VOLUNTARY CLEANUP PROGRAM
INTERIM REMEDIAL ACTION REPORT

Dexter Horton Building
710 Second Avenue
Seattle, Washington

December 13, 2005

Prepared for:

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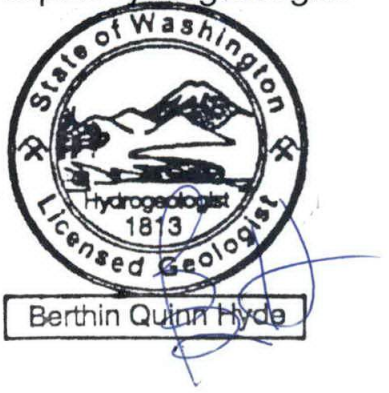

SOUND ENVIRONMENTAL STRATEGIES
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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

EXECUTIVE SUMMARY

Sound Environmental Strategies Corporation (SES) conducted an Voluntary Cleanup Program Interim Remedial Action at the Dexter Horton Building located at 710 – 2nd Avenue in Seattle, Washington (the property) on behalf of Goodman-Carlyle Dexter Horton LLC (GCDH). The purpose of this report is to document the interim remedial activities conducted at the property. Figures, tables, and appendices supplement the report.

The Dexter Horton Building was at one time heated by an oil-burning furnace, the fuel for which was stored in three underground storage tanks (USTs) buried beneath the northeastern portion of the building. The USTs, which had contained Bunker C fuel, were decommissioned by SES in 2005. During the decommissioning process, petroleum-contaminated soil was encountered in the vicinity of the USTs. Groundwater has not been affected as evidenced by the absence of groundwater and soil contamination at the base of the UST cavity. Since UST and soil excavation was not feasible, in situ (in place) chemical oxidation treatment with hydrogen peroxide was conducted to treat contaminated soil in July and August 2005. The peroxide treatment reduced petroleum hydrocarbon contamination to below MTCA Method A cleanup levels under the USTs; however, an estimated 85 cubic yards of shallow (0 to 6 feet below ground surface) petroleum-contaminated soil remains beneath the concrete floor of the building. The shallow contaminated soil is accessible for removal by excavation; but, in its current state does not pose a direct contact risk because it is covered with a concrete floor slab. Post closure sampling results and correspondence with the Department of Ecology (Ecology) suggest that a conditional No Further Action (NFA) petition to Ecology would be approved.

1.0 INTRODUCTION

Sound Environmental Strategies Corporation (SES) conducted a Voluntary Cleanup Program Interim Remedial Action at the Dexter Horton Building (Site Identification NW#1433) located at 710 – 2nd Avenue in Seattle, Washington (the property) on behalf of Goodman-Carlyle Dexter Horton LLC (GCDH). This report summarizes characterization and remediation activities conducted to address the release of Bunker C heating oil from a former underground storage tank (UST). This report has been prepared to fulfill the State of Washington Model Toxics Control Act (MTCA) reporting requirements as described in the Washington State Department of Ecology (Ecology) *Guidance for Site Checks and Site Assessments for Underground Storage Tanks* (Ecology Publication 91-30) and *Guidance on Preparing Independent Remedial Action Reports* (Ecology Publication 94-18). Figures, tables, and appendices supplement the report.

1.1 PROPERTY DESCRIPTION

The downtown Seattle property (Figure 1) is essentially rectangular and covers approximately 28,200 square feet (ft) of land. The property is currently developed with a 1922-vintage, 16-story building (with basement) which encloses 388,934 gross square ft of space, according to King County Assessor's records.

The Dexter Horton Building was at one time heated by two oil-burning boilers, the fuel for which was stored in three USTs buried beneath the northeastern portion of the building. The three USTs are buried beneath the floor of the former boiler room on the main level of the Dexter Horton Building (level with 2nd Avenue). A sub-grade basement wall is located adjacent to the USTs to the west and south. The footing of the basement wall is located approximately 17 ft below the boiler room floor. The basement of the Dexter Horton Building exists only on the western half of the building footprint (Figure 4).

1.2 GEOLOGIC CONDITIONS

This section summarizes the geologic factors that influence the observed site conditions.

1.2.1 Hydrogeology

The site lies within the Puget Sound Lowland, a north-south-trending topographic and structural trough between the Cascade Range to the east and the Olympic Mountains to the west. The trough formed a natural passageway for a succession of glacial advances from British Columbia during the Pleistocene Period. As a consequence, the Lowland was filled with up to 3,000 ft of glacial drift and associated lacustrine, marine and alluvial deposits (Thoreson, 1980; Mullineaux, et al 1965). The last period of glaciation, known as the Vashon Stade of the Fraser Glaciation, occurred 15,000 years ago. Sediments, known as the Vashon Till, underlie the site and consist of a mixture of clay, silt, sand and gravel that was compressed by the weight of up to 3,000 ft of glacial ice.

Review of soil boring logs compiled during SES' July 2005 investigation of subsurface conditions on the northeast corner of the property indicate the property is underlain to a depth of 5.5 ft below ground surface (bgs) by imported fill material, which is in turn underlain to a depth of a minimum of 17 ft bgs by glacial till described as medium-stiff, moderate to very dense clayey silt.

1.2.2 Hydrologic and Hydrogeologic Environment

The property slopes moderately to the southwest and lies at an elevation ranging from 60 ft above sea level on the west side of the property to 90 ft on the east side. The areas immediately adjacent to the property are covered by impervious surfaces (sidewalks, streets, or buildings). Surface water is collected and conveyed away from the property by city storm sewers. No surface water from off-site areas was observed flowing onto the site. The nearest surface water feature is Puget Sound, located approximately one and a half blocks to the southwest.

Groundwater was not encountered to a depth of 17 ft below grade (the maximum depth explored) in soil borings drilled as part of site investigation activities. Given the low volatility of Bunker C constituents and the lack of groundwater in the area of contamination, soil was the only media of concern identified.

1.3 PREVIOUS ENVIRONMENTAL STUDIES

1.3.1 Golder and Associates, 2003

In April of 2003 a Phase One Environmental Site Assessment (Phase One) was performed by Golder and Associates at the property. The Phase One identified the potential presence of two diesel USTs beneath the boiler room floor as depicted on drawings provided by the property manager. The location or presence of the USTs was not confirmed in the Phase One.

1.3.2 SES UST Decommissioning, 2003

On May 23 and June 3, 2003, SES and Environmental Tank Service (ETS) investigated the suspected UST location depicted on site drawings. Four foot by four foot holes were cut in the concrete in the suspected location of the USTs and excavated to a depth of 6 ft bgs. The USTs were not located in the areas depicted on the site drawings provided (north and south ends of the boiler room).

In January 2005, SES received a call from the property manager who had identified Bunker C fuel oil in an above ground pipe located in the west end of the boiler room. SES visited the site with ETS and located a remote fill pipe suspected to be associated with the USTs. ETS returned to the site on January 29, 2005, to trace the lines and uncover the access hatches to three USTs on the west side of the boiler room. ETS confirmed the presence of three USTs and exposed all three access hatches.

ETS returned to the site on February 11, 2005 to decommission the three USTs (certificates in Appendix A). SES visited the site on February 12, 2005, to inspect the USTs and sample the surrounding soil. The USTs consisted of two 3,800-gallon steel tanks and one 1,800-gallon steel pressure boiler converted to a tank. The USTs appeared to be in good condition with the exception of the center tank that contained a 1-ft by 2-inch hole in the top of the UST on the south side. The west 1,800-gallon UST was full of Bunker C fuel oil. The east 3,800-gallon UST contained 60 inches of Bunker C fuel oil and the middle 3,800-gallon UST contained approximately 58 inches of water and 2 inches of Bunker C fuel oil floating on top of the water. The three USTs were pumped and cleaned and the fuel oil/water mixture was taken off site by Phillips Services, Inc., to their disposal facility (disposal tickets are included in Appendix B). Access holes were cut into the sidewalls and the floors of the three USTs to enable the collection of soil samples. SES collected a total of seven soil samples during UST decommissioning (Figure 2). The samples were

analyzed by Friedman and Bruya, Inc., in Seattle, Washington, for diesel- and heavy oil-range petroleum hydrocarbons (DRPH). Table 1 summarizes the analytical results for these samples. These results are included in the laboratory reports (Appendix C). Of the seven soil samples collected, two contained DRPH concentrations above the Model Toxics Control Act (MTCA) Method A cleanup levels for unrestricted land use (2,000 mg/kg).

The USTs were filled with controlled density fill to complete the decommissioning process. Excavation of the contaminated soil beneath the USTs was not feasible due to site logistics. The building does not have an adequate egress to facilitate excavation of contaminated soil and the contamination is located adjacent to building support columns. SES devised a plan to address the soil contamination by in place (in-situ) treatment/oxidation.

SES summarized the UST decommissioning and analytical results in a report titled *Underground Storage Tank Decommissioning Report*, August 22, 2005. The report was submitted to Ecology.

1.3.3 Supplemental Subsurface Investigation

SES installed four borings in the vicinity of the former USTs, three of which were finished as hydrogen peroxide injection wells on July 11 through 13, 2005. A monitoring well to investigate the potential for the presence of groundwater in the vicinity of the soil contamination was installed east of the UST cavity (uphill, and therefore presumed to be upgradient) on July 14, 2005. Water was encountered in a thin perched zone at a depth of approximately 3 ft below the slab elevation, possibly in fill material between the foundation slab and native till material. A water sample (subsequently determined to be associated with surface water runoff) was collected from monitoring well MW-1.

The locations of the investigation borings, treatment injection wells and monitoring well (MW-1) are shown in Figure 3. Analytical results for soil samples collected during the installation of these wells are summarized in Table 1. The analytical results for the water sample from MW-1 are summarized in Table 2. Boring Logs and completion diagrams are included as Appendix D. The observations and analytical results are summarized below.

Boring IN-1 was drilled on July 11, 2005 in a location immediately to the west of former UST. The boring was drilled with a limited access 2-inch split spoon driven by a 60-lb electric jackhammer. Soil samples were collected from this boring at depths of 6, 9, 12, 15, and 16.5 ft and analyzed for NWTPH-Dx. The boring was terminated because of refusal at a total depth of 17.2 ft. Analytical results revealed exceedance of the MTCA Method A diesel and heavy oil cleanup level of 2,000 ppm at depths of 6, 15, and 16.5 ft (4,100; 5,300; and 3,500 ppm, respectively; see Table 1). No groundwater was encountered.

Boring IN-2 was drilled on July 12, 2005, between former USTs 2 and 3 until refusal was encountered at a total depth of 10.75 ft. Samples were collected at depths of 6, 9, and 10.75 ft, and submitted for NWTPH-Dx analysis. Analytical results revealed exceedance of the MTCA Method A diesel and heavy oil cleanup level at the 6 and 10.75 foot depths (19,000 and 18,000, respectively; see Table 1). No groundwater was encountered.

Boring IN-3 was drilled on July 13, 2005, between former USTs 1 and 2 until refusal was encountered at a total depth of 18.7 ft. Samples were collected at depths of 6; 9; 11.5; 13.6, 16.5; and 18.7 ft and submitted for NWTPH-Dx analysis. Analytical results determined that diesel and heavy oil range petroleum hydrocarbons were below (less than

250 ppm, respectively) their respective MTCA Method A cleanup levels in all soil samples. No groundwater was encountered.

Boring IN-4 was drilled on July 13, 2005 at the northern end of former UST 2 to a total depth of 15.5 ft. Samples were collected at depths of 9 ft; 12 ft 5 inches; and 15.5 ft and submitted for NWTPH-Dx analysis. Analytical results revealed total petroleum hydrocarbon concentrations below the MTCA Method A level in all samples (less than 250 ppm, respectively).

Boring MW-1 was drilled on July 14 approximately 45 ft to the east of IN-3 and completed as a background groundwater monitoring well. Soil samples were collected at depths of 6; 9; 12; and 16.9 ft and submitted for extended DRPH analysis. The well was completed to a depth of 15 ft with 2-inch diameter spiral wrap PVC screen and blank riser. Water was encountered in a thin perched zone at a depth of approximately 3 ft below the slab elevation, possibly in fill material between the foundation slab and native till material. The water encountered in this area is thought to be surface drainage from surrounding footing drains and rain diversion drains, and is not present in any of the other site borings/wells or building drain sumps. Analytical results of soil and water samples revealed no total petroleum hydrocarbon concentrations above the MTCA Method A level in all samples (less than 250 ppm in soil and less than 250 ppb in water, respectively).

1.4 INTERIM ACTION OBJECTIVES

The objectives of the interim action were:

- Evaluate the presence or absence of groundwater and the magnitude of potential impacts to the groundwater from the UST release, if encountered.

- Reduce, through in situ treatment, petroleum hydrocarbon levels in inaccessible soil (i.e. below the USTs) to levels below MTCA Method A or B cleanup levels.

2.0 REMEDIATION TECHNOLOGY OVERVIEW

SES incorporated an in situ remedial technology that uses a strong chemical oxidizer (hydrogen peroxide) to react with the petroleum contamination to render less toxic compounds.

The hydrogen peroxide is injected through a site-specific delivery system providing sufficient distribution to selectively treat the area of concern. Reaction time is very fast, with oxidation capacity of the reagent being used up in a matter of a few days. Such oxidation processes have been shown to effectively treat a wide range of contaminants including hard-to-treat compounds such as chlorinated solvents, petroleum hydrocarbons, gasoline additives including benzene, toluene, ethylbenzene, and xylenes, and pesticides. Concentrations from 11 percent to 17 percent hydrogen peroxide were used to reduce the potential for significant exothermic reactions associated with higher concentrations.

3.0 INTERIM ACTION IMPLEMENTATION

3.1 INJECTION WELL INSTALLATION

SES installed four borings in the vicinity of the former USTs, three of which were finished as treatment injection wells on July 11 through 13, 2005. The three injection wells (IN-2, IN-3, and IN-4) were installed in a triangle pattern surrounding the known release area (Figure 3).

Boring IN-1 was drilled on July 11 in a location immediately to the west of former UST 3. This boring was not completed as an injection well but was abandoned because of its close proximity to the stairwell wall.

Injection Well 2 (IN-2) was installed on July 12, 2005, between former USTs 2 and 3. Because the USTs were within 2.5 inches of each other at a depth of 7 ft, the boring was backfilled with sand from 10.75 ft to 7 ft. The injection well was completed to 7 ft bgs with 4 ft of stainless steel-wrapped screen and 3 ft of blank casing. The annular space was backfilled with concrete to within 3 inches of the surface of the slab and completed with a flush-mounted cover.

Injection Well 3 (IN-3) was installed on July 13 between former USTs 1 and 2. Because the USTs were in close proximity to each other at this location, a well was completed in a similar manner as described for IN-2. The well was located hydraulically upgradient to ensure contact of the hydrogen solution with the bulk of the soil contamination. The boring was backfilled with sand from 18.7 ft to 7 ft.

Injection Well 4 (IN-4) was installed on July 13 at the northern end of former UST 2. The boring was backfilled with sand from 15.5 ft to 12.5 ft. A well was completed to this depth with 4 ft of stainless steel-wrapped screen and 8.5 ft of blank casing to target the contamination zone. The well was also located hydraulically upgradient to ensure contact of the hydrogen solution with the bulk of the soil contamination

3.2 METHODOLOGIES

Hydrogen peroxide is typically applied in subsurface injections at concentrations ranging from 8 to 17 percent by weight solution. Because it is a strong oxidizer capable of generating heat and pressure when in contact with organic compounds, SES initially conducted bench level tests to determine the appropriate concentration. The tests consisted of observing the reaction of soil samples with varying concentrations of hydrogen peroxide solution. Bench tests indicated that concentrations ranging from 11.7 percent to 17.5 percent by weight would provide an adequate level of treatment.

