Environmental Report
Lakeview Auto Property
Lakewood Station
Lakewood, Washington

January 24, 2006

Submitted To:
Ms. Monica Moravec
KPFF
1601 5th Avenue, Suite 1600
Seattle, Washington 98101

By:
Shannon & Wilson, Inc.
400 N 34th Street, Suite 100
Seattle, Washington 98103

21-1-12180-007

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

ALASKA
COLORADO
FLORIDA
MISSOURI
OREGON
WASHINGTON

January 24, 2006

Ms. Monica Moravec
KPFF
1601 5th Avenue, Suite 1600
Seattle, WA 98101

RE: ENVIRONMENTAL REPORT, LAKEVIEW AUTO PROPERTY, LAKEWOOD STATION, LAKEWOOD, WASHINGTON

Dear Ms. Moravec:

This letter report summarizes our environmental activities conducted at the above-referenced property in support of construction of the new Lakewood Station. Refer to the Cleanup Action Plan (CAP) and project plans and specifications for environmental requirements during construction.

SCOPE OF SERVICES

The objectives of this environmental investigation were to evaluate the potential for near-surface soil contamination that may be encountered during construction of the station, and to supplement data collected by others in 2003. These data will provide a basis for cost estimates and recommendations for handling contaminated soil. Work was completed in accordance with our proposal dated August 12, 2005. Our scope of work included the following tasks:

- Review of the existing Phase I and II Environmental Site Assessments (ESAs) (URS, 2003a, 2003b, Shannon & Wilson, Inc., 2004a), which included a hazardous building materials survey.
- Perform a visual inspection of the office building to evaluate if additional building materials sampling was warranted to support building demolition.
- Collection of soil samples for analytical testing.
- Analytical laboratory testing of the soil, which include petroleum, metals, and polynuclear aromatic hydrocarbons (PAHs).
- Preparation of this report detailing our observations, conclusions, and recommendations.

400 NORTH 34TH STREET · SUITE 100
P.O. BOX 300303
SEATTLE, WASHINGTON 98103
206·632·8020 FAX 206·695·6777
TDD: 1·800·833·6388
www.shannonwilson.com

Two modifications were made to the original scope of work based on discussions with Mr. Mark Menard (Sound Transit) and our understanding of planned station development. Earthwork at the Lakeview Auto property will generally include minor grading, excavation for footings and utility installation, and fill placement. Therefore, the first modification was to change our explorations from probes and monitoring wells to test pits, and sampling was limited to soil only. No water sampling was performed. The second modification resulted from the understanding that the property owner (Mr. Ed Levesque) would demolish the smaller shop building prior to vacating the property. No visual evaluation of building materials was conducted on the smaller shop building.

The sampling effort was limited in extent and served as a screening effort only. It was not intended to absolutely define the lateral or vertical extent of soil contamination, if any. Soil sampling was only conducted in accessible areas and does not cover all potential areas of soil contamination.

GENERAL ENVIRONMENTAL HISTORY

Railroad Right-of-Way

The Lakeview line of the Northern Pacific Railway was constructed in 1873. The railroad was used primarily to transport people and goods through the Western Washington corridor. Outside of the Tacoma city limits, development along the rail corridor was sparse until the 1950s and 1960s, when commercial businesses began developing land in Lakewood. This development was limited primarily to areas adjoining main arterials including Lakeview Avenue SW, Pacific Highway South, and Union Avenue SW. Residential developments filled in vacant land between these main arterials.

The industrial and commercial zoning of much of the rail corridor has attracted hundreds of businesses that require the use of hazardous materials in their operations. Operations of these businesses, both historically and currently, in addition to long-term use by the railroad, could have resulted in releases or spills of contaminants into the environment along the right-of-way (ROW).

Areawide Contamination

In addition to potential contamination along the rail corridor, the now-closed Asarco copper smelter in Ruston, Washington, released great quantities of arsenic, lead, cadmium, and other heavy metals through its smokestack for almost a century, which settled into the soils of Pierce and King Counties, causing widespread contamination. The lead and arsenic concentrations vary greatly over short distances. Lakewood and Tacoma reportedly have elevated lead concentrations (up to 6,670 milligrams per kilogram [mg/kg]). Elevated arsenic has also been found in Dupont, Lakewood, and Tacoma (up to 1,050 mg/kg) (Ross & Associates, 2003; Glass, 2004). Because the surface soils of the railroad ROW have not been appreciably disturbed since the railroad was constructed in 1873, arsenic, cadmium, and lead concentrations in these soils are expected to be relatively high.

Lakeview Auto Property

The Lakeview Auto property was historically occupied by a paint shop as early as 1959 (Shannon & Wilson, Inc., 2004b), followed by about 30 years of auto-wrecking/maintenance businesses (URS, 2003a). The site has apparently always been unpaved.

Currently, the property is developed with a gravel-covered lot and two metal-sided buildings, enclosed by a fence (Figure 2). At the time of this study (Lakeview Auto Wrecking), Mr. Ed Levesque owns and currently occupies the property; property purchase negotiations are ongoing. The existing railroad tracks are located adjacent to the north of the property. The property and adjacent parcels south of the railroad tracks are zoned commercial. Properties on the north side of the tracks are a mix of commercial, residential, and multi-unit apartment buildings.

PROJECT DESCRIPTION

The Lakeview Auto property is the middle parcel within the Lakewood Station footprint. The station footprint, from south to north, is comprised of the Kwang, Lakeview Auto, and Sweeting properties, and is approximately 1,250 feet in the north-south direction and 120 feet in the east-west direction. The site is bounded by Pacific Highway SW to the east, Sound Transit railroad ROW to the west, Burlington Northern Santa Fe Railway (BNSF) ROW to the

north, and private property to the south (Figure 1). The Lakewood Station will serve as the south terminus of the Sounder Commuter Rail system (KPFF, 2005), and will be multi-modal, serving express bus, train, and local bus service along Pacific Highway SW. The facility will also include a structured parking lot, at the northern end of the station, which will serve as a park-and-ride. The long, narrow site will be laid out with the transit center at the south end of the site, including bus and train platforms, as well as a pull-out bus stop along Pacific Highway SW. To the north of the transit center, a pedestrian plaza will serve as a transition between the transit center and the parking garage.

Station construction will generally include demolition of existing buildings, clearing and grubbing (where applicable), and site excavation. Site excavation is expected to be limited to minor grading, excavation for garage footings and slabs-on-grade, utility installation, and excavation for installation of two stormwater infiltration galleries located at the north and south ends of the station footprint.

PREVIOUS ENVIRONMENTAL STUDIES

Previous environmental studies were conducted at the Lakeview Auto property and vicinity in 2003 and 2004 to support property purchase and development:

- Phase I Environmental Site Assessment, Lakeview Auto Wrecking Property (URS, 2003a)
- Phase II Environmental Site Investigation, Lakeview Auto Wrecking Property (URS, 2003b).
- Alignment Screening Report, South Tacoma Segment, Sound Transit Commuter Rail, Pierce County, Washington (Shannon & Wilson, Inc., 2004b)
- Limited Phase II ESA, South Tacoma Segment – Initial Phase, Sound Transit Commuter Rail, Tacoma through Lakewood, Washington (Shannon & Wilson, Inc., 2004a)

These studies, as they relate to proposed construction plans, are briefly discussed in the following sections.

Phase I Environmental Site Assessment (ESA) and Hazardous Building Materials Survey

Review of the Phase I ESA (URS, 2003a) indicated "there is a potential for the presence of contaminants in soil in portions of the site" resulting from incidental spillage of petroleum hydrocarbons and/or automobile fluids that likely occurred throughout the life of the auto-related businesses that operated on the property. Underground storage tanks (USTs) and/or confirmed or potential recognized environmental conditions (RECs) have been or are present on adjacent properties. There is also the potential for groundwater contamination resulting from adjacent properties. A follow-up Phase II ESA was conducted to evaluate some of these RECs.

In conjunction with the Phase I ESA, a hazardous building material survey was performed for the two buildings on site. Eighteen samples were collected. Test results indicated two of the 18 samples contained asbestos; the asbestos-containing materials (ACMs) identified were white roof sealant under the corrugated metal roof on the main building, and silver paint over the black mastic on the garage/shop building roof (Figure 2). URS estimated approximately 1,700 lineal feet (LF) of the white sealant and 100 LF of the silver-painted mastic are present on the two structures. These materials must be removed by an appropriately trained contractor.

Phase II Environmental Site Assessment (ESA) (URS)

Phase II ESA activities conducted in 2003 included soil and groundwater sampling to evaluate potential subsurface impacts related to auto wrecking operations on the property. One surface soil and one groundwater sample were each collected from three borings and submitted for analytical testing. (Samples were collected at 5 and 10 feet below ground surface (bgs), but were not selected for analysis.) Analytical testing included petroleum, benzene, toluene, ethylbenzene, and xylenes (BTEX), metals, volatile organic compounds (VOCs), and/or ethylene/propylene glycol.

Shallow soil sample analysis detected lead and oil- and diesel-range petroleum hydrocarbons at concentrations substantially above cleanup levels. Three surface samples were collected on the northeastern portion of the property (LASB-1 through LASB-3, Figures 2 and 3). One sample had elevated levels of diesel (2,500 mg/kg), oil (20,000 mg/kg), and lead (1,800 mg/kg), all well above Washington Model Toxics Control Act (MTCA) Method A cleanup levels. The other two soil samples had elevated cadmium, lead, or oil. Groundwater samples analyzed

during this previous study did not contain contaminants. Analytical summary tables and figures from this study are contained in Appendix A. Contaminant concentrations exceeding industrial cleanup criteria are shown in Figure 3.

Alignment Screening

The initial environmental evaluation of the corridor to support ROW purchase consisted of an environmental screening of the entire alignment (Tacoma to Nisqually Delta) to identify current and historical property uses that may have impacted soil and/or groundwater beneath the existing railroad tracks and associated ROW (Shannon & Wilson, Inc., 2004b). Six general types of contaminants of concern were identified along the project alignment: solvents, gasoline, mid- to heavy-range petroleum hydrocarbons, metals, polychlorinated biphenyls (PCBs) and PAHs.

Following review of historical records and 2003 land use records, potentially-contaminated sites identified in the study were ranked based on their potential risk of contaminating soil or groundwater underlying the ROW. Rankings were based on two main factors: (1) the type of contaminant and (2) the location of the known or potential contaminant source relative to the ROW. The Lakeview Auto property was assigned a "high" potential to contaminate the ROW.

Phase II Environmental Site Assessment (ESA) (Shannon & Wilson)

As the first step in the follow-up to the alignment screening, an initial exploration program was completed in 2003 to obtain site-specific information on soil and groundwater quality at sites that appeared to pose a risk of contamination and a significant liability to Sound Transit. Owing to the limited time frame for completion of that work, the initial phase of the study was limited to nine sites along the ROW that were being leased from BNSF, including a portion of the ROW adjacent to the Lakeview Auto property.

Samples were collected from three hand auger borings and two monitoring wells (LA-1 through LA-5, Figure 2, and Appendix B, Figure 8-1). One to two soil samples were collected from each boring/monitoring well and one groundwater sample was collected from each monitoring well. Samples were tested for metals, VOCs, petroleum, herbicides, carcinogenic PAHs (cPAHs), and/or cyanide. Analytical results are summarized in Appendix B. Low levels of lube oil-range petroleum hydrocarbons, cPAHs, and solvents were detected below

Washington MTCA Method A industrial cleanup criteria. No contaminants were detected in groundwater.

SITE CONDITIONS

Geology

For the purpose of this study, the most significant geologic deposits are those that play a key role in the fate and transport of contaminants in the subsurface environment. These include the Steilacoom Gravel and the related Vashon Recessional Outwash, which form a surficial blanket over the great majority of the area, and the underlying Vashon Drift, including Vashon Till and Vashon Advance Outwash.

Essentially, the station footprint is underlain by Steilacoom Gravel, which is comprised of loose, relatively uniform pebble gravel with interstitial sand, with stones ranging from 1 to 3 inches in diameter. This gravel is typically about 20 feet thick or less, with a maximum thickness that rarely exceeds about 60 feet. Owing to its coarse grain size and lack of a fine-grained matrix, the Steilacoom Gravel is highly permeable.

Test pits excavated at the Lakeview Auto property for this study generally encountered about 1 foot of slightly silty to silty, gravelly sand, grading to dense, slightly silty to clean, sandy gravel with occasional to numerous cobbles to about 5 feet bgs. Moderate soil staining was observed in the upper 6 to 18 inches. Borings generally encountered similar material down to 26 feet bgs (URS, 2003b; Shannon & Wilson, 2004a). More specific information is contained in our test pit logs (Appendix B) and previous boring logs (Appendix A).

Groundwater

Groundwater flow directions are typically westward or northwestward toward Puget Sound. However, local variations in groundwater flow direction are common, especially where groundwater pumping has disrupted the natural flow direction. In some cases, the groundwater flow in the upper aquifer has been reported to vary by 360 degrees, depending on the season and the status of nearby groundwater extraction.

Previous site borings encountered groundwater between 18 to 21 feet bgs in May and November 2003. No groundwater was encountered in recent test pits.

SUMMARY OF SITE ACTIVITIES

Our scope of services, as outlined above, included a visual inspection of the existing building, and field screening and environmental sampling at the property. These site activities, along with our field observations are discussed in more detail in the paragraphs below. Field methodology is provided in Appendix B, along with test pit logs.

Results of Visual Reconnaissance

Shannon & Wilson, Inc. conducted a visual reconnaissance of the larger site building on November 3, 2005, accompanied by Mr. Ed Levesque of Lakeview Auto Wrecking. No inspection of the shop building was performed. We understand Mr. Levesque will be removing this building when he vacates the property. No additional ACMs were identified during the reconnaissance.

Test Pits

On October 20, 2005, several test pits were excavated within the station footprint to support geotechnical design of the station. Civil Tech retained a backhoe subcontractor to accomplish the test pits. Two of the explorations were located on the Lakeview Auto property (CTTP-5 and CTTP-6, Figure 2). No field indication of contamination was observed during excavation of the test pits. However, one environmental sample was collected from each test pit at approximately 6 inches bgs. Sampling activities were performed following standard sampling protocol (Appendix B).

On November 3, 2005, Shannon & Wilson, Inc. observed the excavation of five test pits. The test pits were excavated in accessible areas, approximately spaced out across the property (LV-1 through LV-5, Figure 2) to supplement previous sampling data. Test pits were excavated to about 3 feet bgs. Soil was generally collected from the top 6 inches, and at 12 and 18 inches bgs for analytical testing. Dark gray soil was observed during excavation of many of the test pits, up to 2.6 feet bgs. A total of 15 soil samples were collected from the site.

No sampling was conducted in the vicinity of the "one story metal shop building" (Figure 2) because of Lakeview Auto Wrecking's occupation of the property. The soil beneath the shop building may have elevated contaminant concentrations.

Analytical Methods

To support soil characterization, soil samples were collected for analytical testing. The samples were submitted to OnSite Environmental, Inc., of Redmond, Washington, for the following analyses:

- Gasoline-range hydrocarbons by Method Northwest Total Petroleum Hydrocarbons – Gasoline with benzene, toluene, ethylbenzene, and xylenes (BTEX) distinction (NWTPH-Gx/BTEX).
- Diesel- and lube oil-range hydrocarbons by Method Northwest Total Petroleum Hydrocarbons as Diesel – Extended (NWTPH-Dx) with acid/silica gel cleanup
- PAHs by U.S. Environmental Protection Agency (EPA) Method 8270C/SIM
- MTCA five metals (arsenic, cadmium, chromium, mercury, and lead) by EPA Method 6010B/7471A
- Toxicity Characteristic Leaching Procedure (TCLP) for lead by EPA Method 1311/6010B

Samples were collected and delivered to the laboratory and analyzed following chain-of-custody procedures. Analytical results are summarized in Tables 1 through 3. Analytical laboratory reports are contained within Appendix C.

ANALYTICAL RESULTS

Seven surface soil and nine near-surface soil samples were collected from the site. The seven surface soil samples were analyzed for petroleum (by Methods NWTPH-Gx/BTEX and/or NWTPH-Dx), MTCA metals, and PAHs. Some follow-up metals testing (lead and TCLP lead) were also performed on two of the surface soil and two of the near-surface soil samples.

Diesel- and oil-range hydrocarbons were detected in several of the surface soil samples, mostly below cleanup criteria. Oil-range hydrocarbons were detected at 2,000 mg/kg in one location (LV-4), at its cleanup criterion. No gasoline-range hydrocarbons or BTEX were detected.

Three of the five MTCA metals were detected; neither arsenic nor mercury were found. All cadmium, chromium, and lead detections were all below MTCA Method A industrial cleanup criteria.

Samples were also submitted for PAHs analysis. No individual PAH concentration exceeded cleanup criteria, or based on toxicity equivalency factor (TEF) analysis. Table 3 provides the TEF analysis of the individual cPAH constituents. The TEF method is used to adjust the concentration of each cPAH such that they are relative to benzo(a)pyrene, which is the most carcinogenic of the PAHs. The individual adjusted cPAH concentrations are then added together for comparison with the MTCA cleanup level for benzo(a)pyrene.

CONCLUSIONS

Based on limited sampling at the site, there appear to have been relatively minor surface releases of petroleum and metals on the Lakeview Auto property that will be encountered during site development. Cadmium and lead were historically detected above MTCA Method A industrial cleanup criteria in near-surface soil (URS, 2003b). Because of the type of metal and the near-surface depth where the two metals were detected, and because the site is located within the Areawide Soil Contamination plume, these detections may be attributed to former smelter operations. Although remedial actions are not likely required for these elevated detections, much of this soil is expected to be removed during excavation of petroleum-contaminated soil (see below). Residual metals contamination, if any, will be addressed by blending and/or capping, minimizing future exposure.

One elevated concentration of oil-range hydrocarbons in surface soil was detected on the property during this investigation; two other elevated oil- and diesel-range detections in surface soil were found in 2003. Because of the sporadic, but likely, widespread surface petroleum contamination, remedial excavation (removal of approximately 6 to 12 inches) across the site, or at least the north half of the site, will be required. No sampling was conducted beneath the shop building. Remedial action may be required below the building footprint, based on former building use and the potential for a historic release.

Contaminant concentrations are present at the property. Due to the elevated levels of petroleum and metals, and the presence of lead and PAHs, excavated soil will require special handling and/or disposal.

Property owners and facility operators are required by law to report the release (historic or current) of any hazardous substance, including petroleum products, to the Washington Department of Ecology within 90 days of discovery. This includes any discovery during excavation, geotechnical or environmental investigations. In our opinion, the results of this investigation qualify as reportable concentrations. Reporting to Ecology could be timed with submitting a "cleanup report" requesting a no further action (NFA) designation after either conducting a cleanup or collecting sufficient data to justify NFA.

CLOSURE

Within the limitation of scope, schedule and budget, Shannon & Wilson has prepared this report in a professional manner, using that level of skill and care normally exercised for similar projects under similar conditions by reputable and competent environmental consultants currently practicing in this area.

The scope of work was intended to address only those environmental concerns with significant potential to result in contamination to the subject property. The sampling effort was considered limited in extent and served as a screening effort only. It was not intended to absolutely define the lateral extent of soil and/or groundwater contamination, if any.

The data presented in this report is based on limited research and sampling at the site and should be considered representative at the time of our observations. Other areas of contamination that were not obvious during our site work could be present at the site. Shannon & Wilson is not responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. We also note that the facts and conditions referenced in this report may change over time, and that the set forth here are applicable to the facts and conditions as described only at the time of this report. We believe that the conclusions stated here are factual, but no guarantee is made or implied.

This report was prepared for the exclusive use of KPFF, Sound Transit, and their respective representatives, and in no way guarantees that any agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. Shannon & Wilson has prepared the enclosed Appendix D, "Important Information About Your Environmental Report," to help you and others in understanding our reports.

