		l'idii "	
Customer #	Sold To	NESI	700	<i>)</i>	,	<i>;</i> :	
Job 33.45466 P.O.#	Delivery Address		<u></u>			Project #	Time Batched
P. O. #	Instructions						Due Time
Zone				.		Leave Plant	Arrive Job
	· · · · · · · · · · · · · · · · · · ·		· / 1	<i>;</i>		1	
Order #	Truck# 75	Driver/Hauler	THERE			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESCRIPT	ON	Unit Price	AMOUNT
		31	480	DCS 10 \$ 24,1	> (c-1	S	
SUB-TOTAL	the state of the s	TAX	a No. 40 g	TICKET		ORDER	

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DIMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE OURBILINE)

PROPERTY DIVINGE RELEASE (170 BE SIGNED IF DELIVERY IS TO BE MINCE INSIDE CONSIDER LINE).

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE refleving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not filter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order. SIGNED

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LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	162140

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* * *					32-4-56	406	
				Associated	Pla	ant # Ticket #	
Customer #	Sold To	11/80		₹,	j	2-21 Date (17)	
Job	Delivery Address	- \/ `^	*************************************		Project #	Time Batched	
P. O. #	Instructions					Due Time	_
Zone					Leave P	lant Arrive Job	_
,	· 				L		_
Order #	Truck#)5	Driver/Hauler),M	· · · · · · · · · · · · · · · · · · ·	Leave Jo	ob Arrive Plant	_
Load Quantity	Cumulative Quantity	Ordered Quantity	Product . Code	PRODUCT DESCRIPTION	Unit Price	AMOUNT	_
		4/3	20	PCS			
		21,0	160				
SUB-TOTAL	1	TAX		TICKET	ORDER	10.53	_

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The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks,

FROPERTY CAMAGE RELEASE TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE CURB LINE.

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent properly which may be claimed by anyone to have arisen out of delivery of this order. SIGNED

LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	162164

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همتنع، مس و				CER	·	
		$\wedge \wedge \wedge$		Associated	Plant #	Ticket #
Customer #	Sold To	(S) 10	1 ()		12	2 Date 47
45606	Delivery Address				Project #	Time Batched
P. O. #	Instructions			1		Due Time
Zone					Leave Plant	Arrive Job
		(,				
Order#	Truck#	Driver/Hauler			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESCRIPTION	Unit Price	AMOUNT
		./7	320	pas		
		23	60	1		
		35	60			
SUB-TOTAL	in the second se	TAX		TICKET	ORDER TOTAL	.78
attorney's fees, in	promises to pay all o curred in collecting a paid within 30 days o per annum.	ny sums owed.	sonable Dear of may p you in respond this addition	PERTY 2-MAGE RELEASE, TO 9E SIGNED IF DELIVERY IS TO 8E MAD Customer: The driver of this truck is presenting this RELEASE to you for nossibly cause damage to the premises and/or adjacent property if he place of the premise of the place of the premises and/or adjacent; every way that we can, but in order to do this the driver is requesting the nsibility from any damage that may occur to the premises and/or adjacent, material and that you also agree to help him remove mud from the wheel and consideration, the undersigned agrees to indemnify and hold harmless and/or adjacent property which may be claimed by anyone to have a set.	your signature is of the opinion the st he material in this load where at you sign this RELEASE relievements, buildings, sidewalks, dries of his vehicle so that he will not at the driver of this truck and this st he driver of this truck and this	you desire it. It is our wish to help ing him and this supplier from any ye-ways, curbs, etc. by the delivery tilter the public street. Further, as supplier for any and all damage to

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40,00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

nonne 2 av signaturierierom noisates that have tearthereath warning Anica coeresconsiere grand durage (USE) anies de menos de suscionado	HONCE AND SHEPLES
LOAD RECEIVED BY:	,
X CUSTOMER SIGNATURE	162071

143-JWS

DUST BY 184 Cluster



Plant # Ticket # Associated Sold To Customer # Delivery Address Time Batched Project # Due Time Instructions Leave Plant Arrive Job 'one Arrive Plant Leave Job Order # Driver/Hayler Unit Product Cumulative Ordered PRODUCT DESCRIPTION **AMOUNT** Quantity Quantity Code Price Quantity **ORDER** TICKET SUB-TOTAL TAX TOTAL TOTAL PROPERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO BE MACE INSIDE DURB LINE) PROPERTY CAMAGE RELEASE TO BE SIGNED IF DELIVERY IS TO BE MACE INSIDE QURB LINE:

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, driver-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed. All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum. Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

WILL NOT BE RESPONSIBLE OF ANY DAMAGE CALSED V	MEANE WEINGWEINEGUERUM
LOAD RECEIVED BY:	
Υ	163112
CUSTOMER SIGNATURE	1001 in in

13-JWS

CUSTOMER OF PI

	•			Associated		Plant #	Ticket #	
Customer #	Sold To	7.24.7	160			17-) · Date	
Job ! 7 () 3	Delivery Address	<u> </u>				Project #	Time Batched	
P.O.#	Instructions						Due Time	
Zone (100)					· · · · · · · · · · · · · · · · · · ·	Leave Plant	Arrive Job	
	. 1							
Order #	Truck#2.5	Driver/Haufer	WW	XI T		Leave Job	Arrive Plant	
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT D	DESCRIPTION	Unit Price	AMOUNT	
		-79 -33 -50	(170 120 560	= 20	<u>.</u>			
SUB-TOTAL		TAX		TICKET TOTAL		ORDER TOTAL	28.28	
attorney's fees, inco All accounts not pa at the rate of 18% p Not Responsible for Claim Allowed Unle A \$40.00 Service O	The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed. All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum. Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered. A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks. PROPERTY DAMAGE RELEASE TO BE SIGNED IF DELIVERY IS TO BE MACE NSIDE CURB LINE; Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possably cause damage to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curts, etc. by the delivery of the supplier for any and all damage to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curts, etc. by the delivery of the supplier for any and all damage to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curts, etc. by the delivery of the supplier for any and all damage to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curts, etc. by the delivery of the supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order. SIGNED A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.							

CUSTOMER COPY

143-JWS

				CSR	Plant #	Ticket #
 		. \		Associated	Plant #	ricket#
Customer #	Sold To	LAST	700		12	Date 7/
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Order #	Truck#	Driver/Hauler	mily		Leave Job	Arrive Plant
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CUSTOMER SCRY

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				Parameter and the second second	Plant #	Ticket #
			\sim P	Associated		Deta
Customer #	Sold To	11100	HUC IT	MV VIVI	12-	22-9X
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Zone					Leave Plant	Arrive Job
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	·		ŗ.			
	1 7	Driver/Hauler	<u>``\</u>		Leave Job	Arrive Plant
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SUB-TOTAL		TAX		TICKET	TOTAL/,	U. V
Tage is no section	<u>· </u>	See Constitution		ERTY DAMAGE RELEASE TO BE SIGNED IF DELIVERY IS TO BE MADE IN	SIDE CURB LINE)	

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAMAGE RELEASE TO BE SIGNED IF DEL YERY IS TO BE MADE INSIDE CURB LINE;

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE releaving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

NOTICE: MYSIGNATURE HELOW INDICATES THAT I HAVE READ THE HEALTH W WILLENG THE HESPONSIBLE FOR ANY DAMAGE CAUSED WHEN BEGYERING INS	ARMING NOTICE AND SUPPLIES
LOAD RECEIVED BY:	•
X CUSTOMER SIGNATURE	162886
CUSTOMER SIGNATURE	

143-JWS

CUSTOMER COPY

	•			Associated	Plant #	Ticket #
ustomer #	Sold To	in is	7ac	1550014104	12-2) Date
0b	Delivery Address	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	:	· · · · · · · · · · · · · · · · · · ·	Project #	Time Batched
2,45 4 56	Instructions		1			Due Time
one					Leave Plant	Arrive Job
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Order #	Truck#	Driver/Hauler	3/)	Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product L Code	PRODUCT DESCRIPTION	Unit Price	AMOUNT
		33/2	10	P ² 5		

TAX

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum. $\footnote{\cite{NS}}$

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PROPERTY DALMOS RELEASE TO BE SIGNED. F DELIVERY IS TO BE MADE UNITED WITH The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that the will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

ORDER

TOTAL

	THE WASHENATURE RELOW INDICATES THAT HAVE READTHER PERFORMING INSIDE	NG NOTICE AND SUPPLEE
LO	AD RECEIVED BY:	
x	CUSTOMER SIGNATURE	163319

43-JWS

SUB-TOTAL

CUSTOMER COPY

TICKET,

TOTAL

)	CSR		
				Associated	Plant #	Ticket #
Customer #	Sold To	UU	Ci /0	3(F7)VIID	12-	2 2 - 97
Job 32. 45 HEGU	Delivery Address		1		Project #	Time Batched
3). 454764 P.O.#	Instructions	1-7-		115-61- 397 1-11	<u>'</u>	Due Time
Zone		<u> </u>			Leave Plant	Arrive Job
		. /				
Order #	Truck# 1 -1 2	Driver/Hauler	·		Leave Job	Arrive Plant
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All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO SE MADE INSIDE CURB LINE)

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

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Vinegrafies pesta isek espip anganage catset nakateritek	ING INSIDE CURBLINE
X CUSTOMER SIGNATURE	163229

143-JWS

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Release of Liability/Certificate of Disposal

CHUCK OLSEN CHEVROLET: is released from liability for all petroleum contaminated soil originating from:

The Former Chuck Olsen Chevrolet Site, 17545 Aurora AVE North, Shoreline Wa.

and transported to:

CSR - Associated Sand & Gravel Company Inc. 6300 Glenwood Ave. Everett WA 98203

on 12/01/1998 through 2/01/1999

A total of 1213,32 tons of class 3 petroleum contaminated soil were transported to the above facility. The material was treated and disposed of in the following manner:

Thermal Remediation/Landfill for Reclamation

Treatment/Disposal of the contaminated soil was performed in accordance with all applicable federal, state, and local laws and regulations.

Signed: Larry W. Behr Date 04/23/1999

Larry W. Baker

Title: Operations Coordinator

CSR Associated. 6300 Glenwood Avenue. Everett, WA 98203 PO Box 2037. Everett, WA 98203. Telephone Everett (425) 355-2111. Telephone Scattle (206) 624-0301



WP116 (1/96)

54 South Dawson Street Seattle, Washington 98134 Phone: 206-762-1190

Emergency Phone: 1-800-424-9300

BILL OF LADING AND GALLONAGE TICKET

	IIVC.	BILL OF LAL	ING AND GA	ALLO:	IAGE II	OKLI		
SHIPP	ER / GENERATOR C	ruck of s	EN Chev.		CONTACT		JOB # 32	4 5400
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917	STATE, ZIP SEA	WA					DATE 12 -	15-98
CARA	IFR '	DAC			PHONE #		DOCUMENT #	•
CONS	•	ALD PET	ROLFUM		CONTACT	·	TRUCK #	79
ADDR		AIRPORT		,	PHONE #		PRODUCT TY	PE 4/5
CITY,	STATE, ZIP						EST. GALLON	S:
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X SHIPP	ER / GENERATOR (PRINT NAME)		SIGNATURE	(h)	10		ATE:	14-90
X T	DEH - DRIVER 1 (PRINT NAME)	y LE	X SIGNATURE		37		ATE: <u> </u>	} [0
X	IER - DRIVER 2 (PRINT NAME)		X SIGNATURE	10		DA	ATE:	-lad



CUSTOMER NUMBER

WE\$251

HARGE TO

WEST PAC CONSTRUCTION 54 S. DAWSON ST. SEATTLE, WA 98134

_Attn:

INVOICE 5009

DATE 12/28/98

MAIL PAYMENT TO:

54 S.Dawson St. Seattle, WA 98134

(206) 763-2700

TERMS: Net 30 Days

Finance Charge at the rate of 1 1/2 9 per month will be charged on all past due invoices.