SES prepared stabilized 11.7 percent and 17.5 percent hydrogen peroxide from 35 percent hydrogen peroxide. The 35 percent hydrogen peroxide was delivered to the facility and stored on site in 55-gallon drums. The 35 percent hydrogen peroxide was transferred into 55-gallon polyethylene drums with a hand pump and diluted into on-site city water to the desired concentration. SES personnel wore proper personal protective equipment and used appropriate safety procedures during the transfer.

Reagents were injected into the subsurface using three pre-installed stainless steel injection wells at specific locations across the treatment area. Two of the three wells were screened from 3 to 7 ft bgs, the third well was screened from 8 to 12 ft bgs. The hydrogen peroxide was then injected through each rod.

The injections were accomplished using air-operated diaphragm pumps, flow meters, polyvinyl chloride (PVC) flexible tubing and stainless steel wellhead assemblies. The wellheads, with pressure gauges and relief valves, were attached to the injection wells. The wellhead assemblies were attached with PVC tubing to an air-operated diaphragm pump and from the pump to either the peroxide, catalyst or water tanks with PVC tubing. The peroxide was injected through the PVC tubing using the pump.

3.3 PEROXIDE INJECTIONS

SES commenced four in situ soil treatment activities on July 18 and 19, August 2, and August 11, 2005.

The initial treatment was conducted on July 18, 2005, and consisted of injecting 15, 15, and 10 gallons of 11.7 percent peroxide into Injection Wells 2, 3 and 4, respectively. A lower volume of peroxide was used initially to observe the response in the injection wells and to ensure that there were no adverse impacts or surfacing. Surfacing is described as the escape of reagents, groundwater, and/or gas to the ground surface. The initial injections indicated that an injection rate of 2 gallons per minute produced no adverse impacts or surfacing.

The second treatment was conducted on July 19, 2005, and consisted of injecting 175, 185, and 135 gallons of 11.7 percent peroxide into Injection Wells 2, 3 and 4, respectively. No adverse impacts or surfacing were noted during this event.

The third treatment was conducted on August 2, 2005, and consisted of injecting 135, 180, and 180 gallons of 11.7 percent peroxide into Injection Wells 2, 3, and 4, respectively. No adverse impacts or surfacing were noted during this event.

The fourth treatment was conducted on August 11, 2005, and consisted of injecting 110 gallons of 17.5 percent peroxide evenly into Injection Wells 2 and 4 (55 gallons in each well). No adverse impacts or surfacing were noted during this event.

During injection activities, pressures at the wellheads of the injection points remained at 0 pounds per square inch (psi) and injection flow rates ranged from 2 to 4 gallons per minute (gpm). Injection well IN-4 did release some pressure when the injection fittings were removed however not enough pressure was built up to register on the gauge. SES injected a total of 1,140 gallons of hydrogen peroxide through three injection wells during the four injection events.

3.4 POST-INJECTION DRILLING AND COMPLIANCE SOIL SAMPLING

SES installed six borings in the vicinity of the former USTs on August 13, 2005, to evaluate the effects of the peroxide injections. The locations of the borings are shown in Figures 5. The borings were drilled by Environmental Services Network Northwest, Inc. (ESN), with a limited access 2-inch split spoon driven by a 90-lb hydraulic hammer. Soil samples were analyzed for TRPH, DRPH, and ORPH using EPA method NWTPH-Dx. Analytical results for soil samples collected during the investigation are summarized in Table 1. Boring logs and completion diagrams are included as Appendix C. The observations and analytical results are summarized below.

Boring SS-1 was drilled in the southwest corner of the UST cavity (Figure 5) to a depth of 6 ft bgs. The boring was terminated because of refusal at a total depth of 6 ft. ESN drillers felt the split spoon was hitting concrete at 6 ft bgs. Soil from 0 to 6 ft bgs consisted of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. A soil sample was collected from this boring at 6 ft bgs and analyzed for NWTPH-Dx. Analytical

results revealed exceedance of the cleanup level at the 6 ft depth (7,800 mg/kg TRPH, 2,700 mg/kg DRPH, and 8,800 mg/kg ORPH; see Table 1). No groundwater was encountered.

Boring SS-2 was drilled south of UST 3 (Figure 5) to a depth of 6 ft bgs. The boring was terminated because of refusal at a total depth of 6 ft. ESN drillers felt the split spoon was hitting concrete at 6 ft bgs. Soil from 0 to 6 ft bgs consisted of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. A soil sample was collected from this boring at 6 ft bgs and analyzed for NWTPH-Dx. Analytical results revealed exceedance of the cleanup level at the 6 ft depth (6,500 mg/kg TRPH, 17,000 mg/kg DRPH, and 18,000 mg/kg ORPH; see Table 1). No groundwater was encountered.

Boring SS-3 was drilled adjacent to the southwest corner of UST 3 (Figure 5) to a depth of 18 ft bgs. Soil from 0 to 9 ft bgs consisted of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. Soil from 9 to 18 ft bgs consisted of moist, dense, blue grey colored sandy silt with a slight petroleum hydrocarbon odor and some visual petroleum staining. Soil samples were collected at depths of 6; 9; 12; 15, and 18 ft bgs and submitted for NWTPH-Dx analysis. Analytical results revealed exceedance of the cleanup level at the 6 ft and 9 ft depths (Table 1, Figure 5). Analytical results determined that TRPH, DRPH, and ORPH were below the cleanup level in soil samples collected at 12, 15, and 18 ft bgs. No groundwater was encountered.

Boring SS-4 was drilled between USTs 2 and 3 adjacent to IN-2 (Figure 5) to a depth of 18 ft bgs. Soil from 0 to 7 ft bgs consisted of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. Soil from 7 to 18 ft bgs consisted of moist, dense, blue grey colored sandy silt with a slight petroleum hydrocarbon odor and some visual petroleum staining. Soil samples were collected at depths of 6; 9 to 10; 11 to 12; 15, and 18 ft bgs and submitted for NWTPH-Dx analysis. Analytical results revealed exceedance of the cleanup level at the 6 ft depth (16,000 mg/kg TRPH, 11,000 mg/kg DRPH, and 8,900 mg/kg ORPH; see Table 1). Analytical results determined that TRPH, DRPH, and ORPH were below the cleanup level in soil samples collected at 9 to 10; 11 to 12; 15, and 18 ft bgs. No groundwater was encountered.

Boring SS-5 was drilled south of UST 3 (Figure 5) to a depth of 6 ft bgs. The boring was terminated because of refusal at a total depth of 6 ft. ESN drillers felt the split spoon was hitting concrete at 6 ft bgs. Soil from 0 to 6 ft bgs consisted of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. Soil samples were not collected. No groundwater was encountered.

Boring SS-6 was drilled west of UST 3 adjacent to IN-1 (Figure 5) to a depth of 6 ft bgs. The boring was terminated because of refusal at a total depth of 6 ft. Soil from 0 to 6 ft bgs consisted of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. Soil samples were not collected. No groundwater was encountered.

4.0 SUMMARY AND CONCLUSIONS

During building construction in the early 1920s, the hillside between 3rd Avenue and 2nd Avenue was excavated to facilitate construction of the foundation of the existing building. Figure 6 presents a 3-dimensional illustration of the site conditions described below. Soil beneath the concrete slab in the boiler room consists of dense, dry fine sand with some silt (glacial till). The USTs were placed beneath the concrete slab in an excavation area that was created to facilitate the

construction of the basement wall foundation footing. Information gathered from the subsurface investigations suggests an excavated slope exists starting at the east end of the UST cavity and sloping down to the west towards the basement wall footing at 17 ft bgs. Once the USTs were in place and the basement wall was constructed the cavity was backfilled with soil.

In February 2005, SES oversaw the decommissioning (in place) of the three USTs buried beneath the boiler room floor. Soil samples collected and observations made during the UST decommissioning suggested that the DRPH contaminated soil beneath the USTs from 6 ft to 17 ft bgs originated from a failure in UST 2. Given the viscous nature of Bunker C heating oil and the hard glacial till soil present beneath the USTs, contamination was thought to be localized within the UST cavity.

In July 2005, SES drilled five borings in the vicinity of the USTs to define the extent of the Bunker C impacts. No groundwater was encountered to a depth of 17 ft below grade. Following this investigation the Washington Department of Ecology (Mr. Dale Meyers, Ecology Site Manager) concurred with SES at a meeting at Ecology's Northwest Regional Office that groundwater was not a media of concern. SES recommended in situ chemical oxidation with hydrogen peroxide to treat the inaccessible Bunker C-contaminated soil beneath the abandoned USTs. The treatments were accomplished in July and August 2005. Subsequent soil sampling at depths below the USTs showed that the peroxide was effective at reducing the concentrations of total recoverable petroleum hydrocarbons (TRPH) in soil below the USTs from a pre-injection concentration of 18,000 mg/kg TRPH to a post-injection concentration of 400 mg/kg.

The post peroxide treatment sampling also identified two visually distinct waste types based on fill depth. The soil beneath the USTs consisted of moist, dense, blue grey colored sandy silt with a strong petroleum hydrocarbon odor and visual petroleum staining consistent with that expected from a Bunker C fuel release. However, the shallow UST backfill (0 to 6 ft bgs) atop the three USTs and up against the south and west basement walls consists of a dry, loose, tan colored fine to medium sand with some silt, with no visual petroleum staining and a slight asphaltic odor. Prior to peroxide treatment, both waste types exhibited heavy oil range petroleum hydrocarbon contamination above the Model Toxics Control Act (MTCA) Method A cleanup levels for unrestricted land use. Although the shallow fill atop the USTs exhibits an analytical profile similar to the wastes found under the USTs prior to treatment, the stark difference in its appearance and odor strongly suggests that the hydrocarbon contamination in the shallow fill did not originate from the UST releases. Although difficult to confirm, it is hypothesized that fire debris and/or asphalt was used as shallow fill material during building construction.

Groundwater has not been impacted by the UST release. Groundwater was not identified in any of the 10 borings placed within and adjacent to the UST cavity to a maximum depth of 18 ft bgs. Groundwater monitoring well MW-1, located approximately 45 ft to the east of the UST cavity had a thin perched water zone at a depth of approximately 3 ft bgs and exhibited no detectable petroleum hydrocarbon contamination. The water encountered in this area is thought to be surface drainage from surrounding footing drains and rain diversion drains, and is not present in any of the other site borings/wells or building drain sumps.

The remedial objectives of: 1) achieving the MTCA Method A or B cleanup levels for inaccessible soils (below the USTs); and, 2) demonstrating no impacts to groundwater have been achieved by this interim remedial action. The in situ peroxide treatment reduced petroleum hydrocarbon contamination to below MTCA Method A cleanup levels under the USTs; however, shallow fill atop the USTs and adjacent to the west basement wall still contains NWTPH-Dx compounds well in excess of the diesel range hydrocarbon MTCA Method A soil cleanup level of 2,000 mg/kg. The

soil in the 0 to 6 ft below ground surface zone atop the USTs contained up to 19,000 mg/kg NWTPH-Dx. The extent of this shallow fill is estimated to be 20 ft square by 6 ft deep, or roughly 85 cubic yards.

Ecology indicated to SES at the July 2005 meeting that since groundwater had not been impacted, soil impacts are confined to the property, an impermeable surface (the concrete floor) precludes direct contact with the contamination, and the low relative miscibility/mobility of Bunker C reduces the potential for migration of the contaminants, that a No Further Action determination with a deed restriction was possible for the site.

5.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

6.0 REFERENCES

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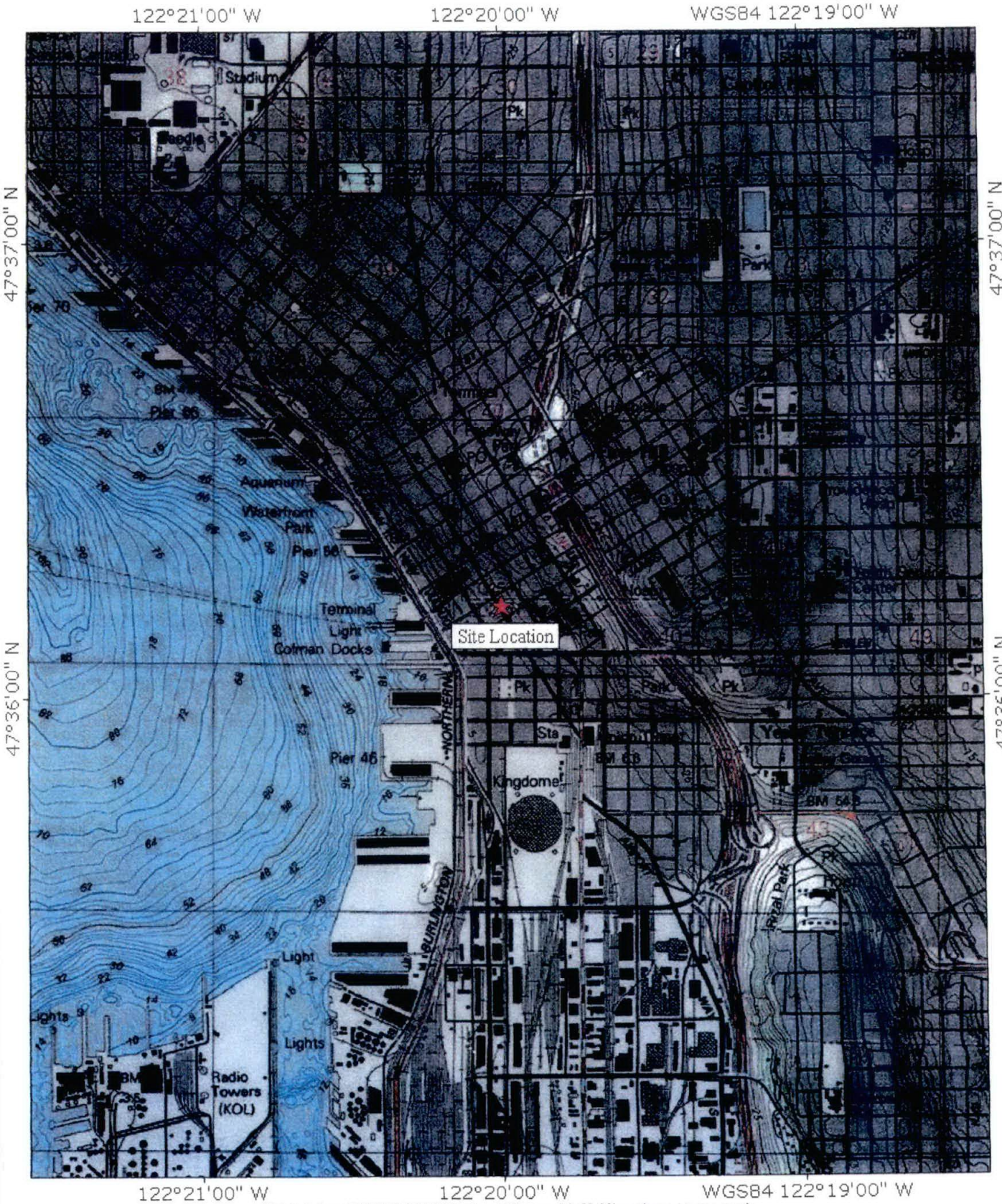
FIGURES



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Date: August 8, 2005
Drawn By: D. Richardson
Chk By: C. Carter
SES Project No.: 257-1-2
File ID: 257-1-2 figure 1 site topo map.doc

Dexter Horton Building
710—2nd Avenue
Seattle, Washington

FIGURE 1
Site Location Map

N

Legend

- Building wall
- Partition wall
- UST tank access
- Water drain
- Sample Locations
- TB-1-1 260 mg/kg — Soil - Diesel extended results (mg/kg)
- TE-2-1 8,100 mg/kg — RED - Analyte greater than MTCA 2001 Method A Soil Cleanup Levels for Unrestricted Land Uses