If you have any questions regarding the findings presented herein, please call Agnes Tirao at (206) 695-6881 or Scott Gaulke at (206) 695-6893.

Sincerely,

SHANNON & WILSON, INC.

Agnes C. Tirao, P.E.
Principal Engineer

Scott W. Gaulke, P.E., L.H.G.
Vice President

ACT:SWG/act

Enclosures: References
Table 1 –Petroleum and Metals Analytical Results
Table 2 – Polynuclear Aromatic Hydrocarbon Analytical Results
Table 3 – Toxicity Equivalency Factor Adjusted Polynuclear Aromatic Hydrocarbon Concentrations (4 pages)
Figure 1 – Vicinity Map
Figure 2 – Site and Exploration Plan
Figure 3 – Analytical Results Exceeding Industrial Criteria
Appendix A – Previous Sampling Data
Appendix B – Subsurface Explorations
Appendix C – Analytical Laboratory Reports
Appendix D – Important Information About Your Environmental Report

REFERENCES

Glass, Gregory L, 2004, Tacoma smelter plume site, Pierce County footprint study: Soil, arsenic, and lead contamination in western Pierce County, final report: Report prepared by Gregory L. Glass, Seattle, Wash., for the Tacoma-Pierce County Health Department and Washington State Department of Ecology, April.

KPFF, 2005, Lakewood Station, 30% basis of design: Report prepared by The KPFF Team, for Sound Transit, Seattle, Wash., project no. 104622, August 23.

Ross and Associates Environmental Consulting, Ltd., Landau Associates, Inc., and Hubbard Gray Consulting, Inc., 2003, Area-wide soil contamination task force report: Report Submitted to the Washington State Department of Agriculture, The Washington State Department of Ecology, the Washington State Department of Health, and the Washington State Department of Community, Trady and Economic Development, June 30.

Shannon & Wilson, Inc., 2004a, Limited phase II environmental site assessment, South Tacoma segment – initial phase, Sound Transit Commuter Rail, Tacoma through Lakewood, Washington: Report prepared by The Shannon & Wilson Team, for Sound Transit Real Estate Division, Seattle, Wash., project no. 21-1-16409-200, August 20.

Shannon & Wilson, Inc., 2004b, Alignment screening report, South Tacoma segment, Sound Transit Commuter Rail, Pierce County, Washington: Report prepared by The Shannon & Wilson Team, for Sound Transit Real Estate Division, Seattle, Wash., project no. 21-1-16402-003, August 26.

URS, 2003a, Phase I environmental site assessment, Lakeview Auto Wrecking property, 11528 Pacific Highway SW, Lakewood, Washington: Report prepared by URS, Seattle, Wash., for the Central Puget Sound Regional Transit Authority, Seattle, Wash., project no. 33755401, May 19.

URS, 2003b, Phase II environmental site investigation report, Lakeview Auto Wrecking property, 11528 Pacific Highway SW, Lakewood, Washington: Report prepared by URS, Seattle, Wash., for the Central Puget Sound Regional Transit Authority, Seattle, Wash., project no. 33755401, August 5.

TABLE 1
PETROLEUM AND METALS
ANALYTICAL RESULTS
LAKEVIEW AUTO WRECKING PROPERTY

Sample ID	Petroleum							Metals					TCLP
	Gasoline	Diesel	Oil	Benzene	Toluene	Ethyl benzene	Xylenes	Arsenic	Cadmium	Chromium	Lead	Mercury	Lead
CTTP-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	**14**	**6.5**	ND	--
CTTP-6	ND	ND	**150**	ND	ND	ND	ND	ND	ND	**12**	**41**	ND	--
LV-1-0.5	--	ND	**310**	--	--	--	--	ND	ND	**14**	**32**	ND	--
LV-1-1	--	--	--	--	--	--	--	--	--	--	--	--	--
LV-1-2.5	--	--	--	--	--	--	--	--	--	--	--	--	--
LV-2-0.5	--	ND	ND	--	--	--	--	ND	ND	**14**	**7.8**	ND	--
LV-2-1	--	--	--	--	--	--	--	--	--	--	--	--	--
LV-3-0.5	--	ND	**1,300**	--	--	--	--	ND	ND	**23**	**510**	ND	**4.3**
LV-3-1	--	--	--	--	--	--	--	--	--	--	**280**	--	--
LV-3-1.5	--	--	--	--	--	--	--	--	--	--	**14**	--	--
LV-4-0.5	--	**200**	**2,000**	--	--	--	--	ND	**0.85**	**26**	**210**	ND	ND
LV-4-1	--	--	--	--	--	--	--	--	--	--	--	--	--
LV-4-1.5	--	--	--	--	--	--	--	--	--	--	--	--	--
LV-5-0.5	--	ND	**380**	--	--	--	--	ND	ND	**18**	**200**	ND	--
LV-5-1	--	--	--	--	--	--	--	--	--	--	--	--	--
LV-5-1.5	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Industrial Land Use	100	2,000	2,000	0.03	7	6	9	20	2	2,000[1]	1,000	2	--
Area-wide Metals Concentrations (Low to Moderate)	--	--	--	--	--	--	--	up to 200	--	--	700 - 1,000	--	--
Dangerous Waste Criteria (mg/L)	--	--	--	--	--	--	--	--	--	--	--	--	5.0

[1] Cleanup criterion for chromium III

*** No MTCA Method A cleanup criterion is established for this analyte

mg/L = milligrams per liter

MTCA = Washington Model Toxics Control Act

ND = Not Detected

TCLP = Toxicity Characteristic Leachate Procedure

Sample results measured in milligrams per kilogram (mg/kg), except TCLP results, which are reported in mg/L.

Shading indicates concentration exceeds MTCA industrial cleanup criterion

See Tables 2 and 3 for a summary of detected polynuclear aromatic hydrocarbons.

TABLE 2
POLYNUCLEAR AROMATIC HYDROCARBON ANALYTICAL RESULTS
LAKEVIEW AUTO WRECKING PROPERTY

Sample ID	Naph thalene	2-Methyl naph thalene	1-Methyl naph-thalene	Acenaph-thylene	Acenaph-thene	Fluorene	Phenan-threne	Anthra-cene	Fluoran-thene	Pyrene	*Carcinogenic PAHs*							Benzo [g,h,i] perylene	SVOCs[3] (cPAHs)
											Benzo [a] anthra-cene	*Chrysene*	*Benzo [b] fluoran-thene*	*Benzo [k] fluoran-thene*	*Benzo [a] pyrene*	*Indeno (1,2,3-c,d) pyrene*	*Dibenz [a,h] anthracene*		
CTTP-5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01
CTTP-6	ND	ND	ND	ND	ND	ND	ND	ND	0.013	0.017	ND	ND	0.0092	ND	ND	ND	ND	0.010	0.01
LV-1-0.5	0.035	0.069	0.029	ND	ND	ND	ND	ND	0.0087	0.012	ND	0.022	0.022	ND	0.013	0.011	ND	0.020	0.02
LV-2-0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
LV-3-0.5	ND	ND	ND	ND	0.21	ND	1.2	0.27	1.2	1.2	0.49	0.50	0.53	0.17	0.47	0.27	ND	0.37	0.68
LV-3-1	0.080	0.10	0.12	ND	0.36	0.29	2.4	0.57	2.2	2.2	0.94	1.1	1.0	0.33	0.91	0.43	0.15	0.59	1.25
LV-3-1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02
LV-4-0.5	0.0080	0.011	ND	0.014	ND	ND	0.014	0.019	0.061	0.085	0.061	0.099	0.16	0.040	0.099	0.052	0.023	0.099	0.14
LV-4-1	ND	ND	ND	ND	ND	ND	ND	ND	0.027	0.065	0.018	0.038	0.066	0.017	0.054	0.041	ND	0.12	0.07
LV-5-0.5	ND	ND	ND	ND	ND	ND	0.023	ND	0.047	0.054	0.022	0.030	0.034	0.013	0.030	0.018	ND	0.042	0.04
MTCA Method A Industrial Land Use	5[2]	5[2]	5[2]	***	***	***	***	***	***	***	See cPAHs				2	See cPAHs		***	2[1]

[1] Sum of the toxic equivalency factor for each carcinogenic polycyclic aromatic hydrocarbon (PAH)

[2] Total value for naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene

[3] See Table 3 for TEFs.

*** No MTCA Method A cleanup criterion is established for this analyte

cPAHs = carcinogenic polynuclear aromatic hydrocarbons

MTCA = Washington Model Toxics Control Act

ND = not detected

Soil sample results reported in milligrams per kilogram (mg/kg)

TABLE 3
TOXICITY EQUIVALENCY FACTOR ADJUSTED POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS LAKEVIEW AUTO WRECKING PROPERTY

ADJUSTED TEF CONCENTRATION FOR SAMPLE CTTP-5

Analyte	Result for Sample CTTP-5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	ND	0.0078	0.0039	0.1	0.00078
Chrysene	ND	0.0078	0.0039	0.01	0.000078
Benzo(b)fluoranthene	ND	0.0078	0.0039	0.1	0.00078
Benzo(k)fluoranthene	ND	0.0078	0.0039	0.1	0.00078
Benzo(a)pyrene	ND	0.0078	0.0039	1	0.0078
Indeno(1,2,3-c,d)pyrene	ND	0.0078	0.0039	0.1	0.00078
Dibenz(a,h)anthracene	ND	0.0078	0.0039	0.4	0.00312
Sum [b]					**0.01**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

ADJUSTED TEF CONCENTRATION FOR SAMPLE CTTP-6

Analyte	Result for Sample CTTP-6 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	ND	0.0080	0.004	0.1	0.0008
Chrysene	ND	0.0080	0.004	0.01	0.00008
Benzo(b)fluoranthene	0.0092	0.0080	0.004	0.1	0.00092
Benzo(k)fluoranthene	ND	0.0080	0.004	0.1	0.0008
Benzo(a)pyrene	ND	0.0080	0.004	1	0.008
Indeno(1,2,3-c,d)pyrene	ND	0.0080	0.004	0.1	0.0008
Dibenz(a,h)anthracene	ND	0.0080	0.004	0.4	0.0032
Sum [b]					**0.01**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-1-0.5

Analyte	Result for Sample LV-1-0.5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	ND	0.0081	0.00405	0.1	0.00081
Chrysene	0.022	0.0081	0.00405	0.01	0.00022
Benzo(b)fluoranthene	0.022	0.0081	0.00405	0.1	0.0022
Benzo(k)fluoranthene	ND	0.0081	0.00405	0.1	0.00081
Benzo(a)pyrene	0.013	0.0081	0.00405	1	0.013
Indeno(1,2,3-c,d)pyrene	0.011	0.0081	0.00405	0.1	0.0011
Dibenz(a,h)anthracene	ND	0.0081	0.00405	0.4	0.00324
Sum [b]					**0.02**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

TABLE 3
TOXICITY EQUIVALENCY FACTOR ADJUSTED POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS LAKEVIEW AUTO WRECKING PROPERTY

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-2-0.5

Analyte	Result for Sample LV-2-0.5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	ND	0.0097	0.00485	0.1	0.00097
Chrysene	ND	0.0097	0.00485	0.01	0.000097
Benzo(b)fluoranthene	ND	0.0097	0.00485	0.1	0.00097
Benzo(k)fluoranthene	ND	0.0097	0.00485	0.1	0.00097
Benzo(a)pyrene	ND	0.0097	0.00485	1	0.0097
Indeno(1,2,3-c,d)pyrene	ND	0.0097	0.00485	0.1	0.00097
Dibenz(a,h)anthracene	ND	0.0097	0.00485	0.4	0.00388
Sum [b]					**0.02**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-3-0.5

Analyte	Result for Sample LV-3-0.5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	0.49	0.15	0.075	0.1	0.049
Chrysene	0.500	0.15	0.075	0.01	0.005
Benzo(b)fluoranthene	0.53	0.15	0.075	0.1	0.053
Benzo(k)fluoranthene	0.17	0.15	0.075	0.1	0.017
Benzo(a)pyrene	0.47	0.15	0.075	1	0.47
Indeno(1,2,3-c,d)pyrene	0.27	0.15	0.075	0.1	0.027
Dibenz(a,h)anthracene	ND	0.15	0.075	0.4	0.06
Sum [b]					**0.68**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-3-1

Analyte	Result for Sample LV-3-1 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	0.94	0.015	0.0075	0.1	0.094
Chrysene	1.10	0.015	0.0075	0.01	0.011
Benzo(b)fluoranthene	1	0.015	0.0075	0.1	0.1
Benzo(k)fluoranthene	0.33	0.015	0.0075	0.1	0.033
Benzo(a)pyrene	0.91	0.015	0.0075	1	0.91
Indeno(1,2,3-c,d)pyrene	0.43	0.015	0.0075	0.1	0.043
Dibenz(a,h)anthracene	0.15	0.015	0.0075	0.4	0.06
Sum [b]					**1.25**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

TABLE 3
TOXICITY EQUIVALENCY FACTOR ADJUSTED POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS LAKEVIEW AUTO WRECKING PROPERTY

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-3-1.5

Analyte	Result for Sample LV-3-1.5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	ND	0.0091	0.00455	0.1	0.00091
Chrysene	ND	0.0091	0.00455	0.01	0.000091
Benzo(b)fluoranthene	ND	0.0091	0.00455	0.1	0.00091
Benzo(k)fluoranthene	ND	0.0091	0.00455	0.1	0.00091
Benzo(a)pyrene	ND	0.0091	0.00455	1	0.0091
Indeno(1,2,3-c,d)pyrene	ND	0.0091	0.00455	0.1	0.00091
Dibenz(a,h)anthracene	ND	0.0091	0.00455	0.4	0.00364
Sum [b]					**0.02**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-4-0.5

Analyte	Result for Sample LV-4-0.5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	0.061	0.0075	0.00375	0.1	0.0061
Chrysene	0.099	0.0075	0.00375	0.01	0.00099
Benzo(b)fluoranthene	0.16	0.0075	0.00375	0.1	0.016
Benzo(k)fluoranthene	0.04	0.0075	0.00375	0.1	0.004
Benzo(a)pyrene	0.099	0.0075	0.00375	1	0.099
Indeno(1,2,3-c,d)pyrene	0.052	0.0075	0.00375	0.1	0.0052
Dibenz(a,h)anthracene	0.023	0.0075	0.00375	0.4	0.0092
Sum [b]					**0.14**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-4-1

Analyte	Result for Sample LV-4-1 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	0.018	0.014	0.007	0.1	0.0018
Chrysene	0.038	0.014	0.007	0.01	0.00038
Benzo(b)fluoranthene	0.066	0.014	0.007	0.1	0.0066
Benzo(k)fluoranthene	0.017	0.014	0.007	0.1	0.0017
Benzo(a)pyrene	0.054	0.014	0.007	1	0.054
Indeno(1,2,3-c,d)pyrene	0.041	0.014	0.007	0.1	0.0041
Dibenz(a,h)anthracene	ND	0.014	0.007	0.4	0.0056
Sum [b]					**0.07**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

TABLE 3
TOXICITY EQUIVALENCY FACTOR ADJUSTED POLYNUCLEAR AROMATIC HYDROCARBON CONCENTRATIONS LAKEVIEW AUTO WRECKING PROPERTY

ADJUSTED TEF CONCENTRATION FOR SAMPLE LV-5-0.5

Analyte	Result for Sample LV-5-0.5 (mg/kg)	Method Detection Limit (mg/kg)	1/2 Method Detection Limit	Toxic Equivalency Factor	Adjusted Concentration[a] (mg/kg)
Benzo(a)anthracene	0.022	0.0078	0.0039	0.1	0.0022
Chrysene	0.03	0.0078	0.0039	0.01	0.0003
Benzo(b)fluoranthene	0.034	0.0078	0.0039	0.1	0.0034
Benzo(k)fluoranthene	0.013	0.0078	0.0039	0.1	0.0013
Benzo(a)pyrene	0.03	0.0078	0.0039	1	0.03
Indeno(1,2,3-c,d)pyrene	0.018	0.0078	0.0039	0.1	0.0018
Dibenz(a,h)anthracene	ND	0.0078	0.0039	0.4	0.00312
Sum [b]					**0.04**
MTCA Method A Cleanup Level for Industrial Land Use					2.000

[a] Calculated as the detected concentration times the TEF,
or as the method detection limit (if analyte is not detected) times the TEF.

[b] Sum of the TEF-adjusted carcinogenic PAHs.

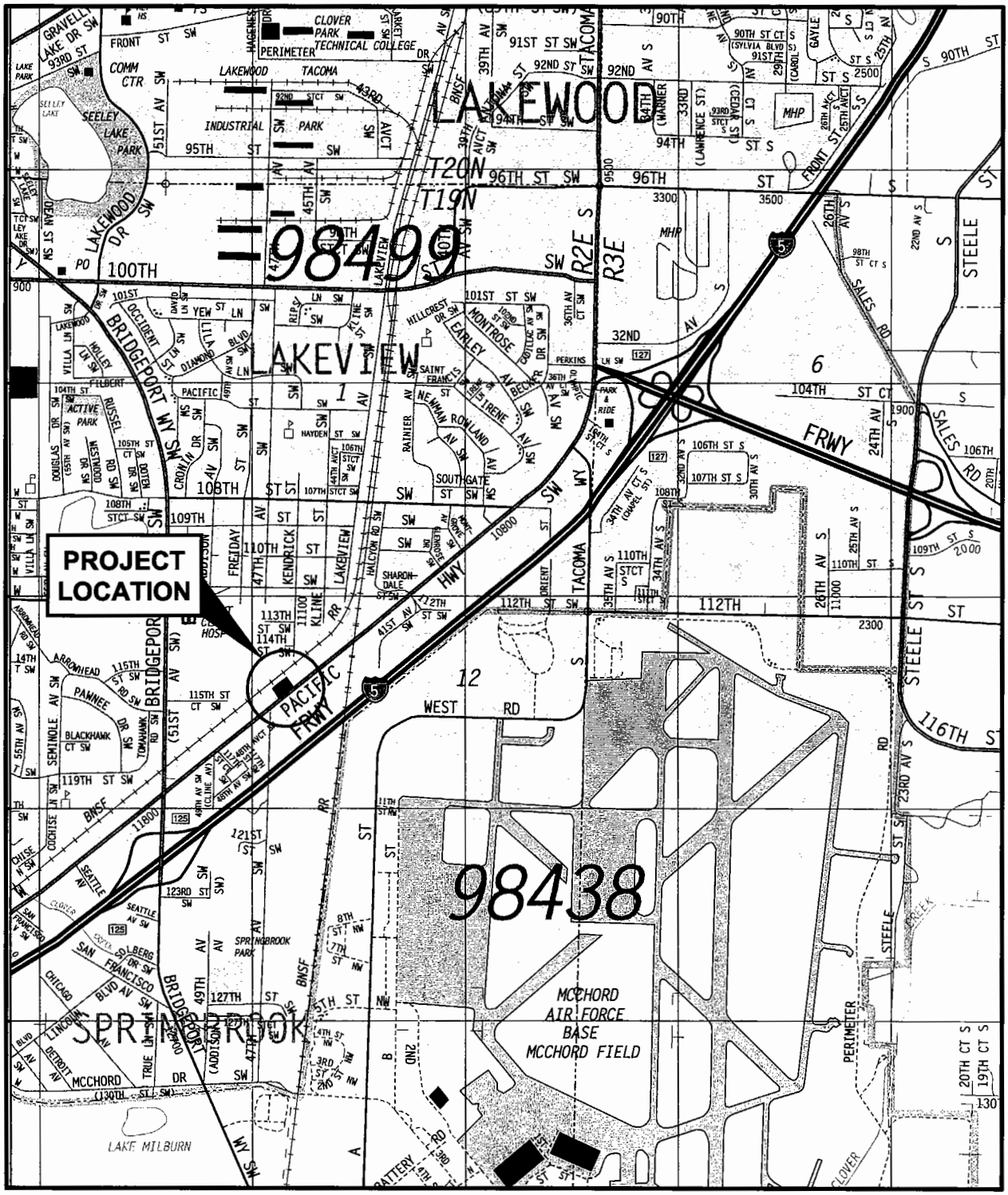
MTCA = Washington Model Toxics Control Act

ND = not detected

PAHs = polycyclic aromatic hydrocarbons

TEF = toxicity equivalency factor

Results are reported in milligrams per kilogram (mg/kg).