FFOF

FIN 91 - 1822954

	•							
JOB	VESSEL / JOB NAME	COMPLETION DATE	YOUR P.O. NUMBER					
ES251		12/15/98	45406,CHUCK OLSE	N .				

SITE ADDRESS:

POVIDE DISPOSAL OF NON-HAZARDOUS WASTE PER ATTACHED GALLONAGE TICKET(S).

2/15/98

t'ATER WITH (5% SOLI GT-18412 GT-18412)LIDS GT-18412 υŻL

524.000 GAL @ 0.13/GAL 90.000 GAL @ 1.40/GAL 138.000 GAL @ 0.11/GAL

68.12 126.00 15.18

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" EXEMPT | CUT OF STATE I WHOLESALE ULRESYCLING

AS3 TAXE OTHER

NonTaxable Subtotal Taxable Subtotal

209.30 0.00

Tax

OPICINAL

209.30

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APPENDIX B

DISPOSAL AND SOIL TREATMENT DOCUMENTATION

6.53			<u> </u>					·
3 4 9			<i>J</i> .	GS	I P.	<u> </u>	·	
	•		^	Associa	ated		Plant #	Ticket #
Customer#	Sold To	1,104	Prip	Associa	<u> </u>		1-7-	- G Date
Job	Delivery Address	Mso,	74(_		· · · · ·		Project #	Time Batched
P.O.# 32-454Na	Instructions						 	Due Time
Zone	,		· -	· ·			Leave Plant	Arrive Job
	-6			1 / A				<u> </u>
Order#	Thick#92	Driver/Hauler	MM				Leave Job	Arrive Plant
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The undersigned pr attorney's fees, incu Ail accounts not pai at the rate of 18% po Not Responsible fo	rred in collecting an id within 30 days of er annum. r Reactive Aggrega	ny sums owed. I delivery will bear in ate or Color Quality	onable resp of thi addithe nterest Sign	r Customer: The driver of possibly cause damage in every way that we can onsibility from any damage its material and that you attornal consideration, the upremises and/or adjacent	f this truck is presenting to to the premises and/or adjo, but in order to do this to the that may occur to the pre- tiso agree to help him remaindersigned agrees to indi-	jacent property if he places the he driver is requesting that you remises and/or adjacent proper nove mud from the wheels of hi	signature is of the opinion to material in this load where u sign this RELEASE reliev ty, buildings, sidewalks, dris is vehicle so that he will not driver of this truck and this out of delivery of this order.	nat the size and weight of his truck you desire it. It is our wish to help ing him and this supplier from any re-ways, curbs, etc. by the delivery litter the public street. Further, as supplier for any and all damage to
Claim Allowed Unles	ss Made at Time Ma	aterial is Delivered.		ANOTED RESPON	SIBLE FOR ANY DAN	AAGE CAUSED WHEN D		THE LINE

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

, NOTICE!, MY SIGNATURE: BELOW, INDICATES IT HAT I FLAVE READ THE HE WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELIVER	ALTHWARNING NOTICE AND SUPPLIER
LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	— 168618

CUSTOMER COPY

143-JWS

		. 1		A	ssociate	ed.	1 .	ţ	Plant #	Ticket #
Customer #	Sold To		117	·	 .					Date /
10b 3 2-45406	Delivery Address		<u> </u>					Project #		Time Batched
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Load	Cumulative Quantity	Ordered Quantity	Proc		PRODU	CT DESCRIPTIO	ones on the second of the seco	Un مدينة Pric		AMOUNT
A. T. Francis VII E. E. Francis	OUTS SHOWERS TH	Para Contractor	828 352 471	40	PCS	→ = 4.8; j\$538;## €.j j†4e		ORDER		· · · · · · · · · · · · · · · · · · ·
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attorney's fees, inci	romises to pay all ourred in collecting and within 30 days oper annum.	ny sums owed.		Dear Custo may possit you in eve responsibil of this mat additional of	Y DMAGE RELEASE (TO orner: The driver of this tru object awas damage to the pr yr way that we can, but in iny from any damage that rerial and that you also agre consideration, the undersig es and/or adjacent property	ok is presenting this RELE emises and/or adjacent pro order to do this the driver ay occur to the premises a e to help him remove mud ned agrees to indemnify ar	ASE to you for your perty if he places the is requesting that yo nd/or adjacent prope from the wheels of he d hold harmless the	signature is of a material in the u sign this REI rty, buildings, s is vehicle so the driver of this to	the opinion that the solution opinion that the solution opinion opinion that the will not little tuck and this support of the will not little the	I desire it. It is our wish to him and this supplier from vays, curbs, etc. by the del or the public street. Furthe
Claim Allowed Unite A \$40.00 Service C	or Reactive Aggreg ess Made at Time M harge and Loss of t	aterial is Delive	ered.	NOTICE WILL NO LOAD RE	MY SIGNATÛRE BE T. BE HESPONSIBLE CEIVED BY:	OW INDICATES THA FOR ANY DAMAGE C	T HAVE READ AUSED WHEN D	THÉ HEALT ELIVEBING	H.WARNING INSIDE CURE	Notice and supplemental supplem
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			Feene	EDTY DAMAGE BEI EASE /T	O RE SIGNED IE DEI IVERY IS	TO BE MADE INS!	DE CLIAB LINE)	

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE CURE LINE).

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, driver ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the whoels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnity and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

NO WIL	NCE: MY SIGNATURE BELOW L'NOT BE RESPONSIBLE FOR	ANDICATES THAT I HAY ANY DAMAGE CAUSEL	ve read the Health W When Delivering insi	ARNING NOTICE AND SURPLIER DECURBLINE
LOA	D RECEIVED BY:			
Х	CUSTOMER SIGNATURE		<u> </u>	168739

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Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

at the rate of 18% per annum.

LOAD RECEIVED BY:

X CUSTOMER SIGNATURE

NOTICE: MY SIGNATURE BELOW INDICATES THAT HAVE READ THE HEALTH WARNING NOTICE AND SUPPLIERS WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELVERING INSIDE TURB LINE.

171411

<u> </u>			—	Production of the Production o		20 1 - 1	<u> </u>
	•			GSR		32-454	$D\varphi_{\perp}$
				Associated		Plant #	Ticket #
ustomer#	Sold To	IMPA	(Dafe
ob	Delivery Address	02-1-00				Project #	Time/Batched
. O. #	Instructions		 -		, ·		Due Time
one .			•		,	Leave Plant	Arrive Job
	· · · · ·	\sum_{α}	ff a				·
rder #	Truck#	Driver/Hauler	Len 1			Leave Job	Arrive Plant
Load Quantity		Ordered Quantity	Product Code	PRODUCTO	ESCRIPTION	Unit Price	AMOUNT
				Drc	•		
						.	•
			2416	D		1	
			2271	10			•
].		1				
			5092	40			10
UB-TOTAL	The second secon	TAX	The state of the s	TICKET	e ja ja ja ja ja ja ja ja ja ja ja ja ja	ORDER	1546
attorney's fees, in	promises to pay all co curred in collecting an	y sums owed.	sonable res	OPERTY DAMAGE RELEASE (TO BE SIG ar Customer: The driver of this truck is pn y possibly cause damage to the premises in every way that we can, but in order to porsibility from any damage that may occu- bis material and that you also agree to hel fitting and that you also agree to hel fitting the premises and/or adjacent property which re	asenting this RELEASE to you for your and/or adjacent property if he places to do this the driver is requesting that you to the premises and/or adjacent prop p him remove mud from the wheels of ses to indemnify and hold harmless the	r signature is of the opinion the material in this load where rou sign this RELEASE relievi- terty, buildings, sidewalks, driv his vehicle so that he will not e driver of this truck and this:	you desire it. It is our wish to hing him and this supplier from a e-ways, curbs, etc. by the delive litter the public street. Further, supplier for any and all damage

CUSTOMER COPY

171377

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

at the rate of 18% per annum.

Oil abroad and O			<u>-,,,</u>				
			CAR		32-4		
Ì			∧ Associated	d .		Plant #	Ticket #
Customer #	Sold To	111aet	Pac,	.	_	1-10-	99
Job	Delivery Address	000		!	Project #		Time Batched
P. O. #	Instructions				l		Due Time
Zone			<u></u>		Lea	ve Plant	Arrive Job
;					, ,	·	
Order #	Truck*259	Driver/Hauler W	ell			ve Job	Arrive Plant
Load Quantity		Ordered Produ		T DESCRIPTION		nnt	AMOUNT
		76,000	RS	'!			
] 		55240) '	. '			
		32,76)				
<u>.</u> !							
SUB-TOTAL	 Particologistes Period Common Common Period TAX	TICKET	a the control of the	ORDEF TOTAL	21.	38	
attorney's fees, inci	urred in collecting any aid within 30 days of	osts, including reasonable y sums owed. delivery will bear interest	PROPERTY CALAGE RELEASE (TO B) Dear Customer: The driver of this truck may possibly cause damage to the prem you in every way that we can, but in or responsibility from any damage that may of this material and that you also agree t additional consideration, the undersigned the premises and/or adjacent property wi SIGNED	is presenting this RELEASE to you isses and/or adjacent property if he p der to do this the driver is requesting o occur to the premises and/or adjace to help him remove mud from the whild agrees to indemnify and hold harm	for your signature is of places the material in the gothat you sign this RE ant property, buildings, weeks of his vehicle so the tless the driver of this	the opinion that the s is load where you de LEASE relieving him sidewalks, drive-ways hat he will not litter th truck and this supplier	sire it. It is our wish to help and this supplier from any , curbs, etc. by the delivery e public street. Further, as

171436

MOTICE: MY SIGNATURE BELOW WILL NOT BE RESPONSIBLE FOR

LOAD RECEIVED BY:

X CUSTOMER SIGNATURE

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be

collected on all Returned Checks.