Sample Depths	
Sample ID	Depth (bgs)
TB-3-1	10'
TB-2-1	10'
TB-1-1	10'
TE-3-N	10'
TS-1-2	7'
TS-4-W	7'
TE-2-5	9'

Note: MTCA A Soil Cleanup Level for Soil - Diesel extended results = 2,000 mg/kg

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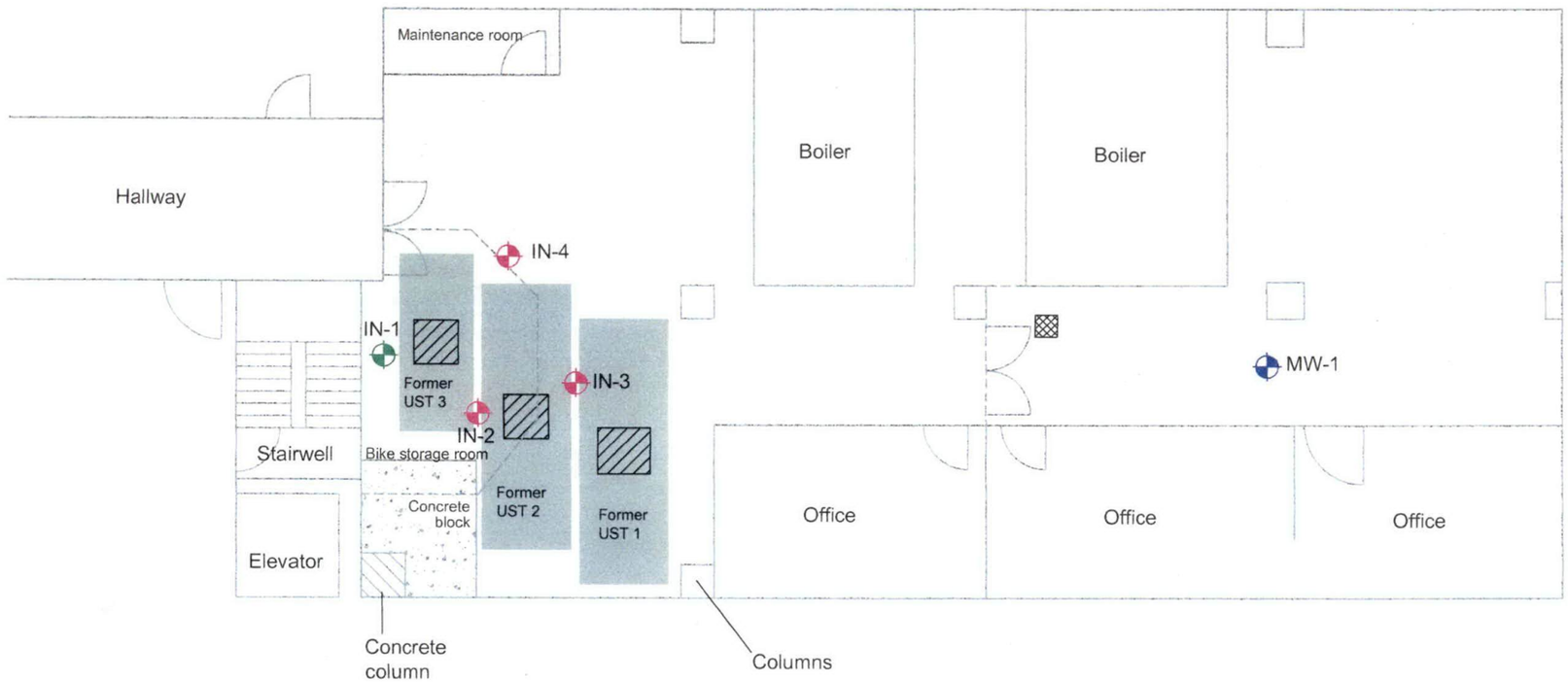
DATE: 08/08/2005
DRAWN BY: HCL
CHK BY: CMC
CAD FILE: 0257 Figure 2

PROJECT NAME: Dexter Horton
LOCATION: 710 2nd Avenue, Seattle, Washington
SES PROJECT NUMBER: 0257-001-02

10 5 0 10
SCALE IN FEET

Figure 2
UST Decommissioning Soil Sample Locations



N

Legend

- Building wall
- Partition wall
- UST access
- Water drain
- MW-1 — Groundwater monitoring well location
- IN-4 — Injection well location
- IN-1 — Abandoned injection well location

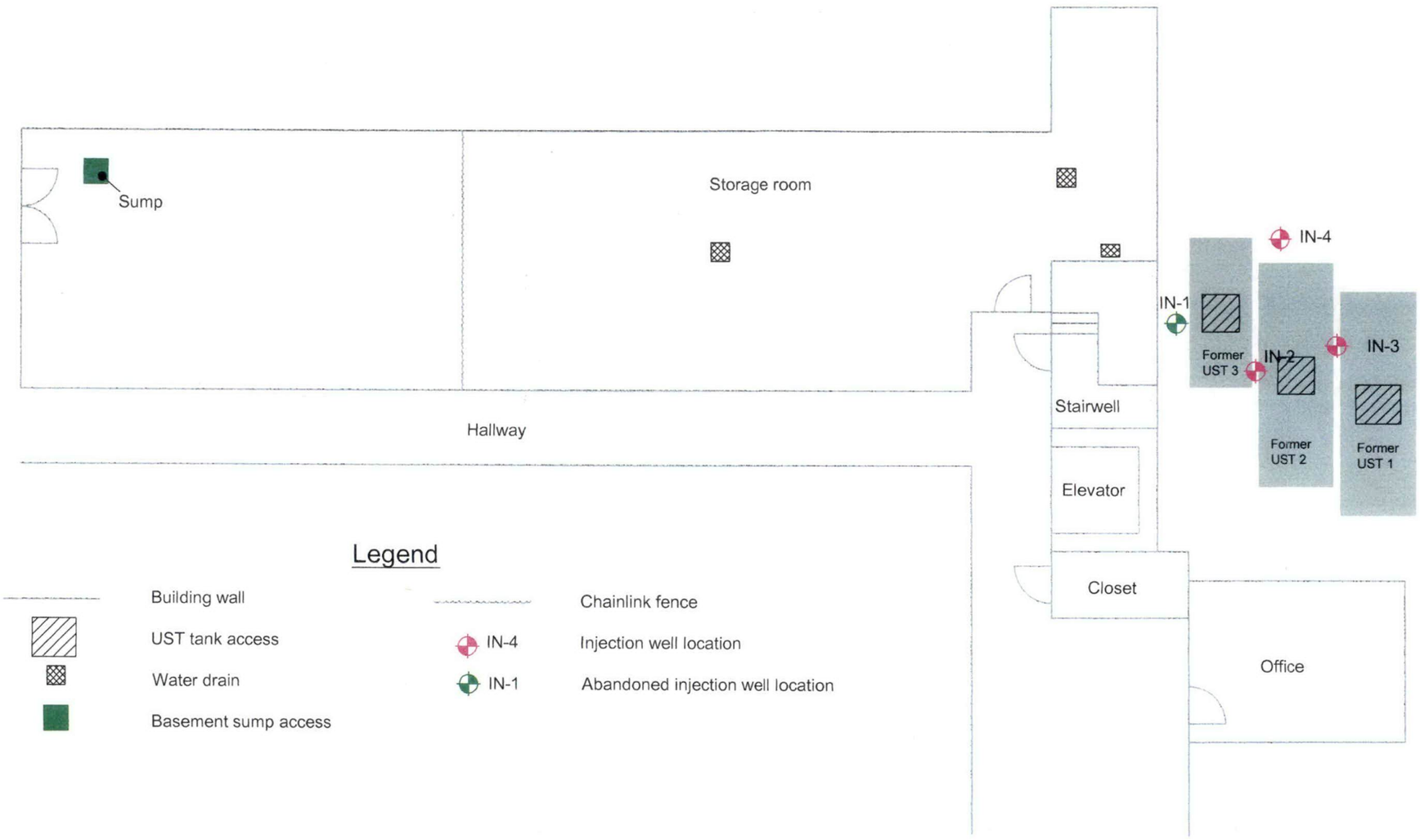
SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

DATE: 07/21/2005
DRAWN BY: HCL
CHK BY: CMC
CAD FILE: 0257 Figure 3

PROJECT NAME: Dexter Horton
LOCATION: 710 2nd Avenue, Seattle, Washington
SES PROJECT NUMBER: 0257-001-02

10 5 0 10
SCALE IN FEET

Figure 3
Main Floor Site Plan



Legend

- Building wall
- UST tank access
- Water drain
- Basement sump access
- Chainlink fence
- IN-4 Injection well location
- IN-1 Abandoned injection well location

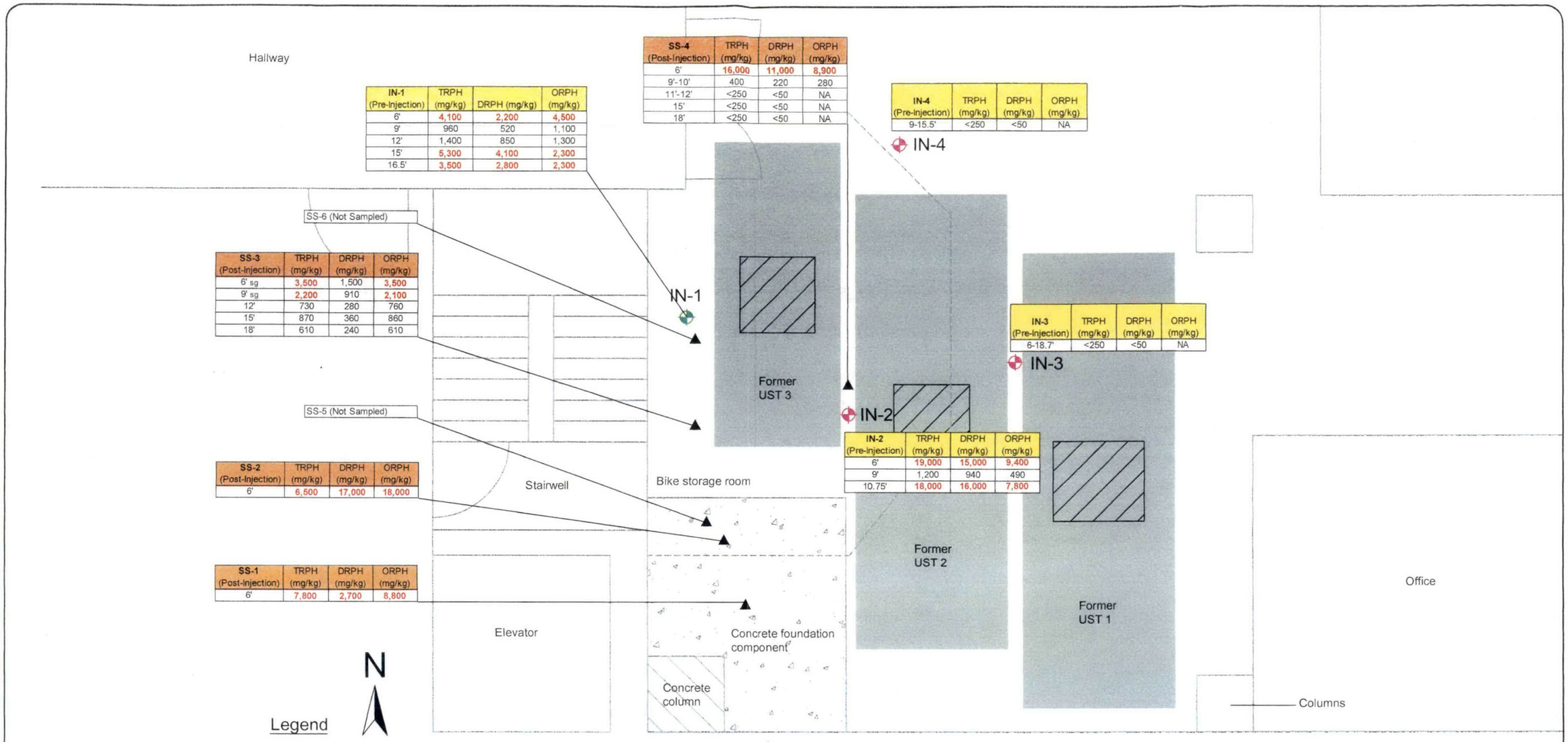
SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

DATE: 07/21/2005
DRAWN BY: HCL
CHK BY: CMC
CAD FILE: 0257 Figure 4

PROJECT NAME: Dexter Horton
LOCATION: 710 2nd Avenue, Seattle, Washington
SES PROJECT NUMBER: 0257-001-02

10 5 0 10
SCALE IN FEET

Figure 4
Basement Site Plan



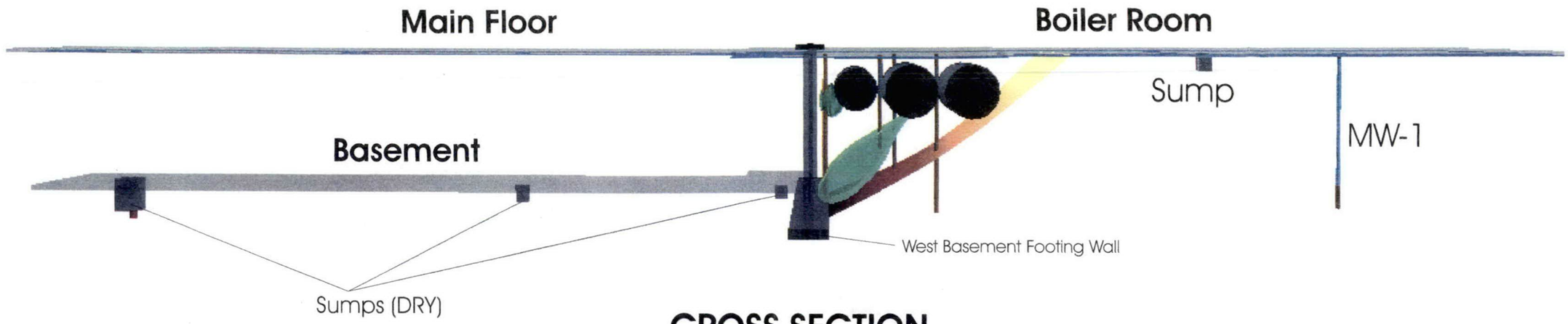
SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

DATE: 10/05/2005
DRAWN BY: HCL
CHK BY: CMC
CAD FILE: 0257 Figure 5

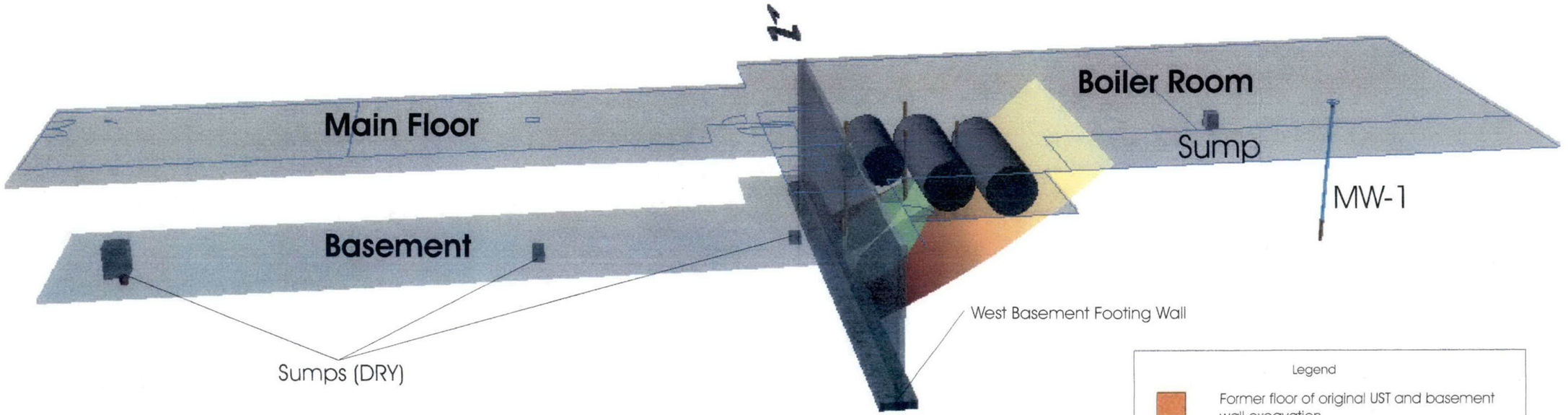
PROJECT NAME: Dexter Horton
LOCATION: 710 2nd Avenue, Seattle, Washington
SES PROJECT NUMBER: 0257-001-02