0 1/4 1/2 1

Scale in Miles

NOTE

Sound Transit - Environmental
Lakeview Auto Property
Lakewood, Washington

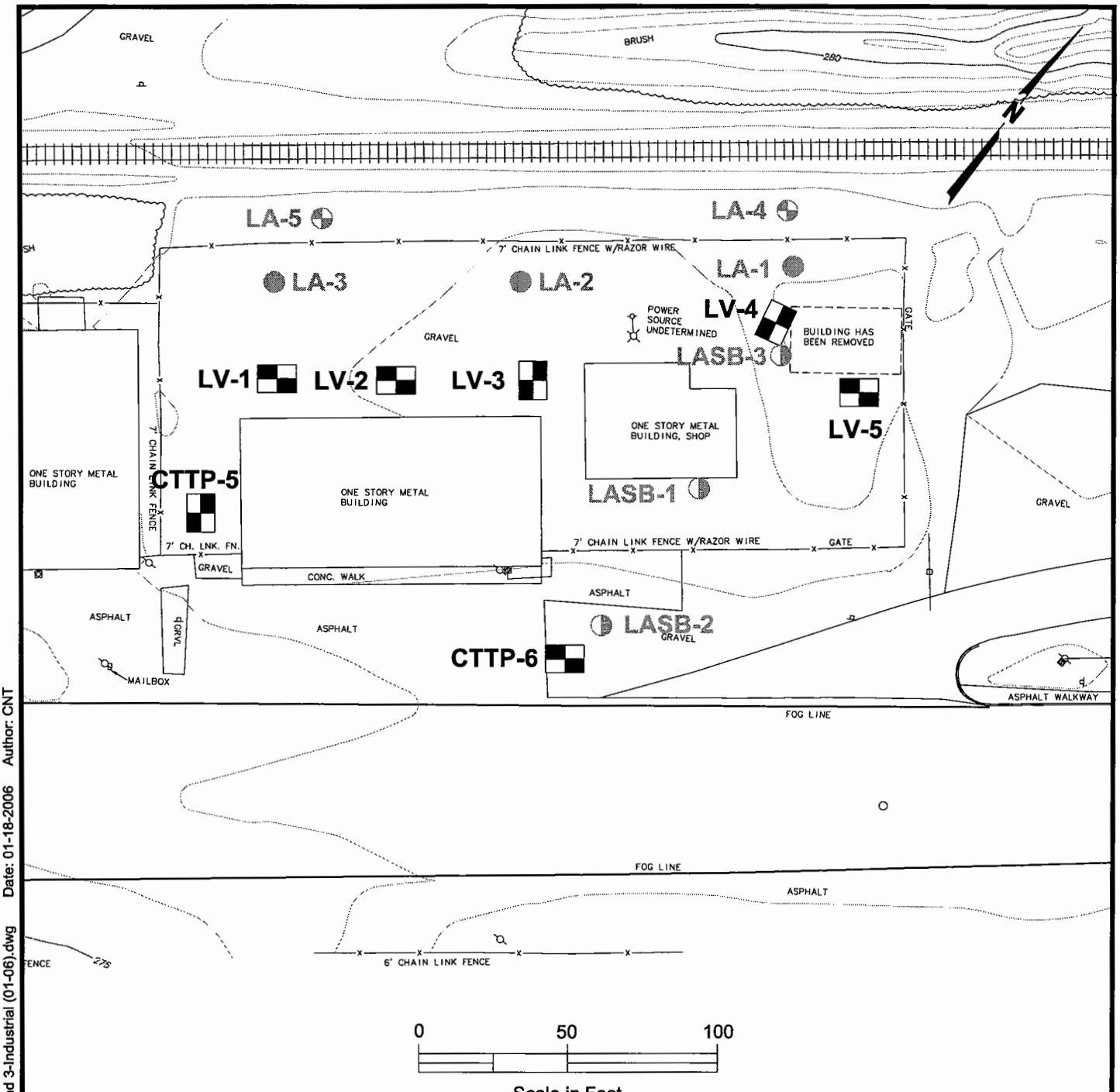
VICINITY MAP

January 2006 21-1-12180-007

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 1

File: J:\21\12180-007\ST - Lakeview Auto\21-1-12180-007 fig 1 (01-06).dwg Date: 01-17-2006 Author: CNT



LEGEND

LV-1	Test Pit Designation and Approximate Location
LASB-1	Boring Designation and Approximate Location (URS, 2003)
LA-1	Hand Boring Designation and Approximate Location (Shannon & Wilson Team, 2003)
LA-4	Monitoring Well Designation and Approximate Location (Shannon & Wilson Team, 2003)

NOTES

This figure is based on drawings by True North, dated 10-13-2005.

Sound Transit - Environmental
Lakeview Auto Property
Lakewood, Washington

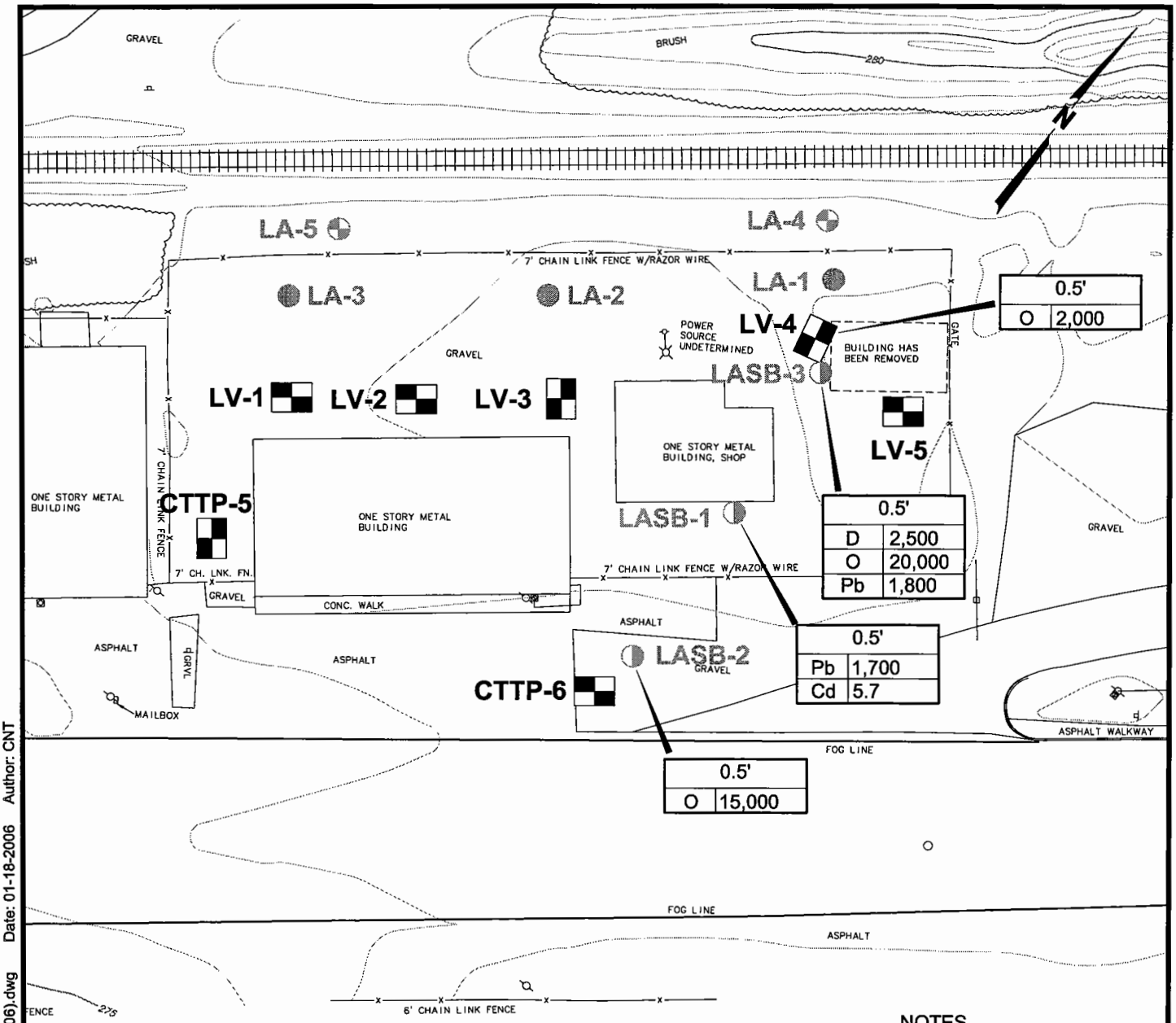
SITE AND EXPLORATION PLAN

January 2006 21-1-12180-007

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 2

File: J:\21\12180-007\ST - Lakeview Auto\21-1-12180-007 fig 2 and 3-Industrial (01-06).dwg Date: 01-18-2006 Author: CNT



LEGEND

LV-1	Test Pit Designation and Approximate Location
LASB-1	Boring Designation and Approximate Location (URS, 2003)
LA-1	Hand Boring Designation and Approximate Location (Shannon & Wilson Team, 2003)
LA-4	Monitoring Well Designation and Approximate Location (Shannon & Wilson Team, 2003)
O	Oil
D	Diesel
Cd	Cadmium
Pb	Lead

NOTES

1. This figure is based on drawings by True North, dated 10-13-2005.
2. Only contaminant concentrations exceeding cleanup criteria are shown. Concentrations are in milligrams per kilogram.
3. "CTTP - " test pits were excavated by CivilTech to support geotechnical site services on 10-20-2005.

Sound Transit - Environmental
Lakeview Auto Property
Lakewood, Washington

ANALYTICAL RESULTS EXCEEDING INDUSTRIAL CRITERIA

January 2006 21-1-12180-007

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 3

File: J:\21\12180-007\ST - Lakeview Auto\21-1-12180-007 fig 2 and 3-Industrial (01-06).dwg Date: 01-18-2006 Author: CNT

APPENDIX A

PREVIOUS SAMPLING DATA

APPENDIX A

PREVIOUS SAMPLING DATA

TABLE OF CONTENTS

LIST OF TABLES

Table No.

LIST OF FIGURES

Figure No.

Table 3-1
Soil and Groundwater Sampling Rational

Soil Boring Location	Rationale For Boring and Samples	Approximate Depth (ft, bgs)	Analyses Performed	Blind Duplicate
SB-1	To assess soil and groundwater conditions in the location of the auto disassembly shed.	0.5	diesel/oil, metals, ethylene and propylene glycol, gas/BTEX	
		10	-	
		15	-	
		Groundwater	diesel/oil, gas/BTEX, PAHs, metals	
SB-2	To evaluate soil conditions in storage areas and to evaluate the potential for onsite migration of contaminants from adjacent properties to the south.	0.5	diesel/oil, metals, ethylene and propylene glycol, gas/BTEX	
		10	-	
		15	-	
		Groundwater	diesel/oil, gas/BTEX	
SB-3	To evaluate soil conditions in storage areas and to evaluate the potential for onsite migration of contaminants from adjacent properties to the north.	0.5	diesel/oil, metals, gas/BTEX	
		10	-	
		15	-	
		Groundwater	diesel/oil, gas/BTEX, VOCs w/ MTBE	X

Table 3-2
Soil Sample Results for Gasoline/Diesel/Oil/BTEX

Sample ID Sample depth (ft bgs) Sample date	MTCA Industrial Cleanup Level		LASB-1-0.5 0.5 5/9/2003	LASB-2-0.5 0.5 5/8/2003	LASB3-0.5 0.5 5/8/2003
BTEX (mg/kg)	**Method A**	**Method B**			
Benzene	0.03	18.2	0.011 U	0.022 U	0.022 U
Toluene	7	16,000	0.053 U	0.11 U	0.11 U
Ethylbenzene	6	8,000	0.053 U	0.11 U	0.11 U
m,p-xylene	9	160,000	0.053 U	0.11 U	0.11 U
o-xylene	9	160,000	0.053 U	0.11 U	0.11 U
TPH (mg/kg)					
Gasoline	100	NE	5.3 U	11 U	11 U
Diesel	2,000	NE	130 U	130 U	**2,500**
Oil	2,000	NE	1,600	**15,000**	**20,000**

Notes:
ft bgs - feet below ground surface
mg/kg - milligrams per kilogram
U- analyte not detected above the reporting limit.
NE- Not Established
Bold- indicates that results is above the MTCA Cleanup Level

Table 3-3
Soil Sample Results for Metals

Sample ID Sample depth (ft bgs) Sample date	MTCA Industrial Cleanup Level		LASB-1-0.5 0.5 5/9/2003	LASB-2-0.5 0.5 5/8/2003	LASB3-0.5 0.5 5/8/2003
Analyte (mg/kg)	**Method A**	**Method B**			
Arsenic	20	0.667	11 U	11 U	11 U
Barium	NE	5,600	76	47	76
Cadmium	2	80	**5.7**	1.3	**5**
Chromium	2,000 (Cr^{3+}), 19 (Cr^{6+})	120,000 (Cr^{3+})	30	30	38
Lead	1,000	NE	**1,700**	280	**1,800**
Mercury	2	24	0.27 U	0.27 U	0.27 U
Selenium	NE	400	11 U	11 U	11 U
Silver	NE	400	2.5	0.54 U	0.55 U

Notes:
ft bgs - feet below ground surface
mg/kg - milligrams per kilogram
U- analyte not detected above the reporting limit.
NE- Not Established
Bold- indicates that results is above the MTCA Cleanup Level

Table 3-4
Soil Sample Results for Ethylene/Proylene Glycol

Sample ID Sample depth (ft bgs) Sample date	MTCA Cleanup Level		LASB-1-0.5 0.5 5/9/2003	LASB-2-0.5 0.5 5/8/2003
Analyte (mg/kg)	**Method A**	**Method B**		
Propylene glycol	NE	NE	2.02 U	1.95 U
Ethylene glycol	NE	160,000,000	2.02 U	1.95 U

Notes:
ft bgs - feet below ground surface
mg/kg - milligrams per kilogram
U- analyte not detected above the reporting limit.
NE- Not Established
Bold- indicates that results is above the MTCA Cleanup Level

Table 3-5
Groundwater Sample Results for Gasoline/Diesel/Oil/BTEX

Sample ID Sample date	MTCA Industrial Cleanup Level		LASB-1-GW 5/9/2003	LASB-2-GW 5/9/2003	LABS-3-GW 5/8/2003
BTEX (ug/L)	**Method A**	**Method B**			
Benzene	5	0.795	1 U	1 U	1 U
Toluene	1,000	1,600	1 U	1 U	1 U
Ethylbenzene	700	800	1 U	1 U	1 U
m,p-xylene	1,000	16,000	1 U	1 U	1 U
o-xylene	1,000	16,000	1 U	1 U	1 U
TPH (ug/L)					
Gasoline	800 / 1,000*	NE	100 U	100 U	100 U
Diesel	500	NE	0.25 U	0.26 U	0.26 U
Oil	500	NE	0.41 U	0.42 U	0.42 U

Notes:
ug/L - micrograms per liter
U- analyte not detected above the reporting limit.
NE- Not Established
Bold- indicates that results is above the MTCA Cleanup Level
*If beneze is present, cleanup level is 800 ug/L. If there is no detectable benzene, cleanup level is 1,000 ug/L.

Table 3-6
Groundwater Sample Results for VOCs

Sample ID / Sample date	MTCA Industrial Cleanup Level		LASB-3-GW 5/8/2003	LASB-DUP-GW 5/8/2003
Analyte (ug/L)	**Method A**	**Method B**		
1,1,1-Trichloroethane	200	7,200	0.20 U	0.20 U
1,1-Dichloroethane	NE	800	0.20 U	0.20 U
1,1-Dichloroethene	NE	0.0729	0.20 U	0.20 U
Chloroethane	NE	NE	0.20 U	0.20 U
Tetrachloroethene	5	0.858	0.20 U	0.20 U
Trichloroethene	5	3.98	0.20 U	0.20 U
cis-1,2-Dichloroethene	NE	80	0.20 U	0.20 U
trans-1,2-Dichloroethene	NE	160	0.20 U	0.20 U
Vinyl chloride	0.2	0.0292	0.20 U	0.20 U
Acetone	NE	800	5 U	5 U
Benzene	5	0.795	0.20 U	0.20 U
Bromodichloromethane	NE	0.706	0.20 U	0.20 U
Bromobenzene	NE	NE	0.20 U	0.20 U
Bromochloromethane	NE	NE	5 U	5 U
Bromoform	NE	5.54	1 U	1 U
Bromomethane	NE	11.2	0.20 U	0.20 U
2-Butanone	NE	4,800	0.20 U	0.20 U
n-Butylbenzene	NE	NE	0.20 U	0.20 U
sec-Butylbenzene	NE	NE	0.20 U	0.20 U
tert-Butylbenzene	NE	NE	0.20 U	0.20 U
Carbon disulfide	NE	800	0.20 U	0.20 U
Carbon tetrachloride	NE	0.337	0.20 U	0.20 U
Chlorobenzene	NE	160	0.20 U	0.20 U
2-Chloroethylvinyl ether	NE	NE	1 U	1 U
Chloroform	NE	7.17	0.20 U	0.20 U
Chloromethane	NE	3.37	0.20 U	0.20 U
2-Chlorotoluene	NE	NE	0.20 U	0.20 U
4-Chlorotoluene	NE	NE	0.20 U	0.20 U
Dibromochloromethane	NE	0.521	0.20 U	0.20 U
1,2-Dichlorobenzene	NE	720	0.20 U	0.20 U
1,3-Dichlorobenzene	NE	NE	0.20 U	0.20 U
1,4-Dichlorobenzene	NE	1.82	0.20 U	0.20 U
1,3-Dichloropropane	NE	NE	0.20 U	0.20 U
2,2-Dichloropropane	NE	NE	0.20 U	0.20 U
1,1-Dichloropropene	NE	NE	0.20 U	0.20 U
1,2-Dibromo-3-chloropropane	NE		1 U	1 U
1,2-Dibromoethane	NE	NE	0.20 U	0.20 U
Dibromomethane	NE	NE	0.20 U	0.20 U
Dichlorodifluoromethane	NE	1,600	0.20 U	0.20 U
1,2-Dichloroethane	NE	0.481	0.20 U	0.20 U
1,2-Dichloropropane	NE	0.643	0.20 U	0.20 U
cis-1,3-Dichloropropene	NE	0.243	0.20 U	0.20 U
trans-1,3-Dichloropropene	NE	0.243	0.20 U	0.20 U
Ethylbenzene	700	800	0.20 U	0.20 U
Hexachlorobutadiene	NE	1	0.20 U	0.20 U
2-Hexanone	NE	NE	2 U	2 U
Isopropylbenzene	NE	NE	0.20 U	0.20 U
p-Isopropyltoluene	NE	NE	0.20 U	0.20 U
Methylene chloride	5	5.83	1 U	1 U

Table 3-6
Groundwater Sample Results for VOCs

Sample ID Sample date	MTCA Industrial Cleanup Level		LASB-3-GW 5/8/2003	LASB-DUP-GW 5/8/2003
Analyte (ug/L)	**Method A**	**Method B**		
4-methyl-2-pentanone	NE	640	0.20 U	0.20 U
Naphthalene	160	160	7 U	7 U
n-Propylbenzene	NE	NE	0.20 U	0.20 U
Styrene	NE	1.46	0.20 U	0.20 U
1,1,1,2-Tetrachloroethane	NE	1.68	0.20 U	0.20 U
1,1,2,2-Tetrachloroethane	NE	0.219	0.20 U	0.20 U
Toluene	1,000	1,600	0.22	0.3
1,2,3-Trichlorobenzene	NE	1,600	0.20 U	0.20 U
1,2,4-Trichlorobenzene	NE	80	0.20 U	0.20 U
MTBE			0.20 U	0.20 U
1,1,2-Trichloroethane	NE	0.768	0.20 U	0.20 U
Trichlorofluoromethane	NE	2,400	0.20 U	0.20 U
Trichlorotrifluoromethane	NE	NE	0.20 U	0.20 U
1,2,4-Trimethylbenzene	NE	NE	0.20 U	0.20 U
1,3,5-trimethylbenzene	NE	NE	0.20 U	0.20 U
Vinyl acetate	NE	8,000	1 U	1 U
Total Xylenes	1,000	16,000	0.20 U	0.20 U

Notes:
ug/L - micrograms per liter
U- analyte not detected above the reporting limit.
NE- Not Established
Bold- indicates that results is above the MTCA Cleanup Level

Table 3-7
Groundwater Sample Results for Dissolved Metals

Sample ID Sample date	MTCA Industrial Cleanup Level		LASB-1-GW 5/9/2003
Analyte (ug/L)	**Level A**	**Level B**	
Arsenic	5	0.0583	3 U
Barium	NE	560	25 U
Cadmium	5	8	4 U
Chromium	50	24,000 (Cr^{3+})	10 U
Lead	15	NE	1 U
Mercury	2	4.8	0.5 U
Selenium	NE	230	5 U
Silver	NE	80	10 U

Notes:
ug/L - micrograms per liter
U- analyte not detected above the reporting limit.
NE- Not Established
Bold- indicates that results is above the MTCA Cleanup Level

Table 3-8
Groundwater Sample Results for PAHs

Sample ID Sample date	MTCA Cleanup Level		LASB-1-GW 5/9/2003
Analyte (mg/kg)	**Method A**	**Method B**	
Naphthalene	160	NE	0.10 U
2-Methylnaphthalene	160	NE	0.10 U
1-Methylnaphthalene	160	NE	0.10 U
Acenaphthylene	NE	NE	0.10 U
Acenaphthene	NE	960	0.10 U
Fluorene	NE	640	0.10 U
Phenanthrene	NE	NE	0.10 U
Anthracene	NE	2,400	0.10 U
Fluoranthene	NE	640	0.10 U
Pyrene	NE	480	0.10 U
Benzo[a]anthracene	*	0.012	0.010 U
Chrysene	*	0.012	0.010 U
Benzo[b]fluoranthene	*	0.012	0.010 U
Benzo[k]fluoranthene	*	0.012	0.010 U
Benzo[a]pyrene	0.1	0.012	0.010 U
Indeno(1,2,3-c,d)pyrene	*	0.012	0.010 U
Dibenz[a,h]anthracene	*	0.012	0.010 U
Benzo[g,h,I]perylene	NE	NE	0.010 U

Notes:
U- analyte not detected above the reporting limit.
NE- Not established
*- Cleanup levels under 2001 MTCA are for total caringoenic PAHs- groundwater 0.1 ug/L.