هسمند				· —.		
		GS		3	2-4540	
	<i>ι</i> Λ	Associ	ated		Plant #	Ticket #
Customer # Sold To	11/8 - fle				1-6	Date G
Job Delivery Address	5//0401	<u> </u>		F	Project #	Time Batched
P. O. # Instructions					· · · · · · · · · · · · · · · · · · ·	Due Time
Zone			·	<u>. </u>	Leave Plant	Arrive Job
		./.				
Order# Truck(*) 25	Qriver/Hauler	u lle		<u> </u>	Leave Job	Arrive Plant
Load Cumulative Quantity			RODUCT DESCRIP	TION	Unit	AMOUNT
	47840 33240 17,600	-	35			Santered Str
SUB-TOTAL	TAX		TICKET TOTAL		ORDER 7.30	Simeran .
The undersigned promises to pay al attorney's fees, incurred in collecting All accounts not paid within 30 days at the rate of 18% per annum. Not Responsible for Reactive Aggre Claim Allowed Unless Made at Time	any sums owed. of delivery will bear interest egate or Color Quality. No	Dear Customer: The driver may possibly cause damage you in every way that we consponsibility from any damage of this material and that you additional consideration, the the premises and/or adjacen SIGNED NOTICE: MY SIGNAT WILL NOT BE RESPO	to the premises and/or adjace in, but in order to do this the d ige that may occur to the premi also agree to help him remove	RELEASE to you for your sign nt property if he places the m twer is requesting that you s ses and/or adjacent property, mud from the wheets of his ify and hold harmless the dri d by anyone to have arisen or	nature is of the opinion that aterial in this load where yo ign this RELEASE refleving buildings, sidewalks, drive- rehicle so that he will not litt wer of this truck and this suj at of delivery of this order.	the size and weight of his truck by the size and weight of his our wish to help him and this supplier from any ways, curbs, etc. by the defivery ter the public street. Further, as polier for any and all damage to the public street.
A \$40.00 Service Charge and Loss o collected on all Returned Checks.	f the Cash Discount will be	LOAD RECEIVED BY:			1	68770

X GUSTOMER SIGNATURE

168770

-				GSR	32	-4540 Plant#	Ticket #
		12121		Associated			
Customer #	Sold To	1/1950	YUC -				Date 5
Job	Delivery Address				Proj	ect #	Time Batched
P. O. #	Instructions						Due Time
Zone						Leave Plant	Arrive Job
							
Order #	THAN 25	Driver/Hauler	·			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESCRIPTION	Jackson and the second	Unit Price	AMOUNT
The state of the s				PCS			
-			4688	0			
			237	0			
			231	20			•
SUB-TOTAL_	7148 Super 14	TAX	 	TICKET	OF TC	RDER OTAL (50
The undersloped	promises to pay all	costs; including rea	Dear may	PERITY DAMAGE THE LEAST (DO BIT SHEED IT DELIVEED F Customer: The driver of this truck is presonling this RELEAS possibly cause damage to the premises and/or adjacent prop nevery way that we can, but in order to do this the driver is onsibility from any damage that may occur to the premises and	SE to you for your signal erty if he places the mate requesting that you sign Yor adjacent property, bu	ure is of the opinion that rial in this load where yo this RELEASE relieving ildings, sidewalks, drive-	thin and this sunnier from an

attorney's fees, incurred in collecting any sums owed.

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

of this material and that you also agree to help him remove m and that material and that you also agree to neep remise more time from the wheels of his vehicle so that he will not stret the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

SIGNED

•				CAS.			32-454	106
		.		Associ	iated		Plant #	# Ticket #
Customer #	Sold To	100	100) . ,		 .	1-	5 -9g
Job	Delivery Address	1 1					Project #	Time Batched
P. O. #	Instructions							Due Time
Zone	<u> </u>	•			<u> </u>	:	Leave Plant	Arrive Job
			`					
Order #	Truck#	Driver/Hauler	DU DC)			Leave Job	Arrive Plant
Load Quantity	Cumulative	Ordered Quantity	Product Code	fe. výbodní spokouho sedo	PRODUCT DE	SCRIPTION	Unit Price	AMOUNT
१ ा सर्वे प्राप्त		48-	760 760	P	CS		Opposition (1)	of transport 1
SUB-TOTAL	A Marketta and the second	TAX	1960 ki izi Anuzi ageliki e. Masahi izi katiki tendi zi izi	And a second of	TICKET TOTAL		ORDER TOTAL	2.5
attorney's fees, inc	promises to pay all ocurred in collecting all paid within 30 days on per annum.	any sums owed.	sonable Dear may you resp of the addington	r Customer: The driving possibly cause dama in every way that we consibility from any dates material and that you tonal consideration, to premises and/or adjacents.	er of this truck is prese age to the premises and can, but in order to do umage that may occur to rou also agree to help h the undersigned agrees	t/or adjacent property if he places this the driver is requesting that the premises and/or adjacent pro im remove mud from the wheels of	our signature is of the opinion the material in this load whit you sign this RELEASE rell openty, buildings, sidewalks, of his vehicle so that he will the driver of this truck and it	in that the size and weight of his truc ere you desire it. It is our wish to he ieving him and this supplier from an drive-ways, curbs, etc. by the deliver not litter the public street. Further, a its supplier for any and all damage to der.
	for Reactive Aggregates Made at Time M			TICE MY EIGNA LENOT RETES? AD RECEIVED BY		UÇATES THAT-LHAYE REA Y CAMAGE CAUSED W. E.	DJÍHE HEÁLTH WARI V DELIVERING INGIDE	NING NOTICE AND SUPPLIES CURBLINE

CUSTOMER COPY.

X CUSTOMER SIGNATURE

171122

143-JW9

A \$40.00 Service Charge and Loss of the Cash-Discount will be collected on all Returned Checks.

•				CASTR		32-454	104
				Associated		Plant #	Ticket #
Customer #	Sold To	MAJAYIA	<u> </u>				12/15
Job	Delivery Address	AMOTHOR	<u></u> _	·		Project #	Time Batched
P. O. #	Instructions	'					Due Time
Zone	<u> </u>					Leave Plant	Arrive Job
							
Order #	Truck# Dr	river/Hauler			· · · · · · · · · · · · · · · · · · ·	Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product	PRODUCT DES	CRIPTION	Unit Price Price	AMOUNT
				PCS-		•	
		l	1586				
÷			2374	30			
			221	W		4	
SUB-TOTAL	शीक्षणसङ्ग्रहसम्बद्धाः १ -	TAX	বা ক্যুক্তক্ষ্ণের আফল ক্রুক্ত	TICKET TOTAL		ORDER TOTAL	105
attorney's fees, inc	promises to pay all cost curred in collecting any stated within 30 days of de	sums owed.	nable resp	OPERITY DAMAGE HELLAST, ITO III. SIGNIT I/ or Customer: The driver of this truck is presenti- y possibly cause damage to the premises and/o- in every way that we can, but in order to do it ponsibility from any damage that may occur to If his material and that you also agree to help him lational consideration, the undersigned agrees to premises and/or adjacent property which may be INED.	ng this RELEASE to you for your sign or adjacent property if he places the rais the driver is requesting that you he premises and/or adjacent property remove mud from the wheels of his is indemnify and hold harmless the di	gnature is of the opinion the material in this load where sign this RELASE relievi, p, buildings, sidewalks, driv vehicle so that he will not river of this truck and this	you desire it. It is our wish to help ing him and this supplier from any ve-ways, curbs, etc. by the delivery t litter the public street. Further, as supplier for any and all damage to
at the rate of 18% Not Responsible	for Reactive Aggregate	e or Color Quality	. No 18702:		Personala de la companya de la comp	PERSONAL PROPERTY AND PROPERTY AND PROPERTY AND PROPERTY AND PROPERTY AND PROPERTY AND PROPERTY AND PROPERTY A	VG NOVICE AND SURBLIER
Claim Allowed Un	less Made at Time Mate	erial is Delivered.		TIGET MY GIGNATURE BETOWN DIG ILL NOT BE RESPONSELS AT FAMY AD RECEIVED BY: V	PAVAGE CAUSED WHEN DE	LIVERINGINSIDEC	URB LINE
A \$40.00 Service collected on all Re	Charge and Loss of the eturned Checks.	Cash Discount Wil		CUSTOMER SIGNATURE			171296

Customer #	Sold To		<u> </u>	Associated		1/4	Date 99
ob	Delivery Address		Q81-16	ω		Project #	Time Balched
. O. #	Instructions						Due Time
Cone	·	,		, 		Leave Plant	Arrive Job
		1.1	'n	· · · · · · · · · · · · · · · · · · ·			
Order #	Tiruch #	Driver/Hauler	AW T			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DE	SCRIPTION	Unit Price party and	AMOUNT
		474	(100	PCS			
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	237	60	\		·	
	د	23,7	00				,
						· ·	

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAIAGE RELEASE (10 BE SIGNILUE DELIVERY IS TO BE, MADE INSIDE CORRECTIONS OF the driver of this truck is presenting this RELEASE to you for your signature of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you significantly find any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, driver-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

NOTICELMY SIGNATION OF THE	VATURE BELOW IN BIGATES THA PONSIBLE FOR ANY DAMAGEO	ATT HAVE READ THE HEALTH W AUSED WHEN DELIVERING IN	NATINING NOTICE AND SUPPLIER
LOAD RECEIVED I	BY:		
X CUSTOMER SI	GNATURE		171331

Of the same	! ' <u></u>		;		2	: D 11541	.
		,		(65);	20	7-4J4 	Ψ
			· .	Associated		Plant #	Ticket #
Customer #	Sold To	PCM	(,				Date
Job	Delivery Address	-JAW.			Pro	ect #	Time Batched
P. O. #	Instructions						Due Time
Zone				·		Leave Plant	Arrive Job
					_		
Order #	Trivak#7 101 DI	river/Hauler				Leave Job	Arrive Plant
Load Quantity	Cumulative	Ordered Quantity	Product Code	PRODUCT DESCRIPTION	ekamen i ida	Unit	AMOUNT
Section 12.11 Control	The State of the S			MC			
				I PW.			
,		· [0.00	2			
		(40881	4			
			2271	ih			
	·.		1111	1		1	
			5761	40			
SUB-TOTAL	A GOUNT PERMANENTANCE	TAX	FORMA NO	TICKET		RDER)	2.97
	يونينه يرموه - يرو بالافؤة فالله - مود	er negaging by Charles Brands Br		ROPERTY DALLAGE RELEASE TO BE SIGNED IN DELIVERY IS TO BE			nat the size and weight of his truck
	d promises to pay all cos incurred in collecting any		sonable resp	ar Customer: The driver of this fluck is presenting this includes in y possibly cause damage to the premises and/or adjacent property it he in every way that we can, but in order to do this the driver is reques sponsibility from any damage that may occur to the premises and/or adja- this material and that you also agree to help him remove mud from the	ting that you sig	uildings, sidewalks, driv	ve-ways, curbs, etc. by the delivery
1	paid within 30 days of o		addi	this material and that you also agree to help him remove mue from the ditional consideration, the undersigned agrees to indemnity and hold hat a premises and/or adjacent property which may be claimed by anyone to GNED			
Not Responsible	e for Reactive Aggregat Inless Made at Time Mat	e or Color Qualif erial is Delivered.	· XVI	OTICE: MYSIGNATURE RELOW, NDICATES A HATA HA ILL NOT BE RESPONSELE TOR ANY DAMAGE CAUSED	VE TEAD TH WHEN DEL		NG NOTICE AND SUPPLIEF URBLINE
A \$40.00 Service collected on all	e Charge and Loss of the Returned Checks.	∍ Cash Discount v	will be	DAD RECEIVED BY:			170806

CUSTOMER COPY

170806

					0	7-45		
			A	ssociated			Plant#	Ticket #
ustomer #	Sold To	CSM(/					Dale 5
b	Delivery Address					. Project	ŧ	Time Batched
O. #	Instructions						- ; ·	Due Time
one	-	<u> </u>			<u> </u>	Lea	ve Plant	Arrive Job
	1.100							¹
rder #	Truck#//	Driver/Hauler				Lea	ve Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT D	ESCRIPTION	ا P جنيبيان کې	nit المارة المارة المارة (Pice المارة)	AMOUNT
				DAC			•	
				KCS			ı	
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, ·			9176				İ	
			222	\wedge	,			
•			7724					
	i	·						

The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PHOPEMIY DAMAGE HELLASI. (TO BE SIGNED IF DELIVERY S. TO BE MADE CURB URLE)

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any respinsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, cubs, etc. by the delivery of this material and that you also agree to help him remove mud from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

NOTICE MY SIGNATURE BELOW IND	CATERTHAN HAVE READ THE YEARTH WARNING NOTICE AND SUPPLIED
LOAD RECEIVED BY:	
X CUSTOMER SIGNATURE	171291
L	

and the same of th						32	-4540	20
		l.	As	ssociated			Plant #	Ticket #
Customer #	Sold To	DIMI						Date 15
Job	Delivery Address					Proje	ect#	Time Batched
P. O. #	Instructions							Due Time
Zone				• • •			Leave Plant	Arrive Job
Order #	W/W /) - 1	Driver/Hauler		·			Leave Job	Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Su Code	PRODUCT DE	ESCRIPTION		Unit ، Price	AMOUNT
				PCS.				
I		\emptyset	5620	.•	•			
 			33240					
		6	3238D	_				
SUB-TOTAL	rderes comparação	TAX	egys same	TICKET TOTAL	A STATE OF THE STA	ORI TO	DER TAL	(ginali)
			Dear Custo	Y DAMAGE RELEASE (TO BE SIGN omer: The driver of this truck is pres oly cause damage to the premises an	senting this RELEASE to you lor	your signature	e is of the opinion tha	at the size and weight of his you desire it. It is our wish to

The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

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Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY MARGE RELEASE TO BE SIGNETHE DELIVERY IS 10th. AND EMBRIS CONTRIBUTE.

Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of understand that you also agree to help him remove much from the wheels of his vehicle so that he will not litter the public street. Further, as addichal consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

X CUSTOMER SIGNATURE 171325	NOTICE: MY BIGNATURE BELOW IN	DICATER THAT Y AVEREAD THE HEAD	TH WARNING NOTICE AND BURPLIEF
	WILL NOT BE RESERVED TO THE	WIDEN DE OVER THE WAS BEAMADAN	GINSIDE GURBLINE
	LOAD RECEIVED IN		171325

			. E	Associated_		Plant #	Ticket #
ustomer #	Sold To	Mest	DIC			Project #	Time Batched
ob .	Delivery Address	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1	,			Due Time
P. O. #	Instructions				•		
Zone						Leave Plant	Arrive Job
order #	Trivek	Driver/Hauler Ordered	Product	PRODUCT D	ESCRIPTION	Unit	AMOUNT
Load	Cumulative		LCode	خالج فإجاد فالمان المحا ويستحق بيساء وديار والمعاملات	مواعظت الراجية والمسابدة والمواد المتطلب الراجول	24,434,5 1100 11010 1101	
Quantity ,			Code		ang mengangkan persaman di pendanggan pendangan dan kenalah dan pendangan pendangan pendangan pendangan pendan Pendangan pendangan		
Load			49421		and the second s		

TICKET

The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in collecting any sums owed.

TAX

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

PROPERTY DAMAGE RELEASE TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE CURB LINE)

Dear Customer. The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck property is not an expectation of the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help may possibly cause damage to the premises and/or adjacent property alt you sign this RELEASE relieving him and this supplier from any you in every way that we can, but in order to do this the driver is requesting that you sign this RELEASE relieving him and this supplier from any of this material and that you also agree to help him remove much from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to the premises and/or adjacent property which may be claimed by anyone to have arisen out of delivery of this order.

ORDER

TOTAL

LOAD RECEIVED BY: 170663 X CUSTOMER SIGNATURE

CUSTOMER COPY

TOTAL

143-JWS

SUB-TOTAL

)	CSR	2-45	406	
		•		Associated		Plant #	Ticket #
Sustomer #	Sold To	11111	VI Pa	N		1-4	Date 9 0
Jop	Delivery Address	-V-V			Project	# /	Time Batched
1 ₹. O. #	Instructions			·	 , ·		Due Time
Zone			•		Le	ave Plant	Arrive Job
<u> </u>					,		
Order #	Truck#257	Driver/Hauler	aw		Le	ave Job	Arrive Plant
Load Quantity مینید	Cumulative Quantity	Ordered Quantity.	Product Code	PRODUCT DESCRIPTION		Unit Price	AMOUNT
		49,	420 760 060	PCS			
SUB-TOTAL		TAX	ricker och exerci- keriker och exerci-	TICKET	ORDE	コノコロコ	THE STATE OF THE S
All accounts not pa at the rate of 18% p Not Responsible for Claim Allowed Unle	or Reactive Aggregates Made at Time Mathematical Marge and Loss of the control of	osts, including reas ly sums owed. I delivery will bear i ate or Color Qualit aterial is Delivered.	PROP Dear t may p you in respor of this addition the pro Signe y. No LOAL	ERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO BE Customer: The driver of this truck is presenting this RELEASE to yossibly cause damage to the premises and/or adjacent property if the every way that we can, but in order to do this the driver is requestability from any damage that may occur to the premises and/or admaterial and that you also agree to help him remove mud from the mal consideration, the undersigned agrees to indemnify and hold hemises and/or adjacent property which may be claimed by anyone to the premise and/or adjacent property which may be claimed by anyone to the property which may be claimed to the property which may be claimed to the property which may be claimed to the property which may be claimed to the property which may be claimed to the property which may be claimed to the property which may be claimed to the property which may be claimed to the property which may be claimed	rou for your signature is he places the material in sting that you sign this jacent property, building wheels of his vehicle st armless the driver of this have arisen out of delix	of the opinion that the this load where you directed in the control of the contro	ssire it. It is our wish to help and this supplier from any s, curbs, etc. by the delivery he public street. Further, as it for any and all damage to
Ja-Jws				CUSTOMER COPY	,		

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ŀ	9202	Delivery Address	- 11.01	+					Project #	1	Time Batched
ŀ	P. O. #	Instructions			<u> </u>						Due Time
1	Zone								Leave Plant	<u> </u>	Arrive Job
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ŀ	Order#	Truck #	Driver/Hauler	awi		-		-	Leave Job		Arrive Plant
Ī	Load Quantity	Cumulative Quantity	Ordered Quantity	Product	iden maximum sq.	PRODUCT D	ESCRIPTIC	N	Unit Price	i esti	AMOUNT
	SUB-TOTAL		45, 23 21,	760	P(TICKET TOTAL			ORDER TOTAL	005	
	attorney's fees, income All accounts not part the rate of 18% part Not Responsible for	urred in collecting and within 30 days of the annum. Be Reactive Aggreg as Made at Time Mearge and Loss of the arge arge arge arge arge arge arge arg	f delivery will bear late or Color Quali aterial is Delivered.	sonable may pour interest significant be considered by the pour interest significant be possible. The pour interest significant be possible. The pour interest significant be possible. The pour interest significant be considered by the pour interest significant be considered by the pour interest significant be considered by the pour interest significant be considered by the pour interest significant be considered by the pour interest significant be considered by the pour interest significant be considered by the pour interest significant by the pour intere	Customer: The driv possibly cause dama is every way that we nsibility from any da is material and that yo onal consideration, the emises and/or adjace	er of this truck is pries age to the premises a can, but in order to mage that may occur ou also agree to help the undersigned agreent property which m	senting this RELE. and/or adjacent pro do this the driver r to the premises a him remove mud les to indemnify an lay be claimed by a	perty if he places the ris is requesting that you a nd/or adjacent property from the wheets of his id hold harmless the dr unyone to have arisen o	nature is of the opinion material in this load wh sign this RELEASE rel , buildings, sidewalks, vehicle so that he will wer of this truck and thut at of delivery of this are	ere you de lieving him drive-ways not litter th his supplier der.	size and weight of his truck sire it. It is our wish to help and this supplier from any and this supplier from any to public street. Further, as r for any and all damage to

CUSTOMER COPY

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rder #	**************************************	Proprieta						Leave Job	Arrive Plant
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UB-TOTAL	tures on the land	TAX	engagitat definer to a geographic		TOTAL	<u> </u>	<u>. </u>	TOTAL	1615
attorney's fees, inco	curred in collecting a aid within 30 days o	costs, including reas any sums owed. of delivery will bear	Sonable responsed add	ly possibly cause damag u in every way that we c sponsibility from any dam this material and that you ditional consideration, the	or of this truck is pre- ge to the premises a can, but in order to mage that may occur as also agree to help be undersigned agre	senting this RELEASE and/or adjacent proper do this the driver is no to the premises and/o him remove mud from the to indemnify and his	E to you for your sig my if he places the me equesting that you so for adjacent property, on the wheels of his hold harmless the dri	gnature is of the opinion that material in this load where y sign this RELEASE relieving, buildings, sidewalks, drive yehicle so that he will not I	at the size and weight of his truck you desire it. It is our wish to help ig him and this supplier from any e-ways, curbs, etc. by the delivery litter the public street. Further, as supplier for any and all damage to

170772

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40,00 Service Charge and Loss of the Cash Discount will be

collected on all Returned Checks.



CONTINUE FOR DECISIONATION # 220-01-AS-30-03-431

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND A GRAVEL AND PAYABLE BY CUSTOMER.

RECEIVED * 11111-01 **PURCHASE ORDER:** JOB **JOB CUSTOMER:** - TONS WESTPAC ENVIRONMENTAL LOADS **CUSTOMER JOB #** 54 SOUTH DAUSON **INTERCO JOB #** 628.35 SEATTLE 32 TOTAL 38 628.35 DAILY REFERENCE SEQUENCE **PLANT** TRUCK 182566 ONSON 1671 TIME TOTAL **TARE** NET PRICE **GROSS** MIXTURE SESSIBLE HOLD 33.60 TN 52.31 TN 18.71 TM 37420 LE COARSE WASHED SAND 67200 LB

SPECIAL INSTRUCTIONS

CHICK OLSEN SITE 17037 AURORA NORTH, SHORELINE

Everett (425) 355-2111. Seattle (206) 624-0301.

Associated

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALLANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

SUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER CUSTOMER JOB # INTERCO JOB #			TOTAL DAILY	JOB LOADS 38 38	JOB TONS 724.50 724.50
DATE 99/01/12		PLANT	"/	UCK	SEQUENCE	REFERENCE
MIXTURE	GROSS	はいさいい TARE	WE:	NET	PRICE	182570 TOTAL
22310 COARSE WASHED SAND	24.79 TN 49580 LB	11.87 TN 23740 LB		.92 T 840 L		
PECIAL INSTRUCTIONS		· · · · · · · · · · · · · · · · · · ·			·	<u>:</u>
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE	•					

CHUCK OLSEN SITE

17037 AURORA NORTH, SHORELINE



CUNTRACTOR REGISTRATION # 223-01-A3-30-03-031-230

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN. TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

			RECEIVED	*	· · · · · · · · · · · · · · · · · · ·
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CUSTOMER: 11111-Ø1 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDEF CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 36	JOB TONS 698.97 698.97
DATE 99701718		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 01:06P		00200	W254	,	188571
MIXTURE	GROSS	TARE	NET .	PRICE	TOTAL
22310 COARSE WASHED SAND	23.34 TN 46680 LE				
SPECIAL INSTRUCTIONS					



LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET OF PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

			:
USTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #	JOB LOADS	JOB TONS :
		DAILY 34	679.24

DATE 99/01/12		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME (0.1 ± (0.31)	*.	00200	1671		182568
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
22310	. 51.70 T	N 18.71 TN	32.99 TK	1	,
COARSE WASHED SAND	1.03400 L	B 37420 LB	65980 LE	} `	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

17037 AURORA NORTH, SHORELINE



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BRALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE		PURCHASE ORDEI CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 33	JOB TONS 646.25
DATE 99/01/18	· ·	· · · · · · · · · · · · · · · · · · ·	PLANT VIVIEWV	TRUCK 以254	SEQUENCE	REFERENCE 182567
MIXTURE	 	GROSS	TARE	NET	PRICE	TOTAL
22310 CDARSE WASHED SAND		29.06 TN 58120 LB	11.16 TN 22320 LB			;



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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He warrant that the materials dumped at the ASEG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

RECEIVED 11111-01 JOB CUSTOMER: ENVIRONMENTAL JOB PURCHASE ORDER: TONS LOADS **CUSTOMER JOB #** 54 SOUTH DAWSON **INTERCO JOB #** 57.74 SEATTLE TOTAL 57.74 DAILY 99/761/1台 SEQUENCE REFERENCE PLANT TRUCK DATE एक्ट्री र गिर्कान 1 (5) 1 (4) VACO 4 TIME GROSS TARE NET PRICE TOTAL MIXTURE 16.62 TN 29.11 IN 45.73 TN 24190 58220 LB 91460 LB 33240 LB PETROLEUM CONTAMINATED SOIL

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE

17037 AURORA NORTH, SHORELINE

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Everett (425) 355-2111. Seattle (206) 624-0301.