4 2 0 4
SCALE IN FEET

Figure 5
Pre-Injection and Post-Injection Boring Locations and Soil Sample Analytical Results



CROSS SECTION



3-D MODEL

SOUND ENVIRONMENTAL STRATEGIES

DATE: 08/05/2005 DRAWN BY: CMC CHK BY: MS FILE: 0257-01-02 FIGURE 4	PROJECT NAME: DEXTER HORTON BUILDING LOCATION: 710 2ND AVENUE SEATTLE, WASHINGTON SES PROJECT NAME: 0257-001-02	NOT TO SCALE	FIGURE 6 Subsurface Cross Section and Three Dimensional Model

TABLES

SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

Table 1
Compliance Soil Sampling Results
Dexter Horton Building
710 2nd Avenue, Seattle, Washington

Sample Number	Date Collected	Sample Location	Sample Depth (feet bgs)	TRPH (mg/kg)	DRPH (mg/kg)	Motor-Oil Range (mg/kg)
UST Decommissioning Sample Data						
TB-1-1	2/12/2005	Beneath UST 1	10	220	NA	NA
TB-2-1	2/12/2005	Beneath UST 2	10	8,100	NA	NA
TB-3-1	2/12/2005	Beneath UST 3	10	<50	NA	NA
TE-2-S	2/12/2005	End of UST 2 south end	10	1,200	NA	NA
TE-3-N	2/12/2005	End of UST 2 north end	10	260	NA	NA
TS-1-2	2/12/2005	Side of UST 1 east side	7	720	NA	NA
TS-4-W *	2/12/2005	Side of UST 3 west side	7	3,700	NA	NA
Pre-Injection Investigation Soil Sample Data						
IN-1-6' *	7/11/2005	Injection Well 1 (west side of former UST 3)	6	4,100	2,200	4,500
IN-1-9' *	7/11/2005	Injection Well 1 (west side of former UST 3)	9	960	520	1,100
IN-1-12'	7/11/2005	Injection Well 1 (west side of former UST 3)	12	1,400	850	1,300
IN-1-15'	7/11/2005	Injection Well 1 (west side of former UST 3)	15	5,300	4,100	2,300
IN-1-16.5'	7/11/2005	Injection Well 1 (west side of former UST 3)	16.5	3,500	2,800	2,300
IN-2-6' *	7/12/2005	Injection Well 2 (between former USTs 2 and 3)	6	19,000	15,000	9,400
IN-2-9'	7/12/2005	Injection Well 2 (between former USTs 2 and 3)	9	1,200	940	490
IN-2-10'9"	7/12/2005	Injection Well 2 (between former USTs 2 and 3)	10.75	18,000	16,000	7,800
IN-3-6'*	7/12/2005	Injection Well 3 (between former USTs 1 and 2)	6	<250	<50	NA
IN-3-9'	7/12/2005	Injection Well 3 (between former USTs 1 and 2)	9	<250	<50	NA
IN-3-11'6"	7/12/2005	Injection Well 3 (between former USTs 1 and 2)	11.5	<250	<50	NA
IN-3-13'7"	7/12/2005	Injection Well 3 (between former USTs 1 and 2)	13.6	<250	<50	NA
IN-3-16'6"	7/12/2005	Injection Well 3 (between former USTs 1 and 2)	16.5	<250	<50	NA
IN-3-18'8"	7/12/2005	Injection Well 3 (between former USTs 1 and 2)	18.7	<250	<50	NA
IN-4-9'	7/13/2005	Injection Well 4 (north end of former UST 2)	9	<250	<50	NA
IN-4-12'6"	7/13/2005	Injection Well 4 (north end of former UST 2)	12.5	<250	<50	NA
IN-4-15'6"	7/13/2005	Injection Well 4 (north end of former UST 2)	15.5	<250	<50	NA
MW-1-6'	7/14/2005	Monitoring Well 1 (45 feet east of IN-3; 2nd floor)	0.5	<250	<50	NA
MW-1-9'	7/14/2005	Monitoring Well 1 (45 feet east of IN-3; 2nd floor)	9	<250	<50	NA
MW-1-12'	7/14/2005	Monitoring Well 1 (45 feet east of IN-3; 2nd floor)	12.0	<250	<50	NA
MW-1-15'	7/14/2005	Monitoring Well 1 (45 feet east of IN-3; 2nd floor)	15	<250	<50	NA
MW-1-16'9"	7/14/2005	Monitoring Well 1 (45 feet east of IN-3; 2nd floor)	17	<250	<50	NA
Post-injection Investigation Soil Sample Data						
SS-1-6' *	8/13/2005	Approximately 7' south of Former UST 3	6	7,800	2,700	8,800
SS-2-6' *	8/13/2005	Approximately 4' south of Former UST 3	6	6,500	17,000	18,000
SS-3-6' *	8/13/2005	End of UST 3 SW side	6	4,300	1,700	4,600
SS-3-6' sg*	8/13/2005	End of UST 3 SW side	6	3,500	1,500	3,500
SS-3-9' *	8/13/2005	End of UST 3 SW side	9	2,700	1,100	2,900
SS-3-9' sg*	8/13/2005	End of UST 3 SW side	9	2,200	910	2,100
SS-3-12'	8/13/2005	End of UST 3 SW side	12	730	280	760
SS-3-15'	8/13/2005	End of UST 3 SW side	15	870	360	860
SS-3-18'	8/13/2005	End of UST 3 SW side	18	610	240	610
SS-4-6' *	8/13/2005	Between USTs 2 and 3	6	20,000	12,000	14,000
SS-4-6' sg*	8/13/2005	Between USTs 2 and 3	6	16,000	11,000	8,900
SS-4-9'	8/13/2005	Between USTs 2 and 3	9	400	220	280
SS-4-12'	8/13/2005	Between USTs 2 and 3	12	<250	<50	NA
SS-4-15'	8/13/2005	Between USTs 2 and 3	15	<250	<50	NA
SS-4-18'	8/13/2005	Between USTs 2 and 3	18	<250	<50	NA
MTCA Method A Action Levels for Unrestricted Use				2000	2000	2000

RED = analyte greater than MTCA 2001 Method A Soil Cleanup levels for Unrestricted Land Uses.
TRPH = total recoverable petroleum hydrocarbons
DRPH = Diesel- and heavy-oil range petroleum hydrocarbons analyzed by Method NWTPH-Dx.
bgs = below ground surface
Results in milligrams per kilogram
MTCA = Model Toxics Control Act
NA = Not Analyzed
sg = Samples run with a silica gel to extract organics, 8/18/05
* = Material encountered at this depth was a mixture of silt and asphalted material apparently used as original backfill for the UST installation, and appears not to be related to the release of product from former UST 2.

SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

Table 2
Water Sample Analytical Results
Dexter Horton Building
710 2nd Avenue, Seattle, Washington

Sample Number	Date Collected	Sample Location	TRPH	DRPH
MW-1	7/28/2005	Monitoring Well 1 (45 feet east of IN-3; 2nd floor)	<250	<50
MTCA 2001 Method A Groundwater Cleanup Level for Unrestricted Land Use			500	500

RED = analyte greater than MTCA 2001 Method A Soil Cleanup levels for Unrestricted Land Uses.

TRPH = total recoverable petroleum hydrocarbons.

DRPH = Diesel- and heavy-oil range petroleum hydrocarbons analyzed by Method NWTPH-Dx.
Results in micrograms per liter.
MTCA = Model Toxics Control Act.

APPENDIX A
UST Decommissioning Certificates

3260 "B" St. N.W., Suite E
Auburn, WA 98001
ENVIR-TS094PU

ENVIRONMENTAL TANK SERVICE, INC.

Seattle: 206-622-6040
Tacoma: 253-474-6242
So. King: 253-833-4375
FAX: 253-939-2898

Statement of U.S.T. Decommissioning

(Underground Storage Tank)
Contr # ENVIR-TS094PU

This is a statement (certificate) of UST (Underground Storage Tank) Decommissioning. Environmental Tank Service, Inc. is a corporation licensed and insured in the State of Washington. Its primary service is tank decommissioning. Environmental Tank Service, Inc. issues this certificate for the work identified and preformed at the below address. Environmental Tank Service, Inc. states this decommissioning has occurred following local rules and regulations and as defined in the Uniform Fire Code and Washington Administrative Code.

Name	**Dexter Horton Building**
Address	**710 2nd Ave**
City/State/Zip	**Seattle WA 98104**
Decommission Date	**Februray 18, 2005**
UST Issue Date	**February 28, 2005**
Permit	**5-87116**
Tank Size	**1-6,000 and 2-4,000**
Decommissioning	**Slurry**

*Type of Decommissioning

Removal means the tank was excavated and removed from the property
Foam means the tank was pumped of contents, triple rinsed and filled with 2lb density polyurethane foam.
Slurry means the tank was pumped of contents, triple rinsed and filled with a cement/slurry mixture.
Pump/Triple Rinse/Cap means the tank was pumped of contents, triple rinsed and capped empty.
Tank Pickup means a tank was removed from the property.

Dan Kubo
ICC Tank Decommissioner

UST USTONE Cert# «Invoice_»

APPENDIX B
Waste Disposal Tickets

8858

PRS Group, Inc.
3003 Taylor Way • Tacoma, WA 98421
(253) 383-4175 • (253) 383-4531

ENTRY LOG FOR NON-HAZARDOUS ITEMS RECEIVED BY PRS PLANT, TACOMA, WASHINGTON

Date: 1-12-C Carrier: PRS - APES Veh. No. 54

Driver Signature: _____ Plant Employee Signature: Mark Mc Time: 1720

Drivers Name (Please Print Legibly) PETE

% Water 50 Ph: 6.7 Flash: >200

Tank # 18-A-18 Chlor: <1000

Generator Name	Profile Number	Work Order, Bill of Lading, or Manifest #	PROFILE REQUIRED									Bulk or Drum Type & Size (closed/open)
			Bunker Used Oil (WET or DRY)	Spent Anti-freeze	Used Oil Filters	Gasoline or Fuel Mixture	Waste Water OILY	Spill Debris	Grease	Sludge or Other Solid Waste	Water Soluble	
E.T.S	CnFile		1000				2000					IT

Please specify the following: 1) *Drums or Gallons* 2) *Closed* or *Open Top* Drums 3) If mixture of material in one drum - note % or *gallons* of each 4) Oil-*Wet* or *Dry* 5) Specify type of *solid* waste

white copy - *Plant File* yellow copy - *Main Office* pink copy - *Customer*

8857

PRS Group, Inc.

3003 Taylor Way • Tacoma, WA 98421
(253) 383-4175 • (253) 383-4531

ENTRY LOG FOR NON-HAZARDOUS ITEMS RECEIVED BY PRS PLANT, TACOMA, WASHINGTON

Date: 2-17-05 Carrier: PRS - APES Veh. No. 4

Driver Signature: _____ Plant Employee Signature: Mel Time: _____

Drivers Name (Please Print Legibly) Scott

% Water <5 Ph: 7.7 Flash: 2140

Tank # 11A Chlor: <1000

Generator Name	Profile Number	Work Order, Bill of Lading, or Manifest #	PROFILE REQUIRED									Bulk or Drum Type & Size (closed/open)
			Used Oil (WET or DRY)	Spent Anti-freeze	Used Oil Filters	Gasoline or Fuel Mixture	Waste Water	Spill Debris	Grease	Sludge or Other Solid Waste	Water Soluble	
ETS	Oil file		5,500									ITT

Please specify the following: 1) *Drums or Gallons* 2) *Closed* or Open *Top* Drums 3) If mixture of material in one drum - note % or *gallons* of each 4) Oil-*Wet* or *Dry* 5) Specify type of *solid* waste

white copy - *Plant File* yellow copy - *Main Office* pink copy - *Customer*

APPENDIX C
Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 28, 2005

APR 1 2005

Chris Carter, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Carter:

Included are the results from the testing of material submitted on February 14, 2004 from the Destar, F&BI 502141 project. There are 8 pages included in this report. Sample TB-2-1 and TS-4-W was sent to Analytical Resources, Inc. for EPH analysis. Review of the enclosed report indicates that all quality assurance was acceptable.

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.

Michael Erdahl
Project Manager

Enclosures
SOU0228R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/28/05
Date Received: 02/14/05
Project: Destar, F&BI 502141
Date Extracted: 02/15/05
Date Analyzed: 02/16/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD 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 (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
TB-3-1 502141-01	<50	91
TB-2-1 502141-02	8,100	87
TB-1-1 502141-03	220	88
TE-3-N 502141-04	260	86
TS-1-2 502141-05	720	85
TS-4-W 502141-06	3,700	84
TE-2-S 502141-07	1,200	92
Method Blank	<50	84

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	TB-2-1	Client:	Sound Environmental Strategies
Date Received:	02/14/05	Project:	Destar, F&BI 502141
Date Extracted:	02/18/05	Lab ID:	502141-02 1/10
Date Analyzed:	02/22/05	Data File:	022213.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	113	38	158
Benzo(a)anthracene-d12	104	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	200
Acenaphthylene	90
Acenaphthene	390
Fluorene	<50
Phenanthrene	<50
Anthracene	530
Fluoranthene	230
Pyrene	1,000
Benz(a)anthracene	430
Chrysene	760
Benzo(b)fluoranthene	140
Benzo(k)fluoranthene	<50
Benzo(a)pyrene	150
Indeno(1,2,3-cd)pyrene	<50
Dibenzo(a,h)anthracene	<50
Benzo(g,h,i)perylene	<50

Note: The sample was diluted due to sample matrix effects. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	TS-4-W	Client:	Sound Environmental Strategies
Date Received:	02/14/05	Project:	Destar, F&BI 502141
Date Extracted:	02/18/05	Lab ID:	502141-06 1/100
Date Analyzed:	02/22/05	Data File:	022214.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	89	38	158
Benzo(a)anthracene-d12	22	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<500
Acenaphthylene	<500
Acenaphthene	<500
Fluorene	<500
Phenanthrene	<500
Anthracene	<500
Fluoranthene	<500
Pyrene	<500
Benz(a)anthracene	<500
Chrysene	<500
Benzo(b)fluoranthene	<500
Benzo(k)fluoranthene	<500
Benzo(a)pyrene	<500
Indeno(1,2,3-cd)pyrene	<500
Dibenzo(a,h)anthracene	<500
Benzo(g,h,i)perylene	<500

Note: The sample was diluted due to sample matrix effects. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	Sound Environmental Strategies
Date Received:	02/14/05	Project:	Destar, F&BI 502141
Date Extracted:	02/18/05	Lab ID:	05-219lmb
Date Analyzed:	02/22/05	Data File:	022206.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	64	38	158
Benzo(a)anthracene-d12	85	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

Date of Report: 02/28/05
Date Received: 02/14/05
Project: Destar, F&BI 502141

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

Laboratory Code: 502149-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/g (ppm)	5,000	<50	102	103	61-136	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	5,000	99	61-140