TABLE 8-1
SAMPLING LOCATIONS AND ANALYTICAL TESTING
LAKEVIEW AUTO WRECKING PROPERTY

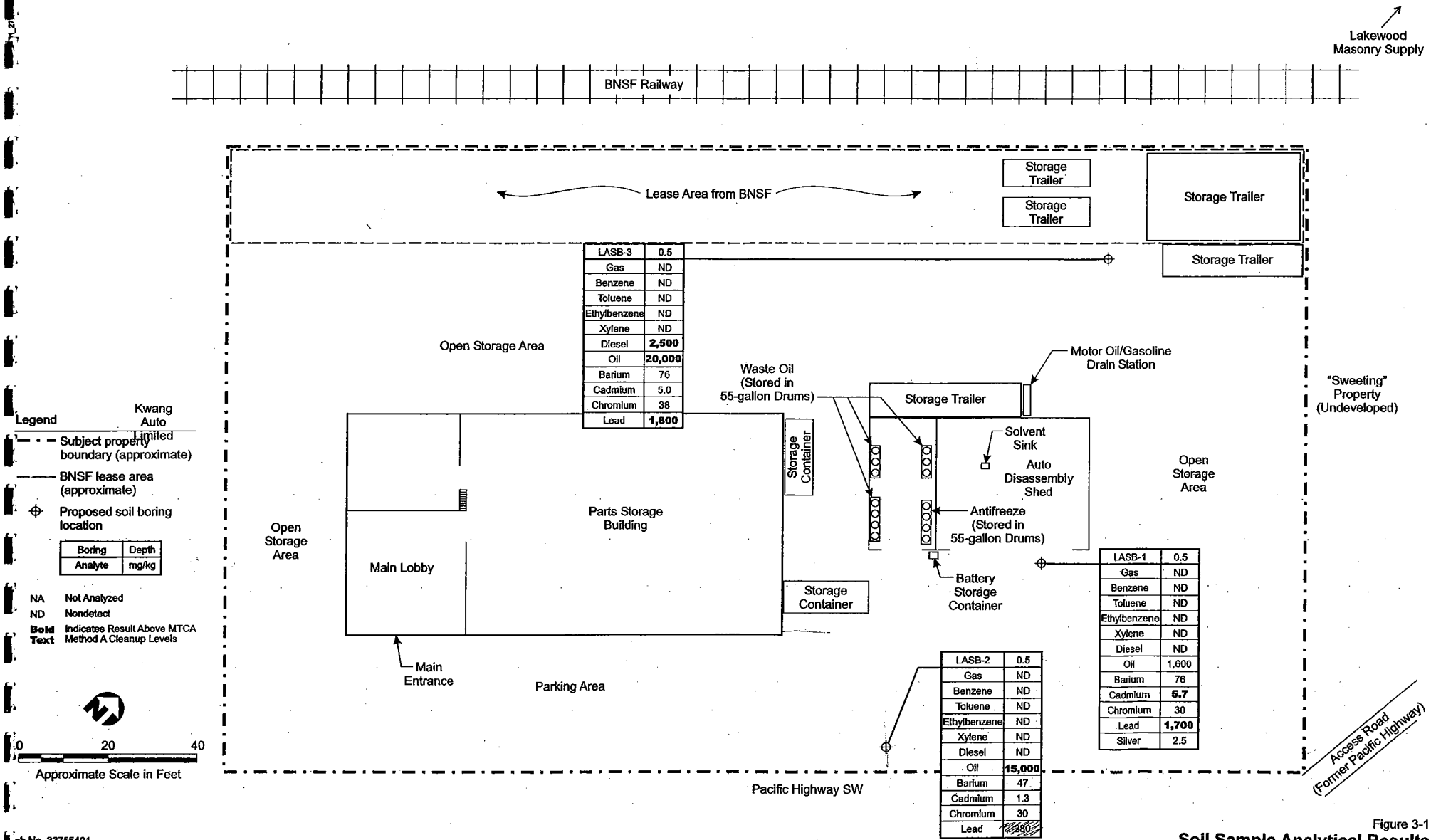
Boring	Sampling Objectives	Sampling Method	Priority Pollutants		VOCs		Gx		Dx		TCLP Lead	Herbicides	PAHs	Cyanide
			soil	water	soil	water	soil	water	soil	water	soil	soil	soil	water
LA-1	Evaluate potential releases from auto body shop and former paint shop, long-term railroad use	hand auger	1	0	1	0	1	0	1	0	0	1	1	0
LA-2	Evaluate potential releases from auto body shop and former paint shop, long-term railroad use	hand auger	1	0	1	0	1	0	1	0	0	1	1	0
LA-3	Evaluate potential releases from auto body shop and former paint shop, long-term railroad use	hand auger	1	0	1	0	1	0	1	0	0	1	1	0
LA-4	Evaluate potential releases from auto body shop and former paint shop, long-term railroad use	soil boring /MW	2	1	2	1	2	1	2	1	1	1	1	1
LA-5	Evaluate potential releases from auto body shop and former paint shop, long-term railroad use	soil boring /MW	2	1	2	1	2	1	2	1	0	1	1	1

Dx = Northwest Total Petroleum Hydrocarbons as diesel-extended
Gx = Northwest Total Petroleum Hydrocarbons as gasoline
Herbicides = chlorinated acid herbicides
MW = monitoring well
PAHs = polycyclic aromatic hydrocarbons
Priority Pollutants = metals (silver, arsenic, beryllium, cadmium, chromium, copper, mercury, nickel, lead, antimony, selenium, thallium, zinc) and cyanide
TCLP Metals = Toxicity Characteristic Leaching Procedure for metals
VOCs = volatile organic compounds

TABLE 8-2
ANALYTICAL RESULTS
LAKEVIEW AUTO WRECKING PROPERTY

Sample ID	Matrix *	Sample Depth (feet)	Lube Oil Range	Toluene	Metals						TCLP Lead	SVOCs	VOCs	
					Cadmium	Chromium	Copper	Lead	Nickel	Zinc		cPAHs	Methylene Chloride	PCE
LA1-S1	soil	2	ND	ND	ND	9.8	17	19	15	39	--	ND	ND	ND
LA2-S1	soil	2	470	ND	0.62	12	14	100	14	530	--	0.038	ND	ND
LA3-S1	soil	2	150	ND	ND	9.7	18	23	14	52	--	0.092	ND	ND
LA4-S1	soil	2.5-4	140	ND	ND	14	29	110	20	140	ND	0.116	0.0078	0.0012
LA4-S7	soil	17.5-19	ND	ND	ND	13	33	ND	15	21	--	--	ND	ND
LA5-S1	soil	2.5-4	75	0.0013	ND	16	33	20	24	34	--	0.0161	0.013	0.0031
LA5-S7	soil	17.5-18.4	ND	ND	ND	14	23	ND	17	22	--	--	ND	ND
MTCA Method A Unrestricted Land Use (soil)		--	2,000	7	2	2,000 [1]	***	250	***	***	5 [2]	0.1	0.02	0.03
MTCA Method A Industrial Land Use (soil)		--	2,000	7	2	2,000 [1]	***	1,000	***	***	5 [2]	2	0.02	0.03
Metals Background Levels [3]		--	--	--	--	--	10-100	--	20->40	10-100	--	--	--	--

PCE = tetrachloroethene
cPAHs = carcinogenic (cancer-causing) polycyclic aromatic hydrocarbons
-- = not analyzed
ND = not detected
Soil sample results reported in milligrams per kilogram (mg/kg)
MTCA = Washington Model Toxics Control Act
Shading indicates concentration exceeds MTCA cleanup criterion or metals background level
[1] Cleanup criterion for chromium III
[2] Dangerous Waste criterion (mg/L)
[3] Background Range or 90th Percentile Value for Metals in Washington State Soil (C. San Juan, 1994; J. Dragun, and A. Chiasson, 1991)
TCLP = Toxicity Characteristic Leaching Procedure (mg/L)
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
* No contaminants were detected in groundwater samples.
*** No MTCA Method A cleanup criterion is established for this analyte.



Job No. 33755401

Figure 3-1

Soil Sample Analytical Results

URS

Sound Transit

Levesque/Lakeview Auto Wrecking Property – Lakewood, Washington

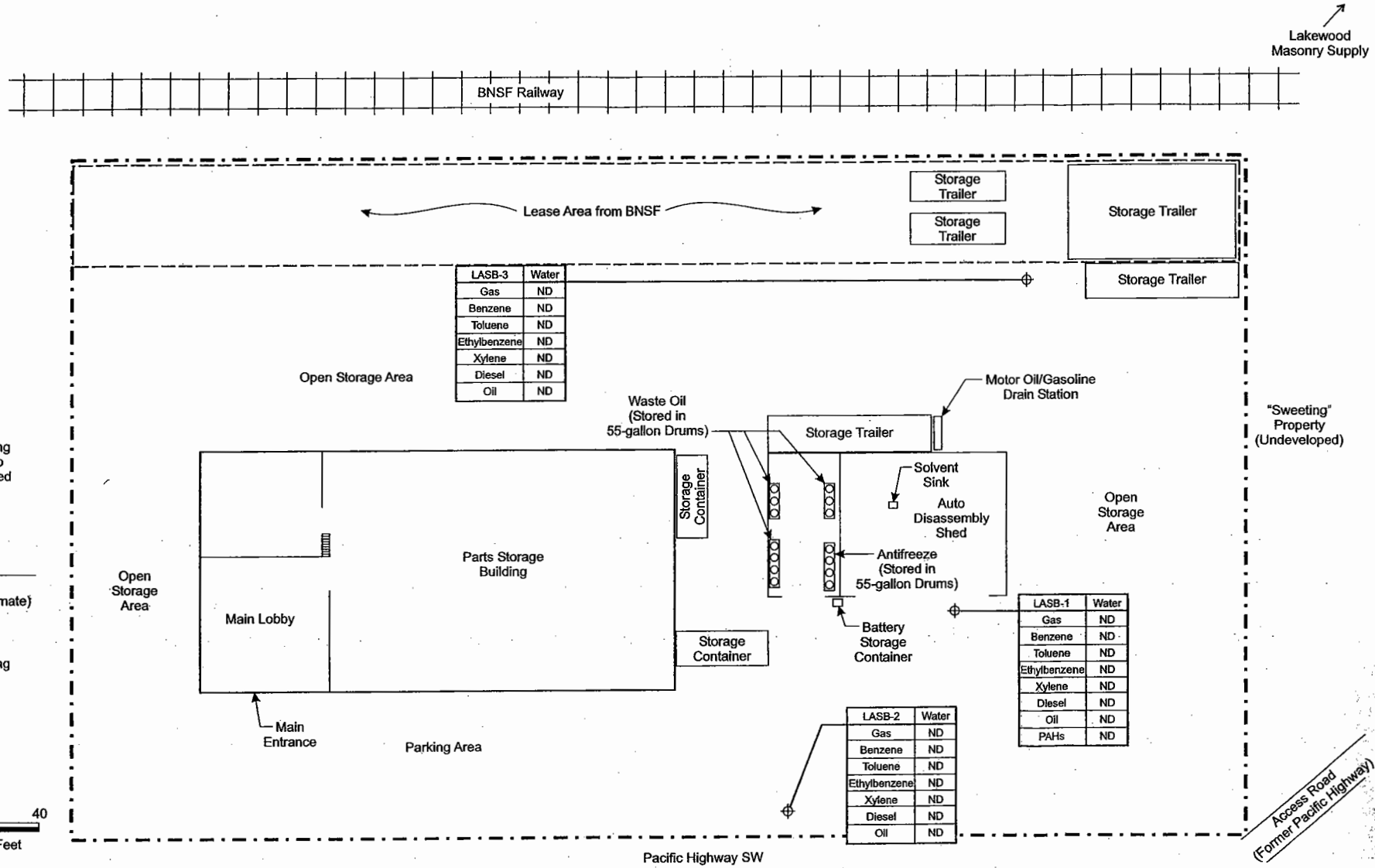


Figure 3-2

Groundwater Sample Analytical Results

Sound Transit

Levesque/Lakeview Auto Wrecking Property – Lakewood, Washington

Job No. 33755401

URS

Project: Sound Transit - Lakewood Station
Project Location: 11520 Pacific Highway SW
Project Number: 33755401.00550

Log of Boring LASB-1

Sheet 1 of 1

Date(s) Drilled	5-8-03	Logged By	J. Rapp	Checked By	T. Griffith
Drilling Method	Hollow Stem Auger	Drilling Contractor	Cascade Drilling, Inc.	Total Depth Drilled (FT BGS)	23.0
Drill Rig Type	CME-75	Sampler Type	Split Spoon	Surface Elevation	
Groundwater Level	21 feet bgs 5-9-03	Drill Bit Size/Type		Top of PVC Elevation	NA
Diameter of Hole (inches)	8"	Diameter of Well (inches)	2"	Type of Well Casing	PVC	Screen Perforation	0.010"
Type of Sand Pack	12-20 filter sand	Type and Depth of Seal(s)	NA		
Comments	Groundwater sample collected from temporary PVC well screen				

Elevation, feet (MSL)	Depth, feet	SAMPLES Type	SAMPLES Number	Blows per 6-inch Interval	Percent Recovery	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	PID (ppm)	Headspace PID (ppm)	Drilling Rate (24-hr clock)	REMARKS
	0						Gravel Surface				0900	0-23' No odor, no visual indication of contamination
	5						Medium brown sandy GRAVEL (GP-GW) - dry, dense, mostly coarse gravel, cobbles, Steilacoom Gravel					
	10		LASB-1-10 (0915)	50/6"	1		Same as above		0		0910	
	15		LASB-1-15 (0930)	20,25,40	1				0		0915	
	18											18-23' Temp well screen set
	21						Same as above - wet ▽					21' Groundwater encountered
	23						Boring Terminated at 23 feet bgs at 1505 on 5-8-03					

ENV_23A S:\JRAPP\ST_LA.GPJ URSSEA3.GLB WC_CORP1.GDT 6/27/03

URS

Project: Sound Transit - Lakewood Station
Project Location: 11520 Pacific Highway SW
Project Number: 33755401.00550

Log of Boring LASB-2

Sheet 1 of 1

Date(s) Drilled	5-8-03	Logged By	J. Rapp	Checked By	T. Griffith
Drilling Method	Hollow Stem Auger	Drilling Contractor	Cascade Drilling, Inc.	Total Depth Drilled (FT BGS)	23.0
Drill Rig Type	CME-75	Sampler Type	Split Spoon	Surface Elevation	
Groundwater Level	21 feet bgs 5-9-03	Drill Bit Size/Type		Top of PVC Elevation	NA
Diameter of Hole (inches)	8"	Diameter of Well (inches)	2"	Type of Well Casing	PVC	Screen Perforation	0.010"
Type of Sand Pack	12-20 filter sand	Type and Depth of Seal(s)	NA		
Comments	Groundwater sample collected from temporary PVC well screen				

Elevation, feet (MSL)	Depth, feet	SAMPLES Type	SAMPLES Number	SAMPLES Blows per 6-inch Interval	SAMPLES Percent Recovery	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	PID (ppm)	Headspace PID (ppm)	Drilling Rate (24-hr clock)	REMARKS
	0						Asphalt surface				1230	0-23' No odor, no visual indication of contamination
	1						Brown sandy GRAVEL (GP-GW) - dry, dense, mostly subrounded gravel, some cobbles, some sand					
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10		LASB-2-10 (1240)	7,7,10	0.5		Same as above - yellowish-brown		0		1240	
	11											
	12											
	13											
	14											
	15		LASB-2-15 (1250)	20,30,50	1		Same as above		0		1250	
	16											
	17											
	18											18-23' Temp well screen set
	19											
	20											
	21						Same as above - wet ▽					21' Groundwater encountered
	22											
	23						Boring Terminated at 23 feet bgs at 1300 on 5-8-03					
	24											
	25											

URS

ENV_23A S:\RAPP\ST_LA.GPJ URSSEA3.GLB WC_CORP1.GDT 6/27/03

Project: Sound Transit - Lakewood Station
Project Location: 11520 Pacific Highway SW
Project Number: 33755401.00550

