Provisioners Express (Former)
LUST #532064
VCP # NW0225

REMEDIAL INVESTIGATION/FEASABILITY STUDY

for

ENTERED
5/10/00

DEPARTMENT OF ECOLOGY
NWRO/TCP TANK UNIT
INTERIM CLEANUP REPORT ☐
SITE CHARACTERIZATION ☑
FINAL CLEANUP REPORT ☐
OTHER ☐
AFFECTED MEDIA: SOIL ☑
OTHER GW ☐
INSPECTOR (INIT.) DATE 3/10/99

Provisioners Express Auburn Facility
2102 West Valley Highway
Auburn, Washington

by

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Project Number: 3613

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EMR INCORPORATED

ENVIRONMENTAL MANAGEMENT RESOURCES

Lawrence, KS ▼ Redmond, WA ▼ Duluth, MN ▼ Lincoln, NE ▼ Ft. Worth, TX ▼ Denver, CO

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1.0 INTRODUCTION

This report is an Interim Remedial Action (IRA) report that summarizes all remedial actions, site characterization data and evaluations completed to date at the Provisioners Express, Inc. facility in Auburn, Washington. This report was prepared in response to the discovery of waste oil and mineral spirits contamination associated with a 550-gallon waste oil underground storage tank (UST) and attached drain lines/floor sumps.

1.1 REPORT ORGANIZATION

Section 1 presents site background information, and an overview of the Phase I Environmental Site Assessment conducted by Atlantic Geoscience, Inc. (AGI) on behalf of Watkins Freight Terminals, Inc.

Section 2 summarizes the Remedial Investigation (RI) objectives, methods and findings. The investigative approach included:

- Review of geologic and hydrogeologic information for the site vicinity;
- Collection and analysis of post-excavation soil samples from UST closure assessment;
- Performance of tracer dye test on north sump drain;
- Collection and analysis of post-excavation soil samples from floor sumps/drain lines inside service bays;
- Collection and analysis of soil samples from sixteen Strataprobe soil borings; and
- Collection and analysis of groundwater samples from three groundwater monitoring wells.

1.2 SITE LOCATION AND FEATURES

The Provisioners Express Auburn facility is located at 2102 West Valley Highway in Auburn, Washington. Figure 1 presents a Site Location Map. The property is zoned M-1, light industrial. Properties surrounding the project site are light industrial, commercial business parks, and undeveloped parcels. The site is located on the 1983 U.S.G.S 7.5 by 15 minute Auburn quadrangle in the NW Corner of Section 12, Township 21 North, Range 5 East (U.S.G.S., 1983). The site is located at 47° 19' 54" North Latitude and 122°14'55" West Longitude.

The subject property is owned and operated by Provisioners Express, Inc.. Mr. David Pollart, President of Provisioners Express, Inc. is the contact for the subject property. Mr. Pollart's mailing address is Provisioners Express, Inc., 2102 West Valley Highway, Auburn, WA.

Features of the property include a vacant 3-acre lot on the north end, an existing refrigerated terminal with offices on the south end, a two service bay maintenance building with associated 550 gallon waste oil UST, 12,000 gallon diesel UST, oil/water separator on the east portion of the property, and a parking lot area. The developed portion of the property spans approximately 6 acres of land.

The portion of the property that the subject area consists of is a 6,090 square feet maintenance shop with two service bays, a 550 gallon waste oil UST off the northwest corner of the maintenance shop, a 12,000 gallon diesel UST and dispensor and an oil/water separator (Figure 2).

Ground surface generally slopes gently to the west across the parking lot toward West Valley Highway on the western boundary of the site. Based on U.S.G.S. topographic map contours, the site is approximately 75 feet above mean sea level. Surface drainage flows toward a storm drain catch basin to the west of the maintenance shop.

1.3 SITE BACKGROUND

On September 14, 1998 Atlantic Geoscience, Inc. (AGI), an environmental consultant from Atlanta, Georgia, conducted a Phase I Environmental Site Assessment and Limited Subsurface Investigation on behalf of an interested potential buyer of the facility, Watkins Terminals, Inc. (AGI, 1998).

Based on AGI's investigation, the site was vacant land from prior to 1950 through at least 1987. The Provisioners Express terminal was constructed in 1987. In addition to the Phase I ESA, AGI advanced five (5) soil borings to assess whether there were any releases of petroleum hydrocarbons from the waste oil and diesel USTs. Three borings (B-1 through B-3) were advanced around the diesel UST and two borings (B-4 and B-5) were advanced around the waste oil UST. Soil and water samples were collected from all of the borings (except for boring B-4) and analyzed for oil-range, diesel-range and gasoline-range hydrocarbons by the qualitative hydrocarbon identification (HCID) method WTPH-HCID. During the drilling of boring B-4, located near the waste oil UST, free oil was encountered. No soil or water samples were subsequently collected from this boring (Table 1). No hydrocarbons by HCID were evident in soil samples collected from all the other borings. However, all of the water samples collected from the borings contained oil, gasoline and diesel-range hydrocarbons above state action levels (Table 1).

EMR notes that the HCID method is subject to organic interferences as it uses no silica gel cleanup in it's method. It is important to note that there is a 6-inch thick layer of peat that corresponds roughly to groundwater depth at approximately 7 to 8 feet below ground surface. According to Mr. Pollart of Provisioners Express, the diesel UST has always passed routine tank tightness testing.

2.0 REMEDIAL INVESTIGATION

2.1 INVESTIGATIVE OBJECTIVE

The objective of the RI was to obtain sufficient investigative data to characterize the distribution of hydrocarbon contamination from the waste oil UST and associated piping and evaluate the potential threat to human health and the environment.

The RI field work focused on evaluation of waste oil and diesel range hydrocarbons in the subsurface and mineral spirits-range hydrocarbons, toluene, ethylbenzene and xylenes. Specific objectives of the focused RI included:

- Adequately characterize the nature and extent of soil exposure to oil and diesel hydrocarbons, mineral spirits-range hydrocarbons and toluene, ethylbenzene and xylene by obtaining data regarding the lateral and vertical distribution of listed contaminant concentrations in the subsurface;

- Obtain reasonably available information regarding local geologic and hydrogeologic conditions; and,

- Obtain information on potential impacts to the groundwater in the uppermost water-bearing formation beneath the site.

2.2 INVESTIGATIVE METHODS

The following methods were used to acquire information and data during the RI:

- Review of geologic and hydrogeologic information including environmental site assessment reports available from public sources;

- Collection and analysis of post-excavation soil samples from waste oil UST closure;

- Completion of a tracer dye test to determine the integrity of waste oil drain lines;

- Collection and analysis of post-excavation soil samples from the waste oil drain line trench;

- Collection and analysis of soil samples from a Strataprobe investigation; and,

- Collection and analysis of groundwater samples from groundwater monitoring wells screened in the shallow formation.

Methods and results are discussed in the following subsections.

2.2.1 UST Closure and Sampling

EMR conducted UST closure assessment activities in October 1998 for the removal of one 550-gallon fiberglass UST containing waste oil. Upon EMR's initial observations on October 8, 1998, it was evident that an unknown volume of free oil had drained into the soils and backfill surrounding the tank. West Pac Environmental was the UST removal contractor. The source of the free oil was a 4-inch ABS plastic drain line, which had sheared off approximately 2 to 3 feet from the drain hole into the tank. Following removal of the UST, it was observed to be in good condition with no observed holes or cracks. This 4-inch drain line was connected in series to two (2) concrete floor drains/sumps in the two north service bays of the maintenance shop. Approximately 350 cubic yards of contaminated soil containing elevated concentrations of oil and diesel range hydrocarbons were removed and disposed.

Five post-excavation soil samples (PX-1 through PX-5) were collected from the waste oil UST excavation following removal of impacted soils. All samples were tested for diesel and oil range hydrocarbons using the NWTPH-Dx Ecology Method. Sample locations are shown on Figure 3. Analytical results are presented in Table 2.

2.2.2 Tracer Dye Test

At the time of excavation of contaminated soils around the UST, a tracer dye test, using a non-hazardous red dye, was performed in the north sump/floor drain. A 4-inch diameter expansion plug was placed on the outflow portion of the drain line at the south excavation limits. Approximately 50 gallons of water were poured into the north drain until the water level was approximately 3 to 4 inches below concrete floor level. An appropriate volume of dye proportionate to the amount of water was then placed in the drain with the water. Approximately 1 hour after initiating the test, the red dye was observed to percolate through standing water accumulated in the UST excavation. Based on this test, the ABS plastic drain line and/or concrete drain/sump was determined to have leaked.

2.2.3 Waste Oil Drain Trench Sampling

Following the tracer dye test, a 4.5-feet wide by 23-feet long trench was cut in the 6-inch thick concrete slab on November 3, 1998. The trench included both concrete drain sumps, connecting ABS plastic drain line and the section of drain line between the north sump drain and the north wall of the building. Based on visual observation by West Pac Environmental

during removal, the two oil floor drains were of two-piece concrete construction (Figure 4). Localized oil seeps were observed at approximately 3 to 4 feet below grade on both sides of the trench walls.

An additional eleven (11) post-excavation soil samples (TR-1 and TR-2 and PX-6 through PX-14), were collected from the waste oil drain line and sump trench excavation. All eleven soil samples were collected from the sidewalls and bottom of the completed excavation. All samples were tested for diesel and oil range hydrocarbons using the NWTPH-Dx Ecology Method. Sample locations are shown in Figure 3. Analytical results are presented in Table 2.

2.2.4 Strataprobe Sampling and Analysis

During the last week of November 1998, a Strataprobe soil boring investigation was completed to delineate the extent of the oil seeps observed during trench excavation. Sixteen (16) Strataprobe soil borings were advanced by TEG, Inc. using Strataprobe direct push technology. Fourteen (14) of the sixteen soil borings were initially cored through a 6-inch thick concrete slab on the inside of the maintenance shop and on the west side of the maintenance shop roll-up doors. The purpose of the Strataprobe investigation was to delineate the horizontal extent of oil seeps that were visible on the sidewalls of the trench excavation. Visual observation of oil seeps in split spoon samples, measured photo ionization detector (PID) readings in collected samples, odor, and discoloration were used as field screening techniques to evaluate oil seeps.

Ten (10) Strataprobe subsurface soil samples (ST-1A, ST-4A, ST-5A, ST-6A, ST-7A, ST-8A, ST-9A, ST-9B, ST-15A, ST-16A) were tested for Total Petroleum Hydrocarbons (TPH) as oil (Oil) and as diesel range organic compounds (DRO) by NWTPH-Dx method.

Based on field screening, light-end hydrocarbons with a mineral spirits-like odor were prevalent on the east side of the oil drain trench. Sample (ST-9B), collected from a depth of 6.5 feet below ground surface, displayed the highest PID readings, and was further tested for specific halogenated hydrocarbons (benzene, toluene, ethylbenzene and xylenes) and NWTPH-Gx.

2.2.5 Groundwater Monitoring Well Installation

In December 1998, three (3) groundwater monitoring wells MW-1 through MW-3 were drilled and completed. Cascade Drilling, Inc. completed the work. The purpose of the wells was to:

- Determine if a release of oil and diesel range hydrocarbons had impacted groundwater;
- Determine groundwater flow direction and gradient; and,
- Determine if additional groundwater wells were necessary based on groundwater flow direction and gradient.

A truck-mounted drill rig equipped with 8-inch hollow-stem augers was used to drill three soil borings that were completed as monitoring wells MW-1 through MW-3. EMR logged the borings for soil types, conducted field screening with a PID and logged the construction of the wells. All wells were completed to a depth of 15 feet below ground surface (bgs) with a 5-foot section of 2-inch PVC flush threaded to a 10-foot section of 2-inch PVC well screen with 0.01-inch slots flush threaded to a bottom plug. Appropriate-sized sand pack was placed in the annular space between the well and boring to a depth of 3 feet below ground surface followed by a 2 foot thick bentonite seal and completed with cement grout at the surface. A locking expansion well cap and lock and steel well housing with bolt down lid installed flush to grade completed the installation (Appendix C, Well Logs).

All three wells were developed by Cascade Drilling using a surge block and bailer. Approximately 5 well volumes were purged prior to collecting groundwater samples.

Following installation of the wells, Entranco Surveyors surveyed north side top of casing elevations for all three monitoring wells to an arbitrary datum of 100 feet above sea level (Appendix D).

EMR measured groundwater from top of casing on all three monitoring wells prior to collecting samples. Depth to groundwater was subtracted from surveyed top of casing (TOC) elevation to obtain groundwater elevation and construct a groundwater gradient map. Table 5 presents groundwater levels. Figure 6 presents a potentiometric surface for the January 5, 1999 groundwater monitoring event, and Figure 7 presents a potentiometric surface map for the February 2, 1999 measurements.

Following evaluation of the potentiometric surface map, it was apparent that an additional downgradient monitoring well was needed at the site. MW-4 was installed by the same methods and procedures as MW-1 through MW-3 on February 2, 1999.

2.2.6 Groundwater Sampling

Following installation, development and surveying, groundwater samples were collected from the monitoring wells and tested for oil and diesel range hydrocarbons by NWTPH-Dx method.

MW-2 and MW-4 were resampled in February and analyzed for NWTPH-Gas, BTEX, halogenated VOCs, aromatic hydrocarbons, and PCBs.

2.3 INVESTIGATIVE FINDINGS

2.3.1 Soil Conditions

Logs of the four (4) monitoring wells advanced during this investigation are presented in Appendix C. Based on observation of soils during excavations, Strataprobe sampling and drilling of monitoring wells, the study area is underlain by brown to gray silty fine to coarse gravel with sand to a depth of approximately 7 to 8 feet. At 7 to 8 feet is a 6-inch thick peat layer, which roughly corresponds to groundwater elevation. Below the peat layer is a layer of dark gray, fine grained sand to a depth of approximately 17 to 18 feet. At 17 to 18 feet depth is a layer of coarse gravel and cobbles.

These soils are listed as Quaternary alluvium (Qaw) in the Auburn Geologic Quadrangle Map #GC-406, King and Pierce Counties (Mullineaux, 1965). The Qaw soils are listed as

> **Qaw**, mostly gravel and sand deposited by the White River. Bouldery cobble and pebble-cobble gravel and sand in White River Valley. Pebble-cobble gravel overlain by thin sand in Duwamish Valley at mouth of White River Valley, grades outward to thick coarse and medium sand overlain by thin silt, clay and peat. Forms distinct fan in Duwamish Valley at mouth of White River Valley. Pattern indicates recent, unmodified channel deposits at surface. Maximum thickness in Duwamish Valley more than 100 feet. Contains glassy volcanic material possibly reactive in some concrete.

follows:
These soils, were deposited during the Vashon Stade of the Frazier Glaciation during the Pleistocene epoch and reworked during changes in river course of the Green River.

2.3.2 Hydrogeology

The project site is situated on the west edge of the Green River Valley below a prominent north-south trending ridge to the west.

Groundwater elevation below the site in September 1998 was approximately 9 feet bgs based on AGI's Phase I Environmental Assessment soil borings. Static groundwater elevations in three groundwater monitoring wells installed in December 1998 stabilized in early January 1999 at approximately 5 feet bgs. Table 5 summarizes surveyed top of casing elevation data, measured depth to groundwater, and corresponding groundwater elevation. Figures 6 and 7 present potentiometric surface maps for the site. Appendix D presents raw survey data collected by Entranco Surveyors.

Based on measured depth to groundwater from surveyed top of well casing elevations and constructing contours of equal elevation, the inferred groundwater flow direction is to the southeast. Hydraulic gradient is approximately 0.002. Groundwater flows toward a marshy area approximately 2000 feet southeast of the site. The marshy area is shown on Figure 1.

2.3.3 Analytical Results

2.3.3.1 Waste Oil UST Closure Soil Sample Analytical Results

Table 2 and Figure 3 present the results of NWTPH-Dx analyses on post-excavation soil samples PX-1 through PX-5. The table summarizes sample I.D., location, depth and concentration of oil and diesel range total petroleum hydrocarbons (TPH). A total of five samples were collected, consisting of four sidewall samples and one bottom sample. Of these, sample PX-1, collected from the south sidewall of the UST excavation at a depth of approximately 7 feet bgs, contained a concentration of TPH above applicable cleanup levels. Sample PX-1 contained 660 milligrams/kilogram (mg/kg) or equivalent parts per million (ppm) heavy oil range TPH and 2,200 mg/kg diesel range TPH. Additional removal of contaminated soils from the south excavation wall was not possible due to the north structural wall of the maintenance shop. The bottom and remaining sidewall samples contained no detectable concentrations of oil or diesel range TPH. Figure 3 shows the locations of post-excavation soil samples in relation to excavation limits and site features.

In addition to NWTPH-Dx analysis, sample PX-2, collected from the bottom of the excavation below the UST location, was analyzed for the RCRA 8 metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver. RCRA 8 metals were not detected except for 36 mg/kg barium and 13 mg/kg chromium. These concentrations are below applicable cleanup levels.

Analytical results indicate that except for the south wall, where further excavation was not possible because of a load-bearing wall, the excavation was closed clean.

2.3.3.2 Oil Drain Trench Soil Sample Analytical Results

Table 2 and Figure 3 present the results of NWTPH-DX analyses on post excavation soil samples PX-6 through PX-14 and TR-1 and TR-2. A total of eleven (11) trench soil samples were collected consisting of four (4) bottom samples and seven (7) sidewall samples. All sidewall samples and one bottom sample contained concentrations of oil and diesel range TPH above applicable cleanup levels. Sample TR-1 and TR-2 were collected from an initial trench that included two 3-foot by 3-foot concrete oil drain sumps and connecting 4-inch diameter ABS plastic drain line. Samples TR-1 and TR-2, collected from below the north and south oil drains at depths of 9 and 6 feet, respectively, contained no detectable concentrations of oil or diesel range TPH. These initial samples were collected in moist but not wet soils. Bottom sample PX-10, collected from a depth of 9 feet was collected in wet soil. Figure 3 shows the locations of post-excavation soil samples in relation to excavation limits and site features.

Though hydrocarbons were generally not observed to migrate below a depth of 8 to 9 feet, numerous hot spots of visible oil seeps were observed along the east and west sidewalls. The excavation was expanded to the west and east to remove oil seeps observed during the Strataprobe Investigation (Sections 2.2.4 and 2.3.3.4).

Oil range TPH ranged from non-detectable to 8600 mg/kg. Diesel range TPH ranged from non-detectable to 5000 mg/kg. Based on the analytical results of trench sampling, this excavation is not clean closed.

Based on the impediments of a 6-inch concrete slab, excavating an approximate volume of 100 cubic yards of soil, and reaching the western and northern edge of the maintenance shop structure, excavation activities were terminated.

2.3.3.3 Soil Disposal Criteria Sample Analytical Results

Table 3 presents the results of sample SP-01, analyzed for oil and diesel range TPH by method NWTPH-Dx, and TCLP Metals. This sample was collected and analyzed for the purpose of profiling the soil for direct disposal at the time of excavation and removal of contaminated soils. The sample contained 12,000 mg/kg diesel TPH and 26,000 oil TPH however contained no detectable TCLP metals.

2.3.3.4 Strataprobe Soil Sample Analytical Results

Table 4 and Figure 5 presents the results of Strataprobe investigation soil samples analyzed for NWTPH-Dx. Sixteen (16) soil borings were advanced and a total of 15 soil samples were sent for laboratory analyses, of which 10 were analyzed. Of the 10 soil samples analyzed, two (2) samples ST-5B and ST-9B contained concentrations of oil and diesel range TPH above applicable cleanup levels. Sample ST-5B contained 1,200 mg/kg oil TPH and 390 diesel TPH while sample ST-9B contained 290 mg/kg oil TPH and 550 mg/kg diesel TPH. Four (4) samples contained concentrations of diesel range TPH below applicable cleanup levels but above detection limits. Two (2) samples contained concentrations of oil range TPH below applicable cleanup levels but above detection limits. Four (4) samples contained no detectable concentrations of oil or diesel range TPH.

Sample ST-9B collected from Strataprobe boring ST-9, near the northeast corner of the trench excavation at a depth of 6.5 feet bgs, was further tested for specific halogenated hydrocarbons by EPA 8021b (including benzene, toluene, ethylbenzene benzene and total xylenes {BTEX}) and TPH in the mineral spirits/stoddard solvent range by method NWTPH-Gx. Sample ST-9B contained no detectable benzene, 0.29 mg/kg toluene, 7.3 mg/kg ethylbenzene, 30 mg/kg xylenes, and 14,000 mg/kg TPH in the mineral spirits/stoddard solvent range. Of these results, the xylenes concentration was above the current MTCA Method A Cleanup level of 20 mg/kg. The concentration of TPH as mineral spirits/stoddard solvent exceeded the proposed MTCA Method A Industrial Cleanup level of 4000 mg/kg.