Associated

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL. 54 SOUTH DAWSON SEATTLE	PURCHASE ORDI CUSTOMER JOB INTERCO JOB #	#	TOTAL DAILY	JOB LOADS 9	JOB TONS 206.67 206.67
DATE 99/01/12		PLANŢ	TRUCK	SEQUENCE	REFERENCE
LIME COSTON		00000	W257	<u> </u>	182406
·	00000	TARE	NET	PRICE	TOTAL
MIXTURE	GROSS	ANE			
MIXTURE 24199 PCS - INTERCO SALE	24.48 T			TN	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



CONTINACTOR REGISTRATION #223-01-A5-50-65-637230

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASEG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

11111-01 CUSTOMER: **PURCHASE ORDER:** JOB **JOB** WESTPAC ENVIRONMENTAL: LOADS TONS **CUSTOMER JOB #** 54 SOUTH DAWSON **INTERCO JOB #** SEATTLE 141.34 TOTAL 141.34 DAILY THURTE **PLANT** TRUCK SEQUENCE REFERENCE MET FU <u>wwww</u> 167T 182404 TIME GROSS TARE NET PRICE TOTAL MIXTURE 24190 50.81 TN 32.10 TN 18.71 TN PETROLEUM CONTAMINATED SOIL 101620 LB 37420 LB 64200 LI SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

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CONTINACTON DEGIS TRATION # 223-01-A3-30-03-0312-00

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALLANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

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CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		10111		JOB TONS 686.79 686.79
DATE 99/01/12 TIME 01:04P	P WUS		rruck 교통4	SEQUENCE	REFERENCE 182569
MIXTURE 21570		TARE	NET 7.55 TN	PRICE	TOTAL

37420 LB

22320 LB

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

RECYCLED CRUSHED CONCRETE

Everett (425) 355-2111. Seattle (206) 624-0301. Associated

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE-HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

USTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	С	URCHASE ORDER USTOMER JOB # ITERCO JOB #	:			JOB LOADS	JOB TONS
Story I Hote					TOTAL DAILY	· ·	
ATE -99/01/120	-		PLANT ØØ2ØØ	_	иск 7 Т	SEQUENCE	REFERENCE 18257
IXTURE 2524Ø TRUCK RENTAL EVT-T & T		GROSS	TARE 18.71 TN 37420 LB	4	NET . 00	PRICE	TOTAL



182400

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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We warrant that the materials dumped at the ASIG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hawler's and/or the Generator's expense.

CUSTOMEST PAC ENVIRONMENTAL. 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS	JOB TONS 28.63
99/01/11 DATE 08:590 TIME		PLANT WITTER	TRUCK	SEQUENCE	REFERENCE I & C.41
MIXTURE 24190/ PETROLEUM CONTAMINATED SOIL		TARE 16.62 TN 33240 LB			TOTAL
SPECIAL INSTRUCTIONS CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE				s er til e	
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. O. #	Instructions							· .				Oue Time
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rder #	Truck #	Driver/Hauler	X.	<u>' ()</u>						ave Job		Arrive Plant
Load Quantity	Cumulative Quantity	Ordered Quantity	Produ Cod		PF	RODUCT DE		inner roenn verser. 		Unit Price		AMOUNT
		87,	100		7	15				·		
		37 8	100	5		. •						
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UB-TOTAL		TAX	<u> </u>			OTAL	o storein de	<u> </u>	TOTA		, D)
The undersigned prattorney's fees, incu All accounts not pai at the rate of 18% p	rred in collecting an	y sums owed.	•	Dear Custor may possibly you in even responsibilit of this mate additional or	ner: The driver of y cause damage of way that we can be from any damage and that you consideration, the	to the premises and in, but in order to di ge that may occur to also agree to help to	enting this RELEAS d/or adjacent prope o this the driver is o the premises and nim remove mud fro s to indemnify and	E to you for your s rty if he places the requesting that you for adjacent proper in the wheels of hi hold harmless the	ignature is material in sign this ty, building s vehicle s driver of thi	of the opinion to this load where RELEASE relieves, s, sidewalks, dried that he will no is truck and this	e you desire ring him an ive-ways, c I litter the p supplier to	and weight of his to be it. It is our wish to d this supplier from urbs, etc. by the defr ublic street. Further r any and all damag
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Claim Allowed Unles	ss Made at Time Ma	aterial is Delivered.		WILL NO	MY SIGNATU BE RESPON CEIVED BY:	ISIBLE FOR AN	Y DAMAGE CAI	SED WHEN O	#VET	G NSIDE C	JEB LIV	EAND SUPPL
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P. O. #	Instructions									Due Time	
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Order #	\foralle{\partial} \sqrt{1} \langle \foralle{\partial} \sqrt{1} \	Driver/Hauler		••	•		Lea	eve Job		Arrive Plan	t
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			may	possibly cause dam	age to the premises and/o	or adjacent property if he places the	e material in u sion this F	ihis load where IELEASE reliev	e you des: vina him a	re it. It is our wi ind this supplier	isn to ne∤p r from any
The undersigned p attorney's fees, inc	romises to pay all co urred in collecting an	osts, including reas ly sums owed.	of th	onsibility from any da is material and that t	amage that may occur to to you also acree to help him	the premises and/or adjacent proper to remove mud from the wheels of he to indemnify and hold harmless the	rty, buildings is vehicle sa	, sidewalks, do that he will no	ve-ways, o t litter the	curos, etc. by the public street. F	ne delivery Further, as
All accounts not pa	aid within 30 days of	delivery will bear		remises and/or adja	cent property which may b	e claimed by anyone to have ariser	out of delive	ery of this order		or any and an e	.a.nago io
at the rate of 18% p				-			-		-		
Not Responsible for Claim Allowed Unle	or Reactive Aggrega ess Made at Time Ma	ate or Color Quali aterial is Delivered.	ty. No	FICE: MY HIGH	STURE BELOW INDIC	CATES THAT THAVE READ D) MAGE CAUSED WHEN D	THE AEAI ELIVERIN	TH WARNIN	NG NOT	IC≌AND SU IE	
	harge and Loss of the		LO	D RECEIVED BY	/			and the second second second	police Smill		- The section of the
collected on all Ret	urned Checks.		``\	<u> </u>	11/2				17	0102	ן כ
	•			CUSTOMERSIG	NATURE	·			<u></u>		<u>-</u>
			-		- ()						 '
143-JWS				CUSTOM	ER COPY		- !	ř			
17070880				1711							

						
•	O	Associated		32	- 4540 Plant#	Ticket #
ustomer # Sold To	110 0110	Associated	<u> </u>			Dater /
						1/8
Delivery Address *				' Pro	oject #	Time Batched
. O. # Instructions		 		ŀ		Due Time
					The state of the s	. Assistant
one ·					Leave Plant	Arrive Job
				· I	<u> </u>	
(7/2)						
rder# Truck#	Driver/Hauler			1 .	Leave Job	Arrive Plant
Load Cumulative	Ordered Product	5565115	co se se se se se se se se se se se se se	्या नाउन्हर इस	Unit	Tamas coresen
Quantity Quantity	Quantity Code	1 . DOUGHIE	r description		Price	AMOUNT
		RS		1.		
	(42	(a()				
	3324	10		1	,	
	3112	20			1 -	- 0
UB-TOTAL	TAX	TICKET	CHYMMACHUSH		RDER A U	
The undersigned promises to pay all co- attorney's fees, incurred in collecting any All accounts not paid within 30 days of of at the rate of 18% per annum.	sts, including reasonable sums owed.	ROPERTY UNLIAGE RELEASE, ILD RE lear Customer: The driver of this tryck lay possibly cause damage to the premo put in every way that we can, but in-kyr esponsibility from any damage that rulay It his material and that you also agrie if dditional consideration, the undersigned re premises and/or adjacent property, whi IGNED	s presenting this RELEASE to see and/or adjacent property i of to do this the driver is requi- occur-to-the premiser land/or a help him remove must from the agrees to indemnify and poid	You for your signate the places the mate eating that you sign diacent property, but he theels of his veh harteless the driver	ure is of the opinion that irial in this load where you this RELEASE relieving idings, sidewalks, drive-vi ide so that he will not little of this truck and this sup	the size and weight of his u desire it. It is our wish to him and this supplier for vays, curbs, etc. by the de or the public street. Furth polier for any and all dama
Not Responsible for Reactive Aggregat		IOTIGE: MY SIGNATURE BELO	Ninhicate attact a	i Webenhitk	aprità Maddisia	NATIONAL AND SELECTION
Claim Allowed Unless Made at Time Mat	terial is Delivered.	VICENOT BE RESPONSIBLE FO		OWNENDERV		

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

NOTICE: MY SIGNATURE BELOW INDICATES THAD HAVE READ THE HEALTH WARNING NOTICE AND SUDHEIE MICENOT BE HESPONSIBLE FOR ANY DAMAGE CAUSED WHEN DELIVERING INSIDE CURE LINE LOAD RECEIVED BY:

X CUSTOMER SIGNATURE

168932

CUSTOMER COPY

		Ç).	C	SR	ты () 32	-454	, 		
]			ï	Ass	ociated			Pla	nt#	Ticket #	
Customer #	Sold To	119	8 4	ter					1-8	Date 7 G	_
Job	Delivery Address	J	O 1					Project #	, ,	Time Batched	
P. O. #	Instructions		 			*		·		Due Time	
Zone ·	-	<u>·</u>			1)		Leave Pla	ant	Arrive Job	 `
		``	<u> </u>	٠		M					
Order #	Truck#	Driver/Hauler	NW	1	1/1/3			Leave Jo		Arrive Plant	
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code		PRODUCK	DESCRIPTION	ON A COMPANY STREET	Unit Price		AMOUNT	
	AY CAUSE SAI		800 40	160/60 91	HICKEL		ाश्यम् सं ⊜क्षांचा	ORDER			
SUB-TOTAL	· ·	TAX	م در دو دی	فهور ومعرا والماسات	TOTAL	1.1.1.1	3 35 3 3 3 3 5 5 5 6 5 6 5 6 5 6 5 6 5 6	TOTAL	<u>X5. </u>	18	,
All accounts not pa at the rate of 18% p Not Responsible to Claim Allowed Unle	urred in collecting ar aid within 30 days of per annum. or Reactive Aggreg	ny sums owed. I delivery will bear ate or Color Quali aterial is Delivered.	interest	Dear Customer: To may possibly can you in every way i responsibility from of this material an additional consider the premises and/o SIGNED	MSE RELEASE (10 RE S he driver of this hinck is e damage to the premise that we can, but in erder any damage that may co that you also agree to h ation, the undersigned a or adjacent property which INCLUDED THE SECONDE	plesenting this RELL is and/or adjacent in to do this the driver cur to the premises letp him remover mu- grees to indemnity, a may be claimed by	ASE to you for your sopenty if he places the is requesting that you and/or adjacent proper if from the wheels of hind hold harmless the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone to have arisen the canyone the ca	ignature is of the op material in this load s sign this RELEASE ty, buildings, sidewal s vehicle so that he driver of this truck ar out of delivery of this	where you d refleving him ks, drive-way will not litter ! ad this supplic order.	lesire it. It is our wish to n and this supplier from rs, curbs, etc. by the de he public street. Furthe er for any and all dama	heip any livery er, as ge to
collected on all Ret		no odan Diacculit V	, 50	x	·	1-3-1			16	8973	

CUSTOMER COPY



32-45406

	,	,		Associated		Plant #	Ticket #	
Customer #	Sold To	Anc	_				Date	
Job	Delivery Address				, P	roject #	Time Batched	
32-454X	Instructions	· · · · · · · · · · · · · · · · · · ·					Due Time	
Zone			_	÷	, -	Leave Plant	Arrive Job	
	1./2		,		•		- -	
Order #	TV##///	DrivenHaulen				Leave Job	Arrive Plant	
Load Quantity	Cumulative Quantity	Ordered Quantity	Product Code	PRODUCT DESC	RIPTION	Unit Price	AMOUNT	
				DCS	•			
				Irco	1			
			4626			,	·	
·			1276					
		_	2710					
	ļ.		225	200			0	
SUB-TOTAL		TAX	erentuaren erroaren 1946. 	TICKET TOTAL		OTAL 1	25	
PROPERTY DAMAGE RELEASE (TO BE SIGNED IF DELIVERY IS TO BE MADE INSIDE CURB LINE) Dear Customer: The driver of this truck is presenting this RELEASE to you for your signature is of the opinion that the size and weight of his truck may possibly cause damage to the premises and/or adjacent property if he places the material in this load where you desire it. It is our wish to help you in every way that we can, but in order to do this the driver, is requesting that you sign this RELEASE relieving him and this supplier from any responsibility from any damage that may occur to the premises and/or adjacent property, buildings, sidewalks, drive-ways, curbs, etc. by the delivery of this material and that you also agree to help him remove much from the wheels of his vehicle so that he will not litter the public street. Further, as additional consideration, the undersigned agrees to indemnify and hold harmless the driver of this truck and this supplier for any and all damage to								

All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.

Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time Material is Delivered.

A \$40.00 Service Charge and Loss of the Cash Discount will be collected on all Returned Checks.

SIGNED

NOTICE MY BIGNATURE BELOW INDICATES THAT I HAVE HEAD THE WILLNOT BE RESPONSIBLE TO HAVY DAMAGE CAUSED WHEN DELY	HEALTH WARNING NOTICE AND SUPPLIERS
LOAD RECEIVED BY	160705
CUSTOMER SIGNATURE	T00100

CUSTOMER COPY



182455

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHLEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

RECEIVED *

CUSTOMER: 11111-01
WESTPAC ENVIRONMENTAL
54 SOUTH DAWSON

54 SOUTH DAWSON SEATTLE PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #

JOB LOADS	JOB TONS
TOTAL 15	298.11
DAILY 16	898, 11

DATE 99/01/13		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 10:16A		_ 00200	W257		182455
MIXTURE	GROSS	TARE	· NET	PRICE	TOTAL
22310	24.23 TN	11.87 TN	12.36 TI	N	
COARSE WASHED SAND	48460 LB	23740 LB	24720 LJ	3	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

REMARKS

CUSTOMER COPY

X SCALE OPERATOR

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REMARKS



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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SCALE OPERATOR

11111-01 CUSTOMER: PURCHASE ORDER: **JOB JOB** WESTPAC ENVIRONMENTAL. LOADS TONS **CUSTOMER JOB #** 54 SOUTH DAWSON **INTERCO JOB #** SEATTLE 271.40 14 TOTAL 271.40 14 DAILY 99/01/13 PLANT TRUCK SEQUENCE REFERENCE 10:15A JJ257 182453 MASAN **GROSS** TARE **NET** PRICE TOTAL **MIXTURE** 11.87 TN 22310 12.61 TM 24.48 TN 25220 LE COARSE WASHED SAND 48960 LB 23740 LB SPECIAL INSTRUCTIONS CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



We warrant that the saterials dumped at the ASLG site contain no Hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

182450

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN. TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% IDTH-PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

RECEIVED

TARE 11.87 TN 23740 LB	NET 13. 1 26.30	5 ТИ	PRICE	TOTAL
TARE 11.87 TN	NET	5 ТИ	PRICE	
TARE 11.87 TN	NET	5 ТИ	PRICE	
TARE 11.87 TN	NET	5 ТИ	PRICE	
TARE 11.87 TN	NET	5 ТИ	PRICE	
TARE 11.87 TN	NET	5 ТИ	PRICE	
TARE	NET		PRICE	
	•			
PLANT	TRUC	(s	EQUENCE	REFERENCE
1	TC DA	TAL	1 .	232.74 232.74
•				TONS
			JOB	JOB
	* 2. * * 2. * * * * * * * * * * * * * *			LOADS

We warrant that the materials dumped at the ASAG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall



182454

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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						- ;
CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 15	JOB TONS 285.75 285.75	-
DATE 99/01/13		PLANT ØØ2ØØ	TRUCK W257	SEQUENCE	REFERENCE 182454	1
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL	•
24190 PETROLEUM CONTAMINATED SOIL	26.22 TN 52440 LB	11.87 TN 23740 LB	14.35 T 28700 L	The second secon		
PECIAL INSTRUCTIONS			,	- 		
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE		· . ·			. :	•
		·		•	. :	
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182456

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

We warrant that the materials dumped at the ASTG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

		·	RECEIVED	<u>k</u>		
CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDE CUSTOMER JOB # INTERCO JOB #		TOTAL	JOB LOADS	JOB TONS 328.19	
Softwalk T. U. How Boo.			DAILY	17	328.19	
DATE 99/01/13 TIME 10:17A		PLANT UUSUU	TRUCK W254	SEQUENCE	REFERENCE 182456	
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL	
24190 PETROLEUM CONTAMINATED SOIL	46.70 TN 93400 LE			I .		
SPECIAL INSTRUCTIONS	· · · · · ·		· ·			HANA.
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE			, · · · .	•		* * * * * * * * * * * * * * * * * * *
					:	1/3
			X			
REMARKS	CUSTOMER	COPY	SCALE OPERATOR	1		· · · · · · · · · · · · · · · · · · ·



We warrant that the materials dumped at the ASAG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

182457

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

	· · · · · · · · · · · · · · · · · · ·		RECEIVED _	<u>k</u>	·
CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 1 &	JOB TONS 339.77 339.77
DATE 99/01/13 TIME 10:17A		PLANT 00200	TRUCK W257	SEQUENCE	REFERENCE 182457
MIXTURE 24190	gross 23.45 TN	TARE	NET	PRICE	TOTAL
PETROLEUM CONTAMINATED SOIL	46900 LB	23740 LB	23160 L	B	
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE					
		·			** . * * * * * * * * * * * * * * * * *
	to the second of	· · · · · · · · · · · · · · · · · · ·	X	1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1 (1	· Market
REMARKS	CUSTOMER	COPY	SCALE OPERATOR	1	

We warrant that the materials dumped at the ASAG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall



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CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN. TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

be removed at the Hauler's and/or the Generator's expense. 11111-01 JOB JOB **PURCHASE ORDER:** CUSTOMER: TONS WESTPAC ENVIRONMENTAL LOADS **CUSTOMER JOB #** 54 SOUTH DAWSON **INTERCO JOB #** SEATTLE 750.55 TOTAL 40 750.55 DAILY 99701713 **SEQUENCE** REFERENCE PLANT TRUCK DATE का : 160 00200 W257 182575 TIME GROSS TARE NET PRICE TOTAL **MIXTURE** 13.77 IN 11.87 TN 24190 25.64 TN PETROLEUM CONTAMINATED SOIL 23740° LB 27540 LB 51280 LB SPECIAL INSTRUCTIONS CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

BEMARKS

CUSTOMER COPY

SCALE OPERATOR



182500

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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We warrant that the materials dumped at the ASSG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

		• • • • • • • • • • • • • • • • • • • •	RECEIVED _		
CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 23 23	JOB TONS 408, 46 408, 46
DATE 99701714		PLANT	TRUCK	SEQUENCE	REFERENCE
11 6 4 17 1		いからかか し	口の転ん		4.00:00.6.00

DATE 99701/14	•	PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 11:51A		00500	W254	·	182498
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24250	40.09 TN	28.69 TN	.11.40. 计		·
DUMP FEE - CONCRETE	82180 LB	57380 LB	22800 LE	}	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



182497

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CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHLEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASAG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

CUSTOMER: 11111-01
WESTPAC ENVIRONMENTAL
54 SOUTH DAWSON
SEATTLE

PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #

•	: ·	JOB LOADS	JOB TONS
	TOTAL_	20 20	372.19 372.19

DATE 99/01/14		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 11:50A		00500	W254 .		182495
MIXTURE	GROSS	TARE	NET	PRICE	TOŢAL
24250 DUMP FEE - CONCRETE	36.37 TN 72740 LB				

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE MAN



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT; WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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RECEIVED

11111-01 CUSTOMER: WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE

PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #

_	OB ADS	JOB TONS	
TOTAL 22		397.06	
DAILY 22		397, Ø6	

DATE 11:50日		PLANT VOZVV	TRUCK W257	SEQUENCE	REFERENCE 188497
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
22310 COARSE WASHED SAND	23.60 TN 47200 LI	1	11.73 TN 23460 LB	•	·

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

be removed at the Hauler's and/or the Generator's expense.

We warrant that the materials dumped at the ASAG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall



182498

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BRAANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # : INTERCO JOB #	51,5	TOTAL	JOB LOADS 21	JOB TONS 385, 33 385, 33
DATE 99701/14	775	PLANT MOROW	TRUCK . W257	SEQUENCE	REFERENCE 182496
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190 PETROLEUM CONTAMINATED SOIL	25.01 TN 50020 LB	11.87 TN 23740 LB	13.14 TN 26200 LB		
SPECIAL INSTRUCTIONS					

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE HHH



182501

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G3725

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PPOX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN DUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASLG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		JOB LOADS	JOB TONS 420, 53 420, 53
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DATE 99/01/14	1	PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 11:51A		00500	W254		182499
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190 PETROLEUM CONTAMINATED SOIL	28.69 TN 57380 LB			· ·	

- SPECIAL INSTRUCTIONS -----

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE HAH

1810 H



182502

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASIG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

	RECEIVED				
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CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DANSON	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #	JOB LOADS	JOB TONS		
SEATTLE		TOTAL 25	431.73 431.73		
73(3.7(3.1.7.1.7.	DI ANT	SEQUENCE	PECEDENCE		

DATE 99/01/14		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 11:52A		00200	W257		182500
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190	23.07 TN	11.87 TN	11.20 m	4	
PETROLEUM CONTAMINATED SOIL	46140 LB	23740 LB	28400 LI	<u>-</u>	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASSG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		JOB LOADS	JOB TONS
SEATTLE		TOTAL	26 <u>26</u>	445.78 445.78

DATE 99/01/14		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 11:58A		00200	W257	•	102501
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190	25.92 TN			` `	
PETROLEUM CONTAMINATED SOIL	51840 LB	23740 LB	28100 LF	8	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



182504

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE 'AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PPOX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASEG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

CUSTOMER: 11111-01 NESTPAC ENVIRONMENTAL 54 SOUTH DAUSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 27 27	JOB TONS 474.96
--	--	--	-------------	--------------------------	-----------------------

DATE 99/01/14		PLANT	TRUCK	SEQUENCE	REFERENÇE
TIME TIESEN		00200	W254		182502
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
2419Ø	45.00 TN	16.62 IN	.29.18 T	A	
PETROLEUM CONTAMINATED SOIL	91600 LE			· E	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE HAN

be removed at the Hauler's and/or the Generator's expense.