Log of Boring LASB-3

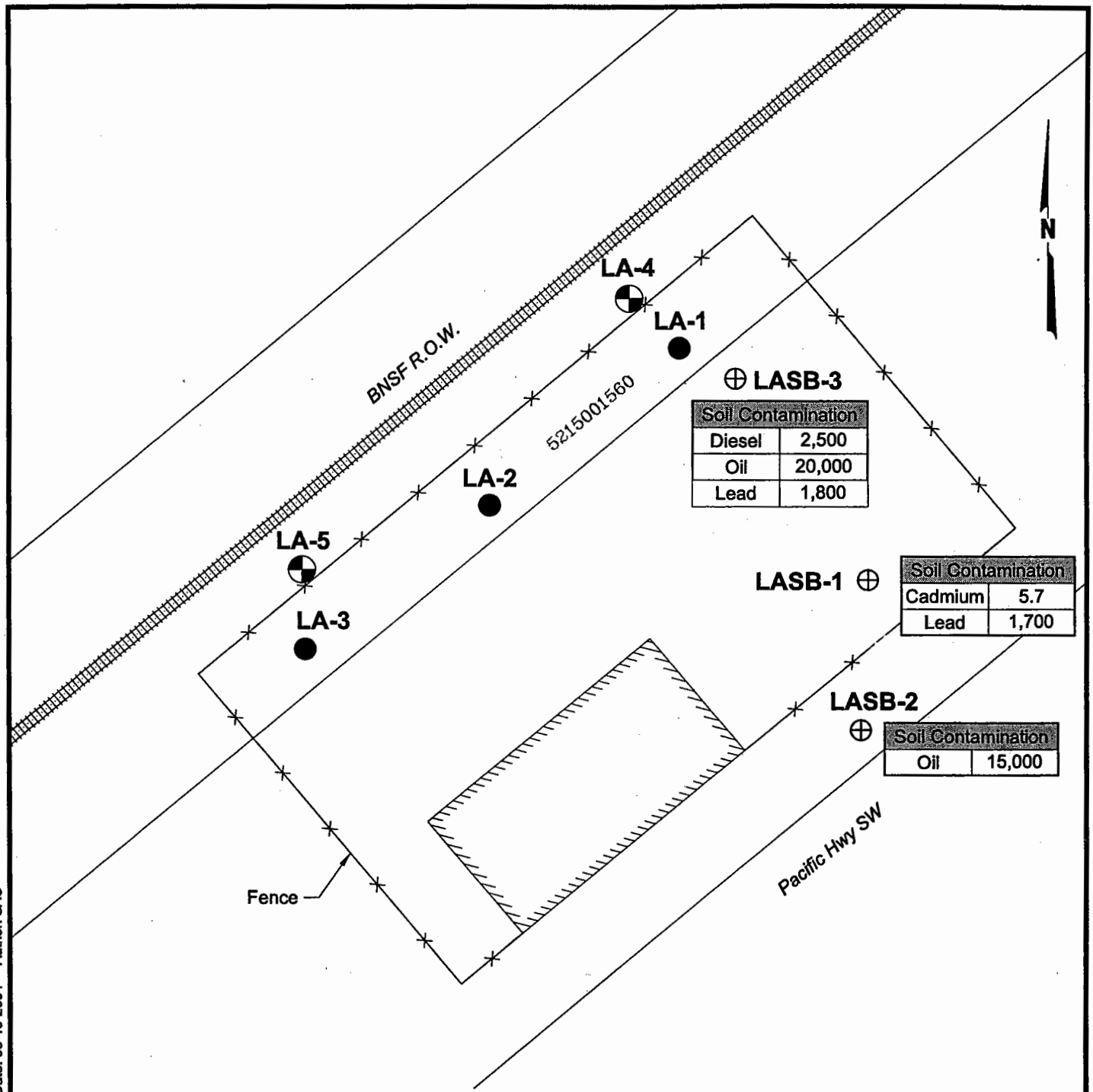
Sheet 1 of 1

Date(s) Drilled	5-8-03	Logged By	J. Rapp	Checked By	T. Griffith
Drilling Method	Hollow Stem Auger	Drilling Contractor	Cascade Drilling, Inc.	Total Depth Drilled (FT BGS)	23.0
Drill Rig Type	CME-75	Sampler Type	Split Spoon	Surface Elevation	
Groundwater Level	21 feet bgs 5-9-03	Drill Bit Size/Type		Top of PVC Elevation	NA
Diameter of Hole (inches)	8" / Diameter of Well (inches) 2"	Type of Well Casing	PVC	Screen Perforation	0.010"
Type of Sand Pack	12-20 filter sand	Type and Depth of Seal(s)	NA		
Comments	Groundwater sample collected from temporary PVC well screen				

Elevation, feet (MSL)	Depth, feet	SAMPLES Type	SAMPLES Number	Blows per 6-inch Interval	Percent Recovery	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	PID (ppm)	Headspace PID (ppm)	Drilling Rate (24-hr clock)	REMARKS
	0						Gravel Surface				1440	0-23' No odor, no visual indication of contamination
	1						Brown sandy GRAVEL (GP-GW) - dry, dense, mostly subrounded gravel, some cobbles, some sand, Steilacoom Gravel					
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10		LASB-3-10 (1500)	100/6"	0.5		Same as above		0		1450	
	11											
	12											
	13											
	14											
	15						Same as above					
	16											
	17											
	18		LASB-2-18 (1515)	22,23,45	1				0		1500	18-23' Temp well screen set
	19											
	20											
	21						Same as above - wet ▽					21' Groundwater encountered
	22											
	23						Boring Terminated at 23 feet bgs at 1505 on 5-8-03					
	24											
	25											

URS

ENV_23A S:\JRAPPIST_LA.GPJ URSSEA3.GLB WC_CORP1.GDT 6/27/03



LEGEND

LA-4 ⊕ Soil Boring/MW Designation and Approximate Location

LA-1 ● Hand Auger Designation and Approximate Location

LASB-1 ⊕ Surface Sample (0.5 to 1 Foot Below Ground Surface) From URS Phase II ESA, August 2003, Project #33755401

Sound Transit - WD#9
Phase II ESA
Pierce County, Washington

LAKEVIEW AUTO WRECKING SITE AND EXPLORATION PLAN

August 2004 21-1-16409-200

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 8-1

File: I:\Drafting\21\16409-200\21-1-16409-200 fig 8-1.dwg Date: 08-19-2004 Author: SAC

ENVIRONMENTAL BOREHOLE LOG

Date Started 11/26/03	Location Lakeview Auto Wrecking	Depth Water First Encountered (ft) 19.0
Date Completed 11/26/03	Drilling Company Holt Drilling	Drilling Method hollow stem auger
Total Depth (ft) 26.5	Sampling Method 4 1/4-inch I.D.	Hammer: Weight (lbs) 300 Drop (in) 30
Borehole Diam. (in) 8	Ground Elev. (ft) NA	Monument Elev. (ft) NA / PVC Elev. (ft) NA

Depth (ft)	Environmental Sample Number	Interval	Blow Count Blows/Ft	Recovery(%)	PID (ppm)	Time	Depth (ft)	Lithologic Description	Soil Log	Well Log	Depth (ft)
								Ground Surface			
								Medium dense, gray-brown, trace silty to slightly silty, sandy GRAVEL; moist; GP.			
	S-1		23	78	0	1244	3.5				
5			50/5.5"	78	0	1253	4.5	Medium dense, dark brown, slightly silty to silty, gravelly SAND/sandy GRAVEL; moist; GP-GM.			5
			50/6"	67	0	1300		Medium dense to very dense, gray-brown, trace silty to silty, sandy GRAVEL/gravelly SAND with cobbles; dry to moist; GP.			
10			28	44	0	1306					10
			50/5.5"	26	0	1314					
15			33	67	0	1320					15
	S-7		32	44	0	1325	19.0			12/6/2003 ▼	
20			26	50	0	1332		Dense, gray-brown, gravelly SAND, trace of silt; wet; SP.		During Drilling ▽	20
25			38	67	0	1340	26.5				25
								BOTTOM OF BORING COMPLETED 11/26/2003			
30								Note: Relative densities estimated where 3-inch spoon was used.			30
35											35
40											40
45											45

ENV_MASTER 21-16409-023.GPJ SHAN_WIL.GDT 8/19/04 Log: ACT Rev: JEH Typ: LKD

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.
5. USCS designation is based on visual-manual classification unless otherwise noted.

LEGEND

- 2-inch O.D. Split Spoon Sample
- 3-inch O.D. Split Spoon Sample
- Ground Water Level ATD
- Ground Water Level in Well

Sound Transit
Lakeview Auto Wrecking Property
Tacoma, Washington

LOG OF BORING LA-4

February 2004 21-1-16409-200

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. E-1

ENVIRONMENTAL BOREHOLE LOG

Date Started 11/26/03	Location Lakeview Auto Wrecking	Depth Water First Encountered (ft) 18.0
Date Completed 11/26/03	Drilling Company Holt Drilling	Drilling Method hollow stem auger
Total Depth (ft) 26.5	Sampling Method 4 1/4-inch I .D.	Hammer: Weight (lbs) 300 Drop (in) 30
Borehole Diam. (in) 8	Ground Elev. (ft) NA	Monument Elev. (ft) NA / PVC Elev. (ft) NA

Depth (ft)	Environmental Sample Number	Interval	Blow Count Blows/Ft	Recovery(%)	PID (ppm)	Time	Depth (ft)	Lithologic Description	Soil Log	Well Log	Depth (ft)
								Ground Surface			
								Medium dense, gray-brown, sandy GRAVEL, trace of silt; moist; GP.			
	S-1		14	67	0	0847	3.0	Medium dense to very dense, dark brown, trace silty to silty, slightly sandy to sandy GRAVEL; moist; GP.			
5			50/6"	83	0	0854	5.5	Medium dense to very dense, gray-brown, trace silty to slightly silty, slightly cobbly and sandy GRAVEL; moist; wet below 18 feet; GP.			5
			42	89	0	0904					
10			12	11	0	0910					10
			39	22	0	0916					
15			52	78	0	0924					15
	S-7		50/5"	55	0	0932				12/5/2003	
20			48	89	0	0947	19.0	Medium dense to very dense, gray-brown, trace silty to slightly silty SAND, sandy GRAVEL, and gravelly SAND; wet; GP/SP.		During Drilling	20
25			18	44	0	0957	26.5				25
								BOTTOM OF BORING COMPLETED 11/26/2003			
30								Note: Relative densities estimated where 3-inch spoon was used.			30
35											35
40											40
45											45

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.
5. USCS designation is based on visual-manual classification unless otherwise noted.

LEGEND

I	2-inch O.D. Split Spoon Sample	▽	Ground Water Level ATD
III	3-inch O.D. Split Spoon Sample	▼	Ground Water Level in Well

Sound Transit
Lakeview Auto Wrecking Property
Tacoma, Washington

LOG OF BORING LA-5

February 2004 21-1-16409-200

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. E-2

ENV_MASTER 21-16409-023.GPJ SHAN_WIL.GDT 8/19/04 Log: ACT Rev: JEH Typ: LKD

APPENDIX B

SUBSURFACE EXPLORATIONS

APPENDIX B

SUBSURFACE EXPLORATIONS

TABLE OF CONTENTS

LIST OF FIGURES

Figure No.

APPENDIX B

SUBSURFACE EXPLORATIONS

B.1 GENERAL

The subsurface conditions at the Lakeview Auto Wrecking property were explored with five test pits, designated LV-1 through LV-5. The test pit excavations were completed on November 3, 2005. The approximate locations of the test pits are shown in the Site and Exploration Plan (Figure 2) presented in this report. These locations were measured in the field using taping and pacing from observed landmarks. The locations should be considered approximate.

B.2 TEST PITS

An environmental scientist from Shannon & Wilson, Inc. observed the five test pit excavations, collected soil samples, and prepared logs for the test pits. The test pits were excavated by CEcon Corporation of Tacoma, Washington, under subcontract to Shannon & Wilson, Inc., using a rubber-tired backhoe. The test pits were excavated to depths ranging from about 1.7 to 3 feet below ground surface (bgs); refer to each test pit log and Figure 2 for locations. Following visual observation of the various soil types and units, the soil was logged, then samples were collected in analytical laboratory-supplied glassware, and submitted to the analytical laboratory for testing. Following completion of excavating and sampling, the contractor loosely backfilled all test pits with excavated soil and tamped with the excavator bucket.

B.3 ENVIRONMENTAL SAMPLING

Standard investigation methods, including sample collection, field screening, documentation procedures, and selected analyses, are described briefly in the following subsections.

B.3.1 Pre-Sampling Activities

Prior to sampling, Shannon & Wilson, Inc. notified the Underground Utilities Location Center (1-800-424-5555) at least 48 hours before the start of subsurface work along the alignment. A private utility locate was also performed in the vicinity of proposed test pit

locations. Site personnel completed railroad-required safety training. Site access was coordinated through Sound Transit and/or Pharos Corporation.

B.3.2 Sample Collection

Soil samples were collected to evaluate the potential for site contamination. During sampling, all soil was visually described using Shannon & Wilson's soil classification procedure, which is a modified version of the Unified Soil Classification System. The soil descriptions were recorded on test pit logs or in field logbooks. When a soil sample was selected for chemical analysis, the soil sample was collected from test pit sidewalls or from the backhoe bucket (away from the sides of the bucket) using disposable, stainless steel tools.

Depths of analytical samples were selected based on field screening results and proposed site development. Sample collection and handling is discussed in Section B.3.3.

B.3.3 Sample Handling

All environmental samples were collected using disposable sampling equipment. New latex or nitrile gloves were worn by the sample handler during collection of each sample. Extensive field notes were taken to document site conditions and sample collection activities.

Samples collected for laboratory analysis were placed into laboratory-provided glassware. Samples were collected and containerized sequentially, with the most volatile target analyte collected first. The preferred order of collection for some of the more common analytes is: (1) volatile organics and petroleum, (2) semivolatile organics, and (3) metals. The sample container labels were completed using indelible ink. The samples were sealed in plastic bags and then placed into a cooler and maintained at 4°C ($\pm$ 2°C) with ice or "blue ice."

Sample information was recorded on chain-of-custody forms; these forms accompanied the samples to the laboratory. Samples were maintained under chain-of-custody until delivered to the analytical laboratory. The samples were transported to OnSite Environmental Inc. (OnSite) of Redmond, Washington, for analytical testing.

B.3.4 Field Screening Methods

Field screening was performed on excavated soil to help evaluate the potential presence of contamination. Typically, at a non-hazardous waste site, the most likely locations to encounter contamination are in fill, at the water table interface, in the water table smear (fluctuation) zone, at fill/native soil contacts, and at sharp changes in permeability. However, the location of contamination, if any, is site dependent.

Field screening methods typically consisted of:

- Photoionization detector (PID) measurements
- Visual observations
- Olfactory observations

All methods were used for this site. While performing field screening, field personnel wore new latex or nitrile gloves.

B.3.5 Photoionization Detector (PID) Measurements

PID measurements were collected on samples to screen for volatile organic vapors such as gasoline and solvents. Typically, decaying organics can elevate PID measurements; diesel and oil can rarely be detected with the PID. PID measurements were obtained by passing the instrument directly over the soil or by performing a headspace measurement. Readings of 2 parts per million (ppm) or more above background were considered suspect.

Headspace measurements can be used to confirm low PID readings or check for low volatility contaminants such as old petroleum products. The following procedure was used:

- Place an amount of soil into a Ziploc™ bag.
- Place the bag in a warm environment.
- Wait a consistent amount of time for the soil to reach "ambient" conditions (usually 15 minutes).
- Insert the tip of the PID into a very small slit in the bag.
- Take a PID reading and record the data.

B.3.6 Visual Observations

Visual observations were made of soil samples and cuttings, and were recorded on the test pit log or in the field logbook. Indications of contamination include:

- Black tarry substances
- Oily or shiny soil
- Metallic flakes
- Free-product petroleum or organic hydrocarbons
- Gray, pink, red, or black discolorations

B.3.7 Olfactory Observations

Olfactory observations were recorded when noted. Soil was not intentionally smelled for contamination. Soil was not tasted for classification purposes.

B.3.8 Field Screening Documentation

For all screening methods, the following were recorded:

- Type of measurement/observation
- Depth
- Time of measurement or observation
- Possible source
- Description of any odor (petroleum, decaying organics, creosote, cedar, etc.)

B.4 ANALYTICAL METHODS

Selected soil samples were analyzed for one or more of the following: Method Northwest Total Petroleum Hydrocarbons as Diesel – Extended (NWTPH-Dx) with acid cleanup; Method Northwest Total Petroleum Hydrocarbons as Gasoline with benzene, toluene, ethylbenzene, and xylenes (BTEX) distinction (NWTPH-Gx/BTEX); polynuclear aromatic hydrocarbons (PAHs) by the U.S. Environmental Protection Agency (EPA) Method 8270C/Selective Ion Monitoring (SIM); Model Toxics Control Act (MTCA) metals (arsenic, cadmium, chromium, lead, and mercury) by EPA Method 6010B/7471; and Toxicity Characteristic Leachate Procedure (TCLP) for lead by EPA Method 1311/6010B.

Analytical work was performed by OnSite in accordance with their in-house Quality Assurance/Quality Control Plans. Sample analysis was performed in compliance with EPA

analytical methods and Washington Department of Ecology (Ecology) guidelines. Samples were analyzed within specified holding times.

Shannon & Wilson, Inc. (S&W), uses a soil classification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following page. Soil descriptions are based on visual-manual procedures (ASTM D 2488-93) unless otherwise noted.

S&W CLASSIFICATION OF SOIL CONSTITUENTS

- MAJOR constituents compose more than 50 percent, by weight, of the soil. Major consituents are capitalized (i.e., SAND).
- Minor constituents compose 12 to 50 percent of the soil and precede the major constituents (i.e., silty SAND). Minor constituents preceded by "slightly" compose 5 to 12 percent of the soil (i.e., slightly silty SAND).
- Trace constituents compose 0 to 5 percent of the soil (i.e., slightly silty SAND, trace of gravel).

MOISTURE CONTENT DEFINITIONS

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, from below water table

ABBREVIATIONS

ATD	At Time of Drilling
Elev.	Elevation
ft	feet
FeO	Iron Oxide
MgO	Magnesium Oxide
HSA	Hollow Stem Auger
ID	Inside Diameter
in	inches
lbs	pounds
Mon.	Monument cover
N	Blows for last two 6-inch increments
NA	Not applicable or not available
NP	Non plastic
OD	Outside diameter
OVA	Organic vapor analyzer
PID	Photo-ionization detector
ppm	parts per million
PVC	Polyvinyl Chloride
SS	Split spoon sampler
SPT	Standard penetration test
USC	Unified soil classification
WLI	Water level indicator

GRAIN SIZE DEFINITION

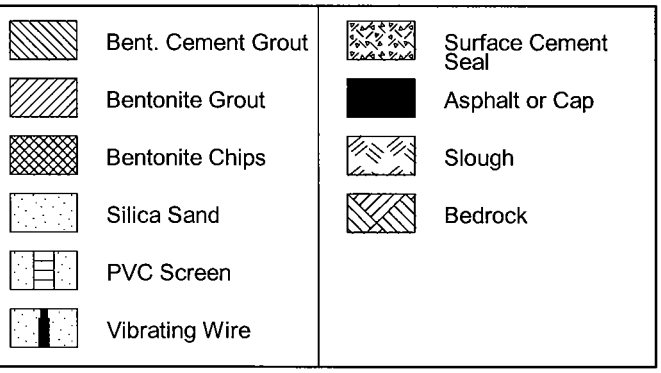
DESCRIPTION	SIEVE NUMBER AND/OR SIZE
FINES	< #200 (0.08 mm)
SAND*	
- Fine	#200 to #40 (0.08 to 0.4 mm)
- Medium	#40 to #10 (0.4 to 2 mm)
- Coarse	#10 to #4 (2 to 5 mm)
GRAVEL*	
- Fine	#4 to 3/4 inch (5 to 19 mm)
- Coarse	3/4 to 3 inches (19 to 76 mm)
COBBLES	3 to 12 inches (76 to 305 mm)
BOULDERS	> 12 inches (305 mm)

* Unless otherwise noted, sand and gravel, when present, range from fine to coarse in grain size.