2.3.3.5 Groundwater Sample Analytical Results

Table 6 and Figure 6 present the results of groundwater sampling. Five groundwater samples were collected, one from each of the wells MW-1 , MW-2 , MW-3, and MW-4

and a second from MW-2. All samples analyzed contained concentrations of constituents below applicable state cleanup levels. Results are summarized below:

Samples MW-1 and MW-3 contained no detectable concentrations of oil or diesel range TPH by method NWTPH-Dx.
Sample MW-4 contained no detectable concentrations of oil, TPH as gasoline; benzene, toluene, ethylbenzene, and xylene (BTEX); halogenated volatiles, Poly-nuclear Aromatic Hydrocarbons (PAHs), or Poly-Carbinated Biphenyls (PCBs).
Sample MW-2 contained 250 micrograms/liter (ug/L) TPH as gasoline, 8.3 µg/l benzene, 1.2 µg/l toluene, 4.0 µg/l xylenes, and no detection for either halogenated volatiles, PAHs, or PCBs.

2.3.4 Estimate of Remaining Soils containing Oil and Diesel Range Hydrocarbons

Based on review of Strataprobe investigation soil sampling and post-excavation soil sampling from the waste oil drain trench, approximately 140 cubic yards of contaminated soil containing oil and diesel range TPH above applicable cleanup levels remain. The location and extent of the remaining contaminated soil is shown on Figure 5.

2.3.5 Estimate of Groundwater Containing Hydrocarbons

Benzene was detected at 8.3 µg/l in MW-2, which is above the MTCA Method A cleanup level of 5.0 µg/l. No other constituents were above applicable cleanup levels. The extent of contaminated groundwater, therefore, is less than 60 feet from the former waste oil UST.

3.0 CLEANUP ACTION EVALUATION

The following steps have been taken at the Provisioners Express site:

- The active product source (waste oil tank and trench) has been removed.
- Accessible contaminated soil has been removed.
- Remaining soil and groundwater contamination has been characterized.

In this section, cleanup levels are determined and compared with sample concentrations, and a remedy consisting of institutional controls and monitoring is proposed.

3.1 REGULATORY CLEANUP LEVELS AND POINTS OF COMPLIANCE

3.1.1 Regulatory Cleanup Levels

As a general screening method for identifying COCs and points of compliance, EMR used appropriate cleanup levels from MTCA Method A and other state and federal regulations:

- Subsurface soil cleanup levels - MTCA Method A Cleanup Levels (Washington Administrative Code [WAC] 173-340-740). Specific soil cleanup levels are: 200 mg/kg for TPH (diesel), 100 mg/kg for TPH (gasoline), 0.5 mg/kg for benzene, 20.0 mg/kg for ethylbenzene, 40.0 mg/kg for toluene, and 20 mg/kg for xylene.

- Groundwater cleanup levels - MTCA Method A Groundwater Cleanup Levels (WAC 173-340-720), WAC 296-290-310), and the Code of Federal Regulations 141.61. Specific groundwater cleanup levels are 1000 µg/l for TPH (gasoline), 1000 µg/l for TPH (diesel), 1,000 µg/l for TPH (other), 5.0 µg/l for benzene, 30.0 µg/l for ethylbenzene, 40.0 µg/l for toluene, and 20.0 µg/l for xylenes.

3.1.2 Sample Concentrations Compared with Cleanup Levels

Soil sample concentrations are summarized in Tables 2 and 4. The extent of soil containing petroleum constituents above applicable cleanup levels is shown in Figure 5.

TPH concentrations exceed the MTCA Method A cleanup level of 200 mg/kg in the south sidewall of the UST excavation and the north side of the trench excavation. These two samples were collected adjacent to the north wall of the existing building (the UST excavation was just north of the building wall and the trench excavation was just south of

the building wall), and further excavation was not possible without jeopardizing the structural integrity of the building. The other sidewall samples taken in the UST excavation were clean.

The west sidwall of the trench excavation and strataprobe samples ST-2 and ST-5 define the extent of contamiantion under the western wall of the existing building. Samples from the south and east sides of the trench excavation also had concentrations exceeding cleanup levels. Strataprobe samples define the extent of remaining contamination south and east of the trench excavation.

Groundwater sample concentrations are summarized in Table 6. Benzene is present in MW-2 at 8.3 ug/l, which is greater than the MTCA Method A cleanup level of 5 ug/l.

3.1.3 Evaluation of Interim Soil Excavations

The effectiveness of the source removal and soil excavations that have occurred at the site for preventing groundwater contamination is not currently known. The source of contamination has been removed, and the vast majority of impacted soil has been removed. Residual soil contamination is present beneath a six-inch concrete floor beneath the maintenance building; infiltration from rain water, therefore, does not occur. Dissolution of residual petroleum constituents within the saturated zone, however, will continue to provide a source of groundwater contamination at the site.

The magnitude of existing groundwater contamination at the Site is slight. Benzene is present in MW-2, adjacent to the former UST excavation, at a concentration slightly above the MTCA Method A cleanup level, and is not present in downgradient wells. The presence of benzene in MW-2 could be a result of the product spillage that occurred during tank excavation. If benzene is a result of product spillage, then the concentration should decrease to below the MTCA Method A cleanup levels over a short time period. If the benzene is from dissolution of residual petroleum contamination of soil, then the concentrations may or may not decrease in the short term.

Further evaluation of the effetiveness of the source removal and soil excavations will be necessary. Based on EMR's experience in remediating petroleum contamination in the West Valley Highway area, the lack of infiltration and poor hydraulic communication within the silty sands should limit groundwater impacts from the residual soil contamination.

3.2 Evaluation of Remedial Alternatives

The remedial alternatives described below do not address all of the soil containing concentrations of petroleum constituents above MTCA Method A cleanup levels. Contaminated soil remains at the site because further excavation is not possible without jeopardizing the structural integrity of the maintenance building. Institutional controls, therefore, will be required to restrict land use. These controls are further described in Section 3.3.1.

3.2.1 Groundwater Monitoring Program

The interim cleanup action, excavation of the former UST and the majority of petroleum contaminated soil, is expected to have eliminated the source of groundwater contamination. Groundwater mixing and natural degradation of petroleum hydrocarbons in groundwater can be monitored to ensure that groundwater concentrations are reduced to below cleanup levels in a relatively short period of time. Since onsite groundwater is not a potential drinking water source, the groundwater-to-surface water pathway must be monitored for compliance with MTCA. This flowpath is effectively monitored by MW-3 and MW-4.

The quarterly groundwater monitoring program will collect the information needed to determine whether the interim remedial actions are sufficient. With two additional quarters of data, an evaluation of concentration trend in MW-2 can be made. If the benzene detected in MW-2 is related to product spillage during tank removal, then the concentration should decrease within two quarters. If the benzene is from dissolution of residual soil contamination, then an indication of whether concentrations are increasing or decreasing can be made.

Cost for the groundwater monitoring program is estimated to be $4,000 per quarter including sampling, data evaluation and reporting. Duration of the monitoring program is not know, but is estimated to be four quarters for a total cost of $16,000.

3.2.2 Oxygen-Reducing Compound

If petroleum constituent concentrations increase in groundwater, then oxygen-reducing compound (ORC) is a cost-effective and efficient method of reducing soil and groundwater contaminant mass in a relatively short time frame. ORC has proven effective when injected into soil in a slurry form by means of a direct-push soil probe. Most of the residual petroleum contamination is in the depth range between the seasonal low groundwater elevation (about nine feet) and the seasonal high groundwater elevation (about five feet). This area, commonly referred to as the smear zone, is where petroleum floating on the water table is absorbed onto clay and organic particles and is difficult to remove by pumping air or water. ORC treats the residual contamiantion in the smear zone effectively.

The application of ORC is expected to reduce the concentration and total area of the soil and groundwater contamination. Typically, the radius of influence is 8 to12 feet for silty soils. The ORC injection would be completed by inserting a direct-push probe to six feet below grade and injecting a slurry of ORC. ORC injection would proceed to cover the entire area of soil impacted above MTCA Method A cleanup levels (see Figure 5).

ORC in its pure form is a fine white powder. At the site, the pure ORC would be mixed with water to produce a 66% solid weight/ weight slurry or amendment fluid. This mixture would be augmented with Microbe-Treat, a bioremediation product containing petroleum hydrocarbon degrading microorganisms. The fluid would be hydraulically injected under pressure into the subsurface by a truck mounted StrataProbe direct-push rig. The StrataProbe system makes a small (1.5-inch) diameter bore hole with minimum disruption to the

surrounding pavement and minimum generation of potentially contaminated soil cutting resulting in cost savings for soil disposal.

Once the locations of the boring points had been determined, the probe would be forced through the soil and inserted to the target depth. The entire saturated thickness would then be treated as the ORC releases oxygen and percolates through the soil. Once the treatment depth has been reached, the trigger valve on the end of the probe is opened and the amendment fluid is discharged through the probe tip. The fluid liquefies the soil in front of the probe allowing it to be advanced. Lateral pressure from the soil on the probe wall above the injection nozzle seals the probe hole as the probe is advanced. In this way, the probe can be rapidly advanced to the impacted interval and then more slowly advanced to the deepest extent of impact. Hydraulic pressure forces the amendment fluid into the formation enhancing permeability in the near radius of the probe hole via a limited degree of hydraulic fracturing. Amendment fluid is also forced into the migration pathways of the natural groundwater flow path.

Past case studies of ORC source injection suggest that given a total treatment volume of 140 cubic yards, a porosity of 0.35, groundwater gradient of 0.002, a velocity of 0.4 ft/day, and a maximum contaminant concentration of 5 mg/l, a total of 24 soil borings on 10 foot centers would be required to achieve a compliance level of 1 mg/l TPH. EMR estimates that 505 lbs of ORC will be required for the 24 bore holes or approximately 21.0 lbs per bore hole to produce a 66% solids weight/weight slurry mixture.

Upon completion of the slurry injection, the hole would be grouted with bentonite/cement to the surface and capped with an asphalt patch to match the surrounding pavement. Upon completion of all 24 injection points, several rounds of groundwater sampling of the four on-site wells will be necessary to monitor the effectiveness of the ORC injection. The estimated cost for ORC injection is $28,500. Including groundwater monitoring for three rounds, the total estimated cost is $40,500.

3.3 Preferred Cleanup Action

The preferred action at the site consists of source removal and contaminated soil excavation that have allready been completed at the site, and implementing institutional controls and a groundwater monitoring program.

3.3.1 Institutional Controls

Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or that may result in exposure to hazardous substances at the site. A deed restriction is a type of restrictive covenant that may be undertaken at the site to limit the use and exposure of soil.

A deed restriction may be drafted to restrict use of soil within the property boundaries. A deed restriction for this site should require the following to protect human health and the environment:

- Prohibit use or excavation of soil below 4 feet bgs;
- Prohibit activities that may result in the release of COCs that had been contained as a part of the cleanup;
- Restrict land use to industrial or commercial uses;
- Restrict any use of groundwater at the site.
- Notify lessees of deed restrictions; and,
- Notify and seek comment from applicable local and state governing agencies.

3.3.2 Groundwater Monitoring

Groundwater monitoring for COC will be conducted quarterly until Method A cleanup levels are achieved for two successive quarters. The groundwater monitoring program will consist of quarterly monitoring beginning in April, 1999. The four monitoring wells will be sampled and analyzed for TPH-gasoline, TPH-diesel and BTEX compounds by the methods outlined in Appendix B. The point of compliance for the groundwater monitoring program will be wells MW-3 and MW-4. If petroleum constituents are detected above MTCA Method A cleanup levels in these wells, then additional remedial actions will be considered (see Section 3.2.2). If groundwater in MW-2 exceeds the Method A cleanup levels after four quarters, then data will be evaluated and recommendations for further action made at that time.

Groundwater monitoring wells MW-1 through MW-4 will be sampled and the groundwater elevations measured quarterly for one year. Wells will be sampled from least impacted to most impacted, or in the order of MW-1, MW-3, MW-4, and MW-2. Analytical results will be compared with MTCA Method A cleanup levels to confirm that corrective action has resulted in compliance of groundwater.

4.0 JUSTIFICATION FOR SELECTING THE CLEANUP ACTION

The selected site cleanup action complies with applicable MTCA regulatory threshold requirements. These requirements include:

- Protection of human health and the environment;
- Compliance with applicable state and federal laws and regulations; and
- Compliance monitoring provisions.

For most petroleum releases, natural biodegradation will reduce toxic chemical compounds to non-toxic metabolic byproducts. The specific mechanism and the rate that natural biodegradation takes place depends on the physical, chemical and biological characteristics of the subsurface environment. Natural attenuation is likely already occurring at the site, and, if needed, it may be identified by measuring COCs and inorganic parameters in groundwater sampling events.

Application of ORC will be considered if MTCA Method A cleanup levels for groundwater are exceeded after four quarters of monitoring, or if cleanup levels are exceeded in the compliance wells MW-3 and MW-4.

4.1 Soil Exposure Risk Assessment

A deed restriction identifying contaminated soil at the site must not be disturbed is relied upon to prevent exposure to contaminated soil. Potential exposure routes for impacted soil to reach receptors are volatilization and atmospheric diffusion and exposure by inhalation; volatilization with enclosed-space accumulation and exposure by inhalation; and migration to groundwater and exposure by ingestion of soil or potable water. These potential exposure routes are not anticipated to pose a threat to receptors at the site. No utilities are known to intersect impacted soil that would otherwise provide a migration pathway off-site.

4.2 Groundwater Exposure Risk Assessment

The proposed cleanup action is protective of human health and the environment by meeting MTCA Method A cleanup levels for groundwater. The Method A cleanup levels for groundwater represent the concentration of COCs in groundwater that is protective of human health and the environment for a potential use of groundwater for drinking water.

No anticipated threat to potential receptors at the site exists because MTCA Method A cleanup levels for groundwater are currently met in compliance wells at the site. Since cleanup levels are set at concentrations that protect human health and the environment, no potential exposure to harmful concentrations of COCs is anticipated. If impacted groundwater was present, potential receptors of groundwater would be users of private wells screened into shallow sands for potable water, workers exposed through utility conduits that can intersect groundwater and provide an enclosed space area for vapor accumulation, and receptors of water from surface water bodies located within one quarter of a mile.

5.0 PLANNED SCHEDULE AND RESTORATION TIME FRAME

The timetable for proposed corrective action tasks are listed below:

January 5, 1999:	First Quarter Groundwater Sampling Event
April 5, 1999:	Second Quarter Groundwater Sampling Event
July 5, 1999	Third Quarter Groundwater Sampling Event
September 5, 1999	Data Evaluation and Groundwater Monitoring Report

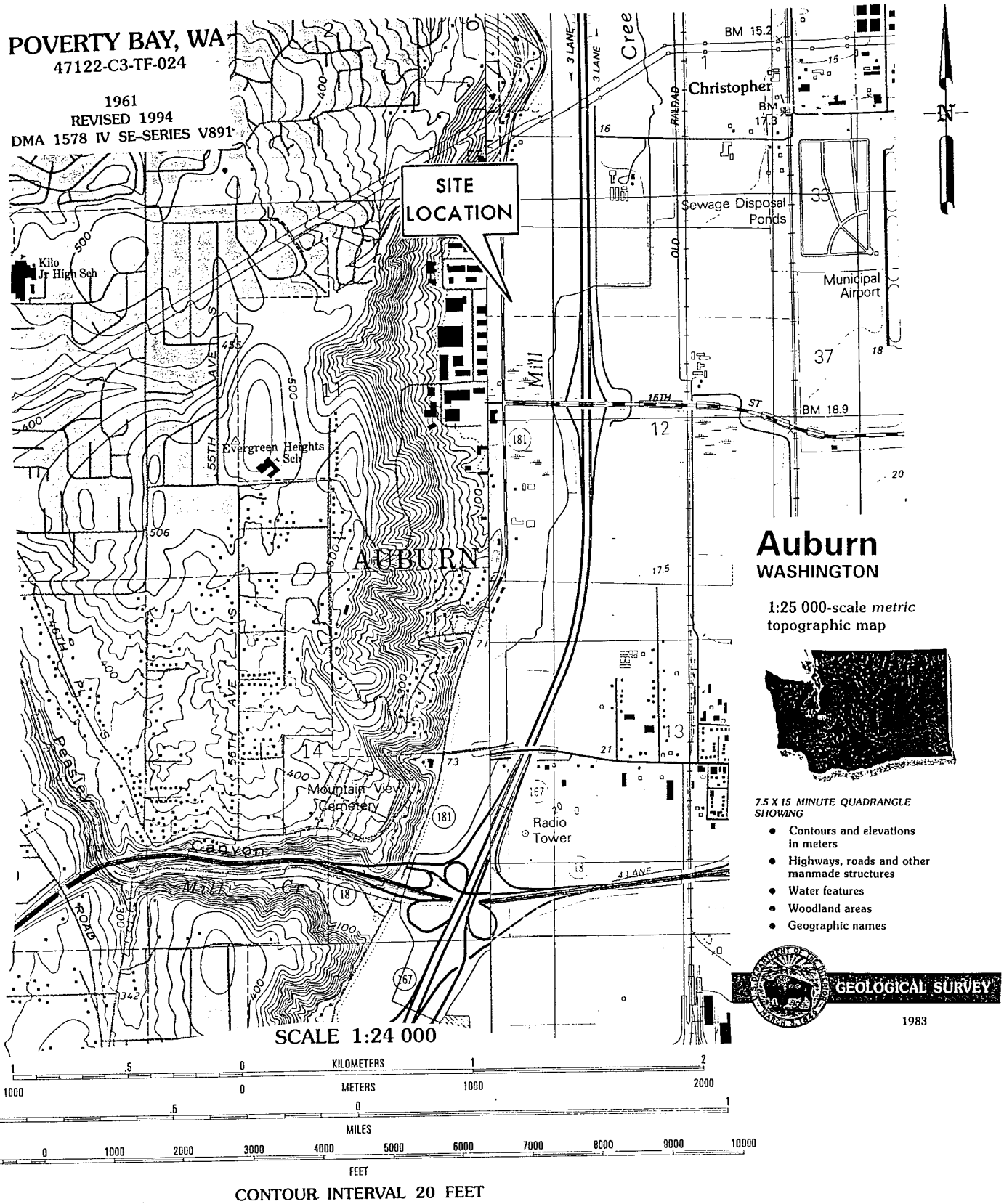
6.0 REFERENCES

Atlantic Geosciences, Inc. (AGI), Phase I Environmental Assessment, Provisioners Terminal, Auburn, Washington, Prepared for Watkins Terminals, Inc., September 14, 1998.

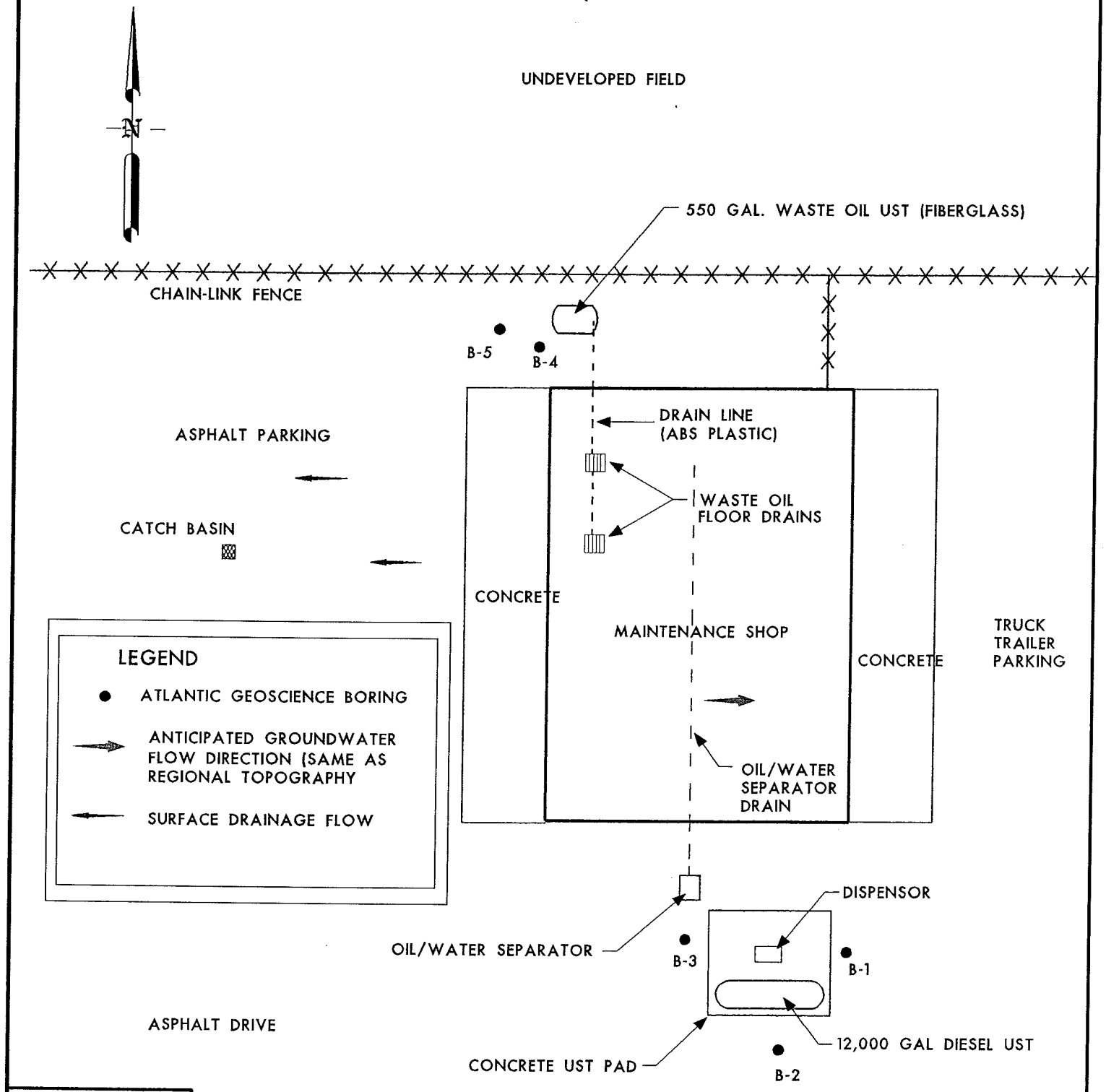
United States Geological Survey (U.S.G.S) Auburn, Washington, 1:25,000-scale metric topographic map, 7.5 x 15 minute Quadrangle, 1983.