Date of Report: 02/28/05
Date Received: 02/14/05
Project: Destar, F&BI 502141

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: 502168-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Naphthalene	µg/kg (ppb)	<5	<5	nm
Acenaphthylene	µg/kg (ppb)	<5	<5	nm
Acenaphthene	µg/kg (ppb)	<5	<5	nm
Fluorene	µg/kg (ppb)	<5	5	nm
Phenanthrene	µg/kg (ppb)	12	47	84 h
Anthracene	µg/kg (ppb)	7	10	35 a
Fluoranthene	µg/kg (ppb)	35	53	41 h
Pyrene	µg/kg (ppb)	33	44	29 h
Benz(a)anthracene	µg/kg (ppb)	21	18	15
Chrysene	µg/kg (ppb)	37	45	20
Benzo(b)fluoranthene	µg/kg (ppb)	45	47	4
Benzo(k)fluoranthene	µg/kg (ppb)	14	12	15
Benzo(a)pyrene	µg/kg (ppb)	16	13	21 a
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	11	9	20
Dibenzo(a,h)anthracene	µg/kg (ppb)	<5	<5	nm
Benzo(g,h,i)perylene	µg/kg (ppb)	16	12	29 a

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

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

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

Date of Report: 02/28/05
Date Received: 02/14/05
Project: Destar, F&BI 502141

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: 502168-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Naphthalene	µg/kg (ppb)	170	<5	60 ip	64-104
Acenaphthylene	µg/kg (ppb)	170	<5	61	54-120
Acenaphthene	µg/kg (ppb)	170	<5	62	59-114
Fluorene	µg/kg (ppb)	170	<5	65	52-121
Phenanthrene	µg/kg (ppb)	170	12	56 ip	57-108
Anthracene	µg/kg (ppb)	170	7	48 ip	52-100
Fluoranthene	µg/kg (ppb)	170	35	44 ip	60-108
Pyrene	µg/kg (ppb)	170	33	43 ip	64-108
Benz(a)anthracene	µg/kg (ppb)	170	21	52	49-118
Chrysene	µg/kg (ppb)	170	37	50	47-120
Benzo(b)fluoranthene	µg/kg (ppb)	170	45	73	56-125
Benzo(k)fluoranthene	µg/kg (ppb)	170	14	66	56-122
Benzo(a)pyrene	µg/kg (ppb)	170	16	51	50-113
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	170	11	33	29-128
Dibenzo(a,h)anthracene	µg/kg (ppb)	170	<5	39	32-136
Benzo(g,h,i)perylene	µg/kg (ppb)	170	16	25	20-129

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

Date of Report: 02/28/05
Date Received: 02/14/05
Project: Destar, F&BI 502141

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	µg/kg (ppb)	170	90	92	69-105	3
Acenaphthylene	µg/kg (ppb)	170	94	96	62-117	2
Acenaphthene	µg/kg (ppb)	170	93	96	66-115	3
Fluorene	µg/kg (ppb)	170	97	99	62-116	2
Phenanthrene	µg/kg (ppb)	170	91	93	68-109	2
Anthracene	µg/kg (ppb)	170	79	84	56-102	6
Fluoranthene	µg/kg (ppb)	170	95	98	64-115	3
Pyrene	µg/kg (ppb)	170	91	94	67-118	3
Benz(a)anthracene	µg/kg (ppb)	170	91	91	53-121	0
Chrysene	µg/kg (ppb)	170	90	93	59-115	3
Benzo(b)fluoranthene	µg/kg (ppb)	170	110	107	58-132	3
Benzo(k)fluoranthene	µg/kg (ppb)	170	90	95	66-120	5
Benzo(a)pyrene	µg/kg (ppb)	170	80	81	49-116	2
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	170	97	99	61-121	1
Dibenzo(a,h)anthracene	µg/kg (ppb)	170	100	100	63-126	0
Benzo(g,h,i)perylene	µg/kg (ppb)	170	97	99	55-121	2

Analytical Resources, Incorporated
Analytical Chemists and Consultants

February 23, 2005

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

RE: Project: 502141 PO# G-197
ARI Job HT09

Dear Michael,

Please find enclosed the original Chain of Custody (COC) record and analytical results for the above referenced project. Analytical Resources, Inc. accepted two soil samples in good condition on February 17, 2005.

The sample was analyzed for EPH (extractable petroleum hydrocarbons), as requested on the COC. The samples were initially analyzed at a 2X dilution. Sample **TS-4-W** contained C21-C34 Aromatics at an "E" flag concentration. The sample was re-analyzed at a 5X dilution for Aromatics only. Both runs are reported.

The 1-chlorooctadecane surrogate recovery was below the advisory 50% limit in the 2X analysis of sample **TS-4-W.** As the ortho-terphenyl surrogate was compliant, no corrective action was taken.

No other analytical complications were noted.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact your project manager.

Sincerely,
ANALYTICAL RESOURCES, INC.

Stephanie Lucas

Stephanie Lucas
Project Manager
(206) 695-6213
steph@arilabs.com

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH
Page 1 of 1

Sample ID: TB-2-1
SAMPLE

Lab Sample ID: HT09A
LIMS ID: 05-3418
Matrix: Soil
Data Release Authorized:
Reported: 02/22/05

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141
Date Sampled: 02/13/05
Date Received: 02/17/05

Date Extracted: 02/18/05
Percent Moisture: 34.5%

Sample Amount: 6.56 g-dry-wt
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 02/22/05 12:40
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 1.00

Aromatic
Date Analyzed: 02/22/05 10:46
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 5.00

Range	RL	Result
C8-C10 Aliphatics	**3,000**	**11,000**
C10-C12 Aliphatics	**3,000**	**120,000**
C12-C16 Aliphatics	**3,000**	**470,000**
C16-C21 Aliphatics	**3,000**	**530,000**
C21-C34 Aliphatics	**3,000**	**1,100,000**
C8-C10 Aromatics	15,000	< 15,000 U
C10-C12 Aromatics	**15,000**	**18,000**
C12-C16 Aromatics	**15,000**	**300,000**
C16-C21 Aromatics	**15,000**	**1,200,000**
C21-C34 Aromatics	**15,000**	**2,200,000**

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	50.9%
Aromatic	Ortho-terphenyl	74.8%

ANALYTICAL RESOURCES INCORPORATED

ALEPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141

Client ID	COD	TOT OUT
MB-021805	83.3%	0
LCS-021805	72.8%	0
TB-2-1	50.9%	0
TS-4-W	41.7%*	1

	LCS/MB LIMITS	QC LIMITS
(COD) = 1-Chlorooctadecane	(50-150)	(50-150)

Prep Method: SW3550B
Log Number Range: 05-3418 to 05-3419

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH

Sample ID: TS-4-W
DILUTION

Lab Sample ID: HT09B
LIMS ID: 05-3419
Matrix: Soil
Data Release Authorized:
Reported: 02/22/05

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141
Date Sampled: 02/13/05
Date Received: 02/17/05

Date Extracted: 02/18/05
Percent Moisture: 22.2%

Sample Amount: 7.78 g-dry-wt
Final Extract Volume: 1.0 mL

Aromatic
Date Analyzed: 02/22/05 11:03
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 5.00

Range	RL	Result
C8-C10 Aromatics	13,000	< 13,000 U
C10-C12 Aromatics	13,000	< 13,000 U
C12-C16 Aromatics	13,000	< 13,000 U
C16-C21 Aromatics	**13,000**	**400,000**
C21-C34 Aromatics	**13,000**	**1,700,000**

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aromatic	Ortho-terphenyl	53.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH

Sample ID: TS-4-W
SAMPLE

Lab Sample ID: HT09B
LIMS ID: 05-3419
Matrix: Soil
Data Release Authorized:
Reported: 02/22/05

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141
Date Sampled: 02/13/05
Date Received: 02/17/05

Date Extracted: 02/18/05
Percent Moisture: 22.2%

Sample Amount: 7.78 g-dry-wt
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 02/22/05 12:56
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 2.00

Aromatic
Date Analyzed: 02/21/05 21:30
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 2.00

Range	RL	Result
C8-C10 Aliphatics	5,100	13,000
C10-C12 Aliphatics	5,100	14,000
C12-C16 Aliphatics	5,100	330,000
C16-C21 Aliphatics	5,100	590,000
C21-C34 Aliphatics	5,100	1,900,000
C8-C10 Aromatics	5,100	< 5,100 U
C10-C12 Aromatics	5,100	< 5,100 U
C12-C16 Aromatics	5,100	13,000
C16-C21 Aromatics	5,100	410,000
C21-C34 Aromatics	5,100	1,800,000 E

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	41.7%
Aromatic	Ortho-terphenyl	56.7%

ANALYTICAL RESOURCES INCORPORATED

AREPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141

Client ID	OTER	TOT OUT
MB-021805	99.5%	0
LCS-021805	97.9%	0
TB-2-1	74.8%	0
TS-4-W	56.7%	0
TS-4-WDL	53.9%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = Ortho-terphenyl	(50-150)	(50-150)

Prep Method: SW3550B
Log Number Range: 05-3418 to 05-3419

Data Reporting Qualifiers

Effective 12/28/04

Inorganic Data

U Indicates that the target analyte was not detected at the reported concentration

* Duplicate RPD is not within established control limits

B Reported value is less than the CRDL but ≥ the Reporting Limit

N Matrix Spike recovery not within established control limits

NA Not Applicable, analyte not spiked

H The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U Indicates that the target analyte was not detected at the reported concentration

* Flagged value is not within established control limits

B Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J Estimated concentration when the value is less than ARI's established reporting limits

D The spiked compound was not detected due to sample extract dilution

NR Spiked compound recovery is not reported due to chromatographic interference

E Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH

Sample ID: LCS-021805
LAB CONTROL

Lab Sample ID: LCS-021805
LIMS ID: 05-3418
Matrix: Soil
Data Release Authorized:
Reported: 02/22/05

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141
Date Sampled: NA
Date Received: NA

Date Extracted: 02/18/05

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 02/22/05 12:24
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 1.00

Aromatic
Date Analyzed: 02/22/05 10:30
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
C8-C10 Aliphatics	9800	15000	65.5%
C10-C12 Aliphatics	9800	15000	65.5%
C12-C16 Aliphatics	11000	15000	73.6%
C16-C21 Aliphatics	11000	15000	73.6%
C10-C12 Aromatics	12600	15000	84.3%
C12-C16 Aromatics	14100	15000	94.3%
C16-C21 Aromatics	31100	29900	104%
C21-C34 Aromatics	45000	29900	150%

Results reported in µg/kg

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	72.8%
Aromatic	Ortho-terphenyl	97.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH

Sample ID: MB-021805
METHOD BLANK

Lab Sample ID: MB-021805
LIMS ID: 05-3418
Matrix: Soil
Data Release Authorized:
Reported: 02/22/05

QC Report No: HT09-Friedman & Bruya
Project: G-197
502141
Date Sampled: NA
Date Received: NA

Date Extracted: 02/18/05
Percent Moisture: NA

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 02/22/05 12:08
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 1.00

Aromatic
Date Analyzed: 02/22/05 10:14
Instrument/Analyst: FID4A/ESJ

Dilution Factor: 1.00

Range	RL	Result
C8-C10 Aliphatics	2,000	< 2,000 U
C10-C12 Aliphatics	2,000	< 2,000 U
C12-C16 Aliphatics	2,000	< 2,000 U
C16-C21 Aliphatics	2,000	< 2,000 U
C21-C34 Aliphatics	2,000	< 2,000 U
C8-C10 Aromatics	2,000	< 2,000 U
C10-C12 Aromatics	2,000	< 2,000 U
C12-C16 Aromatics	2,000	< 2,000 U
C16-C21 Aromatics	2,000	< 2,000 U
C21-C34 Aromatics	2,000	< 2,000 U

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	83.3%
Aromatic	Ortho-terphenyl	99.5%

NA The flagged analyte was not analyzed for

NS The flagged analyte was not spiked into the sample

M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"

Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.

C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column

P The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference

Geotechnical Data

SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations

SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis

W Weight of sample in some pipette aliquots was below the level required for accurate weighting

F Samples were frozen prior to particle size determination

502141

SAMPLE CHAIN OF CUSTODY rt 02-14-05

C03

Send Report To Eric Crites

Company Sound Environmental Strategies

Address 2400 Airport Way S., Suite 200

City, State, ZIP Seattle, WA 98134-2020

Phone # (206) 306-1900 Fax # (206) 306-1907

SAMPLERS (signature)

PROJECT NAME/NO. Desta

PO #

REMARKS Extended

Page # 1 of 1

TURNAROUND TIME
- ☒ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	PAH	EPH					Notes
TB-3-1	01	2/13/05		S	1*	X												
TB-2-1	02					X						X	Ø					Ø per CC 2/17/05 mg
TB-1-1	03					X												
TE-3-N	04					X												
TS-1-2	05					X												
TS-4-W	06					X						X	Ø					
TE-2-S	07					X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Eric Crites	SES	2/14/05	10:50
Received by:		Erik Young	FBI	2/14/05	10:51
Relinquished by:					
Received by:					

HT09

AMB

SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SAMPLERS *(signature)*

PROJECT NAME/NO. 502141

PO # 6-197

REMARKS

Please Fax Results Due Wed 2/23/05

TURNAROUND TIME

☐ Standard (2 Weeks)

☑ RUSH 4-Day

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: NWTPH-Dx											Notes
TB-2-1		2/13/05		S	1	✓											
TS-4-W		"		S	1	✓											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	FEBrye	2/17/05	2:40
Received by:	Eric Brawson	ARI	2/17/05	1618
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

July 21, 2005

Chris Carter, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Carter:

Included are the results from the testing of material submitted on July 15, 2005 from the Dexter Horton, PO#0257-001-02, F&BI 507130 project. There are 3 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
SOU0721R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 07/21/05
Date Received: 07/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 507130
Date Extracted: 07/15/05
Date Analyzed: 07/15/05, 7/16/05, and 07/18/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD 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 Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
MW-1-12' 507130-01	<50	<250	85
MW-1-15' 507130-02	<50	<250	86
MW-1-16'9" 507130-03	<50	<250	90
IN-3-6' 507130-04	<50	<250	87
IN-3-9' 507130-05	<50	<250	81
IN-3-11'6" 507130-06	<50	<250	89
IN-3-13'7" 507130-07	<50	<250	90
IN-3-16'6" 507130-08	<50	<250	92
IN-3-18'8" 507130-09	<50	<250	93
IN-4-9' 507130-10	<50	<250	95
IN-4-12'6" 507130-11	<50	<250	92

Date of Report: 07/21/05
Date Received: 07/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 507130
Date Extracted: 07/15/05
Date Analyzed: 07/15/05, 7/16/05, and 07/18/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD 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 Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
IN-4-15'6" 507130-12	<50	<250	95
Method Blank	<50	<250	84

Date of Report: 07/21/05
Date Received: 07/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 507130

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

Laboratory Code: 507128-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/g (ppm)	5,000	<50	116	107	71-130	8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	5,000	100	69-134

5071 2 ~~1~~ SW 30

7/15/05

mc
A02

SAMPLE CHAIN OF CUSTODY

Page # 1 of 2

Send Report To: Chris Carter
Company: Sound environmental
Address: 2400 Airport Wy
City, State, ZIP: Seattle WA 98134
Phone #: 206-306-1900 Fax #: -1907

SAMPLERS (signature):

PROJECT NAME/NO.: Dexter Harbor
PO #: 0257-04-02

REMARKS:

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (ext)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
mw-1-12'	01	07.13.05		Soil	1	X												
mw-1-15'	02					X												
mw-1-16'9"	03					X												
IN-3-6'	04					X												
IN-3-9'	05					X												
IN-3-11'6"	06					X												
IN-3-13'7"	07					X												
IN-3-16'6"	08					X												
IN-3-18'8"	09					X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Chris Carter	SES	7.15.05	1045
Received by:		Stacey Webber	FBI	7/15/05	11:25
Relinquished by:					
Received by:					

FORMS\COC\COC.DOC

507127 SW 30

7/15/05

ME A02

SAMPLE CHAIN OF CUSTODY

Page # 2 of 2

Send Report To: Chris Carter
Company: SES
Address: 2400 Airport Way
City, State, ZIP: Seattle WA 98134
Phone #: 206-306-1900 Fax #: x 1907

SAMPLERS (signature):
PROJECT NAME/NO.: Dexter Harbor
PO #: 0257-001-02
REMARKS:

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (Ecology)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
IN-4-9'	10					x											
IN-4-12'6"	11					x											
IN-4-15'6"	12					x											

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Chris Carter	SES	7-15-05	11:20
Received by:		Stacey Webber	FSBI	7/15/05	11:25
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

July 22, 2005

Dee Gardner, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Ms. Gardner:

Included are the results from the testing of material submitted on July 15, 2005 from the Dexter Horton, PO# 0257-002-02, F&BI 507127 project. There are 3 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
SOU0722R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 07/22/05
Date Received: 07/15/05
Project: Dexter Horton, PO# 0257-002-02, F&BI 507127
Date Extracted: 07/15/05
Date Analyzed: 07/17/05 and 07/18/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD 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 Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
IN-1-6' x 507127-01	2,200	4,100	98
IN-1-9' x 507127-02	520	960	100
IN-1-12' x 507127-03	850	1,400	102
IN-1-15' y 507127-04	4,100	5,300	83
IN-1-16.5' y 507127-05	2,800	3,500	94
IN-2-6' y 507127-06	15,000	19,000	111
IN-2-9' y 507127-07	940	1,200	96
MW-1-6' 507127-08	<50	<250	83
MW-1-9' 507127-09	<50	<250	85
IN-2-10'9" y 507127-10	16,000	18,000	118
Method Blank	<50	<250	87

x - The pattern of peaks present is not indicative of diesel. The sample was reanalyzed against motor oil.
y - The pattern of peaks present contains material in the diesel and motor oil ranges. The sample was reanalyzed against motor oil.

Date of Report: 07/22/05
Date Received: 07/15/05
Project: Dexter Horton, PO# 0257-002-02, F&BI 507127
Date Extracted: 07/15/05
Date Analyzed: 07/15/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING METHOD NWTPH-Dx

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

Sample ID Laboratory ID	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
IN-1-6' 507127-01	4,500	80
IN-1-9' 507127-02	1,100	83
IN-1-12' 507127-03	1,300	83
IN-1-15' 507127-04	2,300	84
IN-1-16.5' 507127-05	2,300	93
IN-2-6' 507127-06	9,400	79
IN-2-9' 507127-07	490	87
IN-2-10'9" 507127-10	7,800	93
Method Blank	<250	87

Date of Report: 07/22/05
Date Received: 07/15/05
Project: Dexter Horton, PO# 0257-002-02, F&BI 507127

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

Laboratory Code: 507127-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/g (ppm)	5,000	<50	107	119	61-136	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	5,000	108	61-140

507127

SAMPLE CHAIN OF CUSTODY

7/15/05 ME A02

Send Report To DEE GARDNER
Company SOUND ENVIRONMENTAL STRATEGIES
Address 2400 AIRPORT WAY S., STE 200
City, State, ZIP SEATTLE, WA 98134-200
Phone # 206.306.1900 Fax # 206.306.1907

SAMPLERS (signature)
PROJECT NAME/NO. DEXTER HORTON
PO # 0257-002-08
REMARKS

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (ext)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
IN-1-6'	01	07.11.05	1915	S	1	X											
IN-1-9'	02		1925			X											
IN-1-12'	03		1950			X											
IN-1-15'	04		2020			X											
IN-1-16.5'	05		2020			X											
IN-2-6'	06	07.12.05	1930	S	1	X											
IN-2-9'	07		1930			X											
mw-1-6'	08		2020			X											
mw-1-9'	09		2020			X											
IN-2-10'9"	10					X											

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	DEE GARDNER	SES	07.11.05	1030
Received by:	Chris Carter	SES	07.11.05	1130
Relinquished by:	Chris Carter	SES	07.05.05	1045
Received by: Stacey Webber	Stacey Webber	JoBe	7/15/05	11:25

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

August 4, 2005

Chris Carter, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Carter:

Included are the results from the testing of material submitted on July 29, 2005 from the Dexter Horton, PO#0257-001-02, F&BI 507293 project. There are 2 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
SOU0804R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/04/05
Date Received: 07/29/05
Project: Dexter Horton, PO#0257-001-02, F&BI 507293
Date Extracted: 07/29/05
Date Analyzed: 08/01/05

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 68-143)
MW-1 507293-01	<50	<250	93
Method Blank	<50	<250	73

Date of Report: 08/04/05
Date Received: 07/29/05
Project: Dexter Horton, PO#0257-001-02, F&BI 507293

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/L (ppb)	2,500	118	110	68-144	7

Eric Young 507243

SAMPLE CHAIN OF CUSTODY

ME 07/29/05 B04

Page # 1 of 1

Send Report To Chris Carter

Company Sound Environmental Strategies

Address 2400 Airport Way S., Suite 200

City, State, ZIP Seattle, WA 98134-2020

Phone # (206) 306-1900 Fax # (206) 306-1907

SAMPLERS (signature)

PROJECT NAME/NO. Dexter Horton 0257 - 001 - 02

PO #

REMARKS

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (+)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
MW-1	01 A-B	7-28-05		water	2	X												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chris Carter	SES	7-29-05	12:00
Received by:	Nhan Phan	FEBI	7/29/05	1
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

August 25, 2005

Jim Burgess, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Burgess:

Included are the results from the additional testing of material submitted on July 15, 2005 from the Dexter Horton, PO# 0257-002-02, F&BI 507127 project. There are 2 pages included in this report.

The additional work completed at Friedman and Bruya, Inc. (F&BI) included testing of the samples IN-1-6' and IN-2-10'9" for total extractable organics (TEO). This analysis was used to measure the total material (i.e. eluting before and after *n*-C_{36}) in the samples. The results of this testing, including the associated quality assurance, are enclosed.

In addition, we have reviewed the report issued by F&BI on July 22, 2005. This report consisted of analytical data generated from the testing of the samples IN-1-6' and IN-2-10'9" for total recoverable petroleum hydrocarbons (TRPH) using a gas chromatograph fitted with a flame ionization detector (GC/FID). This analysis was used to measure the material which boiled before *n*-C_{36} in the samples. The purpose of this review was to provide further information regarding the nature of the material present in these samples. Our findings are provided below.

Review of the data generated shows that the sample IN-1-6' had a TRPH result of 4,100 ppm. The TEO result for this sample was 50,000 ppm. Comparison of the TRPH and TEO results indicates that over 90% of the material present in this sample boils above *n*-C_{36}. This abundance of very high boiling material indicates that asphalt is likely present in this sample. In addition, review of the GC/FID trace generated shows that this sample may also contain a high boiling material such as lube oil or similar material.

Further review of the data generated shows that the sample IN-2-10'9" had a TRPH result of 18,000 ppm. The TEO result for this sample was 72,000 ppm. Comparison of the TRPH and TEO results indicates that approximately 75% of the material present in this sample boils above *n*-C_{36}. This abundance of very high boiling material indicates that asphalt is likely present in this sample. In addition, review of the GC/FID trace generated shows that this sample also contains a high boiling material such as bunker C or similar materials

Samples IN-1-6' and IN-2-10'9" were also run for metals scan by Method 200.8, but the data was not useful in determining the composition of the material.

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.

Kurt Johnson
Chemist

Enclosures
SOU0825R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/25/05
Date Received: 07/15/05
Project: Dexter Horton, PO# 0257-002-02, F&BI 507127
Date Extracted: 08/19/05
Date Analyzed: 08/19/05

RESULTS FROM THE GRAVIMETRIC ANALYSIS OF THE SOIL SAMPLES FOR TOTAL EXTRACTABLES ORGANICS USING SM 5520B MOD

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Total Extractables
IN-1-6' 507127-01	50,000
IN-2-10'9" 507127-10	72,000
Method Blank	<100

Date of Report: 08/25/05
Date Received: 07/15/05
Project: Dexter Horton, PO# 0257-002-02, F&BI 507127

QUALITY ASSURANCE RESULTS FROM THE GRAVIMETRIC ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLES USING SM 5520B MOD

Laboratory Code: 507127-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Total Extractables	µg/g (ppm)	50,000	47,000	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Total Extractables	µg/g (ppm)	50,000	104	50-150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

August 26, 2005

Chris Carter, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Carter:

Included are the results from the testing of material submitted on August 15, 2005 from the Dexter Horton, PO#0257-001-02, F&BI 508141 project. There are 12 pages included in this report. Samples SS-4-6', SS-3-6', and SS-3-9' were sent to Analytical Resources, Inc. for EPH analysis. The report generated by ARI will be forwarded to your office upon receipt.

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.

Michael Erdahl
Project Manager

Enclosures
SOU0826R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141
Date Extracted: 08/15/05
Date Analyzed: 08/16/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD 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 Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
SS-1-6' x d 508141-01	2,700	7,800	73
SS-2-6' x d 508141-02	6,500	17,000	74
SS-4-6' x d 508141-03	12,000	20,000	101
SS-4-9' x 508141-04	220	400	76
SS-4-12' 508141-05	<50	<250	70
SS-4-15' 508141-06	<50	<250	70
SS-4-18' 508141-07	<50	<250	71
SS-3-6' x d 508141-08	1,700	4,300	76
SS-3-9' x d 508141-09	1,100	2,700	75
SS-3-12' x 508141-10	280	730	77

x - The pattern of peaks present is not indicative of diesel. The sample was reanalyzed against motor oil.
d - The sample was diluted.

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141
Date Extracted: 08/15/05
Date Analyzed: 08/16/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD 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 Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
SS-3-15' x 508141-11	360	870	69
SS-3-18' x 508141-12	240	610	69
Method Blank	<50	<250	100

x - The pattern of peaks present is not indicative of diesel. The sample was reanalyzed against motor oil.

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141
Date Extracted: 08/15/05
Date Analyzed: 08/16/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING METHOD NWTPH-Dx

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

Sample ID Laboratory ID	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 67-131)
SS-1-6' d 508141-01	8,800	73
SS-2-6' d 508141-02	18,000	74
SS-4-6' d 508141-03	14,000	101
SS-4-9' 508141-04	280	76
SS-3-6' d 508141-08	4,600	76
SS-3-9' d 508141-09	2,900	75
SS-3-12' 508141-10	760	77
SS-3-15' 508141-11	860	69
SS-3-18' 508141-12	610	69
Method Blank	<250	100

d - The sample was diluted.

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141
Date Extracted: 08/15/05
Date Analyzed: 08/19/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL USING METHOD NWTPH-Dx
Extended to Include Motor Oil Range Compounds
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	TRPH (C_{10}-C_{36})	Surrogate (% Recovery) (Limit 50-126)
SS-4-6' x 508141-03	11,000	16,000	66
SS-3-6' x 508141-08	1,500	3,500	80
SS-3-9' x 508141-09	910	2,200	69
Method Blank	<50	<250	100

x - The pattern of peaks present is not indicative of diesel. The sample was reanalyzed against motor oil.

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141
Date Extracted: 08/15/05
Date Analyzed: 08/16/05

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL USING METHOD NWTPH-Dx

Sample Extracts Passed Through a Silica Gel Column Prior to Analysis

Results Reported on a Dry Weight Basis

Results Reported as µg/g (ppm)

Sample ID Laboratory ID	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 50-126)
SS-4-6' 508141-03	8,900	66
SS-3-6' 508141-08	3,500	80
SS-3-9' 508141-09	2,100	69
Method Blank	<250	88

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	SS-4-6'	Client:	Sound Environmental Strategies
Date Received:	08/15/05	Project:	Dexter Horton, PO#0257-001-02
Date Extracted:	08/22/05	Lab ID:	508141-03 1/10 rr
Date Analyzed:	08/23/05	Data File:	082312.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	205 vo	38	158
Benzo(a)anthracene-d12	122	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	320
Acenaphthylene	<250
Acenaphthene	<250
Fluorene	<250
Phenanthrene	20,000 ve
Anthracene	1,300
Fluoranthene	2,100
Pyrene	8,500
Benz(a)anthracene	2,500
Chrysene	5,600
Benzo(b)fluoranthene	910
Benzo(k)fluoranthene	<250
Benzo(a)pyrene	650
Indeno(1,2,3-cd)pyrene	<250
Dibenzo(a,h)anthracene	<250
Benzo(g,h,i)perylene	<250

Note: The sample was diluted due to sample matrix effects. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	SS-3-6'	Client:	Sound Environmental Strategies
Date Received:	08/15/05	Project:	Dexter Horton, PO#0257-001-02
Date Extracted:	08/22/05	Lab ID:	508141-08 1/10
Date Analyzed:	08/22/05	Data File:	082208.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	148	38	158
Benzo(a)anthracene-d12	137	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<250
Acenaphthylene	<250
Acenaphthene	<250
Fluorene	<250
Phenanthrene	<250
Anthracene	<250
Fluoranthene	<250
Pyrene	<250
Benz(a)anthracene	<250
Chrysene	<250
Benzo(b)fluoranthene	<250
Benzo(k)fluoranthene	<250
Benzo(a)pyrene	<250
Indeno(1,2,3-cd)pyrene	<250
Dibenzo(a,h)anthracene	<250
Benzo(g,h,i)perylene	<250

Note: The sample was diluted due to sample matrix effects. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	SS-3-9'	Client:	Sound Environmental Strategies
Date Received:	08/15/05	Project:	Dexter Horton, PO#0257-001-02
Date Extracted:	08/22/05	Lab ID:	508141-09 1/10
Date Analyzed:	08/22/05	Data File:	082209.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	155	38	158
Benzo(a)anthracene-d12	134	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<250
Acenaphthylene	<250
Acenaphthene	<250
Fluorene	<250
Phenanthrene	<250
Anthracene	<250
Fluoranthene	<250
Pyrene	<250
Benz(a)anthracene	<250
Chrysene	<250
Benzo(b)fluoranthene	<250
Benzo(k)fluoranthene	<250
Benzo(a)pyrene	<250
Indeno(1,2,3-cd)pyrene	<250
Dibenzo(a,h)anthracene	<250
Benzo(g,h,i)perylene	<250

Note: The sample was diluted due to sample matrix effects. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	Sound Environmental Strategies
Date Received:	Not Applicable	Project:	Dexter Horton, PO#0257-001-02
Date Extracted:	08/22/05	Lab ID:	05-1136mb
Date Analyzed:	08/22/05	Data File:	082206.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	28	139
Benzo(a)anthracene-d12	85	28	145

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5
Dibenzo(a,h)anthracene	<5
Benzo(g,h,i)perylene	<5

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141

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

Laboratory Code: 508139-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/g (ppm)	5,000	<50	101	108	71-130	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	5,000	100	69-134

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	µg/kg (ppb)	170	87	87	69-105	1
Acenaphthylene	µg/kg (ppb)	170	90	90	62-117	1
Acenaphthene	µg/kg (ppb)	170	88	87	66-115	1
Fluorene	µg/kg (ppb)	170	89	88	62-116	2
Phenanthrene	µg/kg (ppb)	170	81	79	68-109	3
Anthracene	µg/kg (ppb)	170	80	79	56-102	1
Fluoranthene	µg/kg (ppb)	170	89	88	64-115	2
Pyrene	µg/kg (ppb)	170	86	84	67-118	2
Benz(a)anthracene	µg/kg (ppb)	170	79	78	53-121	2
Chrysene	µg/kg (ppb)	170	81	79	59-115	2
Benzo(b)fluoranthene	µg/kg (ppb)	170	90	90	58-132	1
Benzo(k)fluoranthene	µg/kg (ppb)	170	91	86	66-120	6
Benzo(a)pyrene	µg/kg (ppb)	170	85	81	49-116	4
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	170	101	92	61-121	9
Dibenzo(a,h)anthracene	µg/kg (ppb)	170	97	87	63-126	10
Benzo(g,h,i)perylene	µg/kg (ppb)	170	99	90	55-121	10

Date of Report: 08/26/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141

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

Laboratory Code: 508139-01 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	µg/g (ppm)	5,000	<50	101	108	71-130	7

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	5,000	100	69-134

508141

SAMPLE CHAIN OF CUSTODY

ME 08/15/05

CO2

Send Report To: Chris Carter

Company: Sound Environmental Strategies

Address: 2400 Airport Way S., Suite 200

City, State, ZIP: Seattle, WA 98134-2020

Phone # (206) 306-1900 Fax # (206) 306-1907

SAMPLERS (signature):

PROJECT NAME/NO.: Dexter Horton

PO #: 0257-001-02

REMARKS: Homogenize all samples.