We warrant that the materials demped at the ASES site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall



182507

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

11111-01 CUSTOMER: PURCHASE ORDER: JOB **JOB** WESTPAC ENVIRONMENTAL **CUSTOMER JOB #** LOADS **TONS** 54 SOUTH DAWSON **INTERCO JOB #** SEATTLE 563.46 TOTAL 563,46 99701715 **PLANT** TRUCK SEQUENCE REFERENCE 11:544 TIME 0005000 Walla4 182505 GROSS TARE MIXTURE NET PRICE TOTAL 24190 45.58 TN 16.23 TN 29.35 TN PETROLEUM CONTAMINATED SOIL 91160 LB 32460 LB 58700 SPECIAL INSTRUCTIONS CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

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182576

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1½ 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

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CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY		JOB TONS 736. 78 736. 78	, alian
DATE 99/01/13 TIME 01:160		PLANT	TRUCK	SEQUENCE	REFERENCE	
MIXTURE	GROSS	00200	W25/7	PRICE	182574 TOTAL	
22310 COARSE WASHED SAND	24.15 TN 48300 LB	11.87 TN 23740 LB	12.28 24560	TN	:	:
SPECIAL INSTRUCTIONS		_ 				* ####
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE	en en en en en en en en en en en en en e					111111

SCALE OPERATOR



182458

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

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CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDEF CUSTOMER JOB # INTERCO JOB #	i:		TOTAL DAILY	JOB LOADS 19	JOB TONS 352.44 352.44	
ATE 99/01/13		PLANT		ıck	SEQUENCE	REFERENCE	
IME 10:18A		00200	Was	57		182458	^{t.}
IXTURE	GROSS	TARE	. !	NET	PRICE	TOTAL	٠٠.
22310 COARSE WASHED SAND	24.54 TN 49080 LB	11.87 TN 23740 LB	i				
PECIAL INSTRUCTIONS CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE		-,					
r			Y				
REMARKS	CUSTOMER	COPY	SCALE	OPERATOR	·	· · · · · · · · · · · · · · · · · · ·	- 1 91



182505

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the RS&6 site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS 28	JOB TONS 504.51 504.51
DATE 99701715 TIME 13:4530	PLAN WWEWW	Charles of the last	RUCK	SEQUENCE	REFERENCE 182503

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

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17037 AURORA NORTH, SHORELINE



182506

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDEF CUSTOMER JOB # INTERCO JOB #	1:		JOB LOADS	JOB TONS
			TOTAL DAILY	29	534.11 534.11
DATE 99/01/15 TIME 11:53A		PLANT VV2VV	TRUCK W254	SEQUENCE	REFERENCE 18治504
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
22320 CONCRETE BUILDING SAND	45.83 TN 91660 LB		29.60 T 59200 L	isl B	

DEMADING



182508

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% IDTH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

			RECEIVED _	^	
CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDE CUSTOMER JOB # INTERCO JOB #		TOTAL DAILY	JOB LOADS	JOB TONS 594.75 594.75
DATE 99/01/15 TIME 11:540		PLANT ወዕድወው	TRUCK 同念語句	SEQUENCE	REFERENCE 182506
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
22320 CONCRETE BUILDING SAND	47.52 TN 95040 LB		31.29 T 62580 L		
SPECIAL INSTRUCTIONS	•				:
CHUCK OLSEN SITE	•		•	;	: i
17037 AURÓRA NORTH, SHORELINE				•	<u>:</u>

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be removed at the Hauler's and/or the Generator's expense.

We warrant that the materials dumped at the ASSG site contain no hazardous materials. Should the dueped material be found to contain hazardous materials, such materials shall



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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		· .	RECEIVED 3	r		
CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON	PURCHASE ORDER CUSTOMER JOB # INTERCO JOB #	:		JOB LOADS	JOB TONS	,
SEATTLE .			TOTAL DAILY	46 46	855. Ø8 855. Ø8	
DATE 99/01/18		PLANT	TRUCK	SEQUENCE	REFERENCE	
TIME 01:410		ØØ2ØØ	W257		182582	
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL	
24190 PETROLEUM CONTAMINATED SOIL	20.90 TN 41800 LB	11.88 TN 23760 LB				
SPECIAL INSTRUCTIONS					-	ì

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMEN'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASEG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

				
USTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		JOB LOADS	JOB TONS
SEATTLE		TOTAL DAILY	45 45	846.06 846.06

DATE 99/01/18		PLANT	TRUCK	SEQUENCE	REFERENCE
TIME 01:41F		00200	W254		182581
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190 PETROLEUM CONTAMINATED SOIL	46.25 TN 92500 LB				

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

be removed at the Hauler's and/or the Generator's expense.

We warrant that the materials dumped at the ASAS site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall



182582

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

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TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1%, 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHER IS LOWER, PER ANNUM SHALL BE ASSESED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

18.80 TN

25600 LI

11.88 TN

23760 LB

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CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDEF CUSTOMER JOB # INTERCO JOB #	₁ :		TOTAL	JOB LOADS	JOB TONS 816, 43
ourri i			-	DAILY	44	816.43
DATE 99/01/18		PLANT	TRU	СК	SEQUENCE	REFERENCE
TIME 01:40P		00200	W25	7		182580
MINTER	GROSS	TARE	N	ET	PRICE	TOTAL

24.68 TN

4936Ø LB

SPECIAL INSTRUCTIONS

MIXTURE

24190

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

PETROLEUM CONTAMINATED SOIL



CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the waterials dusped at the ASAG site contain no hazardous materials. Should the dusped material be found to contain hazardous waterials, such materials shall be removed at the Hauler's and/or the Generator's expense.

		•	•	
USTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #		JOB [*] LOADS	JOB TONS
SEATTLE		TOT/ DAIL	/. "3	803.63

DATE 99/01/18	PLANT	TRUCK	SEQUENCE	REFERENCE	
TIME (01:40)		ØØ2ØØ	W254		182579
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190	45.00 TN	16.62 TN	28.38 T	√	
PETROLEUM CONTAMINATED SOIL	90000 LB	33240 LB	56760 LI	3	

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE



182579

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASEG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

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TOMER: 11111-01 - WESTPAC ENVIRONMENTAL - 54 SOUTH DAWSON	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #	JOB LOADS	JOB TONS
SEATTLE		TOTAL 41	763.70
·		DAILY 41	763.70

oss	TARE	NET '	PRICE	TOTAL
į	MT SK	02 TN 11.87 TN	ða TN 11.87 TN 13.15 TN	72 TN 11.87 TN 13.15 TN

SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

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182580

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

RECEIVED

11111-01 **CUSTOMER:** PURCHASE ORDER: JOB JOB VESTPAC ENVIRONMENTAL LOADS TONS **CUSTOMER JOB #** 54 SQUTH DAWSON INTERCO JOB # SEATTLE 775, 25 48 TOTAL 42 775, 25 DAILY 99701718 **PLANT** TRUCK SEQUENCE REFERENCE 101 : 4 OF 边边全边边 W257 TIME 182578 GROSS TARE NET PRICE TOTAL MIXTURE 22310 23.42 TN 11.55 Th COARSE WASHED SAND 46840 LB \2⁄3740 LB 23100 LE ENGREPHE OF CAR SPECIAL INSTRUCTIONS

CHUCK OLSEN SITE 17037 AURORA NORTH,

Associated Sand & Gravel Company, Inc. 6300 Glenwood Ave., P.O. Box 2037 Everett, WA 98203

Everett (425) 355-2111. Seattle (206) 624-0301.



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CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

We warrant that the materials dumped at the ASSG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

CUSTOMER: 11111 @ WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER CUSTOMER JOB # INTERCO JOB #	TOTAL DAILY	JOB LOADS	JOB TONS	
DATE 99701719		PLANT	TRUÇK	SEQUENCE	880.40
TIME 18:09P		00200	W254	SEQUENCE	REFERENCE 188695
MIXTURE	GROSS	TARE	NET	PRICE	TOTAL
24190 PETROLEUM CONTAMINATED SOIL	91.94 IN 83888 B		25,32 50640	N	/
PECIAL INSTRUCTIONS		The August Inc.			
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE					
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REMARKS .	FILE COP	7	SCALE OPERATOR		<u>·</u>

FORM 143 (R 7/97)



182700

CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN DUTSTANDING BALANCE, IN FAVOR OF ASSECTED AND & GRAVEL AND PAYABLE BY CUSTOMER.

11:4

We warrant that the materials dumped at the ASAG site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Hauler's and/or the Generator's expense.

RECEIVED * IIIII WI CUSTOMESTPAC: EMPTRONMENTAL PURCHASE ORDER: JOB JOB LOADS 54 SOUTH DAWSON **CUSTOMER JOB #** SEE TONS SEATTLE **INTERCO JOB #** 49 932, 58 TOTAL DAILY DATE **PLANT** TRUCK **SEQUENCE** REFERENCE TIME **MIXTURE GROSS** TARE 25.**90** 18 PRICE TOTAL 24190 43,400 119 L f = 4.1%) 13 35000 LD 51800 18 PETROLEUM CONTAMINATED SOLI 86800 LB SPECIAL INSTRUCTIONS CHUCK OLSEN STIE 17037 AURORA NORTH, SHORELINE

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REMARKS

FILE COPY

SCALE OPERATOR

FORM 143 (R 7/97)



182701

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CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

X SCALE OPERATOR

We warrant that the materials dumped at the AS&G site contain no hazardous materials. Should the dumped material be found to contain hazardous materials, such materials shall be removed at the Haulen's and/or the Generator's expense.

REMARKS

CUSTOMER: 11111-01 WESTPAC ENVIRONMENTAL 54 SOUTH DAWSON SEATTLE	PURCHASE ORDER: CUSTOMER JOB # INTERCO JOB #			JOB LOADS 5Ø SØ	JOB TONS 950.50 950.50	
DATE 1881 VIP		PLANT	TRUCK	SEQUENCE	REFERENCE	
MIXTURE 24190 PETROLEUM CONTAMINATED SOIL.	GROSS 34.54 TN 69080 EB	TARE 16.62 TM 33240 LB	NET 17.9a i 35840 L		TOTAL	
CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE			-			

FILE COPY

ORM 143 (R 7/97)



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CONTRACTOR REGISTRATION #223-01-AS-SO-CS-G37250

LIABILITY STATEMENT: WE MAKE DELIVERIES INSIDE THE CURB LINE AND ON THE LOT AT CUSTOMER'S RISK ONLY, AND ACCEPT NO RESPONSIBILITY FOR DAMAGES RESULTING FROM SUCH DELIVERIES.

TERMS OF PAYMENT: THE CUSTOMER AGREES, BY ACCEPTING THE GOODS, LABOR AND MATERIALS SET FORTH HEREIN, TO PAY FOR SUCH GOODS, LABOR AND MATERIALS WITHIN 1% 10TH PROX NET 30 PROX TERMS, AFTER WHICH TIME SERVICE CHARGES AT 12%, OR THE HIGHEST LEGAL RATE, WHICHEVER IS LOWER, PER ANNUM SHALL BE ASSESSED AGAINST THE THEN OUTSTANDING BALANCE, IN FAVOR OF ASSOCIATED SAND & GRAVEL AND PAYABLE BY CUSTOMER.

RECEIVED 11111-01 CUSTOMER: PURCHASE ORDER: JOB JOB WESTPAC ENVIRONMENTAL LOADS TONS **CUSTOMER JOB #** 54 SOUTH DAWSON **INTERCO JOB #** 906.68 48 SEATTLE 906.68 TOTAL DAILY 99701713 PLANT TRUCK SEQUENCE REFERENCE 12:100 TIME **GROSS** TARE NET PRICE TOTAL MIXTURE 26, 28 FN 16,68 18 42.90 IN 22320 52560 LB 33240 LB 85800 1.8 CONCRETE BUILDING SAND SPECIAL INSTRUCTIONS CHUCK OLSEN SITE 17037 AURORA NORTH, SHORELINE

FORM 143 (R 7/97)

REMARKS

FILE COPY

X SCALE OPERATOR

APPENDIX C

SITE EXCAVATION AND BACKFILLING DOCUMENTATION CITY OF SHORELINE



BAINBRIDGE ISLAND OFFICE 179 Madrone Lane North Bainbridge Island, WA 98110 (206) 780-9370 FAX (206) 780-9438

January 25, 1999 AESI Project No. BV97011B CORPORATE OFFICE 911 Fifth Avenue, Suite 100 Kirkland, Washington 98033 (425) 827-7701 FAX (425) 827-5424

Mr. Philip Vartanian City of Shoreline Plan Examiner Planning and Development Services 17544 Midvale Avenue North Shoreline, Washington 98133-4921

Subject:

Summary of Excavation and Backfilling Activities

Shoreline Project Reference #98-027
Former Chuck Olson Chevrolet Facility

17545 Aurora North Shoreline, Washington

Dear Mr. Vartanian:

Associated Earth Sciences, Inc. (AESI) is pleased to present this letter documenting soil excavation and backfilling activities conducted at the former Chuck Olson Chevrolet facility, 17547 Aurora Avenue North, in Shoreline, Washington. Soil excavation was required in order to decommission nine out-of-service underground hydraulic lift vaults and associated equipment, and remove hydrocarbon-impacted soil from around the former hydraulic lift vaults, in accordance with applicable Washington State environmental cleanup regulations.

The attached Figure 1 shows final outlines of the nine cut and filled areas. Total estimated excavation volumes, inclusive of vault voids and concrete, were as follows:

	Volume (cubic yards)
Bay 1	130
Bay 3	60
Bay 4	190
Bay 5	130
Bay 6	80
Bay 7	130
Bay 8	90
Bay 9	110
Bay 12	210

Mr. Philip Vartanian City of Shoreline Plan Examiner Planning and Development Services AESI Project No. BV97011B January 25, 1999 Page 2

The excavated areas were backfilled to original subgrade with either well-graded sand, controlled density fill (CDF), or a combination of both materials. CDF was used in areas proximal to existing wall footings, and/or where subsequent enlargement of the excavation was necessary. Sand and CDF were supplied by CSR Associated of Everett, Washington. Material specifications for the CDF and sand backfill are attached.

Compaction was accomplished using a backhoe-mounted hydraulic plate compactor. From the base of each excavation to 4 feet below grade, maximum 24-inch-thick lifts were placed and then compacted to a minimum of 90 percent of the Modified Proctor maximum density using American Society for Testing and Materials (ASTM) test designation D-1557 as the standard dry density. From 4 feet below grade to finished grade, maximum 12-inch-thick lifts were placed and then compacted to a minimum of 95 percent Modified Proctor maximum density dry density. Optimal water content was maintained during compaction.

An AESI representative monitored compaction activities. Periodic verification of compaction requirements was made by direct measurement using a calibrated Troxler nuclear densometer. A summary of the nuclear densometer tests are attached. The location of the nuclear densometer tests taken at finished grade are shown on Figure 1.

The results of the compaction testing indicate that the backfill material was, in general, well compacted, with all tests indicating compaction above the higher minimum of 95 percent. This combination of well-compacted structural fill and CDF will effectively support a new slab designed for automotive-type loading. The completed areas that were submerged by the roofing removal activity will maintain their load bearing capacity if they are drained and no construction activity disturbs the surface. If surface disturbance has occurred, then the upper disturbed material must be removed prior to placement of any structural feature. Any new structural foundation placed in the bay area should be designed and inspected by the appropriate design professional.

Mr. Philip Vartanian City of Shoreline Plan Examiner Planning and Development Services AESI Project No. BV97011B January 25, 1999 Page 3

We trust the information provided in the letter meets with your satisfaction.

Sincerely,

ASSOCIATED EARTH SCIENCES, INC. Bainbridge Island, Washington

William V. (Chip) Goodhue, R.G. Senior Project Hydrogeologist

William V foresh to.

Attachments: Figure 1

Materials Specifications Density Test Results

cc w/attachments: Mr. Jeff Hancock - Chuck Olson Chevrolet

Mr. Rick Johnson - Alderwood Cadillac

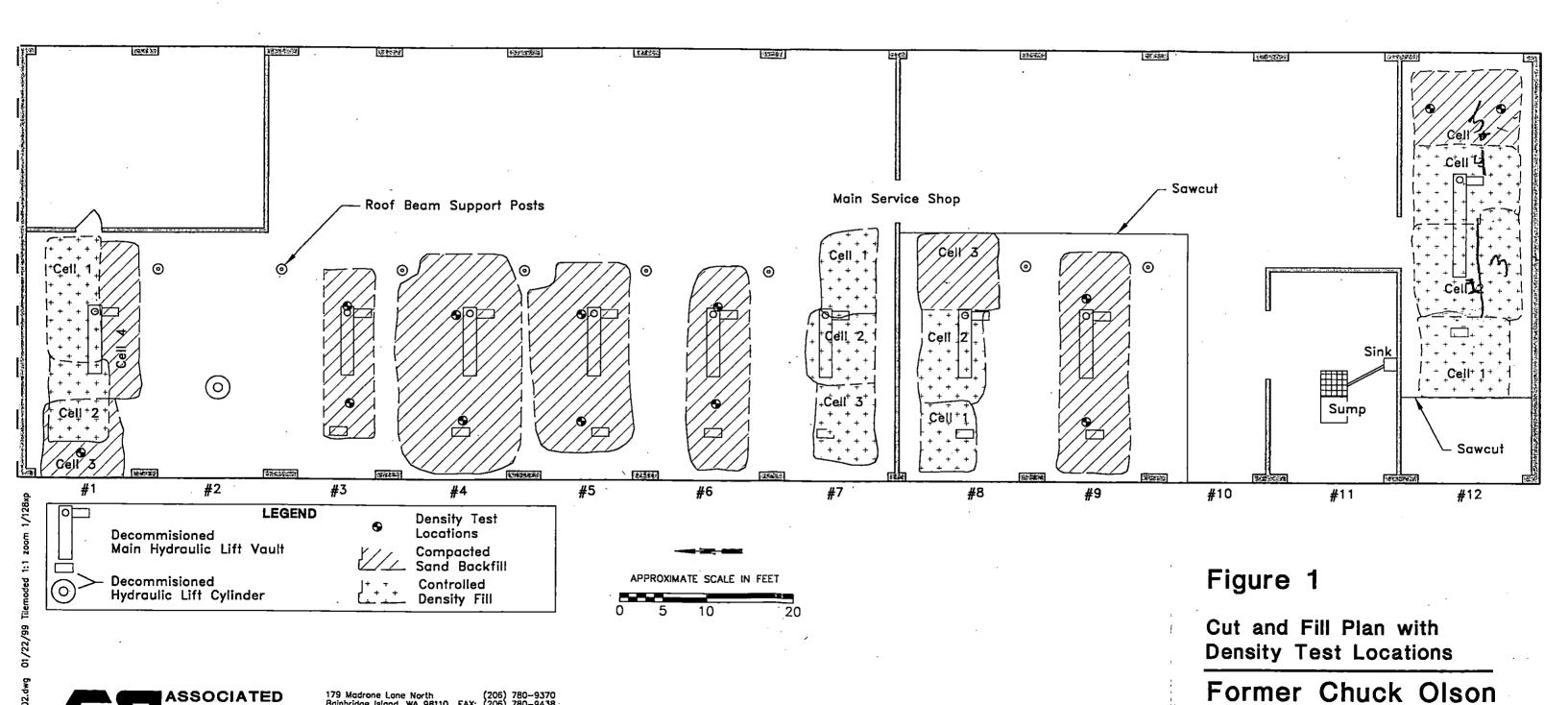
EXPIRES 6/22/99

John Peterson, P.E.

Senior Geotechnical Engineer

Mr. Greg McCormick - EMR

 $KPP: C: \verb|\DOCUMENT| WVG \verb|\C_OLSON3.LTR|$



(425) 827-7701 FAX: (425) 827-5424 **Chevrolet Facility**



MIX ID : 1189442.[]

CONCRETE MIX DESIGN

50 PSI WSDOT Controlled Density Fill 12/22/98

CONTRACTOR :

PROJECT :

WEST RAC ENVIRONMENTAL INC

Chuck Olson Chevrolet Pit Backfill

SOURCE OF CONCRETE : Plant #1 or #2 Everett

CONSTRUCTION TYPE : Controlled Density Lean Concrete Fill

PLACEMENT : Cast In place

WEIGHTS PER CUBIC YARD

(SATURATED, SURFACE-DRY)

Ash Grove Type II AASHTO M-85, LB Pczzolanic Fly Ash AASHTO M-295 Class F, LB Bldg. Sand, LB 3/8" WSDOT 9.03.1(3)C #6, LB WATER, LB (GAL-US) TOTAL AIR, X	60 200 2236 836 320 (38. 6.0 ÷/- 1.	
W.R. Grace Daravair ASTM C 260, OZ-US	TOTAL 5.2	27.00
WATER/CEMENT RATIO, LBS/LB SLUMP, IN CONCRETE UNIT WEIGHT, PCF	1.23 6.00 136.3	

Ascregate weights may be adjusted to maintain yield.

PREPARED

Christopher McBride, Technical Services

CSR Associated, 6300 Glanwood Avenue, Everett, WA 98203

PO Box 2037. Everett. WA 98203. Telephone Everett (206) 355-2111. Telephone Sessele (206) 624-0301

452 248 6887 P.32

CSR ASSOCIATED

S7:91 8661-87-09d

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DENSITY TEST RESULTS

ASSOCIATED EARTH SCIENCES, INC.

Page

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911 Fifth Avenue, Suite 100 Kirkland, Washington 98033 425-827-7701 FAX 827-5424 179 Madrone Lane North Bainbridge Island, WA 98110 206-780-9370 FAX 780-9438 Date Project Name Project No.

1/18/99 Chuck Olson BV97011C

Test No.	Location	Depth Below Finished Grade	% Мс	% ASTM:D 1557	Pass/Fail	Comments
1	Bay #6, west side	5'	5.7	100	Pass	Maximum dry density was reported to be 112 pounds per cubic foot (pcf)
2	Bay #6, east side	5	6.1	105	Pass	
3	Bay #6, east side	Ö	6.8	105	Pass	
4	Bay #6, west side	Ö	5.7	106	Pass	
5	Bay #5, east side	2'	6.2	99	Pass	
6	Bay #5, west side	1'	4.9	102	Pass	
7	Bay #4, west side	4'	7.2	98	Pass	
8	Bay #4, east side	4'	5.9	101	Pass	
9 ′	Bay #3, west side	0'	7.3	112	Pass	
10	Bay #3, east side	0'	7.6	110	Pass	
11	Bay #1/Cell #3	Ö	5.4	104	Pass	
12	Bay #3, east side	O'	15.3	101	Pass	
13	Bay #3, west side	Ö	9.3	103	Pass	
14	Bay #4, west side	0'	8.7	104	Pass	
15	Bay #4, east side	Õ	8.9	101	Pass	
16	Bay #5, east side	Ö	6.0	99	Pass	
17	Bay #5, west side	Ö	8.5	115	Pass	
18	Bay #6, west side	0'	6.9	103	Pass	
19	Bay #6, east side	0'	6.5	102 .	Pass	
20	Bay #8/Cell #3	0'	13.2	101	Pass	
21	Bay #9, east side	0'	10.1	101	Pass	
22	Bay #9, west side	Ö	8.0	104	Pass	
23	Bay #12, south side	O'	9.9	99	Pass	
24	Bay #12, north side	0'	7.8	100	Pass	