United States Geological Survey (U.S.G.S) Poverty Bay, Washington, 1:24,000-scale topographic map, 7.5 minute series, x 15 minute Quadrangle, 1961, rev. 1994.

United States Geological Survey (U.S.G.S) Geologic Map of the Auburn Quadrangle, King and Pierce Counties, Washington, D.R. Mullineaux, 1965.



EMR INCORPORATED	Provisioners Express, Inc. Independent Remedial Action 2102 West Valley Hwy Auburn, Washington Site Location Map	Drawn By: DLW Checked By: DC Project #: 3613	Date: 1/7/99 Scale: No Scale File Name: 3613.gcd	FIGURE 1



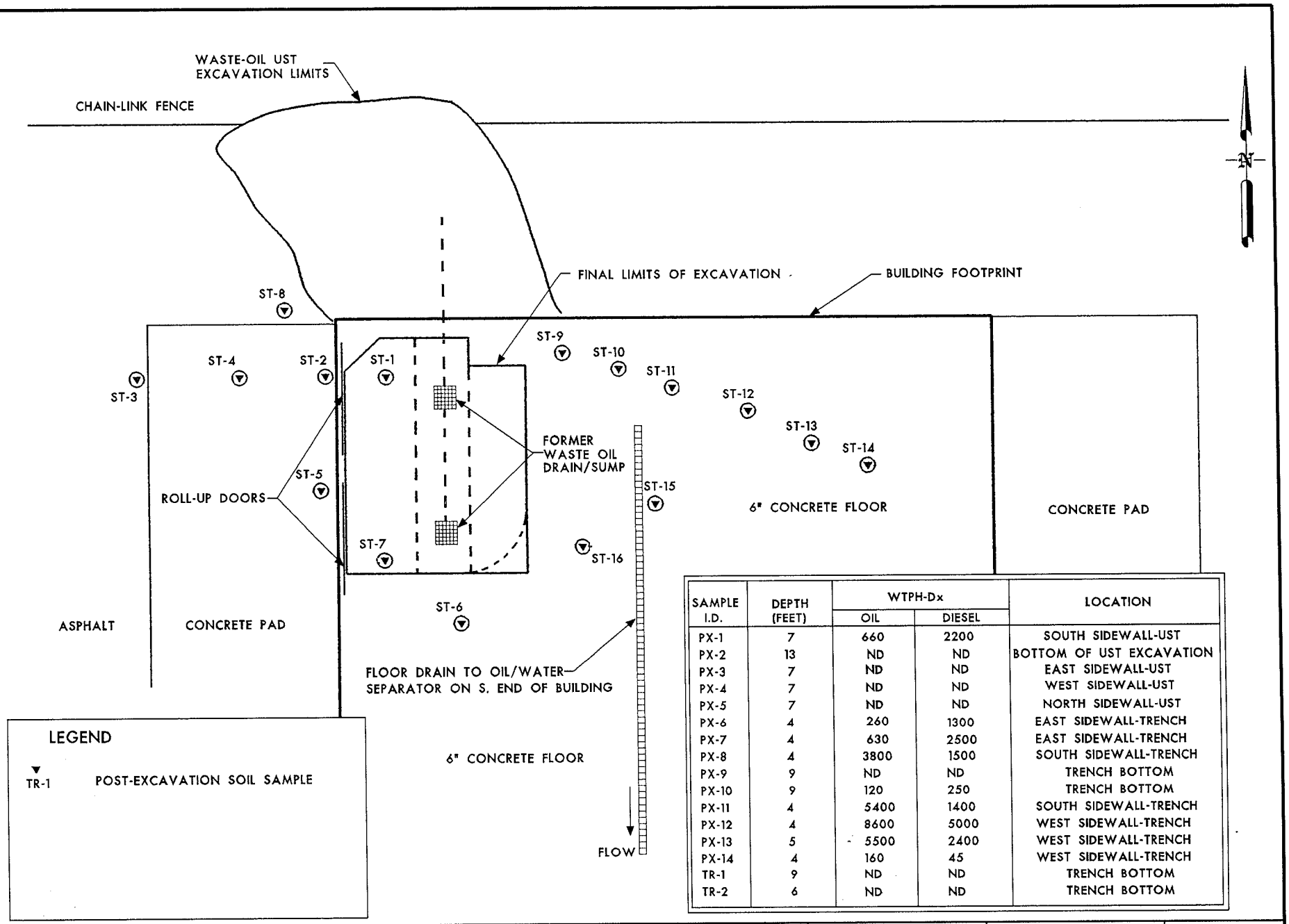
EMR INCORPORATED

Provisioners Express, Inc.
Independent Remedial Action

2102 West Valley Hwy
Auburn, Washington
Site Features Map

Drawn By:	DLW	Date:	1/6/98
Checked By:	DC	Scale:	No Scale
Project #:	3613	File Name:	3613fig2.gcd

FIGURE 2



SAMPLE I.D.	DEPTH (FEET)	WTPH-Dx		LOCATION
		OIL	DIESEL	
PX-1	7	660	2200	SOUTH SIDEWALL-UST
PX-2	13	ND	ND	BOTTOM OF UST EXCAVATION
PX-3	7	ND	ND	EAST SIDEWALL-UST
PX-4	7	ND	ND	WEST SIDEWALL-UST
PX-5	7	ND	ND	NORTH SIDEWALL-UST
PX-6	4	260	1300	EAST SIDEWALL-TRENCH
PX-7	4	630	2500	EAST SIDEWALL-TRENCH
PX-8	4	3800	1500	SOUTH SIDEWALL-TRENCH
PX-9	9	ND	ND	TRENCH BOTTOM
PX-10	9	120	250	TRENCH BOTTOM
PX-11	4	5400	1400	SOUTH SIDEWALL-TRENCH
PX-12	4	8600	5000	WEST SIDEWALL-TRENCH
PX-13	5	5500	2400	WEST SIDEWALL-TRENCH
PX-14	4	160	45	WEST SIDEWALL-TRENCH
TR-1	9	ND	ND	TRENCH BOTTOM
TR-2	6	ND	ND	TRENCH BOTTOM

0 20
SCALE IN FEET

EMR INCORPORATED

Provisioners Express, Inc.
Independent Remedial Action

2102 West Valley Hwy
Auburn, Washington
Post-Excavation Samples

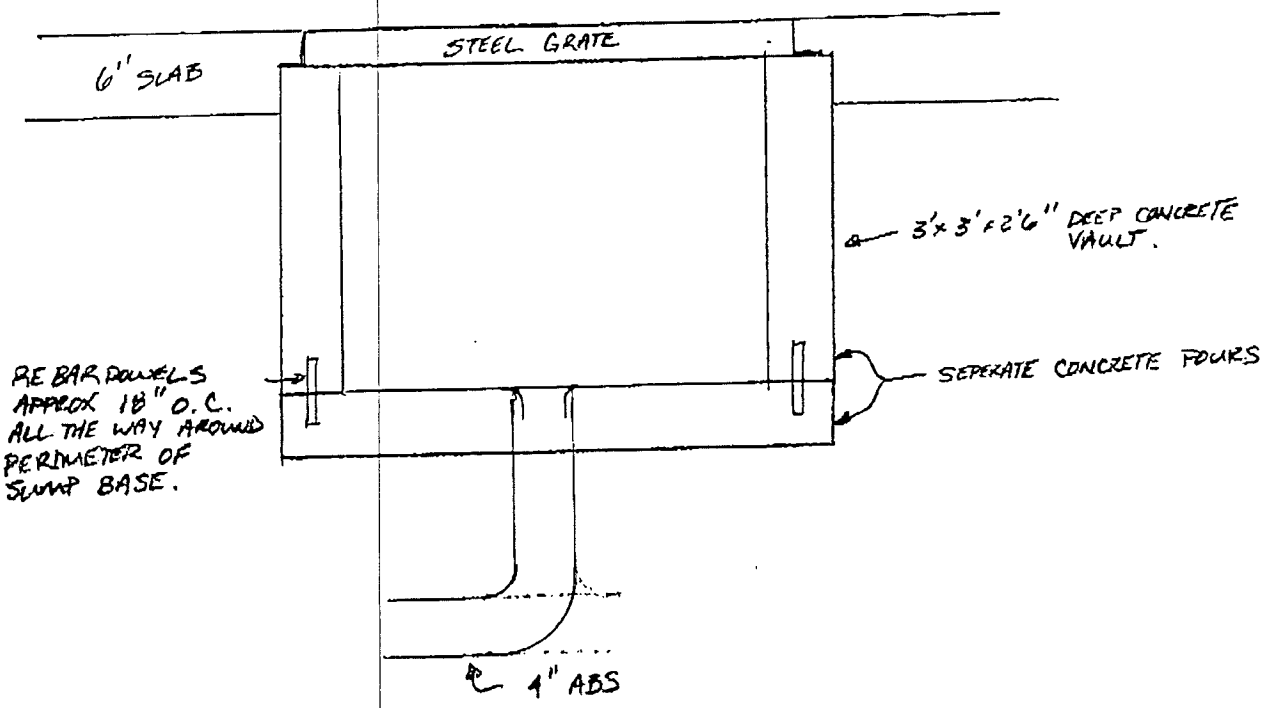
Drawn By:	DLW	Date:	1/7/99
Checked By:	DC	Scale:	As Shown
Project #:	3613	File Name:	3613.gcd

FIGURE 3

WestPac ENVIRONMENTAL INC.

PROJECT: PROVISIONERS EXPRESS

WASTE OIL SUMPS



ELEVATION / SECTION

PREPARED BY: MARK M.

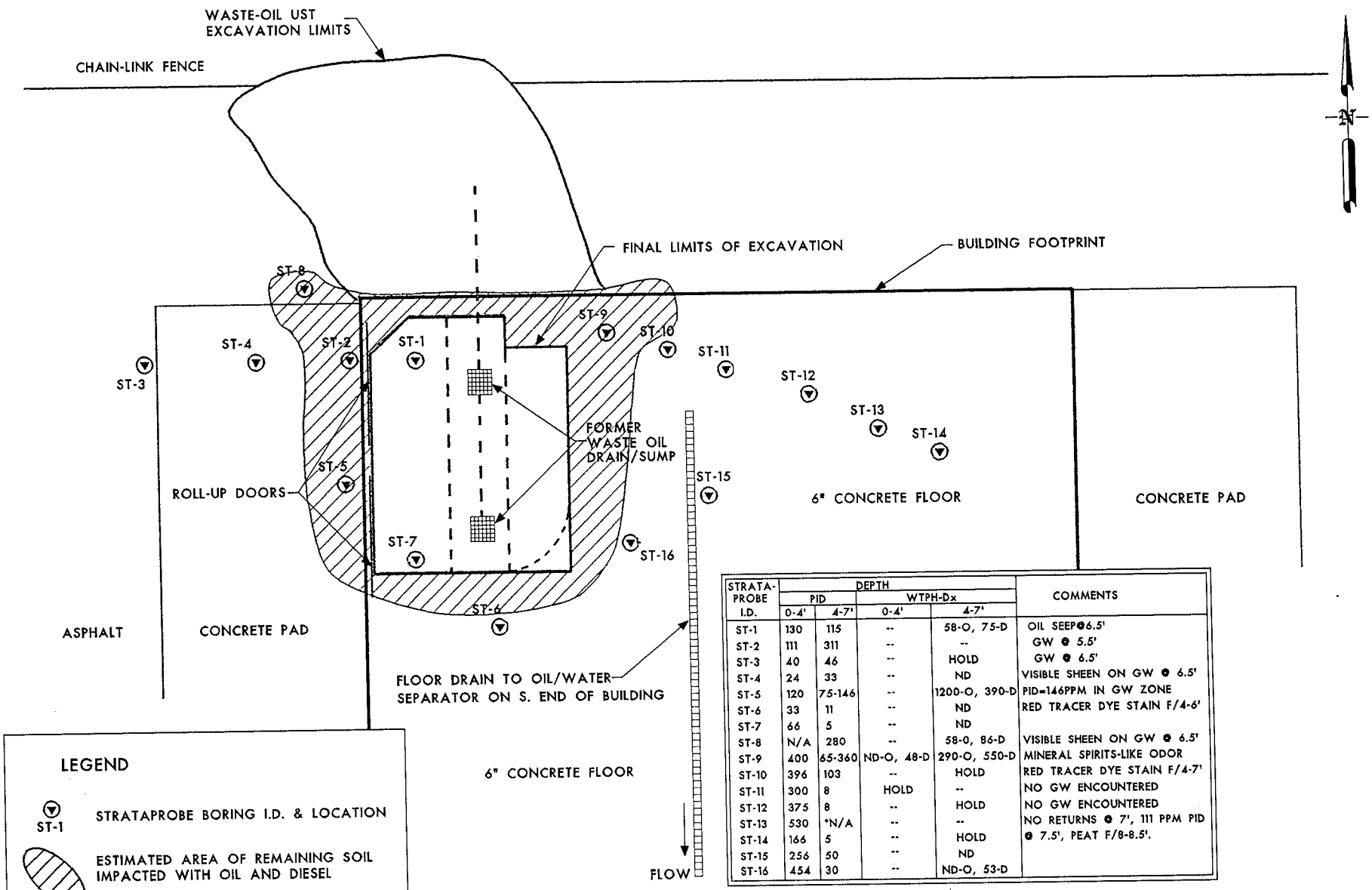
NOT TO SCALE.

54 South Dawson Street • Seattle, Washington 98134 • (206) 762-1190 • Fax (206) 762-9362

Recycled Recyclable

EMR INCORPORATED

Provisioners Express, Inc. Independent Remedial Action	Drawn By: DLW	Date: 1/7/99	FIGURE 4
2102 West Valley Hwy Auburn, Washington Waste Oil Drain Schematic	Checked By: DC	Scale: No Scale	
	Project #: 3613	File Name: 3613.gcd	



STRATA-PROBE I.D.	DEPTH PID 0-4'	DEPTH PID 4-7'	DEPTH WTPH-Dx 0-4'	DEPTH WTPH-Dx 4-7'	COMMENTS
ST-1	130	115	--	58-O, 75-D	OIL SEEP@6.5'
ST-2	111	311	--	--	GW @ 5.5'
ST-3	40	46	--	HOLD	GW @ 6.5'
ST-4	24	33	--	ND	VISIBLE SHEEN ON GW @ 6.5'
ST-5	120	75-146	--	1200-O, 390-D	PID=146PPM IN GW ZONE
ST-6	33	11	--	ND	RED TRACER DYE STAIN F/4-6'
ST-7	66	5	--	ND	
ST-8	N/A	280	--	58-O, 86-D	VISIBLE SHEEN ON GW @ 6.5'
ST-9	400	65-360	ND-O, 48-D	290-O, 550-D	MINERAL SPIRITS-LIKE ODOR
ST-10	396	103	--	HOLD	RED TRACER DYE STAIN F/4-7'
ST-11	300	8	HOLD	--	NO GW ENCOUNTERED
ST-12	375	8	--	HOLD	NO GW ENCOUNTERED
ST-13	530	*N/A	--	--	NO RETURNS @ 7', 111 PPM PID
ST-14	166	5	--	HOLD	@ 7.5', PEAT F/8-8.5'.
ST-15	256	50	--	ND	
ST-16	454	30	--	ND-O, 53-D	

NOTE: SAMPLE ST-9B COLLECTED FROM A DEPTH OF 7 FEET CONTAINED 14,000 PPM TPH AS MINERAL SPIRITS BY METHOD NWTPH-Gx, 0.29 PPM TOLUENE, 7.3 PPM ETHYLBENZENE, AND 30 PPM XYLENES BY EPA METHOD 8021B.

LEGEND

ST-1 STRATAPROBE BORING I.D. & LOCATION

ESTIMATED AREA OF REMAINING SOIL IMPACTED WITH OIL AND DIESEL

0 20

SCALE IN FEET

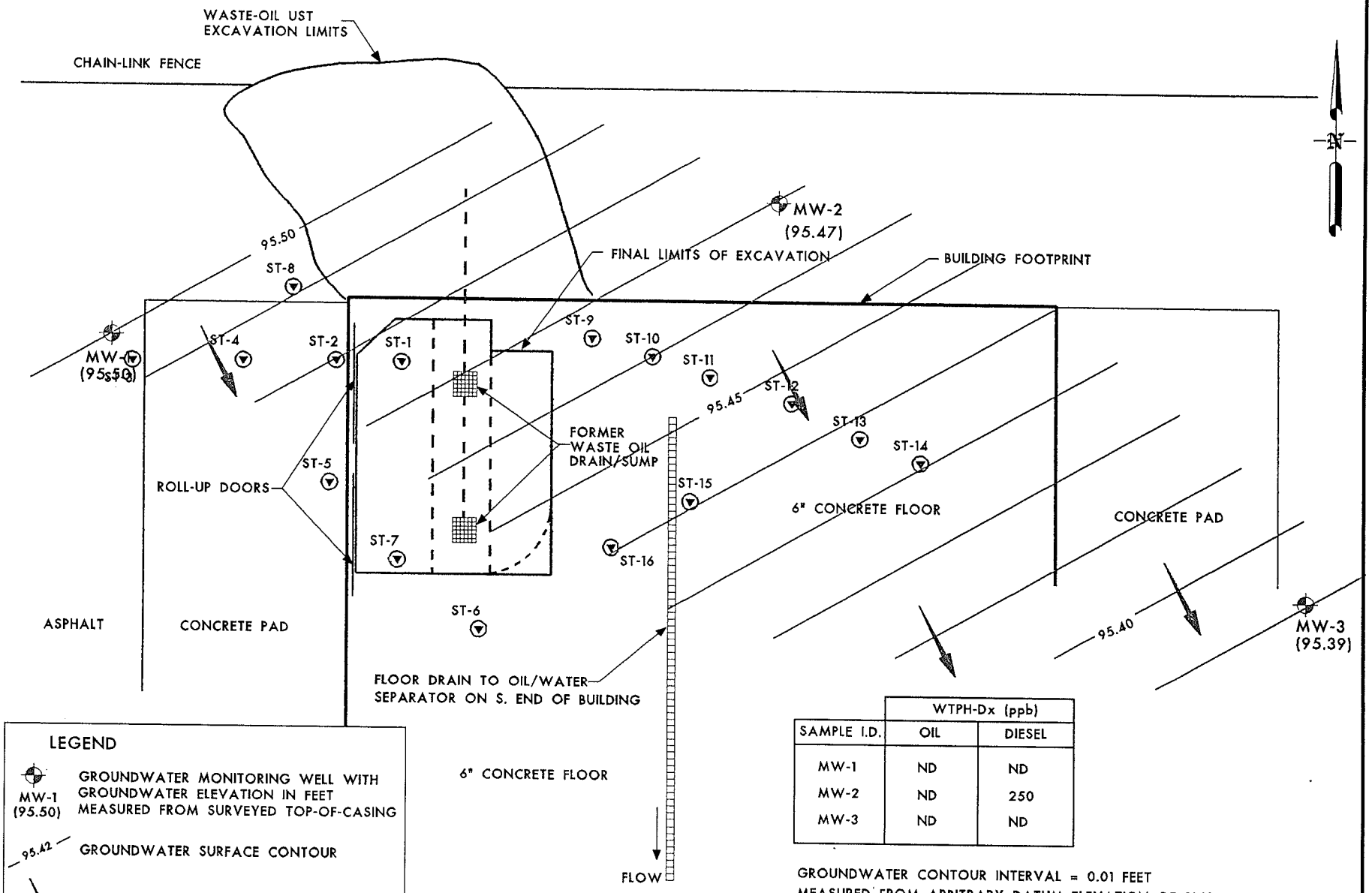
EMR INCORPORATED

Provisioners Express, Inc.
Independent Remedial Action

2102 West Valley Hwy
Auburn, Washington
Strataprobe Investigation

Drawn By:	DLW	Date:	1/7/99
Checked By:	DC	Scale:	As Shown
Project #:	3613	File Name:	3613.gcd