RELATIVE DENSITY / CONSISTENCY

COARSE-GRAINED SOILS		FINE-GRAINED SOILS	
N, SPT, BLOWS/FT.	RELATIVE DENSITY	N, SPT, BLOWS/FT.	RELATIVE CONSISTENCY
0 - 4	Very loose	Under 2	Very soft
4 - 10	Loose	2 - 4	Soft
10 - 30	Medium dense	4 - 8	Medium stiff
30 - 50	Dense	8 - 15	Stiff
Over 50	Very dense	15 - 30	Very stiff
		Over 30	Hard

WELL AND OTHER SYMBOLS



Sound Transit - Environmental
Lakeview Auto Property
Lakewood, Washington

SOIL CLASSIFICATION AND LOG KEY

November 2005 21-1-12180-007

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. B-1
Sheet 1 of 2

BORING_CLASS1 21-12180.GPJ SWNEW.GDT 11/16/05

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
(From ASTM D 2487-98 & 2488-93)

MAJOR DIVISIONS			GROUP/GRAPHIC SYMBOL		TYPICAL DESCRIPTION
COARSE-GRAINED SOILS *(more than 50% retained on No. 200 sieve)*	Gravels *(more than 50% of coarse fraction retained on No. 4 sieve)*	Clean Gravels *(less than 5% fines)*	GW		Well-graded gravels, gravels, gravel/sand mixtures, little or no fines.
			GP		Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with Fines *(more than 12% fines)*	GM		Silty gravels, gravel-sand-silt mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	Sands *(50% or more of coarse fraction passes the No. 4 sieve)*	Clean Sands *(less than 5% fines)*	SW		Well-graded sands, gravelly sands, little or no fines
			SP		Poorly graded sand, gravelly sands, little or no fines
		Sands with Fines *(more than 12% fines)*	SM		Silty sands, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS *(50% or more passes the No. 200 sieve)*	Silts and Clays *(liquid limit less than 50)*	Inorganic	ML		Inorganic silts of low to medium plasticity, rock flour, sandy silts, gravelly silts, or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Organic	OL		Organic silts and organic silty clays of low plasticity
	Silts and Clays *(liquid limit 50 or more)*	Inorganic	MH		Inorganic silts, micaceous or diatomaceous fine sands or silty soils, elastic silt
			CH		Inorganic clays or medium to high plasticity, sandy fat clay, or gravelly fat clay
		Organic	OH		Organic clays of medium to high plasticity, organic silts
HIGHLY-ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor		PT		Peat, humus, swamp soils with high organic content (see ASTM D 4427)

NOTE: No. 4 size = 5 mm; No. 200 size = 0.075 mm

NOTES

1. Dual symbols *(symbols separated by a hyphen, i.e., SP-SM, slightly silty fine SAND)* are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart.

2. Borderline symbols *(symbols separated by a slash, i.e., CL/ML, silty CLAY/clayey SILT; GW/SW, sandy GRAVEL/gravelly SAND)* indicate that the soil may fall into one of two possible basic groups.

Sound Transit - Environmental
Lakeview Auto Property
Lakewood, Washington

SOIL CLASSIFICATION AND LOG KEY

November 2005 21-1-12180-007

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. B-1
Sheet 2 of 2

BORING CLASS2 21-12180.GPJ SWNEW.GDT 11/16/05

File: J:\211\12180-007\ST - Lakeview Auto\21-1-12180-007 TPs LV1-5.dwg Date: 11-17-2005 Author: CNT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

LOG OF TEST PIT LV-1

JOB NO: 21-1-12180-007 DATE: 11-3-2005 LOCATION: SW Corner of Main Building

PROJECT: Sound Transit - Environmental; Lakeview Auto Property; Lakewood, Washington

SOIL DESCRIPTION	Ground Water	% Water Content	Samples	Depth, Ft.
(1) Dark gray, slightly silty to silty, sandy GRAVEL; moist; GP-GM.	None Observed		LV-1-0.5	0
			LV-1-1	
(2) Tan with iron-oxide staining, slightly silty to silty, gravelly SAND to sandy GRAVEL; moist; SP-SM/GP-GM.			LV-1-2.5	2
				4
				6
				8
				10
				12

Sketch of East Pit Side Surface Elevation: Approx. 277.5'

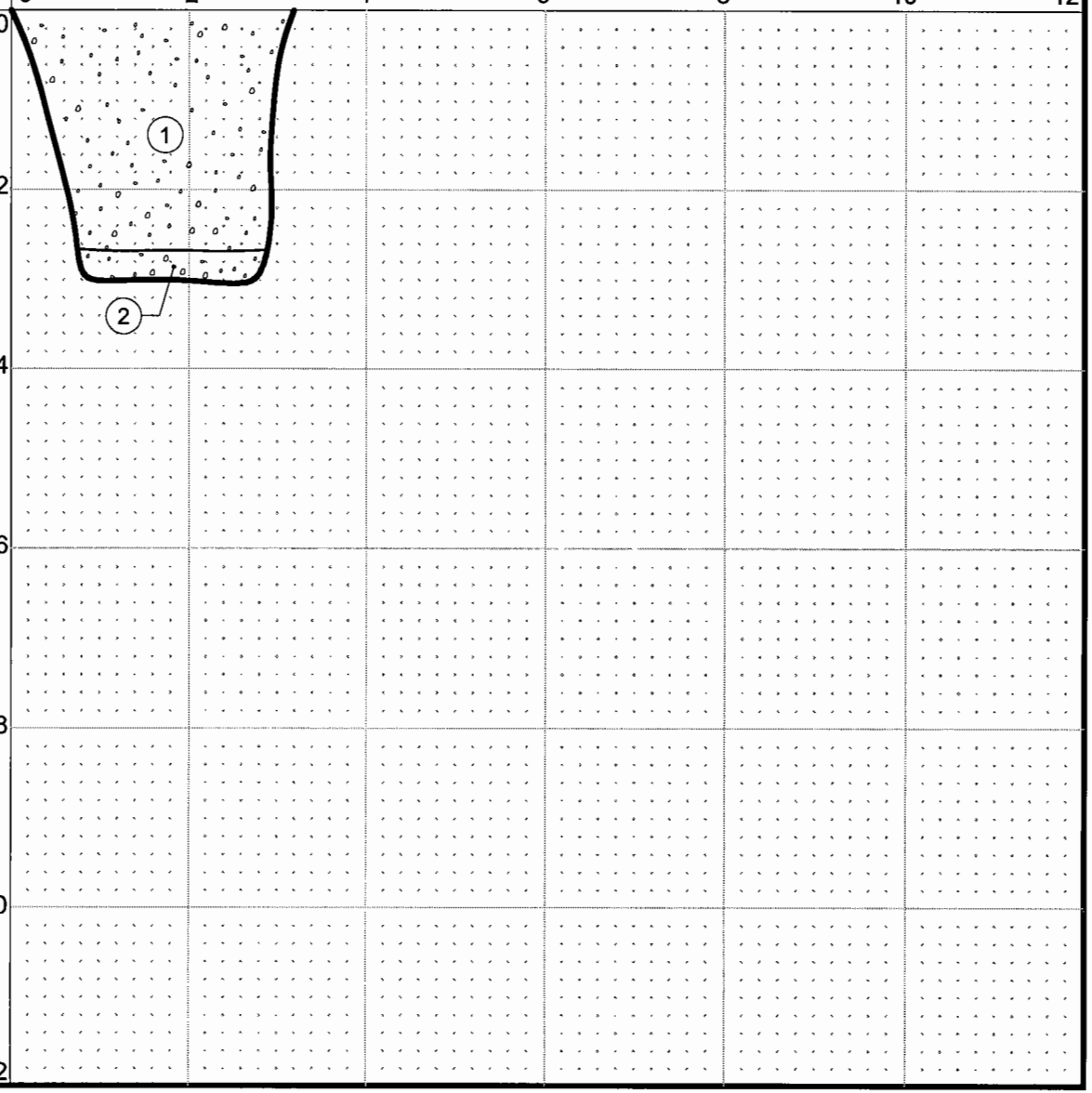


FIG. B-2

File: J:\211\12180-007\ST - Lakeview Auto\21-1-12180-007 TPs LV1-5.dwg Date: 11-17-2005 Author: CNT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

LOG OF TEST PIT LV-2

JOB NO: 21-1-12180-007 DATE: 11-3-2005 LOCATION: West Side of Main Building

PROJECT: Sound Transit - Environmental; Lakeview Auto Property; Lakewood, Washington

SOIL DESCRIPTION	Ground Water	% Water Content	Samples	Depth, Ft.
(1) Dark gray, slightly silty to silty, sandy GRAVEL; moist; GP-GM.	None Observed		LV-2-0.5 LV-2-1	0
(2) Tan with iron-oxide staining, slightly silty, sandy GRAVEL/gravelly SAND; moist; GP-GM/SP-SM.				2
(3) Tan, silty SAND; moist; SM.				4
(4) Tan with iron-oxide staining, slightly silty, sandy GRAVEL/gravelly SAND; moist; GP-GM/SP-SM.				6
				8
				10
				12

Sketch of East Pit Side

Surface Elevation: Approx. 278'

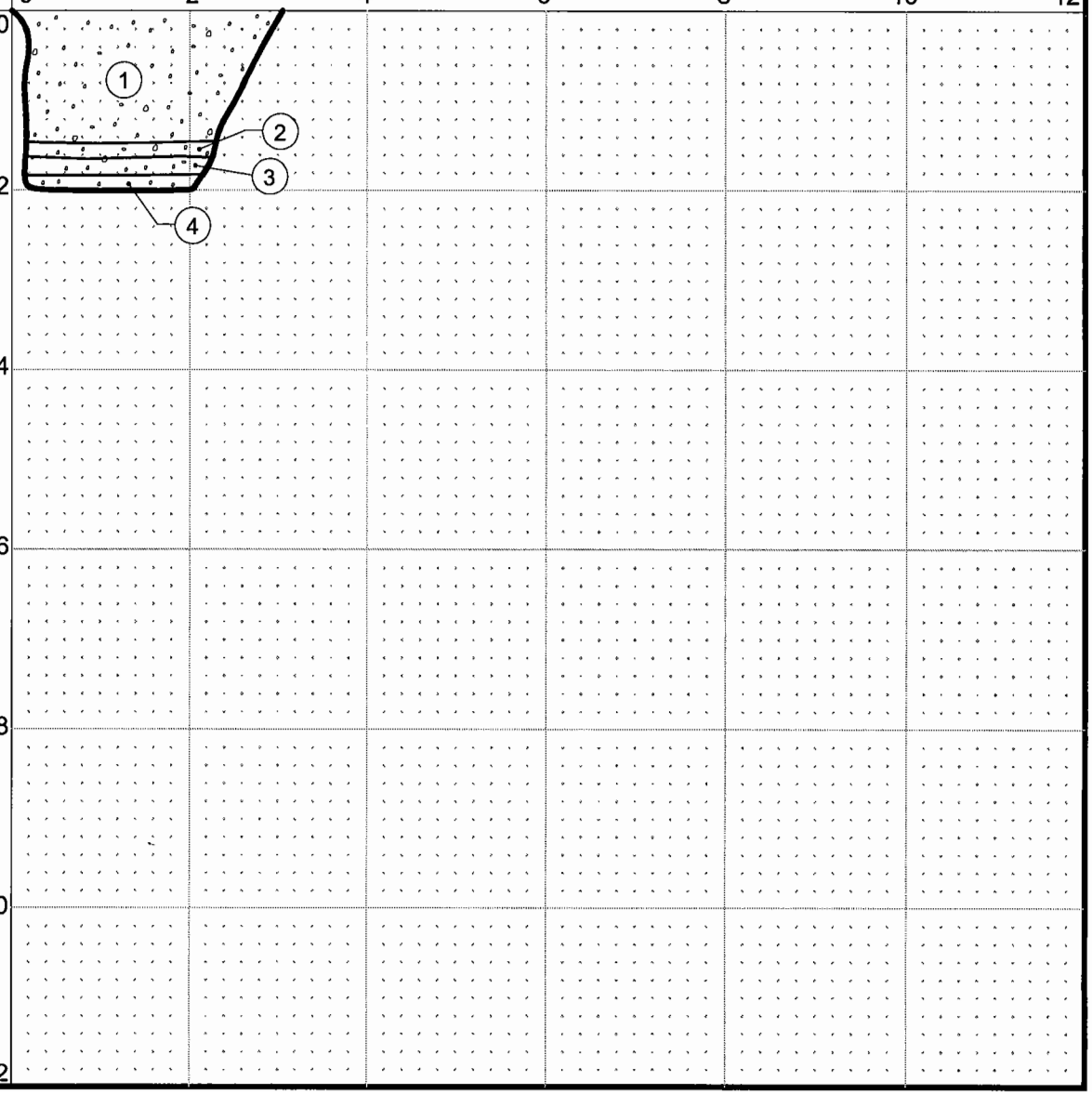


FIG. B-3

File: J:\211\12180-007\ST - Lakeview Auto\21-1-12180-007 TPs LV1-5.dwg Date: 11-17-2005 Author: CNT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

LOG OF TEST PIT LV-3

JOB NO: 21-1-12180-007 DATE: 11-3-2005 LOCATION: NW Corner of Main Building

PROJECT: Sound Transit - Environmental; Lakeview Auto Property; Lakewood, Washington

SOIL DESCRIPTION	Ground Water	% Water Content	Samples	Depth, Ft.
(1) Dark gray, washed rock.	None Observed		LV-3-0.5	0
(2) Debris (wood (lumber) and metal).			LV-3-1	2
(3) Dark gray, slightly silty to silty, sandy GRAVEL; moist; GP-GM.			LV-3-1.5	4
				6
				8
				10
				12

Sketch of North Pit Side Surface Elevation: Approx. 278'

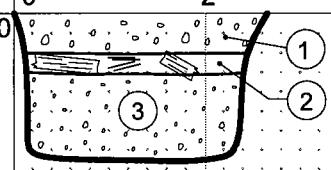


FIG. B-4

File: J:\211\12180-007\ST - Lakeview Auto\21-1-12180-007 TPs LV1-5.dwg Date: 11-16-2005 Author: CNT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

LOG OF TEST PIT LV-4

JOB NO: 21-1-12180-007 DATE: 11-3-2005 LOCATION: NW Corner of Site

PROJECT: Sound Transit - Environmental; Lakeview Auto Property; Lakewood, Washington

SOIL DESCRIPTION	Ground Water	% Water Content	Samples	Depth, Ft.
(1) Washed rock. (2) Dark gray, slightly silty to silty, sandy GRAVEL; moist; GP-GM. (3) Tan with iron-oxide staining, silty, sandy GRAVEL/gravelly SAND; moist; GM/SM.	None Observed		LV-4-0.5 LV-4-1 LV-4-1.5	0 2 4 6 8 10 12

Sketch of South Pit Side

Surface Elevation: Approx. 277'

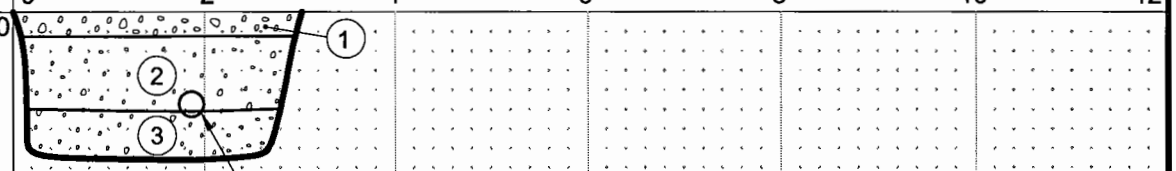


FIG. B-5

File: J:\211\12180-007\ST - Lakeview Auto\21-1-12180-007 TPs LV1-5.dwg Date: 11-17-2005 Author: CNT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

LOG OF TEST PIT LV-5

JOB NO: 21-1-12180-007 DATE: 11-3-2005 LOCATION: Middle of North Fence Line

PROJECT: Sound Transit - Environmental; Lakeview Auto Property; Lakewood, Washington

SOIL DESCRIPTION	Ground Water	% Water Content	Samples	Depth, Ft.
(1) Washed rock. (2) Tan with iron-oxide staining, silty, sandy GRAVEL; moist; GM. (3) Tan with iron-oxide staining, silty, sandy GRAVEL/gravelly SAND; moist; GM/SM.	None Observed		LV-5-0.5 LV-5-1 LV-5-1.5	0 2 4 6 8 10 12

Sketch of NE Pit Side

Surface Elevation: Approx. 277'

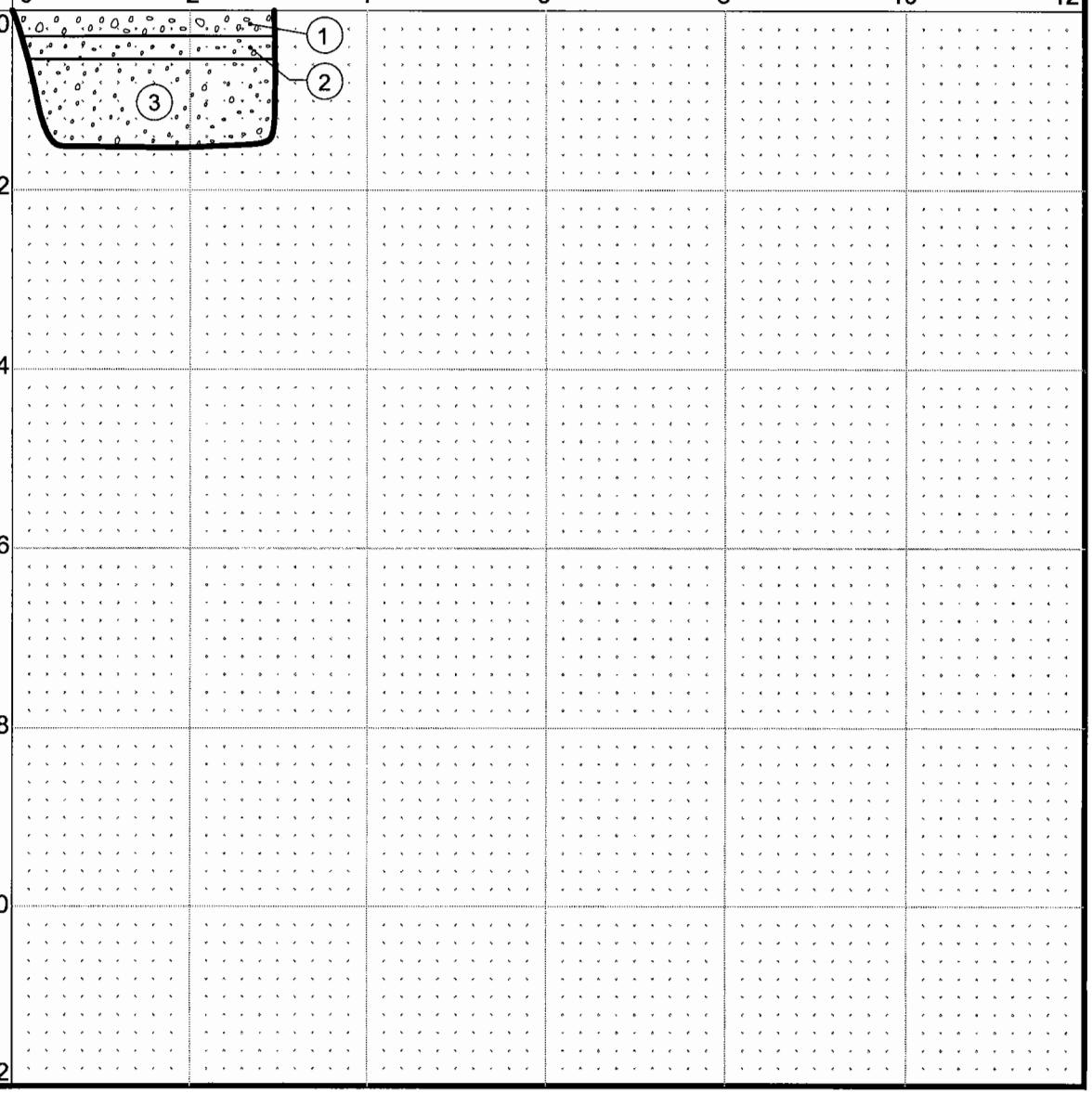


FIG. B-6

APPENDIX C

ANALYTICAL LABORATORY REPORTS

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

November 1, 2005

Agnes Tirao
Shannon & Wilson, Inc.
400 N 34th Street, Suite 100
Seattle, WA 98103

Re: Analytical Data for Project 21-1-12180-007
Laboratory Reference No. 0510-164

Dear Agnes:

Enclosed are the analytical results and associated quality control data for samples submitted on October 20, 2005.