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ ~~RUSH~~ ASAP

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (ext)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	PAHs	Silica Gel	EPH				Notes
SS-1-6'	01	8-13-05		Soil	1 4oz	X												
SS-2-6'	02					X	no		Sample									
SS-4-6'	03					X						⊗	⊗	⊗				
SS-4-9'	04					X												
SS-4-12'	05					X												
SS-4-15'	06					X												
SS-4-18'	07					X												
SS-3-6'	08					X						⊗	⊗	⊗				
SS-3-9'	09					X						⊗	⊗	⊗				
SS-3-12'	10	↓		↓	↓	X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Chris Carter	SES	8-15-05	0930
Received by:					
Relinquished by:		Owen McCullough	FBI	8/15/05	2:37
Received by:		Nhan Phan	FBI	8/15/05	2:37

508141

SAMPLE CHAIN OF CUSTODY

ME 08/15/05

CO2

Send Report To: Chris Carter

Company: Sound Environmental Strategies

Address: 2400 Airport Way S., Suite 200

City, State, ZIP: Seattle, WA 98134-2020

Phone # (206) 306-1900 Fax # (206) 306-1907

SAMPLERS (*signature*)

PROJECT NAME/NO.: Dexter Horton

PO #: 0257-001-02

REMARKS: Homogenize all Samples

Page # 2 of 2

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH ASAP

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (ext)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
SS-3-15'	11	8-13-05		Soil	1 4oz	X												
SS-3-18'	12	"		↓	↓	X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Chris Carter	SES	8-15-05	0930
Received by:					
Relinquished by:		Gwen McCullough	SES	8/15/05	2:37pm
Received by:		Dhan Phan	FBI	8/15/05	2:37

SAMPLE CHAIN OF CUSTODY

Send Report To: Chris Carter

Company: Sound Environmental Strategies

Address: 2400 Airport Way S., Suite 200

City, State, ZIP: Seattle, WA 98134-2020

Phone # (206) 306-1900 Fax # (206) 306-1907

SAMPLERS (signature):

PROJECT NAME/NO.: Dexter Horton

PO # 0257-001-02

REMARKS: Homogenize all samples.

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ ~~RUSH~~ ASAP

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel (ext)	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
SS-1-6'		8-13-05		Soil	1 4oz	X												
SS-2-6'		"	"	"	"	X	1 per Sample											
SS-4-6'		"	"	"	"	X												
SS-4-9'		"	"	"	"	X												
SS-4-12'		"	"	"	"	X												
SS-4-15'		"	"	"	"	X												
SS-4-18'		"	"	"	"	X												
SS-3-6'		"	"	"	"	X												
SS-3-9'		"	"	"	"	X												
SS-3-12'		"	"	"	"	X												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chris Carter	SES	8-15-05	0930
Received by:				
Relinquished by:	Owen McCullough	SES	8/15/05	2:37
Received by:	Nhan Phan	FBI	8/15/05	2:37

Analytical Resources, Incorporated
Analytical Chemists and Consultants

August 30, 2005

Mike Erdahl
Friedman & Bruya
3012 – 16th Avenue West
Seattle, WA 9819-2029

RE: Project: 508141 PO# G-633
ARI Job: IL11

Dear Mike,

Please find enclosed the original chain of custody record and analytical results for the above referenced project. Analytical Resources, Inc. accepted three soil samples in good condition on August 19, 2005. There were no discrepancies between the COC and the sample container labels.

The samples were analyzed for EPH (extractable petroleum hydrocarbons), as requested on the COC.

No analytical complications were noted. Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,
ANALYTICAL RESOURCES, INC.

Stephanie Lucas
Project Manager
(206) 695-6213

Enclosures

SAMPLE CHAIN OF CUSTODY

AMB IL11

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SAMPLERS *(signature)*

PROJECT NAME/NO. 508141

PO # G-633

REMARKS

Please Fax Results

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: EPH											Notes
SS-4-6'		8/13/05		S	1	✓											
SS-3-6'		"		S	1	✓											
SS-3-9'		"		S	1	✓											

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	FB	8/18/05	1:05 PM
Received by:	Bob Congleton	BOB CONGLETON	ARI	8/19/05	11:50
Relinquished by:					
Received by:					

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH
Page 1 of 1

Sample ID: SS-4-6'
SAMPLE

Lab Sample ID: IL11A
LIMS ID: 05-14330
Matrix: Soil
Data Release Authorized: VTS
Reported: 08/29/05

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141
Date Sampled: 08/13/05
Date Received: 08/19/05

Date Extracted: 08/22/05
Percent Moisture: 2.7%

Sample Amount: 9.75 g-dry-wt
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 08/26/05 13:59
Instrument/Analyst: FID4A/JGR

Dilution Factor: 5.00

Aromatic
Date Analyzed: 08/26/05 10:04
Instrument/Analyst: FID4A/JGR

Dilution Factor: 10.0

Range	RL	Result
C8-C10 Aliphatics	10,000	< 10,000 U
C10-C12 Aliphatics	**10,000**	**11,000**
C12-C16 Aliphatics	**10,000**	**920,000**
C16-C21 Aliphatics	**10,000**	**1,600,000**
C21-C34 Aliphatics	**10,000**	**3,100,000**
C8-C10 Aromatics	21,000	< 20,000 U
C10-C12 Aromatics	21,000	< 20,000 U
C12-C16 Aromatics	**21,000**	**690,000**
C16-C21 Aromatics	**21,000**	**2,200,000**
C21-C34 Aromatics	**21,000**	**2,100,000**

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	61.8%
Aromatic	Ortho-terphenyl	98.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH

Sample ID: SS-3-6'
SAMPLE

Lab Sample ID: IL11B
LIMS ID: 05-14331
Matrix: Soil
Data Release Authorized: VTS
Reported: 08/29/05

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141
Date Sampled: 08/13/05
Date Received: 08/19/05

Date Extracted: 08/22/05
Percent Moisture: 22.7%

Sample Amount: 7.76 g-dry-wt
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 08/24/05 22:34
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Aromatic
Date Analyzed: 08/26/05 10:19
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Range	RL	Result
C8-C10 Aliphatics	2,600	< 2,600 U
C10-C12 Aliphatics	2,600	< 2,600 U
C12-C16 Aliphatics	**2,600**	**100,000**
C16-C21 Aliphatics	**2,600**	**300,000**
C21-C34 Aliphatics	**2,600**	**880,000**
C8-C10 Aromatics	2,600	< 2,600 U
C10-C12 Aromatics	2,600	< 2,600 U
C12-C16 Aromatics	**2,600**	**3,100**
C16-C21 Aromatics	**2,600**	**140,000**
C21-C34 Aromatics	**2,600**	**640,000**

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	52.0%
Aromatic	Ortho-terphenyl	92.1%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH
Page 1 of 1

Sample ID: SS-3-9'
SAMPLE

Lab Sample ID: IL11C
LIMS ID: 05-14332
Matrix: Soil
Data Release Authorized: VTS
Reported: 08/29/05

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141
Date Sampled: 08/13/05
Date Received: 08/19/05

Date Extracted: 08/22/05
Percent Moisture: 19.5%

Sample Amount: 8.07 g-dry-wt
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 08/26/05 14:30
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Aromatic
Date Analyzed: 08/26/05 10:35
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Range	RL	Result
C8-C10 Aliphatics	2,500	< 2,500 U
C10-C12 Aliphatics	2,500	< 2,500 U
C12-C16 Aliphatics	**2,500**	**57,000**
C16-C21 Aliphatics	**2,500**	**180,000**
C21-C34 Aliphatics	**2,500**	**530,000**
C8-C10 Aromatics	2,500	< 2,500 U
C10-C12 Aromatics	2,500	< 2,500 U
C12-C16 Aromatics	2,500	< 2,500 U
C16-C21 Aromatics	**2,500**	**70,000**
C21-C34 Aromatics	**2,500**	**380,000**

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	65.5%
Aromatic	Ortho-terphenyl	83.5%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH
Page 1 of 1

Sample ID: MB-082205
METHOD BLANK

Lab Sample ID: MB-082205
LIMS ID: 05-14330
Matrix: Soil
Data Release Authorized: VTS
Reported: 08/29/05

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141
Date Sampled: NA
Date Received: NA

Date Extracted: 08/22/05
Percent Moisture: NA

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 08/26/05 13:27
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Aromatic
Date Analyzed: 08/26/05 09:33
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Range	RL	Result
C8-C10 Aliphatics	2,000	< 2,000 U
C10-C12 Aliphatics	2,000	< 2,000 U
C12-C16 Aliphatics	2,000	< 2,000 U
C16-C21 Aliphatics	2,000	< 2,000 U
C21-C34 Aliphatics	2,000	< 2,000 U
C8-C10 Aromatics	2,000	< 2,000 U
C10-C12 Aromatics	2,000	< 2,000 U
C12-C16 Aromatics	2,000	< 2,000 U
C16-C21 Aromatics	2,000	< 2,000 U
C21-C34 Aromatics	2,000	< 2,000 U

Reported in µg/kg (ppb)

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	74.5%
Aromatic	Ortho-terphenyl	97.1%

ANALYTICAL RESOURCES INCORPORATED

ALEPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141

Client ID	COD	TOT OUT
MB-082205	74.5%	0
LCS-082205	71.5%	0
SS-4-6'	61.8%	0
SS-3-6'	52.0%	0
SS-3-9'	65.5%	0

	LCS/MB LIMITS	QC LIMITS
(COD) = 1-Chlorooctadecane	(50-150)	(50-150)

Prep Method: SW3550B
Log Number Range: 05-14330 to 05-14332

ANALYTICAL RESOURCES INCORPORATED

AREPH SURROGATE RECOVERY SUMMARY

Matrix: Soil

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141

Client ID	OTER	TOT OUT
MB-082205	97.1%	0
LCS-082205	86.3%	0
SS-4-6'	98.5%	0
SS-3-6'	92.1%	0
SS-3-9'	83.5%	0

	LCS/MB LIMITS	QC LIMITS
(OTER) = Ortho-terphenyl	(50-150)	(50-150)

Prep Method: SW3550B
Log Number Range: 05-14330 to 05-14332

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Aliphatic/Aromatic GC-EPH
Page 1 of 1

Sample ID: LCS-082205
LAB CONTROL

Lab Sample ID: LCS-082205
LIMS ID: 05-14330
Matrix: Soil
Data Release Authorized: VTS
Reported: 08/29/05

QC Report No: IL11-Friedman & Bruya
Project: G-633
508141
Date Sampled: NA
Date Received: NA

Date Extracted: 08/22/05

Sample Amount: 10.0 g
Final Extract Volume: 1.0 mL

Aliphatic
Date Analyzed: 08/26/05 13:43
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Aromatic
Date Analyzed: 08/26/05 09:48
Instrument/Analyst: FID4A/JGR

Dilution Factor: 1.00

Range	Lab Control	Spike Added	Recovery
C8-C10 Aliphatics	9600	15000	64.0%
C10-C12 Aliphatics	9200	15000	61.3%
C12-C16 Aliphatics	9400	15000	62.7%
C16-C21 Aliphatics	10000	15000	66.7%
C10-C12 Aromatics	10500	15000	70.0%
C12-C16 Aromatics	11800	15000	78.7%
C16-C21 Aromatics	25100	30000	83.7%
C21-C34 Aromatics	24900	30000	83.0%

Results reported in µg/kg

EPH Surrogate Recovery

Aliphatic	1-Chlorooctadecane	71.5%
Aromatic	Ortho-terphenyl	86.3%

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

SEP 6 2005

TRANSMITTAL

DATE: 9-2-05

TO: Chris Carter

COMPANY: Sound Envir. **PROJECT ID:**

FAX #: **PHONE #:**

FROM: Mike Erdahl

We are sending you the following:

# Pages/Documents (including cover sheet)	Description
	ARI results

These are transmitted as indicated:

☑ For your use ☐ For review and comment ☐ For your signature and return

☐ As requested ☐ As noted ☐ Other

Remarks:

For items sent via Fax:

Original: Will Follow ☐ Will Not Follow ☐

IMPORTANT

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

August 31, 2005

Chris Carter, Project Manager
Sound Environmental Strategies Corporation
2400 Airport Way S., Suite 200
Seattle, WA 98134-2020

Dear Mr. Carter:

Included are the additional results from the testing of material submitted on August 15, 2005 from the Dexter Horton, PO#0257-001-02, F&BI 508141 project. There are 5 pages included in this report. The samples were reanalyzed to lower the detection limit.

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.

Michael Erdahl
Project Manager

Enclosures
SOU0901R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	SS-4-6'	Client:	Sound Environmental
Date Received:	08/15/05	Project:	Dexter Horton
Date Extracted:	08/22/05	Lab ID:	508141-03 1/2 sg
Date Analyzed:	08/30/05	Data File:	083019.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	118	38	158
Benzo(a)anthracene-d12	189 vo	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	310
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	15,000 ve
Anthracene	1,500
Fluoranthene	1,500
Pyrene	5,600 ve
Benz(a)anthracene	2,800
Chrysene	6,300 ve J
Benzo(b)fluoranthene	1,100 J
Benzo(k)fluoranthene	<50 J
Benzo(a)pyrene	690 J
Indeno(1,2,3-cd)pyrene	58 J j
Dibenzo(a,h)anthracene	62 J j
Benzo(g,h,i)perylene	120 J j

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.

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

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

j - The result for this analyte in the laboratory control samples is out of control limits. The reported concentration is an estimate.

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	SS-3-6'	Client:	Sound Environmental
Date Received:	08/15/05	Project:	Dexter Horton
Date Extracted:	08/22/05	Lab ID:	508141-08 1/2 sg
Date Analyzed:	08/30/05	Data File:	083020.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	115	38	158
Benzo(a)anthracene-d12	132	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	<50
Anthracene	<50
Fluoranthene	<50
Pyrene	<50
Benz(a)anthracene	<50
Chrysene	140
Benzo(b)fluoranthene	120 J
Benzo(k)fluoranthene	<50 J
Benzo(a)pyrene	66 J
Indeno(1,2,3-cd)pyrene	<50 J j
Dibenzo(a,h)anthracene	<50 J j
Benzo(g,h,i)perylene	52 J j

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.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an est
j - The result for this analyte in the laboratory control samples is out of control limits. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	SS-3-9'	Client:	Sound Environmental
Date Received:	08/15/05	Project:	Dexter Horton
Date Extracted:	08/22/05	Lab ID:	508141-09 1/2 sg
Date Analyzed:	08/30/05	Data File:	083021.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	115	38	158
Benzo(a)anthracene-d12	126	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<50
Acenaphthylene	<50
Acenaphthene	<50
Fluorene	<50
Phenanthrene	99
Anthracene	<50
Fluoranthene	88
Pyrene	91
Benz(a)anthracene	<50
Chrysene	<50
Benzo(b)fluoranthene	180 J
Benzo(k)fluoranthene	<50 J
Benzo(a)pyrene	160 j
Indeno(1,2,3-cd)pyrene	<50 J j
Dibenzo(a,h)anthracene	<50 J j
Benzo(g,h,i)perylene	79 J j

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.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an est
j - The result for this analyte in the laboratory control samples is out of control limits. The reported concentration is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For PNA Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	Sound Environmental
Date Received:	Not Applicable	Project:	Dexter Horton
Date Extracted:	08/22/05	Lab ID:	05-1136mb sg
Date Analyzed:	08/30/05	Data File:	083018.D
Matrix:	soil	Instrument:	GCMS3
Units:	ug/kg (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	69	38	158
Benzo(a)anthracene-d12	74	35	146

Compounds:	Concentration ug/kg (ppb)
Naphthalene	<5
Acenaphthylene	<5
Acenaphthene	<5
Fluorene	<5
Phenanthrene	<5
Anthracene	<5
Fluoranthene	<5
Pyrene	<5
Benz(a)anthracene	<5
Chrysene	<5
Benzo(b)fluoranthene	<5
Benzo(k)fluoranthene	<5
Benzo(a)pyrene	<5
Indeno(1,2,3-cd)pyrene	<5 j
Dibenzo(a,h)anthracene	<5 j
Benzo(g,h,i)perylene	<5 j

j - The result for this analyte in the laboratory control samples is out of control limits. The reported concentration is an estimate.

Date of Report: 08/31/05
Date Received: 08/15/05
Project: Dexter Horton, PO#0257-001-02, F&BI 508141

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	µg/kg (ppb)	170	76	81	69-105	7
Acenaphthylene	µg/kg (ppb)	170	78	83	62-117	6
Acenaphthene	µg/kg (ppb)	170	76	81	66-115	7
Fluorene	µg/kg (ppb)	170	78	83	62-116	5
Phenanthrene	µg/kg (ppb)	170	71	75	68-109	5
Anthracene	µg/kg (ppb)	170	71	75	56-102	4
Fluoranthene	µg/kg (ppb)	170	83	88	64-115	6
Pyrene	µg/kg (ppb)	170	80	85	67-118	6
Benz(a)anthracene	µg/kg (ppb)	170	70	75	53-121	7
Chrysene	µg/kg (ppb)	170	72	78	59-115	7
Benzo(b)fluoranthene	µg/kg (ppb)	170	94	99	58-132	6
Benzo(k)fluoranthene	µg/kg (ppb)	170	89	96	66-120	8
Benzo(a)pyrene	µg/kg (ppb)	170	78	80	49-116	3
Indeno(1,2,3-cd)pyrene	µg/kg (ppb)	170	42 vo	46 vo	61-121	11
Dibenzo(a,h)anthracene	µg/kg (ppb)	170	45 vo	50 vo	63-126	10
Benzo(g,h,i)perylene	µg/kg (ppb)	170	29 vo	33 vo	55-121	13

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

APPENDIX D
Boring Logs and Well Completion Diagrams

Log of Exploratory Boring:

Notes
Separate contractor working with acetone at front door, background PID reading = 35 - 40 units @ 1900

Drilling Co./Driller:	Rocky Mt / Tom, Dale
Drilling Method:	Rotoprobe
Location:	16' 11.75" N, 18.5" E of SW corner of Boiler Room
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	17.2
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								Concrete slab		
1								Two-inch void space beneath slab Asphalt, 5/8 minus aggregate, black, strong asphalt-like odor (Fill)		
2			100							
3								Asphalt rubble or burn rubble?		
4										
5		13.7	100							
6		12.9			IN-1-6			Moist, medium stiff, clayey SILT mixed with asphaltic material, mixed tan-gray and black, strong asphaltic odor (Fill)		
7										
8		12.4	100		IN-1-9			Moist, medium stiff, clayey SILT mixed with asphaltic - like material, black fragments, asphaltic odor (Fill)		
9										
10		15.7	100					Wet, medium stiff, clayey SILT with brick fragments and trace coarse gravel, mixed tan-gray and black, weak asphalt - like or burn odor (Fill)		
11		10.1			IN-1-12		ML			
12		4.6						Moist to wet, medium stiff, clayey SILT with brick graments and fine particulates, tan-gray and black mixed, weak asphalt - like or burn odor (Fill)		
13			75							
14		4.2						Wet, medium stiff, clayey SILT with trace sand, gray with viscous black liquid confined to fracture surfaces, strong hydrocarbon odor (Fill)		
15			50		IN-1-15					
16										
17		6.2	0		IN-1-16.5			Refusal with the rotoprobe at 17.2 feet (possible basement footing)		
18								Boring terminated at 17.2 feet bgs. No injection well installed at this location due to proximity to basement wall.		
19										
20										

SOUND ENVIRONMENTAL STRATEGIES
www.soundenvironmental.com

Dexter Horton
710 2nd Avenue
Seattle, Washington

Date Started: 7/11/2005
Date Finished: 7/12/2005
Logged By: D. Gardner
Chk By: B. Q. Hyde
SES Project No.: 0257-001-02
File ID.: C:\PROGRAM FILES\GINT\PROJECTS\0257-1-2 DEXTER HORTON.GPJ

BORING LOG
IN-1

Log of Exploratory Boring:

Notes
Bike storage room - injection well

Drilling Co./Driller:	Rocky Mt / Tom, Dale
Drilling Method:	Rotoprobe
Location:	12' 7.25" N, 7' 11.5" E of SW corner of Boiler Room
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	10.75
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1-2" of settlement under slab)		
1			80				ML	Dry, stiff, sandy SILT, fractured, gray, no staining, no hydrocarbon odor		
2		0.0								
3							ML	Dry, hard, sandy SILT, fractured, tan, no staining, no hydrocarbon odor		
4			100					(Burn rubble or asphaltic material mixed with debris)		
5		0.0			IN-2-6					
6								Dry, hard, sandy SILT, fractured, tan, no staining, no hydrocarbon odor		
7			100				ML			
8		0.0			IN-2-9			Moist, stiff, sandy SILT, blue gray, staining, moderate hydrocarbon odor, product on fracture surfaces		
9							ML			
10			100							
		0.0			IN-2-10.5			Refusal with the Rotoprobe		
11								Boring terminated at 10.75 feet bgs. Two-inch diameter injection well installed as depicted above right, using stainless steel, 0.020 spiral wrap screen, 10-12 silica sand, and bentonite chips.		
12										
13										
14										
15										
16										
17										
18										
19										
20										

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Dexter Horton
710 2nd Avenue
Seattle, Washington

Date Started: 7/12/2005
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Chk By: D. Gardner
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BORING LOG
IN-2

Log of Exploratory Boring:

Notes
Injection well between tanks 1 - 2

Drilling Co./Driller:	Rocky Mt / Tom, Dale
Drilling Method:	Rotoprobe
Location:	14' 7.75" N, 14' 7" E of SW corner of Boiler Room
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	18.67
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1" void beneath slab from settlement)		
1			100					Dry, stiff, sandy SILT, fractured, gray, no staining, some debris (brick), no hydrocarbon odor		
2										
3		0.0					ML			
4										
5			100							
6		0.0			IN-3-6			Moist, stiff, sandy SILT, blue gray color, no stain, no hydrocarbon odor		
7							ML			
8			100					Refusal of 3" auger and split spoon (hit debris) Bottom of injection well		
9		0.0			IN-3-9		ML	Moist, stiff, sandy SILT, weak hydrocarbon odor, some hydrocarbon staining on fracture surfaces		
10			100					Moist, stiff, sandy SILT, no hydrocarbon staining, no hydrocarbon odor		
11		0.0			IN-3-11.5					
12										
13			100							
14		0.0			IN-3-13.7		ML			
15			100							
16		0.0			IN-3-16.6					
17										
18			100							
		0.0			IN-3-18.8			(Refusal with the rotoprobe)		
19								Boring terminated at 18.67 feet bgs. Two-inch diameter injection well installed as depicted above right, using stainless steel, 0.020 spiral wrap screen, 10-12 silica sand, and bentonite chips.		
20										

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710 2nd Avenue
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BORING LOG
IN-3

Log of Exploratory Boring:

Notes
Injection well at north end

Drilling Co./Driller:	Rocky Mt / Tom, Dale
Drilling Method:	Rotoprobe
Location:	23' 3" N, 10' 8.5" E of SW corner of Boiler Room
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	15.5
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (0" of settlement, no void)		
1								Moist, stiff, sandy SILT, no hydrocarbon staining, no hydrocarbon odor		
2										
3										
4										
5										
6										
7										
8							ML			
9					IN-4-9'			No staining, no hydrocarbon on fracture surfaces, no hydrocarbon odor		
10										
11										
12										
13					IN-4-12.5'					
14								No staining, no hydrocarbon on fracture surfaces, no hydrocarbon odor		
15					IN-4-15'-6"					
16								Boring terminated at 15.5 feet bgs. Two-inch diameter injection well installed at 12.5' as depicted above right, using stainless steel, 0.020 spiral wrap screen, 10-12 silica sand, and bentonite chips.		
17										
18										
19										
20										

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BORING LOG
IN-4

Log of Exploratory Boring:

Notes
Background monitoring well

Drilling Co./Driller:	Rocky Mt / Tom, Dale
Drilling Method:	Rotoprobe
Location:	15' 9" N, 60' E of SW corner of Boiler Room
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	16.75
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (0" of settlement)		
1								Moist, stiff, sandy SILT, no staining, no hydrocarbon odor		
2			100							
3		0.0							▼	
4										
5			100							
6		0.0			MW-1-6					
7							ML			
8			100					Moist, stiff, sandy SILT, no staining, no hydrocarbon odor		
9		0.0			MW-1-9					
10										
11			100							
12		0.0			MW-1-12			Moist, stiff, sandy SILT, no staining, no hydrocarbon odor		
13										
14			100					Dry, stiff, sandy SILT, blue gray, no staining, no hydrocarbon odor		
15		0.0			MW-1-12		ML	Refusal with 3" split spoon sampler, drive 2" split spoon @ 15'		
16			100					Dry, hard, sandy SILT, blue gray, no staining, no hydrocarbon odor		
		0.0			MW-1-16.9					
17								Bottom of boring refusal with 2" split spoon. Soil is hard. Boring terminated at 16.75 feet bgs.		
18								Water encountered @ 3 feet below the ground surface (bgs)		
19								Bottom of casing @ 15' bgs. Two-inch diameter injection well installed as depicted above right, using PVC 0.010 slot screen, 10-12 silica sand; capped with 6 inches bentonite chips and 1 foot cement.		
20										

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710 2nd Avenue
Seattle, Washington

Date Started: 7/14/2005
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BORING LOG
MW-1

Log of Exploratory Boring:

Notes
South Outside Bikeroom

Drilling Co./Driller:	ESN / Todd, Trevor
Drilling Method:	Geoprobe
Location:	22" S of Bike wall, 46" E of West wall
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	6
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								4" Concrete slab (3" settlement under slab)		
1								5/8 minus aggregate, brown, brick, some staining (fill), no hydrocarbon odor		
2			50							
3							Fill			
4										
5			20							
6								Boring terminated at 6 feet bgs. Refusal (Concrete footing likely), no well installed.		
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

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BORING LOG
SS-1

Log of Exploratory Boring:

Notes
South wall inside Bike room

Drilling Co./Driller:	ESN / Todd
Drilling Method:	Geoprobe
Location:	9" N of South wall, 3' E of West wall
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	6
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1-2" settlement beneath slab), gray crushed concrete, 5/8 minus aggregate		
1								Slight asphaltic odor (fill), (burn rubble?)		
2			20							
3							Fill			
4										
5			100							
6								Boring terminated at 6 feet bgs. Refusal (solid feature beneath ground), no well established.		
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

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BORING LOG
SS-2

Log of Exploratory Boring:

Notes
South sidewall in Bike room, South of IN-1

Drilling Co./Driller:	ESN / Todd
Drilling Method:	Geoprobe
Location:	64" N of South Bike wall, 31" E of West wall
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	18
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1-2" settlement beneath slab)		
1								ASPHALT, 5/8 minus aggregate, black, strong asphaltic / burn material odor (fill)		
2			20							
3							Fill			
4										
5										
6			80		SS-3-6'			Moist, medium stiff, clayey SILT, mixed with asphalt, mixed tan gray and black brick fragments (fill), weak hydrocarbon odor		
7										
8										
9					SS-3-9'					
10			100					Dry, medium stiff, clayey SILT with brick fragments, trace of course gravel, mixed tan, gray and black, organic or burn odor		
11										
12					SS-3-12'		ML			
13										
14			100					Moist, medium stiff, clayey SILT with brick fragments, trace of course gravel, mixed tan, gray and black, some wood debris (fill), organic odor		
15					SS-3-15'					
16								Moist, medium stiff, clayey SILT with brick fragments, wood debris, trace of course gravel, mixed tan gray and black, fill material, organic odor		
17			100							
18					SS-3-18'		ML	Moist, medium stiff, clayey SILT, clean native material, no staining below footing level, no odor		
19								Boring terminated at 18 feet bgs. Below footing @ 17' bgs		
20										

SOUND ENVIRONMENTAL STRATEGIES
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BORING LOG
SS-3

Log of Exploratory Boring:

Notes
Adjacent to IN-2 (North side)

Drilling Co./Driller:	ESN / Todd
Drilling Method:	Geoprobe
Location:	16" N of IN-2, 0" E/W of IN-2
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	18
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1-2" of settlement beneath slab)		
1								Dry, gray crushed concrete 5/8 minus aggregate, weak hydrocarbon odor @ 6' (fill).		
2			50							
3							Fill			
4										
5										
6			50		SS-4-6'					
7							ML	Dry, loose, sandy SILT, 5/8 minus aggregate, dark brown with gravel, strong hydrocarbon odor		
8										
9								Moist, medium stiff, clayey SILT, weak hydrocarbon odor		
10			100		SS-4-9'		ML	Sampled intervals to surround 10' 9"		
11					SS-4-12'			Beginning of fill layer		
12								Moist, medium stiff, clayey SILT, no staining, potential limit of H2O2. (very moist @ 15')		
13							ML			
14			100							
15					SS-4-15'			Dry, stiff, clayey SILT, no staining, no hydrocarbon odor		
16							ML			
17			100							
18					SS-4-18'			Boring terminated at 18 feet bgs. No well installed, no refusal		
19										
20										

SOUND ENVIRONMENTAL STRATEGIES
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Seattle, Washington

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BORING LOG
SS-4

Log of Exploratory Boring:

Notes
South wall of Bike room

Drilling Co./Driller:	ESN / Todd, Trevor
Drilling Method:	Geoprobe
Location:	21" N of South Bike wall, 28" E of South wall
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	6
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1-2" settlement beneath slab)		
1								Dry, loose, asphalt 5/8 minus aggregate, black, burn material (fill), strong asphaltic odor		
2			20							
3							Fill			
4										
5			100		No sample					
6								Boring terminated at 6 feet bgs. Hard concrete, potentially pier pad		
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

Log of Exploratory Boring:

Notes
Adjacent to IN-1

Drilling Co./Driller:	ESN / Todd, Trevor
Drilling Method:	Geoprobe
Location:	104" N of South bike wall, 32" E of West wall
Surface Condition:	Concrete slab on grade
Total Depth (ft) :	6
First GW Depth (ft) :	

Moisture Content:
Dry = Dry, Dp = Damp, Mst = Moist, Vmst = Very Moist, Wet = Wet

Hydrocarbon Odor: NO = no odor, VFO = very faint odor
WO = weak odor, MO = moderate odor, SO = strong odor

Water Levels
▼ After Completion
▽ During Drilling

Depth (feet)	Blow Count	PID	Sample Recovery	Sample Interval	Sample ID	Lithography	USCS Class	Description	Moisture Content	Well Detail
0								7" Concrete slab (1-2" settlement beneath slab)		
1								Asphalt 5/8 minus aggregate, black, strong asphaltic odor (fill), strong burn odor		
2			40							
3							Fill	Rubble Fill		
4										
5			0							
6					No sample			Boring terminated at 6 feet bgs. Refusal, possible asphalt		
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
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