FIGURE 5



SAMPLE I.D.	WTPH-Dx (ppb)	
	OIL	DIESEL
MW-1	ND	ND
MW-2	ND	250
MW-3	ND	ND

GROUNDWATER CONTOUR INTERVAL = 0.01 FEET
MEASURED FROM ARBITRARY DATUM ELEVATION OF 100'

LEGEND

- MW-1 (95.50) — GROUNDWATER MONITORING WELL WITH GROUNDWATER ELEVATION IN FEET MEASURED FROM SURVEYED TOP-OF-CASING
- 95.42 — GROUNDWATER SURFACE CONTOUR
- INFERRED GROUNDWATER FLOW DIRECTION

0 20
SCALE IN FEET

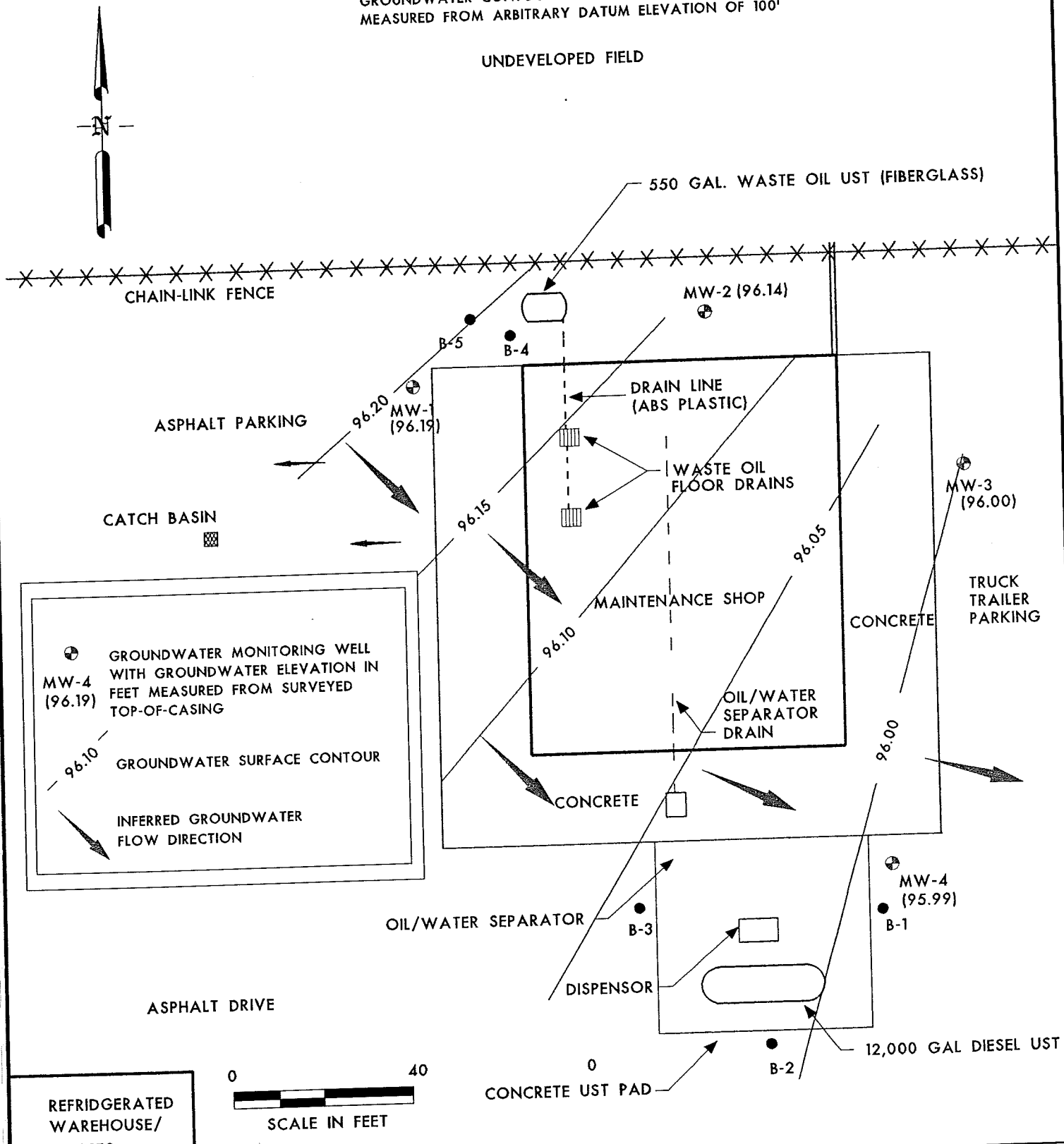
EMR INCORPORATED

Provisioners Express, Inc.
Independent Remedial Action

2102 West Valley Hwy
Auburn, Washington
Groundwater Gradient Map 1-5-99

Drawn By:	DLW	Date:	1/7/99
Checked By:	DC	Scale:	As Shown
Project #:	3613	File Name:	3613.gcd

FIGURE 6



EMR INCORPORATED

Provisioners Express, Inc.
Independent Remedial Action
2102 West Valley Hwy
Auburn, Washington
Groundwater Gradient Map 2-2-99

Drawn By:	DLW	Date:	10/28/98
Checked By:	GMC	Scale:	No Scale
Project #:	3613-02	File Name:	3613-02.gcd

FIGURE 7

Table 2: Summary of Analytical Results - Post-Excavation Samples, UST & Oil Drains
October through December, 1998
Provisioners Express Facility, Auburn, WA
EMR Project No. 3613

Sample I.D.	Sample Location/ Type	Depth Sample (feet bgs)	WTPH-Dx Results	
			Oil	Diesel
PX - 1	South Sidewall-UST	7	660	2200
PX - 2	Bottom of UST Excavation	13	ND	ND
PX - 3	East Sidewall-UST	7	ND	ND
PX - 4	West Sidewall-UST	7	ND	ND
PX - 5	North Sidewall-UST	7	ND	ND
PX - 6	East Sidewall-Trench	4	260	1300
PX - 7	East Sidewall-Trench	4	630	2500
PX - 8	South Sidewall-Trench	4	3800	1500
PX - 9	Trench Bottom	9	ND	ND
PX - 10	Trench Bottom	9	120	250
PX -11	South Sidewall-Trench	4	5400	1400
PX- 12	West Sidewall-Trench	4	8600	5000
PX -13	West Sidewall-Trench	5	5500	2400
PX - 14	West Sidewall-Trench	4	160	45
TR - 1	Trench Bottom	9	ND	ND
TR - 2	Trench Bottom	6	ND	ND
Practical Quantitation Level (PQL)			25	25
MTCA Method A Cleanup Level		6	200	200

Note: Sample PX-2 from bottom of UST excavation analyzed for RCRA 8 metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver. All metals ND except barium = 36 ppm and chromium = 13 ppm.

ND = Not Detected
na = not applicable or not analyzed
bgs = below ground surface

Table 3: Summary of Analytical Results-Soil Disposal Criteria
Provisioners Express Facility, Auburn, WA
EMR Project No. 3613

	Concentrations in mg/kg									
	NWTPH-Dx		TCLP Metals							
Sample I.D.	Diesel	Oil	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
SP-01	12000	26000	ND	ND	ND	ND	ND	ND	ND	ND
Practical Quantitation Level (PQL)	270	220	0.4	3.0	0.02	0.02	0.2	0.01	0.4	0.02
WA Dangerous Waste Criteria	N/A	N/A	5	100	1.0	5.0	5.0	0.2	1.0	5.0

ND = Not Detected
N/A = Not Applicable

Table 4: Summary of Analytical Results-Strataprobe Investigation - November, 1998
Provisioners Express Facility, Auburn, WA
EMR Project No. 3613

Sample I.D.	Sample Location/ Type	Depth Sample (feet bgs)	All concentrations in mg/kg						
			NWTPH-Dx			EPA Method 8021B			
			Diesel	Oil	Mineral Spirits	Benzene	Toluene	Ethyl-benzene	Xylenes
ST - 1A	Strataprobe	6.5'	58	75	na	na	na	na	na
ST - 3A	Strataprobe	5.5'	na	na	na	na	na	na	na
ST - 4A	Strataprobe	6.0'	ND	ND	na	na	na	na	na
ST - 5A	Strataprobe	6.0'	390	1200	1200	na	na	na	na
ST - 6A	Strataprobe	5.0'	ND	ND	ND	na	na	na	na
ST - 7A	Strataprobe	5.0'	ND	ND	ND	na	na	na	na
ST - 8A	Strataprobe	6.0'	58	86	86	na	na	na	na
ST - 9A	Strataprobe	4.0'	48	ND	ND	na	na	na	na
ST - 9B	Strataprobe	6.5'	550	290	14000	ND	0.29	7.3	30
ST - 10A	Strataprobe	6.5'	na	na	na	na	na	na	na
ST - 11A	Strataprobe	4.0'	na	na	na	na	na	na	na
ST - 12A	Strataprobe	6.5'	na	na	na	na	na	na	na
ST - 14A	Strataprobe	6.5'	na	na	na	na	na	na	na
ST - 15A	Strataprobe	5.0'	na	na	na	na	na	na	na
ST - 16A	Strataprobe	4.0'	53	ND	ND	na	na	na	na
ST - 16A (DUPL)	Strataprobe	4.0'	48	ND	ND	na	na	na	na
Reporting Limits			20	50	5.0	0.05	0.05	0.05	0.05
MTCA Method A Cleanup Levels			200	200	N/A	5.0	40	20	20

ND = Not Detected
na = not analyzed
bgs = below ground surface

Table 5: Summary of Groundwater Level Measurements
Provisioners Express Facility, Auburn, WA
EMR Project No. 3613

Well/Sample I.D.	Well Location	Well Depth (feet)	*TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
December 23, 1998 Event					
MW-1	NW Corner of Maintenance Shop	15	100.51	5.32	95.19
MW-2	North of Maintenance Shop	15	100.56	6.89	93.67
MW-3	East of Maintenance Shop	15	100.50	5.44	95.06
January 5, 1999 Event					
MW-1	NW Corner of Maintenance Shop	15	100.51	5.01	95.50
MW-2	North of Maintenance Shop	15	100.56	5.09	95.47
MW-3	East of Maintenance Shop	15	100.50	5.11	95.39
January 20, 1999 Event					
MW-1	NW Corner of Maintenance Shop	15	100.51	4.95	95.56
MW-2	North of Maintenance Shop	15	100.56	4.48	96.08
MW-3	East of Maintenance Shop	15	100.50	4.57	95.93
February 2, 1999 Event					
MW-1	NW Corner of Maintenance Shop	15	100.51	5.01	96.19
MW-2	North of Maintenance Shop	15	100.56	5.09	96.14
MW-3	East of Maintenance Shop	15	100.50	5.11	96.00
MW-4	SE Corner Maintenance Shop	15	100.61	5.11	95.99

TOC = top of well casing

* = Top of Casing elevation measured from arbitrary datum of 100 feet above sea level

Table 6: Summary of Analytical Results-Groundwater Samples - December, 1998
Provisioners Express Facility, Auburn, WA
EMR Project No. 3613

			NWTPH-Dx Results			EPA Method 8021				EPA 8260B	EPA 8270C	EPA 8082
Sample I.D.	Sample Date	TOC Elevation (feet)	Oil	Diesel	Gas	Benzene	Ethyl Benzene	Toluene	Xylene	Halogenated Volatiles	PAHs	PCB's
MW-1	1/5/99	100.51	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	1/5 & 1/29/99	100.56	ND	250	230	8.3	ND	1.2	4.0	ND	ND	ND
MW-3	1/5/99	100.50	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	1/29/99	100.61	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Method A Cleanup Level			1000	1000	1000	5.0	30	40	20			

Note:
All results are in micrograms per liter
MW-1 is located at the NW corner of the Maintenance Shop
MW-2 is located North of the Maintenance Shop
MW-3 is located East of the Maintenance Shop
MW-4 is located Southeast of the Maintenance Shop
NA = not analyzed
ND = Analyte not detected above analytical detection limit

APPENDIX A - WDOE Site Check/Site Assessment Form

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

For Office Use Only
Owner #
Site #

INSTRUCTIONS:

When a release has **not** been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person registered with Ecology. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This form must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
P. O. Box 47655
Olympia, WA 98504-7655

SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): _____

Site/Business Name: Provisioners Express, Inc.

Site Address: 2102 W. Valley Hwy (Street) Telephone: (253) 735-2500

Auburn (City) WA (State) 98071-0989 (ZIP Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
~~UNK~~ #1	550 GAL	WASTE OIL

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

- X Investigate suspected release due to on-site environmental contamination
- ___ Investigate suspected release due to off-site environmental contamination.
- ___ Extend temporary closure of UST system for more than 12 months.
- ___ UST system undergoing change-in-service.
- ___ UST system permanently closed-in-place.
- ___ UST system permanently closed with tank removed.
- ___ Abandoned tank containing product.
- ___ Required by Ecology or delegated agency for UST system closed before 12/22/88.
- ___ Other (describe): _____

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.

		YES	NO
1.	The location of the UST site is shown on a vicinity map.	X	
2.	A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	X	
3.	A summary of UST system data is provided. (see Section 3.1)	X	
4.	The soils characteristics at the UST site are described. (see Section 5.2)	X	
5.	Is there any apparent groundwater in the tank excavation?	X	
6.	A brief description of the surrounding land use is provided. (see Section 3.1)	X	
7.	Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	X	
8.	A sketch or sketches showing the following items is provided:		
	- location and ID number for all field samples collected	X	
	- groundwater samples distinguished from soil samples (if applicable)	X	
	- samples collected from stockpiled excavated soil	X	
	- tank and piping locations and limits of excavation pit	X	
	- adjacent structures and streets	X	
	- approximate locations of any on-site and nearby utilities	X	
9.	If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	X	
10.	A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	X	
11.	Any factors that may have compromised the quality of the data or validity of the results are described.	X	
12.	The results of this site check/site assessment indicate that a confirmed release of a regulated substance has not occurred.		X

SITE ASSESSOR INFORMATION

DAVID L. WELCH — Person registered with Ecology

EMR, INC. — Firm Affiliated with

Business Address: 2509 152ND AVE NE, SUITE B (Street) Telephone: (800) 275-3516

REDMOND (City) WA (State) 98052 (ZIP+Code)

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

OCTOBER 8, 1998 (Date) — (Signature of Person Registered with Ecology)

APPENDIX B - EMR Standard Operating Procedures

APPENDIX B

FIELD METHODOLOGY

This appendix describes field activities that will be implemented during the site investigation. Soil and groundwater sampling, well construction techniques, and quality assurance and quality control (QA/QC) procedures that will be followed in the field are described below.

Soil Sampling Methodology

EMR will collect soil samples from soil borings using a truck-mounted drilling rig equipped with hollow-stem, continuous-flight augers. Soil sampling will be conducted at 5-foot intervals with a modified split-spoon soil sampler inside the hollow-stem augers. The use of hollow-stem augers provides sample integrity by preventing uphole soils caving in to the bottom of the boring during drilling. The soil sampler will be driven (pounded into the soil) ahead of the augers using a 140-pound hammer dropping 30-inches. The number of blows required to drive the sampler each 6-inch interval will be noted on the drilling logs. This sampling technique allows us to collect relatively undisturbed soil samples.

A geologist will visually examine soil recovered from the split-spoon at each sampling interval for soil classification and lithologic description, and classify it according to the Unified Soil Classification System. In addition, a drilling log will be maintained that records the vertical variations in lithology, water content, odor, color, texture, and organic vapor concentrations of the soils. These logs will be included as an appendix to the final report.

Soil samples recovered for possible laboratory analysis will be placed in laboratory-cleaned 8-oz glass jars with tight fitting plastic lids. Following labeling, sealed samples will be refrigerated at the site in a cooler containing pre-frozen Blue Ice packets. Soil sample tubes will be protected from potential exposure to the Blue Ice and each other by placing them in sealed Glad-Loc bags. EMR will complete chain-of-custody forms at the time of sampling, which will accompany the samples to the laboratory. In addition, these forms will be included as an appendix to the final report.

Field Screening (Headspace Tests)

EMR will screen recovered samples in the field (utilizing the headspace test method) with photoionization detector (PID) instrument to determine the concentration of organic vapors. Portions of the samples will be placed in a sealed resealable bag and placed in direct sunlight for approximately 15 minutes to encourage volatilization of chemical constituents. Following this equilibration period, EMR will measure the total organic vapor concentration in the sample headspace with the PID calibrated to benzene. This data will be recorded as a function of depth and instrument reading on the boring log.

APPENDIX B

Groundwater Sampling Methodology

Immediately after well development, EMR will sample groundwater from each well. Groundwater samples will be obtained from just below the air-water interface with a disposable polyethylene bailer and a polypropylene rope dedicated to each well. The samples will be immediately transferred to one liter amber glass bottle preserved with HCL analyzed for oil and diesel range TPH by method NWTPH-Dx

A label will be affixed to each sample container to identify the job number, sampler, date and time of sample collection, analyses requested, and a sample number unique to that sample. EMR will record this information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations in the field notebook. Following labeling of the sealed samples, the samples will be refrigerated at the site in a cooler with pre-frozen Blue Ice packets. Chain-of-custody forms will be completed at the time of sampling and accompany the samples to the laboratory.

FIELD QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

The QA/QC procedures described below provide a system of checks designed to minimize errors and ensure that all work is of reasonable quality. Although QA/QC is an important component of each aspect of a project, it is of fundamental importance in the collection and analysis of soil and groundwater samples. The QA/QC procedures EMR will follow to ensure that samples obtained are precise and representative of actual conditions are described below.

Soil Sampling QA/QC

Field QA/QC procedures for soil sampling will include:

- Complete steam cleaning of drilling equipment prior to each drilling;
- Cleaning sampler and sample tubes with Alconox solution prior to soil sampling;
- Using disposable gloves during sampling procedures to reduce chances of cross contamination; and
- Preparing sample labels carefully and cross-comparing against chain-of-custody lists and field notes.