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 Manager

Enclosures

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

Case Narrative

Samples were collected on October 20, 2005 and received by the laboratory on October 20, 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Gx/BTEX

Date Extracted: 10-21-05
Date Analyzed: 10-21-05

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**CTTP-5**			**CTTP-6**		
Lab ID:	10-164-01			10-164-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		0.020	**ND**		0.020
Toluene	**ND**		0.055	**ND**		0.084
Ethyl Benzene	**ND**		0.055	**ND**		0.084
m,p-Xylene	**ND**		0.055	**ND**		0.084
o-Xylene	**ND**		0.055	**ND**		0.084
TPH-Gas	**ND**		5.5	**ND**		8.4
Surrogate Recovery:						
Fluorobenzene	88%			75%		

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 10-21-05
Date Analyzed: 10-21-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1021S1

	Result	Flags	PQL
Benzene	**ND**		0.020
Toluene	**ND**		0.050
Ethyl Benzene	**ND**		0.050
m,p-Xylene	**ND**		0.050
o-Xylene	**ND**		0.050
TPH-Gas	**ND**		5.0
Surrogate Recovery: Fluorobenzene	96%		

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 10-21-05
Date Analyzed: 10-24-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID:	10-142-01 **Original**	10-142-01 **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	62%	62%		

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 10-21-05
Date Analyzed: 10-24-05

Matrix: Soil
Units: mg/kg (ppm)

Spike Level (ppm): 2.25

Lab ID:	10-142-01 **MS**	Percent Recovery	10-142-01 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**2.11**	**93**	**2.15**	**95**	2	
Toluene	**2.07**	**92**	**2.11**	**94**	2	
Ethyl Benzene	**2.08**	**93**	**2.12**	**94**	2	
m,p-Xylene	**2.09**	**93**	**2.12**	**94**	2	
o-Xylene	**2.08**	**93**	**2.10**	**93**	1	
Surrogate Recovery:						
Fluorobenzene	67%		67%			

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Dx

Date Extracted:	10-26-05
Date Analyzed:	10-26&28-05
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**CTTP-5**	**CTTP-6**
Lab ID:	10-164-01	10-164-02
Diesel Range:	**ND**	**ND**
PQL:	29	30
Identification:	---	---
Lube Oil Range:	**ND**	**150**
PQL:	58	60
Identification:	---	Lube Oil
Surrogate Recovery		
o-Terphenyl:	93%	91%
Flags:	Y	Y

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-26-05
Date Analyzed:	10-26-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1026S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	114%
Flags:	Y

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	10-26-05	
Date Analyzed:	10-26-05	
Matrix:	Soil	
Units:	mg/kg (ppm)	
Lab ID:	10-195-01	10-195-01 DUP
Diesel Range:	**ND**	**ND**
PQL:	25	25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	91%	104%
Flags:	Y	Y

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	10-26-05	
Date Analyzed:	10-26-05	
Matrix:	Soil	
Units:	mg/kg (ppm)	
Lab ID:	10-172-04	10-172-04 DUP
Diesel Range:	**227**	**236**
PQL:	25	25
RPD:	4	
Surrogate Recovery		
o-Terphenyl:	98%	91%
Flags:	Y	Y

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

PAHs by EPA 8270C/SIM

Date Extracted:	10-24-05
Date Analyzed:	10-24-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	10-164-01
Client ID:	**CTTP-5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.0078
2-Methylnaphthalene	ND		0.0078
1-Methylnaphthalene	ND		0.0078
Acenaphthylene	ND		0.0078
Acenaphthene	ND		0.0078
Fluorene	ND		0.0078
Phenanthrene	ND		0.0078
Anthracene	ND		0.0078
Fluoranthene	ND		0.0078
Pyrene	ND		0.0078
Benzo[a]anthracene	ND		0.0078
Chrysene	ND		0.0078
Benzo[b]fluoranthene	ND		0.0078
Benzo[k]fluoranthene	ND		0.0078
Benzo[a]pyrene	ND		0.0078
Indeno(1,2,3-c,d)pyrene	ND		0.0078
Dibenz[a,h]anthracene	ND		0.0078
Benzo[g,h,i]perylene	ND		0.0078

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	73	27 - 107
2-Fluorobiphenyl	78	33 - 100
Terphenyl-d14	102	55 - 106

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

PAHs by EPA 8270C/SIM

Date Extracted:	10-24-05
Date Analyzed:	10-26-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	10-164-02
Client ID:	**CTTP-6**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.0080
2-Methylnaphthalene	ND		0.0080
1-Methylnaphthalene	ND		0.0080
Acenaphthylene	ND		0.0080
Acenaphthene	ND		0.0080
Fluorene	ND		0.0080
Phenanthrene	ND		0.0080
Anthracene	ND		0.0080
Fluoranthene	0.013		0.0080
Pyrene	0.017		0.0080
Benzo[a]anthracene	ND		0.0080
Chrysene	ND		0.0080
Benzo[b]fluoranthene	0.0092		0.0080
Benzo[k]fluoranthene	ND		0.0080
Benzo[a]pyrene	ND		0.0080
Indeno(1,2,3-c,d)pyrene	ND		0.0080
Dibenz[a,h]anthracene	ND		0.0080
Benzo[g,h,i]perylene	0.010		0.0080

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	83	27 - 107
2-Fluorobiphenyl	80	33 - 100
Terphenyl-d14	97	55 - 106

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

PAHs by EPA 8270C/SIM
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-24-05
Date Analyzed:	10-24-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1024S1

Compound:	Results	Flags	PQL
Naphthalene	ND		0.0067
2-Methylnaphthalene	ND		0.0067
1-Methylnaphthalene	ND		0.0067
Acenaphthylene	ND		0.0067
Acenaphthene	ND		0.0067
Fluorene	ND		0.0067
Phenanthrene	ND		0.0067
Anthracene	ND		0.0067
Fluoranthene	ND		0.0067
Pyrene	ND		0.0067
Benzo[a]anthracene	ND		0.0067
Chrysene	ND		0.0067
Benzo[b]fluoranthene	ND		0.0067
Benzo[k]fluoranthene	ND		0.0067
Benzo[a]pyrene	ND		0.0067
Indeno(1,2,3-c,d)pyrene	ND		0.0067
Dibenz[a,h]anthracene	ND		0.0067
Benzo[g,h,i]perylene	ND		0.0067

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	61	27 - 107
2-Fluorobiphenyl	67	33 - 100
Terphenyl-d14	105	55 - 106

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

PAHs by EPA 8270C/SIM
MS/MSD QUALITY CONTROL

Date Extracted: 10-24-05
Date Analyzed: 10-24-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-164-01

Compound:	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
Naphthalene	ND	0.0833	0.0652	78	0.0634	76	30-115	
Acenaphthylene	ND	0.0833	0.0909	109	0.0850	102	46-125	
Acenaphthene	ND	0.0833	0.0796	96	0.0753	90	40-119	
Fluorene	ND	0.0833	0.0846	102	0.0795	95	50-133	
Phenanthrene	ND	0.0833	0.0834	100	0.0788	95	48-128	
Anthracene	ND	0.0833	0.0848	102	0.0799	96	53-134	
Fluoranthene	ND	0.0833	0.0913	110	0.0856	103	50-143	
Pyrene	ND	0.0833	0.0845	101	0.0798	96	44-139	
Benzo[a]anthracene	ND	0.0833	0.0902	108	0.0850	102	62-129	
Chrysene	ND	0.0833	0.0855	103	0.0803	96	42-127	
Benzo[b]fluoranthene	ND	0.0833	0.0876	105	0.0800	96	57-132	
Benzo[k]fluoranthene	ND	0.0833	0.0828	99	0.0774	93	57-131	
Benzo[a]pyrene	ND	0.0833	0.0845	101	0.0788	95	59-132	
Indeno(1,2,3-c,d)pyrene	ND	0.0833	0.0750	90	0.0705	85	55-135	
Dibenz[a,h]anthracene	ND	0.0833	0.0717	86	0.0679	82	36-146	
Benzo[g,h,i]perylene	ND	0.0833	0.0705	85	0.0670	80	42-140	

	RPD	RPD Limit	Flags
Naphthalene	3	25	
Acenaphthylene	7	25	
Acenaphthene	6	25	
Fluorene	6	25	
Phenanthrene	6	25	
Anthracene	6	25	
Fluoranthene	6	25	
Pyrene	6	25	
Benzo[a]anthracene	6	25	
Chrysene	6	25	
Benzo[b]fluoranthene	9	25	
Benzo[k]fluoranthene	7	25	
Benzo[a]pyrene	7	25	
Indeno(1,2,3-c,d)pyrene	6	25	
Dibenz[a,h]anthracene	6	25	
Benzo[g,h,i]perylene	5	25	

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 10-21&27-05
Date Analyzed: 10-24&27-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-164-01
Client ID: CTTP-5

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	12
Cadmium	6010B	**ND**	0.58
Chromium	6010B	**14**	0.58
Lead	6010B	**6.5**	5.8
Mercury	7471A	**ND**	0.29

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 10-21&27-05
Date Analyzed: 10-24&27-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-164-02
Client ID: CTTP-6

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	12
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**12**	0.60
Lead	6010B	**41**	6.0
Mercury	7471A	**ND**	0.30

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-21-05
Date Analyzed:	10-24-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1021S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	10-27-05
Date Analyzed:	10-27-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1027S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.25

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 10-21-05
Date Analyzed: 10-24-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-168-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**22.1**	**20.7**	7	0.50	
Lead	**28.3**	**25.2**	11	5.0	

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 10-27-05
Date Analyzed: 10-27-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-193-07

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 10-21-05
Date Analyzed: 10-24-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-168-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**91.1**	91	**91.1**	91	0	
Cadmium	50	**47.5**	95	**47.4**	95	0	
Chromium	100	**113**	91	**114**	92	1	
Lead	250	**265**	95	**263**	94	0	

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 10-27-05
Date Analyzed: 10-27-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-193-07

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.522**	101	**0.529**	102	1	

Date of Report: November 1, 2005
Samples Submitted: October 20, 2005
Laboratory Reference: 0510-164
Project: 21-1-12180-007

% MOISTURE

Date Analyzed: 10-21-05

Client ID	Lab ID	% Moisture
CTTP-5	10-164-01	14
CTTP-6	10-164-02	17

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a 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.

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.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

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 inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

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 - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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

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

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: S2W
Project Number: 21-1-12180-007
Project Name: ST - Lake Wood / Lakeview Auto
Project Manager: Agnes Tirao
Sampled by: John Deeds

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☑ Standard (7 working days)
☐ _____ (other)

Laboratory Number: 10-164

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	MTCA 5 metals				% Moisture
1	CTTP-5	10/20/05	0940	S	6		X	X				X									X				X
2	CTTP-6	10/20/05	1030	S	6		X	X				X									X				X

	Signature	Company	Date	Time
Relinquished by	John Deeds	S2W	10/20/05	1230
Received by	[illegible]	[illegible]	[illegible]	[illegible]
Relinquished by	Alex Hayes	S2W	10/20/05	4:10
Received by	Kelley Hall	OnSite Env.	10/20/05	16:10
Relinquished by				
Received by				

Comments/Special Instructions:
Possible follow up TCLP depending on metals results. Contact Agnes for Direction

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

November 15, 2005

Agnes Tirao
Shannon & Wilson, Inc.
400 N 34th Street, Suite 100
Seattle, WA 98103

Re: Analytical Data for Project Lakewood LV.
Laboratory Reference No. 0511-043

Dear Agnes:

Enclosed are the analytical results and associated quality control data for samples submitted on November 4, 2005.

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,

for David Baumeister
Project Manager

Enclosures

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

Case Narrative

Samples were collected on November 3, 2005 and received by the laboratory on November 4, 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH-Dx Analysis

The diesel range result reported for sample LV-4-0.5 is being impacted by the large amount of lube oil present in the sample.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

PAHs EPA 8270C/SIM Analysis

Sample 11-045-01 was analyzed as the matrix spike/matrix spike duplicate (MS/MSD). The percent recovery (%R) values in the matrix spike duplicate exceeded the upper control limit for some of the spiked analytes. The relative percent difference (RPD) values for some of the compounds were also out of control. Since the %R and RPD values in the spike blank and spike blank duplicate were within acceptance limits, the problem in the MS/MSD was attributed to a non-homogenous sample; thus, no further action was taken.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

NWTPH-Dx

Date Extracted: 11-8-05
Date Analyzed: 11-8&9-05

Matrix: Soil
Units: mg/kg (ppm)

Client ID:	**LV-1-0.5**	**LV-2-0.5**	**LV-3-0.5**
Lab ID:	11-043-01	11-043-04	11-043-06
Diesel Range:	**ND**	**ND**	**ND**
PQL:	31	36	28
Identification:	---	---	---
Lube Oil Range:	**310**	**ND**	**1300**
PQL:	61	72	56
Identification:	Lube Oil	---	Lube Oil
Surrogate Recovery			
o-Terphenyl:	124%	110%	95%
Flags:	Y	Y	Y

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

NWTPH-Dx

Date Extracted:	11-8-05
Date Analyzed:	11-8-05
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID:	**LV-4-0.5**	**LV-5-0.5**
Lab ID:	11-043-09	11-043-12
Diesel Range:	**200**	**ND**
PQL:	140	29
Identification:	Diesel Range Organics	---
Lube Oil Range:	**2000**	**380**
PQL:	280	58
Identification:	Lube Oil	Lube Oil
Surrogate Recovery		
o-Terphenyl:	126%	117%
Flags:	Y,Z	Y

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-8-05
Date Analyzed:	11-8-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1108S1
Diesel Range:	**ND**
PQL:	25
Identification:	---
Lube Oil Range:	**ND**
PQL:	50
Identification:	---
Surrogate Recovery	
o-Terphenyl:	121%
Flags:	Y

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	11-8-05	
Date Analyzed:	11-8-05	
Matrix:	Soil	
Units:	mg/kg (ppm)	
Lab ID:	11-052-04	11-052-04 DUP
Diesel Range:	**30.9**	**30.3**
PQL:	25	25
RPD:	2	
Surrogate Recovery		
o-Terphenyl:	106%	110%
Flags:	Y	Y

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM

Date Extracted:	11-7-05
Date Analyzed:	11-10-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-01
Client ID:	**LV-1-0.5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	0.035		0.0081
2-Methylnaphthalene	0.069		0.0081
1-Methylnaphthalene	0.029		0.0081
Acenaphthylene	ND		0.0081
Acenaphthene	ND		0.0081
Fluorene	ND		0.0081
Phenanthrene	ND		0.0081
Anthracene	ND		0.0081
Fluoranthene	0.0087		0.0081
Pyrene	0.012		0.0081
Benzo[a]anthracene	ND		0.0081
Chrysene	0.022		0.0081
Benzo[b]fluoranthene	0.022		0.0081
Benzo[k]fluoranthene	ND		0.0081
Benzo[a]pyrene	0.013		0.0081
Indeno(1,2,3-c,d)pyrene	0.011		0.0081
Dibenz[a,h]anthracene	ND		0.0081
Benzo[g,h,i]perylene	0.020		0.0081

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	80	27 - 107
2-Fluorobiphenyl	80	33 - 100
Terphenyl-d14	83	55 - 106

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM

Date Extracted:	11-7-05
Date Analyzed:	11-9-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-04
Client ID:	**LV-2-0.5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.0097
2-Methylnaphthalene	ND		0.0097
1-Methylnaphthalene	ND		0.0097
Acenaphthylene	ND		0.0097
Acenaphthene	ND		0.0097
Fluorene	ND		0.0097
Phenanthrene	ND		0.0097
Anthracene	ND		0.0097
Fluoranthene	ND		0.0097
Pyrene	ND		0.0097
Benzo[a]anthracene	ND		0.0097
Chrysene	ND		0.0097
Benzo[b]fluoranthene	ND		0.0097
Benzo[k]fluoranthene	ND		0.0097
Benzo[a]pyrene	ND		0.0097
Indeno(1,2,3-c,d)pyrene	ND		0.0097
Dibenz[a,h]anthracene	ND		0.0097
Benzo[g,h,i]perylene	ND		0.0097

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	81	27 - 107
2-Fluorobiphenyl	68	33 - 100
Terphenyl-d14	75	55 - 106

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM

Date Extracted:	11-7-05
Date Analyzed:	11-9-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-06
Client ID:	**LV-3-0.5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.15
2-Methylnaphthalene	ND		0.15
1-Methylnaphthalene	ND		0.15
Acenaphthylene	ND		0.15
Acenaphthene	0.21		0.15
Fluorene	ND		0.15
Phenanthrene	1.2		0.15
Anthracene	0.27		0.15
Fluoranthene	1.2		0.15
Pyrene	1.2		0.15
Benzo[a]anthracene	0.49		0.15
Chrysene	0.50		0.15
Benzo[b]fluoranthene	0.53		0.15
Benzo[k]fluoranthene	0.17		0.15
Benzo[a]pyrene	0.47		0.15
Indeno(1,2,3-c,d)pyrene	0.27		0.15
Dibenz[a,h]anthracene	ND		0.15
Benzo[g,h,i]perylene	0.37		0.15

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	97	27 - 107
2-Fluorobiphenyl	79	33 - 100
Terphenyl-d14	83	55 - 106

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM

Date Extracted:	11-7-05
Date Analyzed:	11-10-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-09
Client ID:	**LV-4-0.5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	0.0080		0.0075
2-Methylnaphthalene	0.011		0.0075
1-Methylnaphthalene	ND		0.0075
Acenaphthylene	0.014		0.0075
Acenaphthene	ND		0.0075
Fluorene	ND		0.0075
Phenanthrene	0.014		0.0075
Anthracene	0.019		0.0075
Fluoranthene	0.061		0.0075
Pyrene	0.085		0.0075
Benzo[a]anthracene	0.061		0.0075
Chrysene	0.099		0.0075
Benzo[b]fluoranthene	0.16		0.0075
Benzo[k]fluoranthene	0.040		0.0075
Benzo[a]pyrene	0.099		0.0075
Indeno(1,2,3-c,d)pyrene	0.052		0.0075
Dibenz[a,h]anthracene	0.023		0.0075
Benzo[g,h,i]perylene	0.099		0.0075

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	80	27 - 107
2-Fluorobiphenyl	76	33 - 100
Terphenyl-d14	81	55 - 106

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM

Date Extracted:	11-7-05
Date Analyzed:	11-10-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-12
Client ID:	**LV-5-0.5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.0078
2-Methylnaphthalene	ND		0.0078
1-Methylnaphthalene	ND		0.0078
Acenaphthylene	ND		0.0078
Acenaphthene	ND		0.0078
Fluorene	ND		0.0078
Phenanthrene	0.023		0.0078
Anthracene	ND		0.0078
Fluoranthene	0.047		0.0078
Pyrene	0.054		0.0078
Benzo[a]anthracene	0.022		0.0078
Chrysene	0.030		0.0078
Benzo[b]fluoranthene	0.034		0.0078
Benzo[k]fluoranthene	0.013		0.0078
Benzo[a]pyrene	0.030		0.0078
Indeno(1,2,3-c,d)pyrene	0.018		0.0078
Dibenz[a,h]anthracene	ND		0.0078
Benzo[g,h,i]perylene	0.042		0.0078

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	86	27 - 107
2-Fluorobiphenyl	74	33 - 100
Terphenyl-d14	83	55 - 106

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-7-05
Date Analyzed:	11-8-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1107S1