Groundwater Sampling QA/QC

Field QA/QC procedures for groundwater sampling will include:

APPENDIX C - Monitoring Well Logs

Well Log and Construction

Well No. *MW-1*

Date Drilled: *12/23/98* **County:** *King* **Use:** *MONITORING*

Location: *NW Corner of Maintenance Shop*

Owner *Provisioners Express, Inc.* **Address:** 2102 West Valley Hwy, Auburn, WA

Driller: *Cascade Drilling* **Geologist:** *David L. Welch*

Drilling Method: *Hollow Stem Auger* **Sampling Method:** *2-inch Split Spoon*

BORING: **Diameter:** *8-inch* **Total Depth:** *15 feet*

CASING: **Type:** *PVC* **Diameter:** *2-inch* **Length:** *5 feet*

SCREEN: **Type/Slot:** *PVC/0.01-inch* **Diameter:** *2-inch* **Length:** *10 feet*

Gravel Pack Size: *2/12 Sand* **Casing Seal:** *Bentonite Chips* **Static Water Level:** *5.32 FT*

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER	WELL DESIGN	USCS LOG	IDENTIFICATION OF SOILS/REMARKS
			cap; G 1 ft; B; B 3 ft; C		*4-inches of Asphalt at Surface*
				GM	*Gray to Brown, Silty, Sandy, Fine to Coarse GRAVEL Damp, Very Dense, Hydrocarbon-like odor, PID = 50 ppm (Photovac Microtip), Oil Seep at 4 feet*
		24			
5		50	5 ft		
			S; S; SC	SW	*Dark Gray Gravelly Fine SAND, Wet, Very Dense, No Hydrocarbon-like Odor, PID =40.1*
		100/4"			
10					
		17			
		12		SP	*Dark Gray Fine SAND, Saturated, Medium Dense, No Hydrocarbon-like Odor*
		15			
15					
					Bottom of Boring at 15 feet, Install 2-inch Monitoring Well

WELL CONSTRUCTION SYMBOLS: SC = WELLSCREEN, S=SANDPACK, C=CASING, B=BENTONITE, G=GROUT, CAP=LOCKING CAP

Well Log and Construction

Well No. *MW-2*

Date Drilled: *12/23/98* **County:** *King* **Use:** *MONITORING*

Location: *North of Maintenance Shop*

Owner *Provisioners Express, Inc.* **Address:** *2102 West Valley Hwy, Auburn, WA*

Driller: *Cascade Drilling* **Geologist:** *David L. Welch*

Drilling Method: *Hollow Stem Auger* **Sampling Method:** *2-inch Split Spoon*

BORING: **Diameter:** *8-inch* **Total Depth:** *15 feet*

CASING: **Type:** *PVC* **Diameter:** *2-inch* **Length:** *5 feet*

SCREEN: **Type/Slot:** *PVC/0.01-inch* **Diameter:** *2-inch* **Length:** *10 feet*

Gravel Pack Size: *2/12 Sand* **Casing Seal:** *Bentonite Chips* **Static Water Level:** *6.89 ft*

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER	WELL DESIGN	USCS LOG	IDENTIFICATION OF SOILS/REMARKS
			cap; G; 1 ft; B; B; 3 ft		*4-inches of Asphalt at Surface*
		50/6"	C; 5 ft	GM	*Gray to Brown, Silty, Sandy, Fine to Coarse GRAVEL Damp, Very Dense, No Hydrocarbon-like odor, PID=0 (Photovac Microtip)*
5					
		5	S; S		
		9		Pt	*Dark Brown PEAT underlain by Dark Gray SAND, Wet,*
		16	SC		*Medium Dense, No Hydrocarbon -like Odor, PID =1.8*
10					
		6			
		12		SP	*Dark Gray Fine SAND, Saturated, Medium Dense,*
		13			*No Hydrocarbon-like Odor, PID=0*
15					
					Bottom of Boring at 15 feet, Install 2-inch Monitoring Well

WELL CONSTRUCTION SYMBOLS: SC = WELLSCREEN, S=SANDPACK, C=CASING, B=BENTONITE, G=GROUT, CAP=LOCKING CAP

Well Log and Construction

Well No. *MW-3*

Date Drilled: *12/23/98* **County:** *King* **Use:** *MONITORING*

Location: *East of Maintenance Shop*

Owner: *Provisioners Express, Inc.* **Address:** *2102 West Valley Hwy, Auburn, WA*

Driller: *Cascade Drilling* **Geologist:** *David L. Welch*

Drilling Method: *Hollow Stem Auger* **Sampling Method:** *2-inch Split Spoon*

BORING: **Diameter:** *8-inch* **Total Depth:** *15 feet*

CASING: **Type:** *PVC* **Diameter:** *2-inch* **Length:** *5 feet*

SCREEN: **Type/Slot:** *PVC/0.01-inch* **Diameter:** *2-inch* **Length:** *10 feet*

Gravel Pack Size: *2/12 Sand* **Casing Seal:** *Bentonite Chips* **Static Water Level:** *5.44 ft*

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER	WELL DESIGN	USCS LOG	IDENTIFICATION OF SOILS/REMARKS
			cap; G; 1 ft		*4-inches of Asphalt at Surface*
			B; B 3 ft	*GM*	*Gray to Brown, Silty, Sandy, Fine to Coarse GRAVEL with trace cobbles, Very Dense, No Hydrocarbon-like odor, PID=0.0 (Photovac Microtip)*
		17	C		
5		50	5 ft		
				Pt	*Dark Brown PEAT*
			S; S		
			SC		
10		12		*SP*	*Dark Gray Fine SAND, Saturated, Medium Dense, No Hydrocarbon-like Odor*
		17			
		18			
15					
					Bottom of Boring at 15 feet, Install 2-inch Monitoring Well

WELL CONSTRUCTION SYMBOLS: SC = WELLSCREEN, S=SANDPACK, C=CASING, B=BENTONITE, G=GROUT, CAP=LOCKING CAP

Well Log and Construction

Well No. *MW-4*

Date Drilled: *1/29/99* **County:** *King* **Use:** *MONITORING*

Location: *Southeast Corner of Maintenance Shop*

Owner: *Provisioners Express, Inc.* **Address:** *2102 West Valley Hwy, Auburn, WA*

Driller: *Cascade Drilling* **Geologist:** *David L. Welch*

Drilling Method: *Hollow Stem Auger* **Sampling Method:** *2-inch Split Spoon*

BORING: **Diameter:** *8-inch* **Total Depth:** *15 feet*

CASING: **Type:** *PVC* **Diameter:** *2-inch* **Length:** *5 feet*

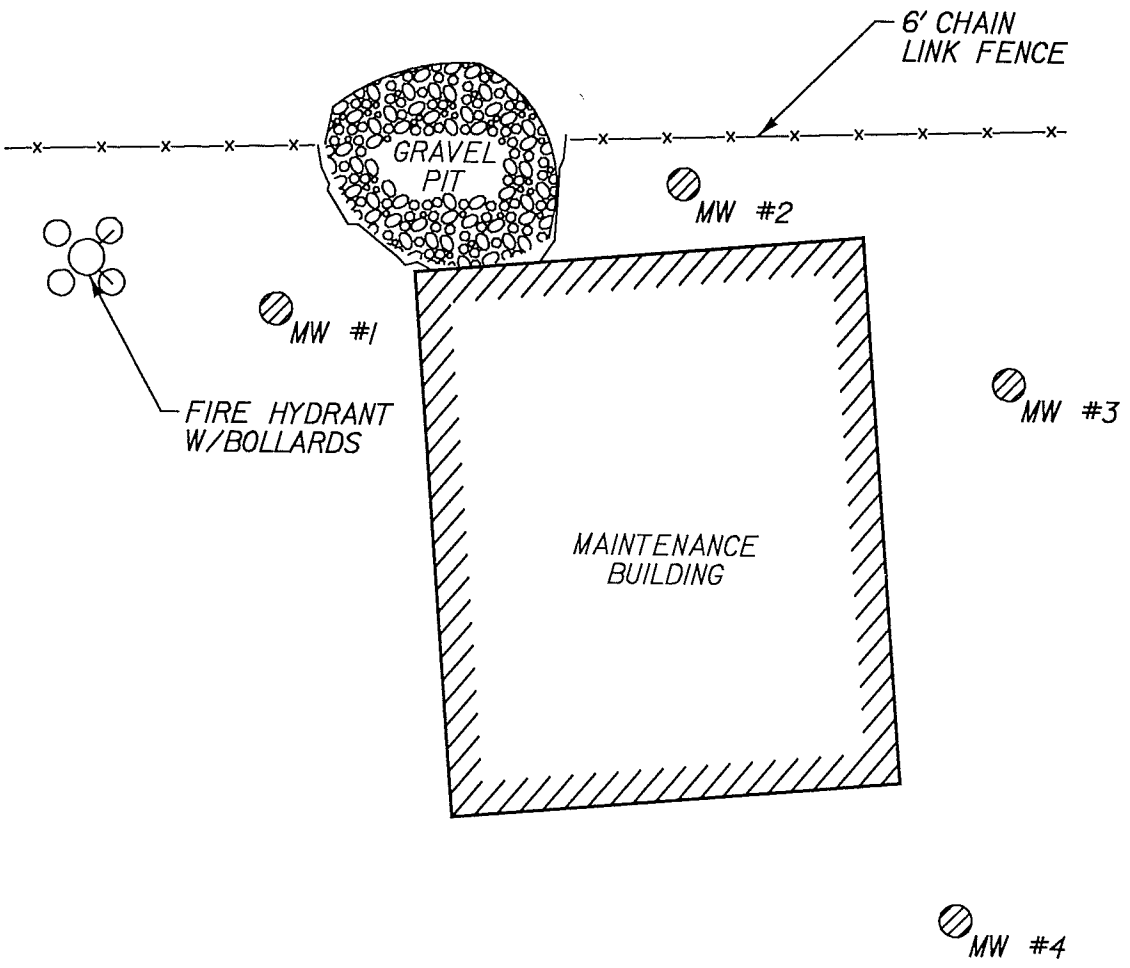
SCREEN: **Type/Slot:** *PVC/0.01-inch* **Diameter:** *2-inch* **Length:** *10 feet*

Gravel Pack Size: *2/12 Sand* **Casing Seal:** *Bentonite Chips* **Static Water Level:** *4.60 feet*

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER	WELL DESIGN	USCS LOG	IDENTIFICATION OF SOILS/REMARKS
			cap, G, 1 ft		*3-inches of Asphalt at Surface*
			B, B 3 ft	*GM*	*Brown, Silty, Sandy, GRAVEL, Very Dense, Damp-Moist,*
		50			*No Hydrocarbon-like odor,*
		60/5	C		*PID=0.0*
5			5 ft		
			S, S		
			SC		
10		30		*GW*	*Gray Sandy GRAVEL, Wet, Very Dense,*
		32			*No Hydrocarbon-like Odor*
		35			*PID=0.0*
					Dark Gray Fine SAND, Saturated, Very Dense,
		11		SP	*No Hydrocarbon-like Odor*
		25			*PID=0.0*
15		35			
					Bottom of Boring at 15 feet, Install 2-inch Monitoring Well

WELL CONSTRUCTION SYMBOLS: SC = WELLSCREEN, S=SANDPACK, C=CASING, B=BENTONITE, G=GROUT, CAP=LOCKING CAP

APPENDIX D - Entranco Survey Data



MONITORING WELL ELEVATIONS	
MW #1	100.51
MW #2	100.56
MW #3	100.50
MW #4	100.61

N

PROJECT NORTH

0 15 30 60

Scale In Feet

Drawn By: JLP/EPG	Date: 2/3/99	WASHINGTON CALIFORNIA ARIZONA OREGON IDAHO UTAH	Scale: Horiz. 1"= 30' Vert. NA Job No. 98121-60	MONITORING WELLS FOR EMR PROVISIONS TRUCKING YARD AUBURN, WASHINGTON	Sheet 1 Of 1
Designed By:					
Checked By:					
Approved By: JLP	2/3/99				

APPENDIX E - Laboratory Reports- Post-Excavation Soil Samples

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 19, 1998

Greg McCormick
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project 3613
Laboratory Reference No. 9810-101

Dear Greg:

Enclosed are the analytical results and associated quality control data for samples submitted on October 14, 1998.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

14924 NE 31st Circle • Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

NWTPH-Dx

Date Extracted:	10-15-98
Date Analyzed:	10-15-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	PX-1 (S.SIDEWALL)	PX-2 (BOTTOM)	PX-3 (E.SIDEWALL)
Lab ID:	10-101-01	10-101-02	10-101-03
Diesel Fuel:	660	ND	ND
PQL:	27	30	28
Heavy Oil:	2200	ND	ND
PQL:	55	60	56
Surrogate Recovery:			
o-Terphenyl	133%	83%	78%
Flags:	N		

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

NWTPH-Dx

Date Extracted:	10-15-98
Date Analyzed:	10-15-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	PX-4 (W.SIDEWALL)	PX-5 (N.SIDEWALL)
Lab ID:	10-101-04	10-101-05
Diesel Fuel:	ND	ND
PQL:	28	27
Heavy Oil:	ND	ND
PQL:	56	55
Surrogate Recovery:		
o-Terphenyl	85%	80%

Flags:

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-15-98
Date Analyzed:	10-15-98
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1015S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	83%

Flags:

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	10-15-98
Date Analyzed:	10-15-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	10-101-02	10-101-02 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	83%	88%

Flags:

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 10-14&15-98
Date Analyzed: 10-14&15-98

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-101-2
Client ID: PX-2 (Bottom)

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	12
Barium	6010B	**36**	0.60
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**13**	0.60
Lead	6010B	**ND**	6.0
Mercury	7471A	**ND**	0.30
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.60

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-14&15-98
Date Analyzed:	10-14,15&16-98
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1014S1&MB1015S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Barium	6010B	**ND**	0.50
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 10-14&15-98
Date Analyzed: 10-14,15&16-98

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-084-2

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Arsenic	ND	ND	NA		10
Barium	64.6	60.6	6.4		0.50
Cadmium	ND	ND	NA		0.50
Chromium	17.3	16.2	6.9		0.50
Lead	48.2	48.3	0.10		5.0
Mercury	ND	ND	NA		0.25
Selenium	ND	ND	NA		10
Silver	ND	ND	NA		0.50

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 10-14&15-98
Date Analyzed: 10-14,15&16-98

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 09-084-2

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**78.6**	79	**79.3**	79	0.89	
Barium	100	**151**	87	**151**	87	0.17	
Cadmium	50	**47.5**	95	**46.3**	93	2.6	
Chromium	100	**111**	94	**115**	97	2.8	
Lead	250	**270**	89	**266**	87	1.2	
Mercury	1.0	**0.910**	91	**0.904**	90	0.66	
Selenium	100	**91.8**	92	**90.6**	91	1.3	
Silver	50	**42.9**	86	**42.6**	85	0.70	

Date of Report: October 19, 1998
Samples Submitted: October 14, 1998
Lab Traveler: 10-101
Project: 3613

Date Analyzed: 10-15-98

% MOISTURE

Client ID	Lab ID	% Moisture
PX-1 (S. Sidewall)	10-101-01	9.0
PX-2 (Bottom)	10-101-02	16
PX-3 (E. Sidewall)	10-101-03	11
PX-4 (W.Sidewall)	10-101-04	11
PX-5 (N. Sidewall)	10-101-05	9.0

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample which are elevating the diesel result.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: EMR, Inc.
Project No.: 3613
Project Name: Provisioners Express
Project Manager: Greg McCormick

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☒ 48 Hours
- ☐ Standard
- ☐ _____ (other)

Project Chemist: DAB

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8240/624/8260	Halogenated Volatiles by 8260	Semivolatiles by 8270/625	PAHs by 8270/625	PCB's by 8081/608	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	PX-1 (S. Sidewall)	10-14-98		Soil	1			X						X				X
2	PX-2 (Bottom)	"		"	"			X										X
3	PX-3 (E Sidewall)	"		"	"			X										X
4	PX-4 (W. Sidewall)	"		"	"			X										X
5	PX-5 (N. Sidewall)	"		"	"			X										X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	10-14-98	[signature]	10-14-98
FIRM: EMR, Inc.	TIME: 3:45p	FIRM: OnSite	TIME: 3:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

November 6, 1998

David Welch
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project 3613
Laboratory Reference No. 9811-022

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on November 4, 1998.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

14924 NE 31st Circle • Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: November 6, 1998
Samples Submitted: November 4, 1998
Lab Traveler: 11-022
Project: 3613

NWTPH-Dx

Date Extracted:	11-4-98	
Date Analyzed:	11-4&5-98	
Matrix:	Soil	
Units:	mg/Kg (ppm)	
Client ID:	TR-1	TR-2
Lab ID:	11-022-01	11-022-02
Diesel Fuel:	ND	ND
PQL:	34	28
Heavy Oil:	ND	ND
PQL:	68	56
Surrogate Recovery:		
o-Terphenyl	90%	92%
Flags:		

Date of Report: November 6, 1998
Samples Submitted: November 4, 1998
Lab Traveler: 11-022
Project: 3613

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-4-98
Date Analyzed:	11-4-98
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1104S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	104%

Flags:

Date of Report: November 6, 1998
Samples Submitted: November 4, 1998
Lab Traveler: 11-022
Project: 3613

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	11-4-98	
Date Analyzed:	11-4-98	
Matrix:	Soil	
Units:	mg/Kg (ppm)	
Lab ID:	11-019-03	11-019-03 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	88%	81%
Flags:		

Date of Report: November 6, 1998
Samples Submitted: November 4, 1998
Lab Traveler: 11-022
Project: 3613

Date Analyzed: 11-4-98

% MOISTURE

Client ID	Lab ID	% Moisture
TR-1	11-022-01	27
TR-2	11-022-02	11

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

OnSite Environmental Inc.

14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Chain of Custody

Company: EMP, Inc.

Project No.: 3613

Project Name: PROVISIONERS EXPRESS

Project Manager: DAVID L. WELCH

Turn Around Requested (Check One)

- ☐ Same Day
- ☒ 24 Hours
- ☐ 48 Hours
- ☐ Standard
- ☐ ________ (other)

Project Chemist: DB

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8240/624/8260	Halogenated Volatiles by 8260	Semivolatiles by 8270/625	PAHs by 8270/625	PCB's by 8081/608	Total RCRA Metals (8)	TCLP Metals	VPH	EPH								% Moisture
1	TR-1	11-4-98	10:50	Soil	1			X																	X
2	TR-2	11-4-98	11:45	Soil	1			X																	X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	11-4-98	Kristen Koch	11/4/98
FIRM: EMP, Inc.	TIME: 12:35p	FIRM: OSE	TIME: 12:35
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

December 18, 1998

David Welch
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project 3613
Laboratory Reference No. 9812-127

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on December 16, 1998.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

Date of Report: December 18, 1998
Samples Submitted: December 16, 1998
Lab Traveler: 12-127
Project: 3613

NWTPH-Dx

Date Extracted:	12-16-98
Date Analyzed:	12-17-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	PX-9 (9")	PX-10 (9")	PX-12 (4")
Lab ID:	12-127-01	12-127-02	12-127-03
Diesel Fuel:	ND	120	5000
PQL:	27	28	140
Heavy Oil:	ND	250	8600
PQL:	55	57	110
Surrogate Recovery:			
o-Terphenyl	84%	83%	---
Flags:		N	S,N

Date of Report: December 18, 1998
Samples Submitted: December 16, 1998
Lab Traveler: 12-127
Project: 3613

NWTPH-Dx

Date Extracted:	12-16-98
Date Analyzed:	12-17-98
Matrix:	Soil
Units:	mg/Kg (ppm)
Client ID:	PX-13 (5")
Lab ID:	12-127-04
Diesel Fuel:	2400
PQL:	140
Heavy Oil:	5500
PQL:	110
Surrogate Recovery:	
o-Terphenyl	---
Flags:	S,N

Date of Report: December 18, 1998
Samples Submitted: December 16, 1998
Lab Traveler: 12-127
Project: 3613

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-16-98
Date Analyzed:	12-17-98
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1216S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	108%
Flags:	X

Date of Report: December 18, 1998
Samples Submitted: December 16, 1998
Lab Traveler: 12-127
Project: 3613

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	12-16-98	
Date Analyzed:	12-16-98	
Matrix:	Soil	
Units:	mg/Kg (ppm)	
Lab ID:	12-123-02	12-123-02 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery: o-Terphenyl	98%	112%
Flags:	Y	Y

Date of Report: December 18, 1998
Samples Submitted: December 16, 1998
Lab Traveler: 12-127
Project: 3613

Date Analyzed: 12-16-98

% MOISTURE

Client ID	Lab ID	% Moisture
PX-9 (9")	12-127-01	9.0
PX-10 (9")	12-127-02	12
PX-12 (4")	12-127-03	10
PX-13 (5")	12-127-04	11

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: EMR, Inc.
Project No.: 3613
Project Name: Provisioners Express
Project Manager: David Welch

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DB

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	PX-9/9 (9")	12/16/98		S	1			X											X
2	PX-8/10 (9")	↓		S	1			X											X
3	PX-8/12 (4")			S	1			X											X
4	PX-9/13 (5")			S	1			X											X
	4th corrections Made 12/17/98. DB																		

RELINQUISHED BY: Amy M Conrad	DATE: 12/16/98	RECEIVED BY: [illegible]	DATE: 12/16/98	COMMENTS:
FIRM: EMR Inc	TIME: 3:30 PM	FIRM: OnSite Env.	TIME: 3:30 pm	
RELINQUISHED BY	DATE	RECEIVED BY	DATE	
FIRM	TIME	FIRM	TIME	
REVIEWED BY		DATE REVIEWED		

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

December 21, 1998

Greg McCormick
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project 3613
Laboratory Reference No. 9812-119

Dear Greg:

Enclosed are the analytical results and associated quality control data for samples submitted on December 15, 1998.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

Date of Report: December 21, 1998
Samples Submitted: December 15, 1998
Lab Traveler: 12-119
Project: 3613

NWTPH-Dx

Date Extracted:	12-16-98
Date Analyzed:	12-16-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	PX-6 (4')	PX-7 (4')	PX-8 (4')
Lab ID:	12-119-01	12-119-02	12-119-03
Diesel Fuel:	1300	2500	1500
PQL:	28	27	28
Heavy Oil:	260	630	3800
PQL:	57	54	57
Surrogate Recovery:			
o-Terphenyl	---	---	---
Flags:	F,N	F,N	F,N

Date of Report: December 21, 1998
Samples Submitted: December 15, 1998
Lab Traveler: 12-119
Project: 3613

NWTPH-Dx

Date Extracted:	12-16-98
Date Analyzed:	12-16-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	PX-11 (4')	PX-14 (4')
Lab ID:	12-119-04	12-119-05
Diesel Fuel:	1400	45
PQL:	28	28
Heavy Oil:	5400	160
PQL:	56	57
Surrogate Recovery:		
o-Terphenyl	---	86%
Flags:	F,X,N	

Date of Report: December 21, 1998
Samples Submitted: December 15, 1998
Lab Traveler: 12-119
Project: 3613

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-16-98
Date Analyzed:	12-16-98
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1216S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	80%

Date of Report: December 21, 1998
Samples Submitted: December 15, 1998
Lab Traveler: 12-119
Project: 3613

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	12-15-98
Date Analyzed:	12-16-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	12-108-05	12-108-05 DUP
Diesel Fuel:	30.4	25.1
PQL:	25	25
RPD:	19	
Surrogate Recovery:		
o-Terphenyl	92%	97%

Flags:

Date of Report: December 21, 1998
Samples Submitted: December 15, 1998
Lab Traveler: 12-119
Project: 3613

Date Analyzed: 12-16-98

% MOISTURE

Client ID	Lab ID	% Moisture
PX-6 (4')	12-119-1	12
PX-7 (4')	12-119-2	8.0
PX-8 (4')	12-119-3	12
PX-11 (4')	12-119-4	11
PX-14 (4')	12-119-5	12

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: EMR Inc.
Project No.: 3613
Project Name: Provisioners Express
Project Manager: Greg McCormick

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: DB

Laboratory No. 12-119

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	PX-16 (4')	12/15/98	2:30pm	S	1			X											X
2	PX-37 (4')	↓	↓	S	1			X											X
3	PX-38 (4')			S	1			X											X
4	PX-611 (4')			S	1			X											X
5	PX-1014 (4')			S	1			X											X

↑ Changes Made 12/16/98 Per lab request. DB

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Greg McCormick	12/15/98	[illegible]	12/15/98
FIRM: EMR, Inc	TIME: 5:50 PM	FIRM: OnSite	TIME: 5:50 pm
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

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TABLE 1 : Cumulative Groundwater Analytical Results
Burlington Northern Santa Fe Railway Co.
Bellingham South UST
EMR Project No. 348

SAMPLE ID	MATRIX	DATE	WTPH-G	B	T	E	X	WTPH-418.1	WTPH-D	WTPH-O	
MW-1	Water	12/11/90	ND	ND	ND	ND	ND	1,100	NA	NA	ppb
MW-1	Water	12/16/91	ND	ND	2	ND	ND	ND	NA	NA	ppb
MW-1	Water	12/19/96	ND	ND	ND	ND	ND	NA	268	ND	ppb
MW-1	Water	5/30/97	ND	ND	ND	ND	ND	NA	ND	ND	ppb
MW-1	Water	8/8/97	ND	ND	ND	ND	ND	NA	ND	ND	ppb
MW-1	Water	2/6/98	ND	ND	ND	ND	ND	NA	ND	ND	ppb
MW-1	Water	6/30/98	ND	ND	ND	ND	ND	NA	ND	ND	ppb
MW-1	Water	8/4/98	ND	ND	ND	ND	ND	NA	ND	ND	ppb
MW-1	Water	9/25/98	ND	ND	ND	ND	ND	NA	ND	ND	ppb
MW-1	Water	11/24/98	ND	ND	ND	ND	ND	NA	259	ND	ppb
MW-2	Water	12/11/90	2,100	6.3	6.4	9.8	16	2,900	NA	NA	ppb
MW-2	Water	12/16/91	3	2	ND	6	19	2,400	NA	NA	ppb
MW-2	Water	5/30/97	3,900	9.53	4.66	10.3	11.2	NA	2,290	ND	ppb
MW-2	Water	8/8/97	5,300	12.7	6.45	11.5	28.7	NA	NA	NA	ppb
MW-2	Water	2/6/98	3,990	ND	ND	ND	ND	NA	1	ND	ppb
MW-2	Water	6/30/98	1,680	3.12	3.65	3.28	6.24	NA	397	ND	ppb
MW-2	Water	8/4/98	1,410	ND	ND	ND	ND	NA	638	ND	ppb
MW-2	Water	9/25/98	1,500	ND	ND	ND	ND	NA	533	ND	ppb
MW-2	Water	11/24/98	1,720	2.79	ND	ND	ND	NA	810	ND	ppb
MW-3	Water	12/11/90	150	0.6	ND	ND	0.6	2,300	NA	NA	ppb
MW-3	Water	12/16/91	ND	ND	2	ND	2	700	NA	NA	ppb
MW-3	Water	12/19/96	208	1.03	ND	ND	ND	NA	458	ND	ppb
MW-3	Water	5/30/97	565	0.897	ND	ND	1.04	NA	294	ND	ppb
MW-3	Water	8/8/97	1,580	4.35	1.47	2.04	9.24	NA	NA	NA	ppb
MW-3	Water	2/6/98	117	ND	ND	ND	ND	NA	ND	ND	ppb
MW-3	Water	6/30/98	308	1.06	ND	ND	ND	NA	ND	ND	ppb
MW-3	Water	8/4/98	273	ND	ND	ND	ND	NA	330	ND	ppb
MW-3	Water	9/25/98	896	3.61	ND	ND	5.39	NA	280	ND	ppb
MW-3	Water	11/24/98	166	ND	ND	ND	ND	NA	ND	ND	ppb

WTPH-G = Gasoline-Range Total Petroleum Hydrocarbons
WTPH-D = Diesel-Range Total Petroleum Hydrocarbons
WTPH-O = Heavy Oil-Range Total Petroleum Hydrocarbons
B = Benzene
T = Toluene
X = Total Xylenes
E = Ethylbenzene
ND = Not Detected
NA = Not Analyzed
ppm = Parts Per Million
ppb = Parts Per Billion

APPENDIX F - Laboratory Reports - Soil Disposal Profile

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

October 9, 1998

Greg McCormick
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project Provisioners
Laboratory Reference No. 9810-034

Dear Greg:

Enclosed are the analytical results and associated quality control data for samples submitted on October 5, 1998.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

14324 NE 21st Circle, Redmond, WA 98052 (425) 883-3881 Fax (425) 885-4603

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

NWTPH-Dx

Date Extracted:	10-05-98
Date Analyzed:	10-06-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	SP-01
Lab ID:	10-034-01
Diesel Fuel:	12000
PQL:	270
Heavy Oil:	26000
PQL:	220
Surrogate Recovery:	
o-Terphenyl	---
Flags:	S,X,N

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-05-98
Date Analyzed:	10-05-98
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1005S2
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	142%

Flags:

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	10-05-98
Date Analyzed:	10-05-98
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	10-018-09	10-018-09 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	138%	141%

Flags:

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

NWTPH-Dx
SB/SBD QUALITY CONTROL

Date Extracted:	10-05-98	
Date Analyzed:	10-05-98	
Matrix:	Soil	
Units:	mg/Kg (ppm)	
Spike Level:	100 ppm	
Lab ID:	SB1005S1	SB1005S1 DUP
Diesel Fuel:	73.2	76.0
PQL:	25	25
Percent Recovery:	73	76
RPD:	3.8	
Surrogate Recovery:		
o-Terphenyl	126%	126%
Flags:		

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

TCLP Metals
EPA 1311/6010B/7470A

Date Extracted: 10-6-98
Date Digested: 10-7-98
Date Analyzed: 10-7-98

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 10-034-1
Client ID: SP-01

Analyte	Method	Result	PQL
Arsenic	6010B	ND	.40
Barium	6010B	ND	3.0
Cadmium	6010B	ND	.020
Chromium	6010B	ND	.020
Lead	6010B	ND	.20
Mercury	7470A	ND	.010
Selenium	6010B	ND	.40
Silver	6010B	ND	.020

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

TCLP Metals
EPA 1311/6010B/7470A
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-6-98
Date Digested:	10-7-98
Date Analyzed:	10-7-98
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB1007TCLP

Analyte	Method	Result	PQL
Arsenic	6010B	ND	0.40
Barium	6010B	ND	3.0
Cadmium	6010B	ND	0.020
Chromium	6010B	ND	0.020
Lead	6010B	ND	0.20
Mercury	7470A	ND	0.010
Selenium	6010B	ND	0.40
Silver	6010B	ND	0.020

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

TCLP Metals
EPA 1311/6010B/7470A
DUPLICATE QUALITY CONTROL

Date Extracted: 9-30-98
Date Digested: 10-4-98
Date Analyzed: 10-4-98

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-151-1,2

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Arsenic	**ND**	**ND**	NA		0.40
Barium	**ND**	**ND**	NA		2.0
Cadmium	**0.0228**	**0.0218**	4.5		0.020
Chromium	**0.0466**	**0.0510**	9.0		0.020
Lead	**0.530**	**0.516**	2.7		0.20
Mercury	**ND**	**ND**	NA		0.010
Selenium	**ND**	**ND**	NA		0.40
Silver	**ND**	**ND**	NA		0.020

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

TCLP Metals
EPA 1311/6010B/7470A
MS/MSD QUALITY CONTROL

Date Extracted: 9-30-98
Date Digested: 10-4-98
Date Analyzed: 10-4-98

Matrix: TCLP Extract
Units: mg/L (ppm)

Lab ID: 09-151-1,2

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	4.0	**4.12**	103	**4.13**	103	0.097	
Barium	4.0	**3.32**	83	**3.26**	81	2.0	
Cadmium	2.0	**1.81**	89	**1.80**	89	0.34	
Chromium	4.0	**3.85**	95	**3.79**	94	1.5	
Lead	10	**9.11**	86	**9.03**	85	0.94	
Mercury	0.10	**0.0910**	91	**0.0906**	91	0.44	
Selenium	4.0	**4.22**	105	**4.07**	102	3.5	
Silver	2.0	**1.68**	84	**1.65**	83	2.0	

Date of Report: October 9, 1998
Samples Submitted: October 5, 1998
Lab Traveler: 10-034
Project: Provisioners

Date Analyzed: 10-5-98

% MOISTURE

Client ID	Lab ID	% Moisture
SP-01	10-034-01	7.0

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample which are elevating the diesel result.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

Page _____ of _____

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: EMR
Project No.: CALL TO GET
Project Name: PROVISIONERS
Project Manager: GREG McCORMICK.

Turn Around Requested (Check One)
- ☒ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☐ Standard
- ☐ _____ (other)

Project Chemist: DAB

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8240/624/8260	Halogenated Volatiles by 8260	Semivolatiles by 8270/625	PAHs by 8270/625	PCB's by 8081/608	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	SP-01	10/5/98	2:00PM	SOIL	1			✓							✓			X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Mark McCulley	10/5/98	Whitney Dodson	10-5-98
FIRM	TIME	FIRM	TIME
		DOE	5:00
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS: LOOK FOR GAS.

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

APPENDIX G - Laboratory Reports - Strataprobe Investigation

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

7110 38th Drive SE
Lacey, Washington 98503

Mobile Environmental Laboratories
Environmental Sampling Services

Telephone: 360-459-4670
Fax: 360-459-3432

December 8, 1998

David L. Welch
Environmental Management Resources Inc.
2509 152nd Ave. NE, Suite B
Redmond, WA 98052-5551

Dear Mr. Welch:

Please find enclosed the analytical data report for the Provisioners Express Project in Auburn, Washington. Soil samples were analyzed for Gasoline by NWTPH-Gx, Diesel by NWTPH-Dx, and Specific Halogenated Hydrocarbons and BTEX by Method 8021B on November 30, 1998.

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

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

Sincerely,

Sherry L. Chilcutt
Senior Chemist

QA/QC FOR ANALYTICAL METHODS

GENERAL

The TEG Northwest Laboratory quality assurance and quality control (QA/QC) procedures are conducted following the guidelines and objectives which meet or exceed certification/-accreditation requirements of California DOHS, Washington DOE, and Oregon DEQ. The Quality Control Program is a consistent set of procedures which assures data quality through the use of appropriate blanks, replicate analyses, surrogate spikes, and matrix spikes, and with the use of reference standards that meet or exceed EPA standards.

When analyses are taking place on-site with the mobile lab, the need for Field Blanks or Travel/Trip Blanks is eliminated. If there is going to be a delay before sample preparation for analysis, the sample is stored at 4^{o} C.

ANALYTICAL METHODS

TEG Northwest Labs use analytical methodologies which are in conformity with U. S. Environmental Protection Agency (EPA), Washington DOE, and Oregon DEQ methodologies. When necessary and appropriate due to the nature or composition of the sample, TEG may use variations of the methods which are consistent with recognized standards or variations used by the industry and government laboratories.

TPH-Gasoline, TPH-Diesel
(Gasoline and/or Diesel, Modified EPA 8015, NWTPH-Gx and NWTPH-Dx)

A check standard is run at the beginning of the day. 1) A close standard is run at the end of the day. 2) Both open and close standards must be within 15% of the continuing calibration curve value. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135% unless high sample concentrations interfere with the determination of the recovery percentage. A duplicate sample is run at a rate of 1 per 10 samples. At least 1 method blank is run per 20 samples analyzed.

Purgeable Volatile Halocarbons
(Chlorinated Hydrocarbons, EPA 601/8021B)

A calibration standard is run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

TEG NW SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

TEG Job Number: S81125-2
Client: EMR, INC
Client Job Name: PROVISIONERS EXPRESS
Client Job Number: 3613-03

Analytical Results

8010, µg/kg		MTH BLK	LCS	ST-9B	DUPL ST-9B	RPD ST-9B
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/01/98	12/01/98	12/01/98	12/01/98	12/01/98
Date analyzed	Limits	12/01/98	12/01/98	12/01/98	12/01/98	12/01/98
Moisture, %				16%	16%	
Chloromethane	250	nd		nd	nd	
Bromomethane	250	nd		nd	nd	
Vinyl chloride	250	nd		nd	nd	
Chloroethane	250	nd		nd	nd	
cis-1,2-Dichloroethene	250	nd		nd	nd	
1,1-Dichloroethene	250	nd	65%	nd	nd	
Methylene Chloride	250	nd		nd	nd	
trans-1,2-Dichloroethene	250	nd		nd	nd	
1,1-Dichloroethane	250	nd		nd	nd	
Chloroform	50	nd		nd	nd	
1,1,1-Trichloroethane	50	nd		nd	nd	
Carbontetrachloride	50	nd		nd	nd	
1,2-Dichloroethane	250	nd		nd	nd	
Trichloroethene	50	nd	81%	nd	nd	
1,2-Dichloropropane	250	nd		nd	nd	
Bromodichloromethane	250	nd		nd	nd	
cis-1,3-Dichloropropene	250	nd		nd	nd	
trans-1,3-Dichloropropene	250	nd		nd	nd	
Chlorobenzene	250	nd	91%	nd	nd	
1,1,2-Trichloroethane	50	nd		nd	nd	
Tetrachloroethene	50	nd		nd	nd	
Dibromochloromethane	250	nd		nd	nd	
Bromoform	250	nd		nd	nd	
1,1,2,2-Tetrachloroethane	250	nd		nd	nd	
1,1,1,2-Tetrachloroethane	250	nd		nd	nd	
Bromobenzene	250	nd		nd	nd	
1,2,3-Trichloropropane	250	nd		nd	nd	
Dibromomethane	250	nd		nd	nd	
m-Dichlorobenzene	50	nd		nd	nd	
p-Dichlorobenzene	50	nd		nd	nd	
o-Dichlorobenzene	50	nd		nd	nd	
Benzene	50	nd	73%	nd	nd	
Toluene	50	nd	81%	290	310	7%
Ethylbenzene	50	nd		7,300	8,100	10%
Xylenes	50	nd		30,000	30,000	0%
Surrogate recoveries:						
Bromochloromethane		107%	105%	106%	105%	
1,4-Dichlorobutane		102%	104%	103%	101%	
Bromochloropropane		98%	101%	106%	99%	
Trifluorotoluene		100%	102%	105%	91%	
Bromofluorobenzene		107%	101%	C	C	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

TEG NW SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

TEG Job Number: S81125-2
Client: EMR, INC
Client Job Name: PROVISIONERS EXPRESS
Client Job Number: 3613-03

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	LCS	ST-1A	ST-4A	ST-5A
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	11/30/98	11/30/98	11/30/98	11/30/98	11/30/98
Date analyzed	Limits	11/30/98	11/30/98	11/30/98	11/30/98	11/30/98
Moisture, %				9%	9%	12%
Kerosene/Jet fuel	20	nd		nd	nd	nd
Diesel/Fuel oil	20	nd	113%	58	nd	390
Heavy oil	50	nd		75	nd	1,200
Surrogate recoveries:						
Fluorobiphenyl		97%	108%	92%	99%	102%
o-Terphenyl		97%	C	101%	101%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

TEG NW SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

TEG Job Number: S81125-2
Client: EMR, INC
Client Job Name: PROVISIONERS EXPRESS
Client Job Number: 3613-03

Analytical Results		ST-6A	ST-7A	ST-8A	ST-9A	ST-9B	ST-15A
NWTPH-Dx, mg/kg	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Matrix	Reporting	11/30/98	11/30/98	11/30/98	11/30/98	11/30/98	11/30/98
Date extracted	Limits	11/30/98	11/30/98	11/30/98	11/30/98	11/30/98	11/30/98
Date analyzed		11%	9%	11%	11%	16%	9%
Moisture, %							
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	58	48	550	nd
Heavy oil	50	nd	nd	86	nd	290	nd
Surrogate recoveries:							
Fluorobiphenyl		98%	100%	97%	96%	106%	101%
o-Terphenyl		100%	103%	105%	103%	121%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

TEG NW SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

TEG Job Number:	S81125-2
Client:	EMR, INC
Client Job Name:	PROVISIONERS EXPRESS
Client Job Number:	3613-03

Analytical Results

NWTPH-Dx, mg/kg		ST-16A	DUPL ST-16A
Matrix	Soil	Soil	Soil
Date extracted	Reporting	11/30/98	11/30/98
Date analyzed	Limits	11/30/98	11/30/98
Moisture, %		11%	11%
Kerosene/Jet fuel	20	nd	nd
Diesel/Fuel oil	20	53	48
Heavy oil	50	nd	nd
Surrogate recoveries:			
Fluorobiphenyl		96%	102%
o-Terphenyl		104%	105%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

TEG NW SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

TEG Job Number:	S81125-2
Client:	EMR, INC
Client Job Name:	PROVISIONERS EXPRESS
Client Job Number:	3613-03
Printed:	12/8/98 13:53

Analytical Results				DUPL	RPD
NWTPH-Gx / BTEX (8020)		MTH BLK	ST-9B	ST-9B	ST-9B
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	12/01/98	12/01/98	12/01/98	12/01/98
Date analyzed	Limits	12/01/98	12/01/98	12/01/98	12/01/98
Moisture, %			16%	16%	
NWTPH-Gx, mg/kg					
Mineral spirits/Stoddard solvent	5.0	nd	14,000	14,000	0%
Gasoline	5.0	nd	nd	nd	
Surrogate recoveries:					
Trifluorotoluene		93%	90%	95%	
Bromofluorobenzene		95%	C	C	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

S81125-2

CHAIN-OF-CUSTODY RECORD

CLIENT: EMR, Inc.
ADDRESS: 2509 152nd Ave NE, Suite B, Redmond WA 98052
PHONE 425-861-4561 FAX: 425-869-7870
CLIENT PROJECT #: 3613-03 PROJECT MANAGER: David L. Welch

DATE: 11-25-98 PAGE 1 OF 1
PROJECT NAME: Provisioners Express
LOCATION: Auburn, WA
COLLECTOR: David L. Welch DATE OF COLLECTION 11-25-98

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	WTPH-DX	HOLD	8021 BG	NWTPH-G		FIELD NOTES	Total Number of Containers	Laboratory Note Number
ST-1A	6.5'		Soil	4 oz. Jar															X							1	
ST-3A	5.5'		↓	↓															X							↓	
ST-4A	6.0'																		X	X							
ST-5A	6.0'																		X	[illegible]							
ST-6A	5.0'																		X								
ST-7A	5.0'																		X								
ST-8A	6.0'																		X								
ST-9A	4.0'																		X								
ST-9B	6.5'																		X								
ST-10A	6.5'																		X		X	X			Added on 12/01/98		
ST-11A	4.0'																		X	X					@ 1700 by David Welch		
ST-12A	6.5'																		X	X					48 hr TAT		
ST-14A	6.5'																		X	X							
ST-15A	5.0'																		X	X							
ST-16A	4.0'		↓	↓															X	X							

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
David L. Welch	11-25-98	Tod Behrend	5:45pm 11-25-98
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:
48 hr TAT

APPENDIX H - Laboratory Reports - Groundwater Samples

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

December 30, 1998

David Welch
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project 3613-02
Laboratory Reference No. 9812-169

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on December 22, 1998.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

Date of Report: December 30, 1998
Samples Submitted: December 22, 1998
Lab Traveler: 12-169
Project: 3613-02

NWTPH-Dx

Date Extracted:	12-28-98		
Date Analyzed:	12-28&30-98		
Matrix:	Water		
Units:	mg/L (ppm)		
Client ID:	MW-1	MW-2	MW-3
Lab ID:	12-169-01	12-169-02 ACU	12-169-03
Diesel Fuel:	ND	0.25	ND
PQL:	0.25	0.25	0.25
Heavy Oil:	ND	ND	ND
PQL:	0.50	0.50	0.50
Surrogate Recovery: o-Terphenyl	100%	82%	99%
Flags:		Y,T	

Date of Report: December 30, 1998
Samples Submitted: December 22, 1998
Lab Traveler: 12-169
Project: 3613-02

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-28-98
Date Analyzed:	12-28-98
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB1228W1
Diesel Fuel:	ND
PQL:	0.25
Heavy Oil:	ND
PQL:	0.50
Surrogate Recovery:	
o-Terphenyl	102%

Flags:

Date of Report: December 30, 1998
Samples Submitted: December 22, 1998
Lab Traveler: 12-169
Project: 3613-02

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-28-98
Date Analyzed:	12-30-98
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB1228W1 ACU
Diesel Fuel:	ND
PQL:	0.25
Heavy Oil:	ND
PQL:	0.50
Surrogate Recovery:	
o-Terphenyl	94%
Flags:	Y

Date of Report: December 30, 1998
Samples Submitted: December 22, 1998
Lab Traveler: 12-169
Project: 3613-02

NWTPH-Dx
SB/SBD QUALITY CONTROL

Date Extracted:	12-14-98	
Date Analyzed:	12-14-98	
Matrix:	Water	
Units:	mg/L (ppm)	
Spike Level:	1.00 ppm	
Lab ID:	SB1214W1	SB1214W1 DUP
Diesel Fuel:	1.26	1.29
PQL:	0.25	0.25
Percent Recovery:	126	129
RPD:	2.4	
Surrogate Recovery:		
o-Terphenyl	87%	92%

Flags:

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: EMR, Inc.
Project No.: 3613-02
Project Name: Provisioners Express
Project Manager: David Wescott

Turn Around Requested
(Check One)
☐ Same Day
☐ 24 Hours
☐ 48 Hours
☒ Standard
☐ _____ (other)

Project Chemist:

Laboratory No.

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	MW-1	12-23-98	3:05p	W	1			X											
2	MW-2	12-23-98	3:25p	W	1			X											
3	MW-3	12-23-98	3:45p	W	1			X											

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	12-23-98	[signature]	12/23/98
FIRM: EMR, Inc.	TIME: 5:15pm	FIRM: OnSite	TIME: 5:15pm
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

February 5, 1999

Don Clabaugh
Environmental Management Resources, Inc.
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Re: Analytical Data for Project 3613-04
Laboratory Reference No. 9901-145

Dear Don:

Enclosed are the analytical results and associated quality control data for samples submitted on January 29, 1999.

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

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

Sincerely,

David Baumeister
Project Chemist

Enclosures

14924 NE 31st Circle • Redmond, WA 98052 • (425) 883-3881 • Fax (425) 885-4603

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

NWTPH-G/BTEX

Date Extracted: 2-2-99
Date Analyzed: 2-2-99

Matrix: Water
Units: ug/L (ppb)

Client ID:	MW-2			MW-4		
Lab ID:	01-145-01			01-145-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**8.3**		1.0	**ND**		1.0
Toluene	**1.2**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**ND**		1.0
m,p-Xylene	**2.9**		1.0	**ND**		1.0
o-Xylene	**1.1**		1.0	**ND**		1.0
TPH-Gas	**230**		100	**ND**		100
Surrogate Recovery: Fluorobenzene	80%			80%		

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

NWTPH-G/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 2-2-99
Date Analyzed: 2-2-99

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0202W1

	Result	Flags	PQL
Benzene	ND		1.0
Toluene	ND		1.0
Ethyl Benzene	ND		1.0
m,p-Xylene	ND		1.0
o-Xylene	ND		1.0
TPH-Gas	ND		100

Surrogate Recovery:
Fluorobenzene 77%

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

NWTPH-G/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 1-29-99
Date Analyzed: 1-29-99

Matrix: Water
Units: ug/L (ppb)

Lab ID:	01-123-11 **Original**	01-123-11 **Duplicate**	**RPD**	**Flags**
Benzene	ND	ND	NA	
Toluene	ND	ND	NA	
Ethyl Benzene	ND	ND	NA	
m,p-Xylene	ND	ND	NA	
o-Xylene	ND	ND	NA	
TPH-Gas	ND	ND	NA	
Surrogate Recovery:				
Fluorobenzene	86%	80%		

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

NWTPH-G/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 1-22-99
Date Analyzed: 1-22-99

Matrix: Water
Units: ug/L (ppb)
Spike Level: 50.0 ppb

Lab ID:	01-100-01 **MS**	Percent Recovery	01-100-01 **MSD**	Percent Recovery	RPD
Benzene	**45.0**	**90**	**46.4**	**93**	3.1
Toluene	**48.8**	**98**	**47.7**	**95**	2.3
Ethyl Benzene	**45.9**	**92**	**47.7**	**95**	3.8
m,p-Xylene	**45.8**	**92**	**47.4**	**95**	3.5
o-Xylene	**46.0**	**92**	**46.9**	**94**	2.0

Surrogate Recovery:

Fluorobenzene	87%	87%

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B

Date Extracted:	2-4-99
Date Analyzed:	2-4-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-01
Client ID:	**MW-2**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		1.0
Chloromethane	ND		1.0
Vinyl Chloride	ND		1.0
Bromomethane	ND		1.0
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
1,1-Dichloroethene	ND		1.0
Methylene Chloride	ND		5.0
(trans) 1,2-Dichloroethene	ND		1.0
1,1-Dichloroethane	ND		1.0
2,2-Dichloropropane	ND		1.0
(cis) 1,2-Dichloroethene	ND		1.0
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		5.0
1,1-Dichloropropene	ND		1.0
1,2-Dichloroethane	ND		1.0
Trichloroethene	ND		1.0
1,2-Dichloropropane	ND		1.0
Dibromomethane	ND		1.0
Bromodichloromethane	ND		1.0
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	ND		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane			

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 01-145-01
Client ID: MW-2

Compound	Results	Flags	PQL
Chlorobenzene	ND		1.0
1,1,1,2-Tetrachloroethane	ND		1.0
Bromoform	ND		5.0
Bromobenzene	ND		1.0
1,1,2,2-Tetrachloroethane	ND		1.0
1,2,3-Trichloropropane	ND		1.0
2-Chlorotoluene	ND		1.0
4-Chlorotoluene	ND		1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND		1.0
1,2-Dichlorobenzene	ND		1.0
1,2-Dibromo-3-chloropropane	ND		5.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery		Control Limits
Dibromofluoromethane	92		71-133
Toluene-d8	100		80-151
4-Bromofluorobenzene	154	*	75-139

* Surrogate recovery outside control limits.

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B

Date Extracted:	2-4-99
Date Analyzed:	2-4-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-02
Client ID:	**MW-4**

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		1.0
Chloromethane	ND		1.0
Vinyl Chloride	ND		1.0
Bromomethane	ND		1.0
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
1,1-Dichloroethene	ND		1.0
Methylene Chloride	ND		5.0
(trans) 1,2-Dichloroethene	ND		1.0
1,1-Dichloroethane	ND		1.0
2,2-Dichloropropane	ND		1.0
(cis) 1,2-Dichloroethene	ND		1.0
Chloroform	1.6		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		5.0
1,1-Dichloropropene	ND		1.0
1,2-Dichloroethane	ND		1.0
Trichloroethene	ND		1.0
1,2-Dichloropropane	ND		1.0
Dibromomethane	ND		1.0
Bromodichloromethane	ND		1.0
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	ND		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane			

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B

page 2 of 2

Lab ID: 01-145-02
Client ID: MW-4

Compound	Results	Flags	PQL
Chlorobenzene	ND		1.0
1,1,1,2-Tetrachloroethane	ND		1.0
Bromoform	ND		5.0
Bromobenzene	ND		1.0
1,1,2,2-Tetrachloroethane	ND		1.0
1,2,3-Trichloropropane	ND		1.0
2-Chlorotoluene	ND		1.0
4-Chlorotoluene	ND		1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND		1.0
1,2-Dichlorobenzene	ND		1.0
1,2-Dibromo-3-chloropropane	ND		5.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	89	71-133
Toluene-d8	86	80-151
4-Bromofluorobenzene	119	75-139

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL

Date Extracted:	2-4-99
Date Analyzed:	2-4-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0204W1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		1.0
Chloromethane	ND		1.0
Vinyl Chloride	ND		1.0
Bromomethane	ND		1.0
Chloroethane	ND		1.0
Trichlorofluoromethane	ND		1.0
1,1-Dichloroethene	ND		1.0
Methylene Chloride	ND		5.0
(trans) 1,2-Dichloroethene	ND		1.0
1,1-Dichloroethane	ND		1.0
2,2-Dichloropropane	ND		1.0
(cis) 1,2-Dichloroethene	ND		1.0
Chloroform	ND		1.0
1,1,1-Trichloroethane	ND		1.0
Carbon Tetrachloride	ND		5.0
1,1-Dichloropropene	ND		1.0
1,2-Dichloroethane	ND		1.0
Trichloroethene	ND		1.0
1,2-Dichloropropane	ND		1.0
Dibromomethane	ND		1.0
Bromodichloromethane	ND		1.0
(cis) 1,3-Dichloropropene	ND		1.0
(trans) 1,3-Dichloropropene	ND		1.0
1,1,2-Trichloroethane	ND		1.0
Tetrachloroethene	ND		1.0
1,3-Dichloropropane	ND		1.0
Dibromochloromethane	ND		1.0
1,2-Dibromoethane			

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
page 2 of 2

Lab ID: MB0204W1

Compound	Results	Flags	PQL
Chlorobenzene	ND		1.0
1,1,1,2-Tetrachloroethane	ND		1.0
Bromoform	ND		5.0
Bromobenzene	ND		1.0
1,1,2,2-Tetrachloroethane	ND		1.0
1,2,3-Trichloropropane	ND		1.0
2-Chlorotoluene	ND		1.0
4-Chlorotoluene	ND		1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND		1.0
1,2-Dichlorobenzene	ND		1.0
1,2-Dibromo-3-chloropropane	ND		5.0
1,2,4-Trichlorobenzene	ND		1.0
Hexachlorobutadiene	ND		1.0
1,2,3-Trichlorobenzene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	95	71-133
Toluene-d8	97	80-151
4-Bromofluorobenzene	102	75-139

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

HALOGENATED VOLATILES by EPA 8260B
SB/SBD QUALITY CONTROL

Date Extracted: 2-4-99
Date Analyzed: 2-4-99

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0204W1

Compound	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	RPD
1,1-Dichloroethene	50.0	46.6	93	43.1	86	7.7
Benzene	50.0	53.6	107	52.8	106	1.6
Trichloroethene	50.0	49.8	100	51.0	102	2.5
Toluene	50.0	39.9	80	40.4	81	1.2
Chlorobenzene	50.0	46.3	93	47.4	95	2.2

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PAH's by EPA 8270C

Date Extracted:	02-01-99
Date Analyzed:	02-01-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-01
Client ID:	**MW-2**

Compound:	Results	Flags	PQL
Naphthalene	ND		1.0
2-Methylnaphthalene	ND		1.0
Acenaphthylene	ND		1.0
Acenaphthene	ND		1.0
Fluorene	ND		1.0
Phenanthrene	ND		1.0
Anthracene	ND		1.0
Fluoranthene	ND		1.0
Pyrene	ND		1.0
Benzo[a]anthracene	ND		1.0
Chrysene	ND		1.0
Benzo[b]fluoranthene	ND		1.0
Benzo[k]fluoranthene	ND		1.0
Benzo[a]pyrene	ND		1.0
Indeno[1,2,3-cd]pyrene	ND		1.0
Dibenz[a,h]anthracene	ND		1.0
Benzo[g,h,i]perylene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Nitrobenzene-d5	49	35 - 114
2-Fluorobiphenyl	53	43 - 116
Terphenyl-d14	38	33 - 144

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

CPAH's by EPA 8270C (SIM)

Date Extracted:	02-01-99
Date Analyzed:	02-04-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-01
Client ID:	**MW-2**

Compound:	Results	Flags	PQL
Benzo[a]anthracene	ND		0.05
Chrysene	ND		0.05
Benzo[b]fluoranthene	ND		0.05
Benzo[k]fluoranthene	ND		0.05
Benzo[a]pyrene	ND		0.05
Indeno[1,2,3-cd]pyrene	ND		0.05
Dibenz[a,h]anthracene	ND		0.05
Benzo[g,h,i]perylene	ND		0.05

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PAH's by EPA 8270C

Date Extracted:	02-01-99
Date Analyzed:	02-01-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-02
Client ID:	**MW-4**

Compound:	Results	Flags	PQL
Naphthalene	ND		1.0
2-Methylnaphthalene	ND		1.0
Acenaphthylene	ND		1.0
Acenaphthene	ND		1.0
Fluorene	ND		1.0
Phenanthrene	ND		1.0
Anthracene	ND		1.0
Fluoranthene	ND		1.0
Pyrene	ND		1.0
Benzo[a]anthracene	ND		1.0
Chrysene	ND		1.0
Benzo[b]fluoranthene	ND		1.0
Benzo[k]fluoranthene	ND		1.0
Benzo[a]pyrene	ND		1.0
Indeno[1,2,3-cd]pyrene	ND		1.0
Dibenz[a,h]anthracene	ND		1.0
Benzo[g,h,i]perylene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Nitrobenzene-d5	57	35 - 114
2-Fluorobiphenyl	63	43 - 116
Terphenyl-d14	46	33 - 144

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

CPAH's by EPA 8270C (SIM)

Date Extracted:	02-01-99
Date Analyzed:	02-04-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-02
Client ID:	**MW-4**

Compound:	**Results**	**Flags**	**PQL**
Benzo[a]anthracene	ND		0.05
Chrysene	ND		0.05
Benzo[b]fluoranthene	ND		0.05
Benzo[k]fluoranthene	ND		0.05
Benzo[a]pyrene	ND		0.05
Indeno[1,2,3-cd]pyrene	ND		0.05
Dibenz[a,h]anthracene	ND		0.05
Benzo[g,h,i]perylene	ND		0.05

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PAH's by EPA 8270C
METHOD BLANK QUALITY CONTROL

Date Extracted:	02-01-99
Date Analyzed:	02-01-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0201W1

Compound:	Results	Flags	PQL
Naphthalene	ND		1.0
2-Methylnaphthalene	ND		1.0
Acenaphthylene	ND		1.0
Acenaphthene	ND		1.0
Fluorene	ND		1.0
Phenanthrene	ND		1.0
Anthracene	ND		1.0
Fluoranthene	ND		1.0
Pyrene	ND		1.0
Benzo[a]anthracene	ND		1.0
Chrysene	ND		1.0
Benzo[b]fluoranthene	ND		1.0
Benzo[k]fluoranthene	ND		1.0
Benzo[a]pyrene	ND		1.0
Indeno[1,2,3-cd]pyrene	ND		1.0
Dibenz[a,h]anthracene	ND		1.0
Benzo[g,h,i]perylene	ND		1.0

Surrogate	Percent Recovery	Control Limits
Nitrobenzene-d5	65	35 - 114
2-Fluorobiphenyl	75	43 - 116
Terphenyl-d14	55	33 - 144

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

CPAH's by EPA 8270C (SIM)
METHOD BLANK QUALITY CONTROL

Date Extracted:	02-01-99
Date Analyzed:	02-04-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0201W1

Compound:	Results	Flags	PQL
Benzo[a]anthracene	ND		0.05
Chrysene	ND		0.05
Benzo[b]fluoranthene	ND		0.05
Benzo[k]fluoranthene	ND		0.05
Benzo[a]pyrene	ND		0.05
Indeno[1,2,3-cd]pyrene	ND		0.05
Dibenz[a,h]anthracene	ND		0.05
Benzo[g,h,i]perylene	ND		0.05

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PAH's by EPA 8270C
SB/SBD QUALITY CONTROL

Date Extracted: 01-26-99
Date Analyzed: 01-27-99

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0126W1

Compound:	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	RPD	
Phenol	100	38.2	38	43.6	44	13	
2-Chlorophenol	100	69.1	69	70.9	71	2.6	
1,4-Dichlorobenzene	50	34.5	69	33.9	68	1.8	
N-Nitroso-di-n-propylamine	50	33.7	67	33.1	66	1.8	
1,2,4-Trichlorobenzene	50	36.6	73	34.4	69	6.2	
4-Chloro-3-methylphenol	100	92.9	93	79.6	80	15	
Acenaphthene	50	42.1	84	41.3	83	1.9	
2,4-Dinitrotoluene	50	41.4	83	40.7	81	1.7	
4-Nitrophenol	100	40.6	41	42.1	42	3.6	
Pentachlorophenol	100	39.6	40	31.1	31	24	*
Pyrene	50	45.7	91	43.2	86	5.6	

* RPD outside control limits.

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PCB's by EPA 8082

Date Extracted:	2-1-99
Date Analyzed:	2-2-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-01
Client ID:	**MW-2**

	Result	**PQL**
Aroclor 1016:	**ND**	0.050
Aroclor 1221:	**ND**	0.050
Aroclor 1232:	**ND**	0.050
Aroclor 1242:	**ND**	0.050
Aroclor 1248:	**ND**	0.050
Aroclor 1254:	**ND**	0.050
Aroclor 1260:	**ND**	0.050

Surrogate	**Percent Recovery**	**Control Limits**
Decachlorobiphenyl	75	40 - 140

Flags:

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PCB's by EPA 8082

Date Extracted:	2-1-99
Date Analyzed:	2-2-99
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	01-145-02
Client ID:	**MW-4**

	Result	**PQL**
Aroclor 1016:	**ND**	0.050
Aroclor 1221:	**ND**	0.050
Aroclor 1232:	**ND**	0.050
Aroclor 1242:	**ND**	0.050
Aroclor 1248:	**ND**	0.050
Aroclor 1254:	**ND**	0.050
Aroclor 1260:	**ND**	0.050

Surrogate	**Percent Recovery**	**Control Limits**
Decachlorobiphenyl	78	40 - 140

Flags:

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PCB's by EPA 8082
METHOD BLANK QUALITY CONTROL

Date Extracted: 2-1-99
Date Analyzed: 2-2-99

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0201W1

	Result	PQL
Aroclor 1016:	ND	0.050
Aroclor 1221:	ND	0.050
Aroclor 1232:	ND	0.050
Aroclor 1242:	ND	0.050
Aroclor 1248:	ND	0.050
Aroclor 1254:	ND	0.050
Aroclor 1260:	ND	0.050

Surrogate	Percent Recovery	Control Limits
Decachlorobiphenyl	73	40 - 140

Flags:

Date of Report: February 5, 1999
Samples Submitted: January 29, 1999
Lab Traveler: 01-145
Project: 3613-04

PCB's by EPA 8082
SB/SBD QUALITY CONTROL

Date Extracted: 2-1-99
Date Analyzed: 2-2-99

Matrix: Water
Units: ug/L (ppb)

Lab ID: SB0201W1

Spike Level: 1.0

	SB Result	Percent Recovery	SBD Result	Percent Recovery	RPD
Aroclor 1260:	0.634	63	0.610	61	3.9
PQL	0.050		0.050		

Surrogate	**Percent Recovery**	**Percent Recovery**	**Control Limits**
Decachlorobiphenyl	75	73	40 - 140

Flags:

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

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

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

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

D - Data from 1:____ dilution.

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

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

G - Insufficient sample quantity for duplicate analysis.

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

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

M - Predominantly _____ range hydrocarbons present in the sample.

N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.

O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.

P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result.

Q - The RPD of the results between the two columns is greater than 25.

R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

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

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

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

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

X - Sample underwent silica gel cleanup procedures.

Y - Sample underwent acid cleanup procedures.

Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.

ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
14924 NE 31st Circle • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Company: EMR, Inc.
Project No.: 3613-04
Project Name: Provisioners Express Auburn
Project Manager: Don Labaugh

Turn Around Requested (Check One)
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Standard
- ☐ _____ (other)

Project Chemist: YAB

Laboratory No. 01-145

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C & CPAHs	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
1	MW-2	1-29-99	1:00p	W	11		X			X		X	X				H	H	
2	MW-4	1-29-99	11:00A	W	11		X			X		X	X				H	H	

RELINQUISHED BY	DATE	RECEIVED BY	DATE
	1-29-99	Rachel Anderson	1/29/99
FIRM: EMR, Inc.	TIME: 3:20p	FIRM: ESE	TIME: 3:20PM
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS: H - hold pending results of the analyses.

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

APPENDIX I - Disposal Certificates

WEST PAC ENVIRONMENTAL, INC.

54 South Dawson
Seattle, Wa. 98134
(206) 762-1190
FAX (206) 762-9362

TRANSMITTAL # 01

To: Dave Welch
EMR
2509 152nd Avenue NE, Suite B
Redmond, WA 98052

Date: 1/18/99
Job Number/Name:
Provisioners
32-45124

X	Mail/UPS
	For Action
	For Approval
	For Signature

X	Per Your Request
	Read & Return
	For Your Info
	Return to Sender

By _____

	# of Pages Incl. Transmittal
	Per Our Conversation
	Read & Route to File
	For Your Comments

	Change Order Proposal
	Field Authorization No.
	Intent to Pay Prevailing Wages
	Affidavit of Wages Paid
	Certified Payroll Records
	Waste Product Questionnaires (WPQ's)

	Certificate of Insurance
	Job Cost/Status Report as of _____
	Plans/or Specifications
	Schedule/or Cost Estimate
	Analytical Results
	Invoice Vouchers

X	Other: Disposal Documentation

Comments:

Attached:
Pump and Rinse Certificate for Waste Oil UST
WMI petroleum impacted soil weight slips
Bill of Lading 17783, 17605, 17702, and 16689 for tank rinsate and pumping petroleum impacted water.

Signature: Mark McCullough
Title: Division Manager - Remedial Services

West Pac ENVIRONMENTAL INC.

PUMP AND RINSE CERTIFICATION

DATE: 10-5-97

TO WHOM IT MAY CONCERN

This letter is to certify that tank(s), size(s)

1 Tank approx 500 to 1000 gal in size has been Triple rinsed

have been pumped and rinsed for removal.

Work was performed at:

provisioner 2102 west valley Hwy N Auburn

For:

provisioners

Please note that this letter does **not** certify that the above tank(s) have been cleaned for disposal or that it (they) should be considered gas-free.

Sincerely,

West Pac Environmental, Inc.

10-5-97

Underground Tank Division
762-1190

Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 602

WEIGHIN 55940 LB

GROSS	55940 LB
TARE	21200 LB
NET	34740 LB
	17.37 TONS

TIME 09:27 AM 08 OCT 98

From West. Pac

To Prof:le # 422950

Address Job # 32-45124

Steve Leuder

SSD-800

Number Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 60[illegible]

WEIGHIN 81060 LB

GROSS	81060 LB
TARE	32820 LB
NET	48240 LB
	24.12 TON

TIME 02:16 PM 08 OCT 98

From West. Pac

To Prof:le # 422950

Address Job # 32-45124

Steve Leuder

SSD-800

Number _____ Date _____

Commodity _____ @ _____ per _____

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 61

GROSS	85300	LB
MTARE	32740	LB
NET	52560	

TIME 12:32 PM 09 OCT 98 26.28

From West-Pac Prof: Le # 422950

To _____

Address Job # 32-45124
Steve Lauder

SSD-800

Number 1 Date 10-9-

Commodity _____ @ _____ per _____

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 60

WEIGHIN 79020 LB

GROSS	79020	LB
TARE	32740	LB
NET	46280	LB

TIME 07:46 AM 09 OCT 98 23.14 tons

From WEST PAC

To PROFILE # 422950

Address Steve Lauder

SSD-800

[redacted]r _______ Date _______

Commodity _______ @ _______ per _______

Weighed by _______

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 425 TICKET 637

WEIGHIN 82420 LB

H..led by Cedar Grove 425

GROSS 82420 LB
TARE 36280 LB
NET 46140 LB
23.07 TONS

TIME 11:59 AM 12 OCT 98

From West-Pac

To Profile# 422950 Job# 32-45124

Address

SSD-800

Number _______ Date _______

Commodity _______ @ _______ per _______

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 425 TICKET 64[illegible]

Hauled by cedar Grove 425

GROSS 97080 LB
MTARE 36280 LB
NET 60800 LB
30.40 TONS

TIME 02:21 PM 12 OCT 98

From West Pac

To Profile# 422950 Job 32-4512

Address

SSD-800

Number _______ Date _______

Commodity _______ @ _______ per _______

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 633

WEIGHIN 76160 LB

GROSS 76160 LB
TARE 32560 LB
NET 43600 LB
21.80 TONS

TIME 10:29 AM 12 OCT 98

From West-Pac

To Profile# 422950 Job# 32-45124

Address Steve Leider

SSD-800

Number _______ Date _______

Commodity _______ @ _______ per _______

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 640

GROSS 83900
MTARE 32560
NET 51340
25.67 TONS

TIME 01:16 PM 12 OCT 98

From West Pac

To PROFile# 422950 Job# 32-451[illegible]

Address Steve Leider

SSD-800

Date

Commodity @ per

Weighed by GREG

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 425 TICKET

GROSS 105900 LB
MTARE 36300 LB
NET 69600 LB

TIME 02:19 PM 13 OCT 98 34.80

From WEST PAC Job# 32-45124
To PROFILE #422950
Address

SSD-800

Number Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

Hauled by Cedar Grove 425

ID NO. 425 TICKET

WEIGHIN 90440 LB

GROSS 90440 LB
TARE 36300 LB
NET 54140 LB
27.07 TONS

TIME 10:43 AM 13 OCT 98

From West Pac Prof. # 422950
To Job # 32 - 45124
Address

SSD-800

Number Date

Commodity @ per

Weighed by GREG

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET

GROSS 84720 LB
MTARE 32600 LB
NET 52120 LB

TIME 01:42 PM 13 OCT 98 26.06

From WEST PAC Job# 32-45124
To PROFILE #422950
Address

SSD-800

Number Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET

WEIGHIN 82240 LB

GROSS 82240 LB
TARE 32600 LB
NET 49640 LB
24.82

TIME 10:55 AM 13 OCT 98

From West Pac Prof. # 422950
To Job # 32 - 45124
Address

SSD-800

Number 24 Date 10-14-98

Commodity _____ @ _____ per _____

Weighed by GREG

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 257 TICKET 684

WEIGHIN 45740 LB

GROSS	45740 LB
TARE	23600 LB
NET	22140 LB

TIME 12:27 PM 14 OCT 98 11.07

From WEST PAC 32-45124

To PROFILE #422950

Address PROVISIONERS

Dan Doyle

SD-800

Number 38 Date 10-14-98

Commodity _____ @ _____ per _____

Weighed by GREG

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 257 TICKET 695

GROSS	92300 LB
MTARE	23600 LB
NET	68700 LB

TIME 02:27 PM 14 OCT 98 34.35

From WEST PAC 32-45124

To PROFILE #422950

Address

Dan Doyle

SSD-800

Number 49 Date _____

Commodity _____ @ _____ per _____

Weighed by _____

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 257 TICKET 705

GROSS	82780 LB
MTARE	23600 LB
NET	59180 LB

TIME 04:12 PM 14 OCT 98 29.59

From WEST PAC 32-45124

To PROFILE # 422950

Address

Dan Doyle

SD-800

Number 52 Date 10-14-98

Commodity _____ @ _____ per _____

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 257 TICKET

GROSS	89080 LB
MTARE	23600 LB
NET	65480 LB

32,7# TONS

TIME 05:57 PM 14 OCT 98

From WEST PAC

To PROFILE # 422950

Address

Dan Doyle

32-45124

SSD-800

Number 43 Date 1-14-98

Commodity _____ @ _____ per _____

Weighed by GREG

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 705

GROSS 84140 LB
MTARE 32800 LB
NET 51340 LB

TIME 03:11 PM 14 OCT 98 25.67

From WEST PAC

To PROFILE #422950

Address 32-45124

Steve Luder

SSD-800

Number 55 Date 10-14-98

Commodity _____ @ _____ per _____

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET

GROSS 87220 LB
MTARE 32800 LB
NET 54420 LB
27.21 TONS

TIME 04:46 PM 14 OCT 98

From WEST PAC

To PROFILE #422950

Address Steve Luder
Job # 32-45124

SSD-800

Number 53 Date 10-14-98

Commodity _____ @ _____ per _____

Weighed by _____

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 713

GROSS 85100
MTARE 32800
NET 52300
26 15 TONS

TIME 06:20 PM 14 OCT 98

From WEST PAC

To PROFILE # 422950

Address Job # 32-45124

Steve Luder

SSD-800

Number 30 Date 10-14-98

Commodity _____ @ _____ per _____

Weighed by GREG

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET

WEIGHIN 82280 LB

GROSS 82280 LB
TARE 32800 LB
NET 49480 LB

TIME 01:28 PM 14 OCT 98 24.74

From WEST PAC

To PROFILE #422950

Address PROVISIONERS 32-4512

Steve Luder

SSD-800

Date 10-15-98

Commodity _____ @ _____ per _____

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

32-45124

ID NO. 257 TICKET 715

WEIGHIN 89740 LB

GROSS	89740	LB
TARE	35340	LB
NET	54400	LB
	27.20	TONS

TIME 07:19 AM 15 OCT 98

From WEST PAC

To PROFILE # 422950

Address Dan Doyle

SSD-800

Number 2 Date 10-15-98

Commodity _____ @ _____ per _____

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 71[illegible]

WEIGHIN 89240 LB

GROSS	89240
TARE	32820
NET	56420

TIME 07:23 AM 15 OCT 98 28.21

From WEST PAC

To PROFILE # 422950

Address Job # 32-45124

Steve Leader

SSD-800

Number 10 Date _____

Commodity _____ @ _____ per _____

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

Cedar Grove 258

ID NO. 258 TICKET 72[illegible]

WEIGHIN 88220 LB

GROSS	88220
TARE	35040
NET	53180
	26.59 TONS

TIME 08~~32~~ AM 15 OCT 98 Job # 32-45124

From WEST PAC

To Profile # 422950

Address _____

SSD-800

Number 1 Date

Commodity @ per

Weighed by JON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 257 TICKET 1058

WEIGHIN 52400 LB

GROSS	52400 L
TARE	23900 L
NET	28500 L
	14.25

TIME 07:29 AM 05 NOV 98

From West Pac

To Prof. # 422950

Address ~~206~~ # 3245124 PROVISIONERS

Dan Doyle

SSD-800

Number 10 Date 11-6-98

Commodity _____ @ _____ per _____

Weighed by MIKE

UNIT ARRF
70 S ALASKA ST
SEATTLE WA

CEDIC GROUP 270

ID NO. 270 TICKET 1102

WEIGHIN 59440 LB

GROSS [illegible]
TARE [illegible]
NET [illegible]

9.87 TONS

TIME 12:59 PM 06 NOV 98

From WEST - PAC

To PROFILE # 422950

Address _____

Job # 32-45128

Brian K. McCoy

SSD-800

Number 1208 Date 11-18-98

Commodity _____ @ _____ per _____

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

WEST-PAC ID NO. 257 TICKET [illegible]
257

WEIGHIN 48080 LB

GROSS	48080 LB
TARE	23506 LB
NET	24574 LB 12.29 TONS

TIME 07:08 AM 19 NOV 98

From WEST-PAC

To PROFILE # 422950

Address 32-45124

Dawn Doyle

SSD-800

Number 1194 Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 257 TICKET 1194

WEIGHIN 49420 LB

GROSS	49420 LB
TARE	23560 LB
NET	25860 LB
	12.93 TONS

TIME 08:58 AM 18 NOV 98

From West-Pac Job# 32-45124

To PROF: Job# 422950

Address Dan Doyle

SSD-800

Number 1227 Date

Commodity @ per

Weighed by Don

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 12

WEIGHIN 78960 LB

GROSS	78960
TARE	33580
NET	45380
	22.69

TIME 03:32 PM 23 NOV 98

From West Pac Job # 32-45124

To PROF. # 422950

Address Dan Doyle

SSD-800

(1)

Number _____ Date _____

Commodity _____ @ _____ per _____

Weighed by _____

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 1233

WEIGHIN 44320 LB

GROSS	44320	LB
TARE	23080	LB
NET	21240	LB
	10.62	

TIME 10:05 AM 24 NOV 98

From WEST-PAC

To PROFILE # 422950

Address PROVISIONER

32-45124

SSD-800

Number 1302 Date _____

Commodity _____ @ _____ per _____

Weighed by TON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 1302

GROSS	69870
MTARE	32820
NET	37000

18.50 TONS

TIME 07:23 AM 17 DEC 98

From West-Pac Job # 32-45124

To Prof. # 422950

Address _____

Jerry Smiley

SSD-800

Number 1294 Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET

WEIGHIN 88260 LB

GROSS	88260 LB
TARE	32820 LB
NET	55440 LB
	27.72 TONS

TIME 12:19 PM 16 DEC 98

From WEST-PAC Job # 32-45124

To Profile #422950

Address

Jerry Smiley

SSD-800

Number 1290 Date 12-16-98

Commodity @ per

Weighed by MIKE

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET

WEIGHIN 95820 LB

GROSS	95820
TARE	32620
NET	63200
	31.60 TONS

TIME 07:26 AM 16 DEC 98

From WEST-PAC

To PROFILE # 422950

Address PROVISIONERS 32-45124

Jerry Smiley

SSD-800

Dat

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 602

WEIGHIN 55940 LB

GROSS	55940 LB
TARE	21200 LB
NET	34740 LB
	17.37 TONS

TIME 09:27 AM 08 OCT 98

From West Pac

To Profile # 472950

Address Job # 32-45124

Steve Lesher

SSD-800

Number Date

Commodity @ per

Weighed by DON

WMI ARRF
70 S ALASKA ST
SEATTLE WA

ID NO. 254 TICKET 60

WEIGHIN 81060 LB

GROSS	81060 LB
TARE	32820 LB
NET	48240 LB
	24.12 TON

TIME 02:16 PM 08 OCT 98

From West Pac

To Profile # 472950

Address Job # 32-45124

Steve Lesher

SSD-800

16720

54 South Da[illegible]n Street
Seattle, Washington 98134
Phone: 206-762-1190

Emergency Phone: 1-800-424-9300

BILL OF LADING AND GALLONAGE TICKET

SHIPPER / GENERATOR Provisioner	CONTACT Dave	JOB # 32-45124
ADDRESS 2102 west valley Hwy	PHONE #	LOAD # 1
CITY, STATE, ZIP Auburn wash		DATE 10-5-98
CARRIER west pac	PHONE # 7683232	DOCUMENT #
CONSIGNEE E.P.S	CONTACT Dave	TRUCK # 979
ADDRESS 1500 airport Way	PHONE #	PRODUCT TYPE L
CITY, STATE, ZIP Seattle wash		EST. GALLONS:

HM	ITEM #	U.S. DOT DESCRIPTION	#	TYPE	QTY.
	A	waste water		TT	300
	B	Non Haz Liquid			
	C				
	D				

A. WPQ # _____ DISP. CODE: _____ C. WPQ# _____ DISP. CODE: _____

B. WPQ # _____ DISP. CODE: _____ D. WPQ# _____ DISP. CODE: _____

DISPOSAL

WASH OUT: YES ( ) NO ( ) TIME IN _____ TIME OUT _____

E. WATER _____ GALLONS LOCATION _____ TEST _____ DISP. CODE _____

F. SOLIDS _____ GALLONS LOCATION _____ TEST _____ DISP. CODE _____

_____ % SUSPENDED SOLIDS BY CENTRIFUGE + _____ GALS SEDIMENT

G. (OIL) / DIESEL 300 GALLONS LOCATION P-31 TEST OL DISP. CODE OP-A

HOC'S <1000 PCB'S _____ B.S.&W. _____ API _____ LAB: Y / (N)

Shipper's/Generator Certification: I hereby declare that the contents of the consignment are fully and accurately described on the above bill of lading by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway, vessel and rail according to applicable international and national government regulations and this material is not regulated under WAC 173-303, 40 CFR Part 261 or 40 CFR Part 761.

X David Parkhurst
SHIPPER / GENERATOR (PRINT NAME)

X _____
SIGNATURE

DATE: _____

X ROGER L PORTRA
CARRIER - DRIVER 1 (PRINT NAME)

X _____
SIGNATURE

DATE: 10-5-98

X _____
CARRIER - DRIVER 2 (PRINT NAME)

X _____
SIGNATURE

DATE: _____

X Marie Anderson
CONSIGNEE - DISPOSAL FACILITY(PRINT NAME)

X _____
SIGNATURE

DATE: 10-5-98

WP116 (1/96)

54 South L. ...son Street
Seattle, Washington 98134
Phone: 206-762-1190

Emergency Phone: 1-800-424-9300

17605

BILL OF LADING AND GALLONAGE TICKET

SHIPPER / GENERATOR PROVISIONERS		CONTACT	JOB # 32-45124
ADDRESS 2102 WEST VALLEY		PHONE # 735-5200	LOAD # 01
CITY, STATE, ZIP AUBURN WA.			DATE 11/3/98
CARRIER WEST PAC ENVIRO		PHONE # 768-3232	DOCUMENT # 6979
CONSIGNEE E.P.S.		CONTACT Bill	TRUCK # 777
ADDRESS 1500 AIRPORT WY		PHONE # 762-1108	PRODUCT TYPE
CITY, STATE, ZIP SEATTLE WA.			EST. GALLONS:

HM	ITEM #	U.S. DOT DESCRIPTION	#	TYPE	QTY.
	A	WASTE WATER 9½" = 255			255
	B				
	C				
	D				

A. WPQ # _____ DISP. CODE: _____ C. WPQ# _____ DISP. CODE: _____

B. WPQ # _____ DISP. CODE: _____ D. WPQ# _____ DISP. CODE: _____

DISPOSAL

WASH OUT: YES ( ) NO ( ) TIME IN _____ TIME OUT _____

E. WATER 213 GALLONS LOCATION F-PIT TEST PHD DISP. CODE WTP-A

F. SOLIDS 42 GALLONS LOCATION F PIT TEST OK DISP. CODE SOL

13 32 % SUSPENDED SOLIDS BY CENTRIFUGE + 10 GALS SEDIMENT

G. OIL / DIESEL TRACE GALLONS LOCATION _____ TEST _____ DISP. CODE _____

HOC'S _____ PCB'S _____ B.S.&W. _____ API _____ LAB: Y / N

Shipper's/Generator Certification: I hereby declare that the contents of the consignment are fully and accurately described on the above bill of lading by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway, vessel and rail according to applicable international and national government regulations and this material is not regulated under WAC 173-303, 40 CFR Part 261 or 40 CFR Part 761.

X Steve Savola — SHIPPER / GENERATOR (PRINT NAME) — X Steve Savola — SIGNATURE — DATE: _____

X Roland T. Rasher — CARRIER - DRIVER 1 (PRINT NAME) — X [signature] — SIGNATURE — DATE: 11/3/98

X _____ — CARRIER - DRIVER 2 (PRINT NAME) — X _____ — SIGNATURE — DATE: _____

X Bo Colello — CONSIGNEE - DISPOSAL FACILITY(PRINT NAME) — X Bo Colello — SIGNATURE — DATE: 11/3/98

WP116 (1/96)

17783

WestPac ENVIRONMENTAL INC.

54 South D___on Street
Seattle, Washington 98134
Phone: 206-762-1190

Emergency Phone: 1-800-424-9300

BILL OF LADING AND GALLONAGE TICKET

SHIPPER / GENERATOR Provisioners	CONTACT	JOB # 32-45124
ADDRESS 2102 West Valley Hwy	PHONE #	LOAD # 1
CITY, STATE, ZIP Auburn WA		DATE 11-18-98
CARRIER West Pac Enviro	PHONE # 7683252	DOCUMENT #
CONSIGNEE Emerald Petro Service	CONTACT Harry	TRUCK # 181-356
ADDRESS 1500 Airport way So	PHONE # 6221090	PRODUCT TYPE C
CITY, STATE, ZIP Seattle WA		EST. GALLONS: 5000

HM	ITEM #	U.S. DOT DESCRIPTION	#	TYPE	QTY.
	A	Non Hazardous Liquid	1	TT	5813
	B	(water) "G1"			
	C				
	D				

A. WPQ # ______ DISP. CODE: ______ C. WPQ# ______ DISP. CODE: ______

B. WPQ # ______ DISP. CODE: ______ D. WPQ# ______ DISP. CODE: ______

DISPOSAL

WASH OUT: YES ( ) NO ( ) TIME IN ______ TIME OUT ______

E. WATER ______ GALLONS LOCATION ______ TEST ______ DISP. CODE ______

F. SOLIDS ______ GALLONS LOCATION ______ TEST ______ DISP. CODE ______

______ % SUSPENDED SOLIDS BY CENTRIFUGE + ______ GALS SEDIMENT

G. OIL/ DIESEL ______ GALLONS LOCATION ______ TEST ______ DISP. CODE ______

HOC'S ______ PCB'S ______ B.S.&W. ______ API ______ LAB: Y / N

Shipper's/Generator Certification: I hereby declare that the contents of the consignment are fully and accurately described on the above bill of lading by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway, vessel and rail according to applicable international and national government regulations and this material is not regulated under WAC 173-303, 40 CFR Part 261 or 40 CFR Part 761.

X [signature] SHIPPER / GENERATOR (PRINT NAME) X [signature] SIGNATURE DATE: ______

X Terry Luckey CARRIER - DRIVER 1 (PRINT NAME) X [signature] SIGNATURE DATE: 11-18-98

X ______ CARRIER - DRIVER 2 (PRINT NAME) X ______ SIGNATURE DATE: ______

X ______ CONSIGNEE - DISPOSAL FACILITY(PRINT NAME) X ______ SIGNATURE DATE: ______

WP116 (1/96)