Compound:	Results	Flags	PQL
Naphthalene	ND		0.0067
2-Methylnaphthalene	ND		0.0067
1-Methylnaphthalene	ND		0.0067
Acenaphthylene	ND		0.0067
Acenaphthene	ND		0.0067
Fluorene	ND		0.0067
Phenanthrene	ND		0.0067
Anthracene	ND		0.0067
Fluoranthene	ND		0.0067
Pyrene	ND		0.0067
Benzo[a]anthracene	ND		0.0067
Chrysene	ND		0.0067
Benzo[b]fluoranthene	ND		0.0067
Benzo[k]fluoranthene	ND		0.0067
Benzo[a]pyrene	ND		0.0067
Indeno(1,2,3-c,d)pyrene	ND		0.0067
Dibenz[a,h]anthracene	ND		0.0067
Benzo[g,h,i]perylene	ND		0.0067

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	83	27 - 107
2-Fluorobiphenyl	70	33 - 100
Terphenyl-d14	92	55 - 106

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

PAHs by EPA 8270C/SIM
MS/MSD QUALITY CONTROL

Date Extracted: 11-7-05
Date Analyzed: 11-8-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-045-01

Compound:	Sample Amount	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	Recovery Limits	Flags
Naphthalene	ND	0.0833	0.0652	78	0.0733	88	30-115	
Acenaphthylene	ND	0.0833	0.0737	88	0.0810	97	46-125	
Acenaphthene	ND	0.0833	0.0720	86	0.0737	88	40-119	
Fluorene	ND	0.0833	0.0690	83	0.0703	84	50-133	
Phenanthrene	0.0253	0.0833	0.102	92	0.0958	85	48-128	
Anthracene	ND	0.0833	0.0776	93	0.0819	98	53-134	
Fluoranthene	0.0564	0.0833	0.152	115	0.217	193	50-143	I
Pyrene	0.0553	0.0833	0.148	111	0.226	205	44-139	I
Benzo[a]anthracene	0.0260	0.0833	0.111	102	0.154	153	62-129	I
Chrysene	0.0339	0.0833	0.115	97	0.162	154	42-127	I
Benzo[b]fluoranthene	0.0450	0.0833	0.124	95	0.170	150	57-132	I
Benzo[k]fluoranthene	0.0141	0.0833	0.0900	91	0.113	119	57-131	
Benzo[a]pyrene	0.0336	0.0833	0.114	97	0.164	157	59-132	I
Indeno(1,2,3-c,d)pyrene	0.0257	0.0833	0.103	93	0.133	128	55-135	
Dibenz[a,h]anthracene	0.00793	0.0833	0.0805	87	0.0888	97	36-146	
Benzo[g,h,i]perylene	0.0359	0.0833	0.114	94	0.149	136	42-140	

	RPD	RPD Limit	Flags
Naphthalene	12	25	
Acenaphthylene	10	25	
Acenaphthene	2	25	
Fluorene	2	25	
Phenanthrene	6	25	
Anthracene	5	25	
Fluoranthene	35	25	L
Pyrene	42	25	L
Benzo[a]anthracene	33	25	L
Chrysene	34	25	L
Benzo[b]fluoranthene	31	25	L
Benzo[k]fluoranthene	23	25	
Benzo[a]pyrene	36	25	L
Indeno(1,2,3-c,d)pyrene	25	25	
Dibenz[a,h]anthracene	10	25	
Benzo[g,h,i]perylene	27	25	L

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-9&10-05
Date Analyzed: 11-9&11-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-043-01
Client ID: LV-1-0.5

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	12
Cadmium	6010B	**ND**	0.61
Chromium	6010B	**14**	0.61
Lead	6010B	**32**	6.1
Mercury	7471A	**ND**	0.30

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-9&10-05
Date Analyzed: 11-9&11-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-043-04
Client ID: LV-2-0.5

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	14
Cadmium	6010B	**ND**	0.72
Chromium	6010B	**14**	0.72
Lead	6010B	**7.8**	7.2
Mercury	7471A	**ND**	0.36

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-9&10-05
Date Analyzed: 11-9&11-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-043-06
Client ID: LV-3-0.5

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	11
Cadmium	6010B	**ND**	0.56
Chromium	6010B	**23**	0.56
Lead	6010B	**510**	5.6
Mercury	7471A	**ND**	0.28

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-9&10-05
Date Analyzed: 11-9&11-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-043-09
Client ID: LV-4-0.5

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	11
Cadmium	6010B	**0.85**	0.56
Chromium	6010B	**26**	0.56
Lead	6010B	**210**	5.6
Mercury	7471A	**ND**	0.28

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-9&10-05
Date Analyzed: 11-9&11-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-043-12
Client ID: LV-5-0.5

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	12
Cadmium	6010B	**ND**	0.58
Chromium	6010B	**18**	0.58
Lead	6010B	**200**	5.8
Mercury	7471A	**ND**	0.29

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-10-05
Date Analyzed:	11-10-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1110S2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-9-05
Date Analyzed:	11-9-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1109S1

Analyte	Method	Result	PQL
Mercury	7471A	**ND**	0.25

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 11-10-05
Date Analyzed: 11-10-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-083-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**11.9**	**10.6**	11	0.50	
Lead	**ND**	**ND**	NA	5.0	

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-9-05
Date Analyzed: 11-9-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-024-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 11-10-05
Date Analyzed: 11-10-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-083-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**98.3**	98	**95.9**	96	3	
Cadmium	50	**49.2**	98	**48.0**	96	3	
Chromium	100	**109**	98	**106**	94	3	
Lead	250	**254**	101	**250**	100	1	

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

TOTAL METALS
EPA 7471A
MS/MSD QUALITY CONTROL

Date Extracted: 11-9-05
Date Analyzed: 11-9-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-024-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.50	**0.501**	95	**0.509**	97	2	

Date of Report: November 15, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043
Project: Lakewood LV.

% MOISTURE

Date Analyzed: 11-7-05

Client ID	Lab ID	% Moisture
LV-1-0.5	11-043-01	18
LV-2-0.5	11-043-04	31
LV-3-0.5	11-043-06	11
LV-4-0.5	11-043-09	11
LV-5-0.5	11-043-12	14

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a 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.

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.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

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 inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

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 - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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

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

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z - The Diesel range result is being impacted by the large amount of lube oil present in the sample.

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: SAW
Project Number:
Project Name: Lake Wood LV.
Project Manager: AGNES
Sampled by: MJK

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Laboratory Number: 11-043

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	MTCA 5	Hold			% Moisture
1	LV-1-0.5	11/03/05	1024	S	2			X				X									X				X
2	LV-1-1	11/03/05	1031	S	1																	X			
3	LV-1-2.5	11/03/05	1039	S	1																	X			
4	LV-2-0.5	11/03/05	1113	S	2			X				X									X				X
5	LV-2-1	11/03/05	1121	S	1																	X			
6	LV-3-0.5	11/03/05	1153	S	2			X				X									X				X
7	LV-3-1	11/03/05	1158	S	1																	X			
8	LV-3-1.5	11/03/05	1210	S	1																	X			
9	LV-4-0.5	11/03/05	1333	S	2			X				X									X				X
10	LV-4-1	11/03/05	1342	S	1																	X			

	Signature	Company	Date	Time
Relinquished by		S.W.	11/03/05	1658
Received by		OSE	11/4/05	1400
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: SAW
Project Number:
Project Name: Lake wood - LV.
Project Manager: AGNES
Sampled by: MJK

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Laboratory Number: 11-043

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	MTCA 5	HOLD			% Moisture
11	LV-4-1.5	11/03/05	1348	S	1																	X			
12	LV-5-0.5	11/03/05	1412	S	2			X				X									X				X
13	LV-5-1	11/03/05	1413	S	1																	X			
14	LV-5-1.5	11/03/05	1419	S	1																	X			

	Signature	Company	Date	Time
Relinquished by	[signature]	S.W	11/03/05	
Received by	[signature]	OSE	11/4/05	1400
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Chro

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

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

November 21, 2005

Agnes Tirao
Shannon & Wilson, Inc.
400 N 34th Street, Suite 100
Seattle, WA 98103

Re: Analytical Data for Project Lakewood LV
Laboratory Reference No. 0511-043B

Dear Agnes:

Enclosed are the analytical results and associated quality control data for samples submitted on November 4, 2005.

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 Manager

Enclosures

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

Case Narrative

Samples were collected on November 3, 2005 and received by the laboratory on November 4, 2005. They were maintained at the laboratory at a temperature of 2°C to 6°C except as noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

PAHs by EPA 8270C/SIM

Date Extracted:	11-16-05
Date Analyzed:	11-17-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-07
Client ID:	**LV-3-1**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	0.080		0.015
2-Methylnaphthalene	0.10		0.015
1-Methylnaphthalene	0.12		0.015
Acenaphthylene	ND		0.015
Acenaphthene	0.36		0.015
Fluorene	0.29		0.015
Phenanthrene	2.4		0.30
Anthracene	0.57		0.015
Fluoranthene	2.2		0.30
Pyrene	2.2		0.30
Benzo[a]anthracene	0.94		0.015
Chrysene	1.1		0.015
Benzo[b]fluoranthene	1.0		0.015
Benzo[k]fluoranthene	0.33		0.015
Benzo[a]pyrene	0.91		0.015
Indeno(1,2,3-c,d)pyrene	0.43		0.015
Dibenz[a,h]anthracene	0.15		0.015
Benzo[g,h,i]perylene	0.59		0.015

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	73	27 - 107
2-Fluorobiphenyl	78	33 - 100
Terphenyl-d14	90	55 - 106

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

PAHs by EPA 8270C/SIM

Date Extracted:	11-16-05
Date Analyzed:	11-17-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-08
Client ID:	**LV-3-1.5**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.0091
2-Methylnaphthalene	ND		0.0091
1-Methylnaphthalene	ND		0.0091
Acenaphthylene	ND		0.0091
Acenaphthene	ND		0.0091
Fluorene	ND		0.0091
Phenanthrene	ND		0.0091
Anthracene	ND		0.0091
Fluoranthene	ND		0.0091
Pyrene	ND		0.0091
Benzo[a]anthracene	ND		0.0091
Chrysene	ND		0.0091
Benzo[b]fluoranthene	ND		0.0091
Benzo[k]fluoranthene	ND		0.0091
Benzo[a]pyrene	ND		0.0091
Indeno(1,2,3-c,d)pyrene	ND		0.0091
Dibenz[a,h]anthracene	ND		0.0091
Benzo[g,h,i]perylene	ND		0.0091

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	83	27 - 107
2-Fluorobiphenyl	84	33 - 100
Terphenyl-d14	90	55 - 106

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

PAHs by EPA 8270C/SIM

Date Extracted:	11-16-05
Date Analyzed:	11-17-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	11-043-10
Client ID:	**LV-4-1**

Compound:	**Results**	**Flags**	**PQL**
Naphthalene	ND		0.014
2-Methylnaphthalene	ND		0.014
1-Methylnaphthalene	ND		0.014
Acenaphthylene	ND		0.014
Acenaphthene	ND		0.014
Fluorene	ND		0.014
Phenanthrene	ND		0.014
Anthracene	ND		0.014
Fluoranthene	0.027		0.014
Pyrene	0.065		0.014
Benzo[a]anthracene	0.018		0.014
Chrysene	0.038		0.014
Benzo[b]fluoranthene	0.066		0.014
Benzo[k]fluoranthene	0.017		0.014
Benzo[a]pyrene	0.054		0.014
Indeno(1,2,3-c,d)pyrene	0.041		0.014
Dibenz[a,h]anthracene	ND		0.014
Benzo[g,h,i]perylene	0.12		0.014

Surrogate :	**Percent Recovery**	**Control Limits**
Nitrobenzene-d5	81	27 - 107
2-Fluorobiphenyl	85	33 - 100
Terphenyl-d14	83	55 - 106

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

PAHs by EPA 8270C/SIM
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-16-05
Date Analyzed:	11-17-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1116S1

Compound:	Results	Flags	PQL
Naphthalene	ND		0.0067
2-Methylnaphthalene	ND		0.0067
1-Methylnaphthalene	ND		0.0067
Acenaphthylene	ND		0.0067
Acenaphthene	ND		0.0067
Fluorene	ND		0.0067
Phenanthrene	ND		0.0067
Anthracene	ND		0.0067
Fluoranthene	ND		0.0067
Pyrene	ND		0.0067
Benzo[a]anthracene	ND		0.0067
Chrysene	ND		0.0067
Benzo[b]fluoranthene	ND		0.0067
Benzo[k]fluoranthene	ND		0.0067
Benzo[a]pyrene	ND		0.0067
Indeno(1,2,3-c,d)pyrene	ND		0.0067
Dibenz[a,h]anthracene	ND		0.0067
Benzo[g,h,i]perylene	ND		0.0067

Surrogate :	Percent Recovery	Control Limits
Nitrobenzene-d5	72	27 - 107
2-Fluorobiphenyl	74	33 - 100
Terphenyl-d14	87	55 - 106

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

PAHs by EPA 8270C/SIM
SB/SBD QUALITY CONTROL

Date Extracted: 11-16-05
Date Analyzed: 11-17-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: SB1116S1

Compound:	MB Amount	Spike Amount	SB	Percent Recovery	SBD	Percent Recovery	Recovery Limits	Flags
Naphthalene	ND	0.0833	0.0661	79	0.0633	76	39-130	
Acenaphthylene	ND	0.0833	0.0757	91	0.0730	88	47-130	
Acenaphthene	ND	0.0833	0.0757	91	0.0736	88	40-130	
Fluorene	ND	0.0833	0.0776	93	0.0753	90	48-130	
Phenanthrene	ND	0.0833	0.0776	93	0.0760	91	49-130	
Anthracene	ND	0.0833	0.0740	89	0.0743	89	55-130	
Fluoranthene	ND	0.0833	0.0836	100	0.0838	101	59-130	
Pyrene	ND	0.0833	0.0817	98	0.0820	98	55-130	
Benzo[a]anthracene	ND	0.0833	0.0774	93	0.0776	93	60-130	
Chrysene	ND	0.0833	0.0802	96	0.0805	97	48-130	
Benzo[b]fluoranthene	ND	0.0833	0.0754	91	0.0765	92	61-130	
Benzo[k]fluoranthene	ND	0.0833	0.0771	93	0.0789	95	62-130	
Benzo[a]pyrene	ND	0.0833	0.0632	76	0.0703	84	59-130	
Indeno(1,2,3-c,d)pyrene	ND	0.0833	0.0721	87	0.0737	88	56-130	
Dibenz[a,h]anthracene	ND	0.0833	0.0717	86	0.0722	87	40-130	
Benzo[g,h,i]perylene	ND	0.0833	0.0761	91	0.0775	93	49-130	

	RPD	RPD Limit	Flags
Naphthalene	4	25	
Acenaphthylene	4	25	
Acenaphthene	3	25	
Fluorene	3	25	
Phenanthrene	2	25	
Anthracene	0	25	
Fluoranthene	0	25	
Pyrene	0	25	
Benzo[a]anthracene	0	25	
Chrysene	0	25	
Benzo[b]fluoranthene	1	25	
Benzo[k]fluoranthene	2	25	
Benzo[a]pyrene	11	25	
Indeno(1,2,3-c,d)pyrene	2	25	
Dibenz[a,h]anthracene	1	25	
Benzo[g,h,i]perylene	2	25	

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TCLP LEAD
by EPA 1311/6010B

Date Prepared:	11-16-05
Date Extracted:	11-17-05
Date Analyzed:	11-18-05
Matrix:	TCLP Extract
Units:	mg/L (ppm)

Client ID	Lab ID	Result	PQL
LV-3-0.5	11-043-06	**4.3**	0.20
LV-4-0.5	11-043-09	**ND**	0.20

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TCLP LEAD
by EPA 1311/6010B
METHOD BLANK QUALITY CONTROL

Date Prepared:	11-16-05
Date Extracted:	11-17-05
Date Analyzed:	11-18-05
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	MB1117T1

Analyte	Method	Result	PQL
Lead	6010B	**ND**	0.20

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TCLP LEAD
by EPA 1311/6010B
DUPLICATE QUALITY CONTROL

Date Prepared:	11-16-05
Date Extracted:	11-17-05
Date Analyzed:	11-18-05
Matrix:	TCLP Extract
Units:	mg/L (ppm)
Lab ID:	11-018-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	0.20	

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TCLP LEAD
by EPA 1311/6010B
MS/MSD QUALITY CONTROL

Date Prepared: 11-16-05
Date Extracted: 11-17-05
Date Analyzed: 11-18-05

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

Lab ID: 11-018-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	10	**9.66**	97	**9.63**	96	0	

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TOTAL LEAD
EPA 6010B

Date Extracted:	11-17-05
Date Analyzed:	11-18-05
Matrix:	Soil
Units:	mg/kg (ppm)

Client ID	Lab ID	Result	PQL
LV-3-1	11-043-07	**280**	5.6
LV-3-1.5	11-043-08	**14**	6.8

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TOTAL LEAD
EPA 6010B
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-17-05
Date Analyzed:	11-18-05
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1117S2

Analyte	Method	Result	PQL
Lead	6010B	**ND**	5.0

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TOTAL LEAD
EPA 6010B
DUPLICATE QUALITY CONTROL

Date Extracted: 11-17-05
Date Analyzed: 11-18-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-044-03

Analyte	Sample Result	Duplicate Result	RPD	Flags	PQL
Lead	**17.8**	**16.2**	9		5.0

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

TOTAL LEAD
EPA 6010B
MS/MSD QUALITY CONTROL

Date Extracted: 11-17-05
Date Analyzed: 11-18-05

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-044-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**257**	96	**249**	92	3	

Date of Report: November 21, 2005
Samples Submitted: November 4, 2005
Laboratory Reference: 0511-043B
Project: Lakewood LV

% MOISTURE

Date Analyzed: 11-16-05

Client ID	Lab ID	% Moisture
LV-3-1	11-043-07	10
LV-3-1.5	11-043-08	27
LV-4-1	11-043-10	7

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a 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.

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.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

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 inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons indicative of diesel fuel are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

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 - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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

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

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: S&W
Project Number:
Project Name: Lake Wood LV.
Project Manager: AGNES
Sampled by: MJK

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☒ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Laboratory Number: 11-043

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP ~~Metals~~ Lead	HEM by 1664	VPH	EPH	MTCA 5	HOLD	Lead		% Moisture
1	LV-1-0.5	11/03/05	1024	S	2			X				X									X				X
2	LV-1-1	11/03/05	1031	S	1																	X			
3	LV-1-2.5	11/03/05	1039	S	1																	X			
4	LV-2-0.5	11/03/05	1113	S	2			X				X									X				X
5	LV-2-1	11/03/05	1121	S	1																	X			
6	LV-3-0.5	11/03/05	1153	S	2			X				X					(X)				X				X
7	LV-3-1	11/03/05	1158	S	1							(X)										X	(X)		(X)
8	LV-3-1.5	11/03/05	1210	S	1							(X)										X	(X)		(X)
9	LV-4-0.5	11/03/05	1333	S	2			X				X					(X)				X				X
10	LV-4-1	11/03/05	1342	S	1							(X)										X			(X)

	Signature	Company	Date	Time
Relinquished by	[signature]	S.W	11/03/05	1658
Received by	[signature]	OSE	11/4/05	1400
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

(X) Added 11 Lead 8260
3 day TA

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: SAW
Project Number:
Project Name: Lake wood - LV.
Project Manager: AGNES
Sampled by: MJK

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Laboratory Number: 11-043

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 / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	MTCA 5	Hold			% Moisture
11	LV-4-1.5	11/03/05	1348	S	1																	X			
12	LV-5-0.5	11/03/05	1412	S	2			X				X									X				X
13	LV-5-1	11/03/05	1413	S	1																	X			
14	LV-5-1.5	11/03/05	1419	S	1																	X			

	Signature	Company	Date	Time
Relinquished by	[signature]	S.W	11/03/05	
Received by	[signature]	OSE	11/4/05	1400
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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

APPENDIX D

IMPORTANT INFORMATION ABOUT YOUR ENVIRONMENTAL REPORT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Attachment to and part of Report 21-1-12180-007

Date: January 24, 2006
To: Ms. Monica Moravec
KPFF

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland