LUST INC # 4077
GTE Everett Primary Center
Snohomish Co.

DEPARTMENT OF ECOLOGY
NWRO/TCP TANK UNIT

INTERIM CLEANUP REPORT ☑
SITE CHARACTERIZATION ☑
FINAL CLEANUP REPORT ☐
OTHER Limited Cleanup-NFA ☑
AFFECTED MEDIA: SOIL ☑
OTHER _____ GW ☐
INSPECTOR (INIT.) JK DATE 8-31-93

SR

T-1388-01

Underground Storage Tank Removal and Related Environmental Services Everett Primary Center Everett, Washington

1/2

July 1993

7/28/93

GTE Northwest, Inc.
Attn: Mr. Donald S. Kindle
P.O. Box 1003
Everett, Washington 98206-1003

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AUG 30 1993
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AUG 06 1993 NWRO
DEPT. OF ECOLOGY

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 N. 34th St. ▪ Suite 100
P.O. Box 300303
Seattle, Washington 98103
206▪632▪8020

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

SEATTLE
EVERETT
KENNEWICK
FAIRBANKS
ANCHORAGE
SAINT LOUIS

July 28, 1993

GTE Northwest, Inc.
P.O. Box 1003
Everett, Washington 98206-1003

Attn: Mr. Donald S. Kindle (WA0104LB)

RE: UNDERGROUND STORAGE TANK REMOVAL AND RELATED ENVIRONMENTAL SERVICES, EVERETT PRIMARY CENTER, 426 CASINO ROAD, EVERETT, WASHINGTON

Shannon & Wilson, Inc. (S&W) is pleased to submit this report for environmental services related to underground storage tank (UST) removal at the referenced GTE property in Everett, Washington.

Please contact Dale Topham, John McClellan, or Frank Pita directly at (206) 632-8020 with any questions or comments which you might have concerning this report.

Respectfully,

SHANNON & WILSON, INC.

Dale E. Topham, P.E.
Senior Engineer

Frank W. Pita, P.E., P.G.
Vice President - Environmental Services

DET:FWP/det

T1388-01.LTR/T1388-lkd/dgw

T-1388-01
WO#: 2240-B01-3C001AA

400 NORTH 34TH STREET • SUITE 100
P.O. BOX 300303
SEATTLE, WASHINGTON 98103
206 • 632 • 8020 FAX 206 • 633 • 6777

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UNDERGROUND STORAGE TANK REMOVAL AND RELATED ENVIRONMENTAL SERVICES, EVERETT PRIMARY CENTER, 426 CASINO ROAD, EVERETT, WASHINGTON

1.0 INTRODUCTION

This report presents the results of environmental services performed by Shannon & Wilson, Inc. during removal of one underground storage tank (UST) and stockpiling of soil containing elevated levels of petroleum hydrocarbons, and site characterization at the GTE Northwest Inc. Everett Primary Center, 426 Casino Road, Everett, Washington. Tank removal was accomplished on November 3, 1992. Additional field activities related to characterization of soils containing potentially elevated levels of petroleum hydrocarbons was accomplished on November 23 and December 1, 1992. The objective of this work was to provide partial field oversight and environmental sampling associated with the removal of one underground fuel storage tank (UST) and associated piping.

The scope of our services included:

- Observe removal of one 10,000-gallon diesel fuel oil UST;
- Perform field screening to provide a preliminary assessment of the presence or absence of potential petroleum hydrocarbon contamination in excavated soils and in the soils of the piping trench and the excavation walls and bottom.
- Perform environmental sampling to characterize petroleum hydrocarbon contamination in excavated potentially contaminated soil and, if any, in remaining site soils in the walls and bottom of the UST removal excavation and piping trench.
- Prepare a report summarizing our methods and findings and providing conclusions based upon our observations and the analytical data.

2.0 SITE DESCRIPTION AND BACKGROUND INFORMATION

The subject property is located at 426 Casino Road, Everett, Washington, as indicated in Figure 1, Vicinity Map. In general, the site is located on a low knoll and is relatively level. The area surrounding the site slopes gently in all directions. Across the street to the north of the site is a gas station/convenience store and a building supply store. Beyond these stores to the north is State Highway 526. To the west is an area of commercial development. To the northeast

is a Texaco service station. The area to the south and east is mostly residential. The property consists of the Primary Center building and associated asphalt concrete (AC) parking lot.

The old UST was a 10,000-gallon diesel fuel UST which was located on the west side of the building in the parking lot as shown on the Site Layout, Figure 2. The approximate location of piping from the UST to the building is also shown Figure 2. The excavation for the UST removal extended into till-like material generally consisting of very dense moist, gravelly, fine sandy silt.

The subject site is located in the NW 1/4 of the NW 1/4 of S. 18, T. 28 N., R. 5 E. A review of water well reports on file at Ecology indicated that only two water well reports were on file for the four sections closest to the site. Based on the addresses shown on the reports, neither well is within 1/2 mile of the site. A geologic map included in a U.S.G.S. publication titled "Ground-Water Resources of Snohomish County, Washington" shows the elevation of the regional water table below the site to be approximately elevation 360 feet. The U.S.G.S. topographic map of the Everett, Washington quadrangle shows the site elevation to be about 560 feet. Therefore, the regional water table appears to be approximately 200 feet below the site.

3.0 ENVIRONMENTAL FIELD MONITORING ACTIVITIES

A Shannon & Wilson representative was on site November 3, 1992 to observe tank removal activities. During tank removal, excavated soils were screened for volatile organic compounds (i.e., benzene, toluene, xylene) using a Photoionization Detector (PID), and total petroleum hydrocarbons (TPH) using a Hanby colorimetric test kit (Hanby kit). The Hanby kit provides a semi-quantitative assessment of petroleum hydrocarbon contamination and character. These methods were used to determine areas of possible contamination and sampling locations.

Field screening indicated the presence of petroleum hydrocarbon contamination in soils near the fill and turbine risers and below the fill riser. Additional soil was excavated from below the fill riser until field screening did not detect significant levels of petroleum hydrocarbons. Soils suspected of having elevated levels of petroleum hydrocarbons were stockpiled pending results of laboratory tests.

Field screening also indicated the potential presence of petroleum hydrocarbon contamination in the soils below the point where the fuel line penetrated the basement wall of the building.

The penetration was located under a concrete structure north of the loading dock and a portion of this structure had been demolished to provide access to the penetration. Some potentially contaminated soil in this area was excavated and stockpiled on November 23, 1993; however, due to the proximity of the building and difficulty in excavating the soils manually, over-excavation was terminated after digging about four feet pending further evaluation. Soil samples (SP1-10 and PT1-011) were obtained from the stockpile of excavated soil and from the bottom of the excavation, respectively, to quantify levels of potential contamination.

The extent of potential contamination was evaluated by manually auguring three borings on December 1, 1992 at the locations shown on Figure 3. Generalized subsurface conditions encountered and sample locations within the borings are shown in Figure 4, Hand Boring Profile Sketch. Two soil samples were obtained from both borings HB-1 and HB-2, and one sample was obtained from HB-3. These samples were submitted to the laboratory for analysis.

Groundwater was not encountered in any of the hand borings nor was it encountered in the tank excavation.

Based on analytical results, Shannon & Wilson, Inc. notified Washington Department of Ecology (Ecology) that a petroleum hydrocarbon release had occurred.

All field sampling activities performed by Shannon & Wilson, Inc. were in accordance with the quality assurance/quality control (QA/QC) procedures and guidelines outlined in Shannon & Wilson's QA/QC Plan. Disposable sampling equipment was used for each sample to prevent cross-contamination. Samples were identified with a unique sample number, immediately logged and placed on ice in a cooler for storage and transportation to the analytical laboratory. The sample identification method is described below. As an example, the abbreviation GTEE-T1-005-SL-0 is a unique sample number which presents the following information:

- GTEE: Client identification number (GTE Everett Primary Center)
- T1: Location (Tank 1)
- 005: Sample number (the 5th sample obtained for this project)
- SL: Media type (SoiL)
- 0: Type of sample:0 represents a regular field collected sample; 1 represents a Quality Assurance/Quality Control (QA/QC) field duplicate sample for intra-laboratory precision assessment.

Soil samples were analyzed as soon as was practicable and within specified holding times. We are not aware of any factors adversely affecting data quality.

Analytical work was conducted at Friedman & Bruya, Inc. (FBI) , located in Seattle, Washington. Analytical work was done in accordance with FBI's in-house QA/QC plan. Sample analyses were performed in compliance with U.S. Environmental Protection Agency (EPA) analytical methods and the Washington State Department of Ecology (Ecology) guidelines. All detection limits used were within method requirements and were acceptable. Based on our understanding of site and the contents of the old UST (diesel), samples were analyzed by Washington method WTPH-D to quantify the potential diesel fuel contamination. One sample, HB1-012 from boring HB-1, was also tested using WTPH-HCID (Hydrocarbon Fuel Scan) to characterize petroleum hydrocarbons and confirm that contamination, if present, was in the diesel fuel range. The fuel scan detected diesel fuel components in this sample but did not detect gasoline fuel components or waste oil components. Sample SP2-010 was also analyzed for total metals by inductively coupled plasma (ICP, Method 6010). Analytical results are summarized in Table 1, Analytical Data Summary. Laboratory test data are presented in Appendix A, Environmental Laboratory Test Results.

4.0 DISCUSSION

Field screening during tank removal indicated the potential presence of petroleum hydrocarbon contamination in the soils near the fill and turbine risers and below the fill riser, and in the soils below the point where the fuel line penetrated the basement wall of the building. Additional soil was excavated from below the fill riser until field screening did not detect significant levels of petroleum hydrocarbons. Laboratory test results of soil samples from the tank excavation indicate that petroleum hydrocarbon contamination, if present, is below the detection limits of the testing procedure which are well below regulatory levels. In our opinion, no further action is required in the area of the removed UST.

Some potentially contaminated soil was removed from below the old fuel line penetration at the building; however, overexcavation was terminated due to the proximity of the building and concrete structure and the difficulty in removing additional soil manually. Laboratory test results of soil samples obtained from hand borings advanced to evaluate the extent of potential contamination indicate that levels of petroleum hydrocarbons in soils below the old fuel line penetration at the building are above regulatory levels. Test results also indicate that the highest concentra-

tions of hydrocarbons are within the basement wall backfill adjacent to the building, and that concentrations are significantly lower in the very dense native silts below the fill. Also, chemical analyses did not detect the presence of petroleum hydrocarbons in the samples obtained from hand borings to the north and west of the area of confirmed contamination, indicating that contamination is localized.

Based on discussions with Ecology, we understand that GTE will not be required to remove or otherwise treat the soils contaminated with petroleum hydrocarbons which remain at the site; however, the site will be given a "limited cleanup" status. A memorandum dated February 11, 1993 was prepared to document our telephone conversations with Ecology regarding site cleanup and is included in Appendix C.

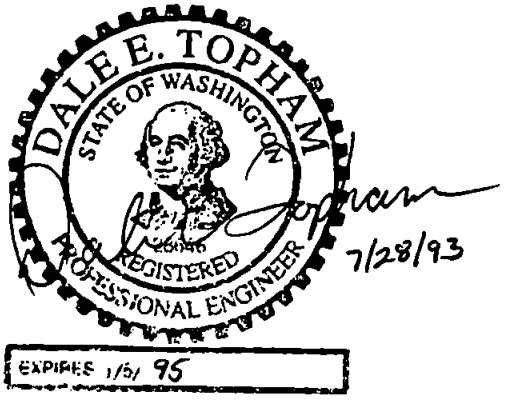
It is our opinion that closure of the UST at the GTE Northwest Incorporated Everett Primary Center located at 426 Casino Road, Everett, Washington was accomplished in accordance with current Washington State Department of Ecology Guidelines.

5.0 CLOSURE

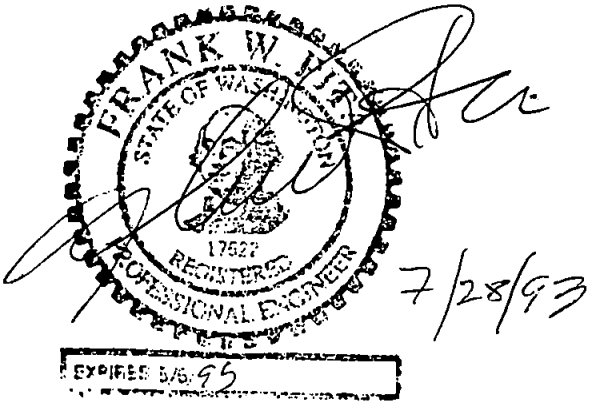
This report was prepared for the exclusive use of GTE Northwest Incorporated and their representatives regarding UST Site Assessment/Closure activities and associated environmental and geotechnical services at the Everett Primary Center located at 426 Casino Road, Everett, Washington. The findings we have presented within this report are based on limited sampling, observation, and testing. The data presented in this report should be considered representative at the time of our field observations. The analyses and sampling results can only provide you with our best judgement as to the general environmental characteristics of the property at this time and should not be construed as a definite conclusion regarding soil quality at this site. Shannon & Wilson, Inc. has prepared the attachment, "Important Information About Your Geotechnical Engineering/Subsurface Waste Management (Remediation) Report" to assist you and others in understanding the use and limitations of our reports.

We appreciate this opportunity to be of service. If you have any questions, please do not hesitate to contact us.

SHANNON & WILSON, INC.



Dale E. Topham, P.E.
Senior Engineer



Frank W. Pita, P.E., P.G.
Vice President

DET:FWP/det

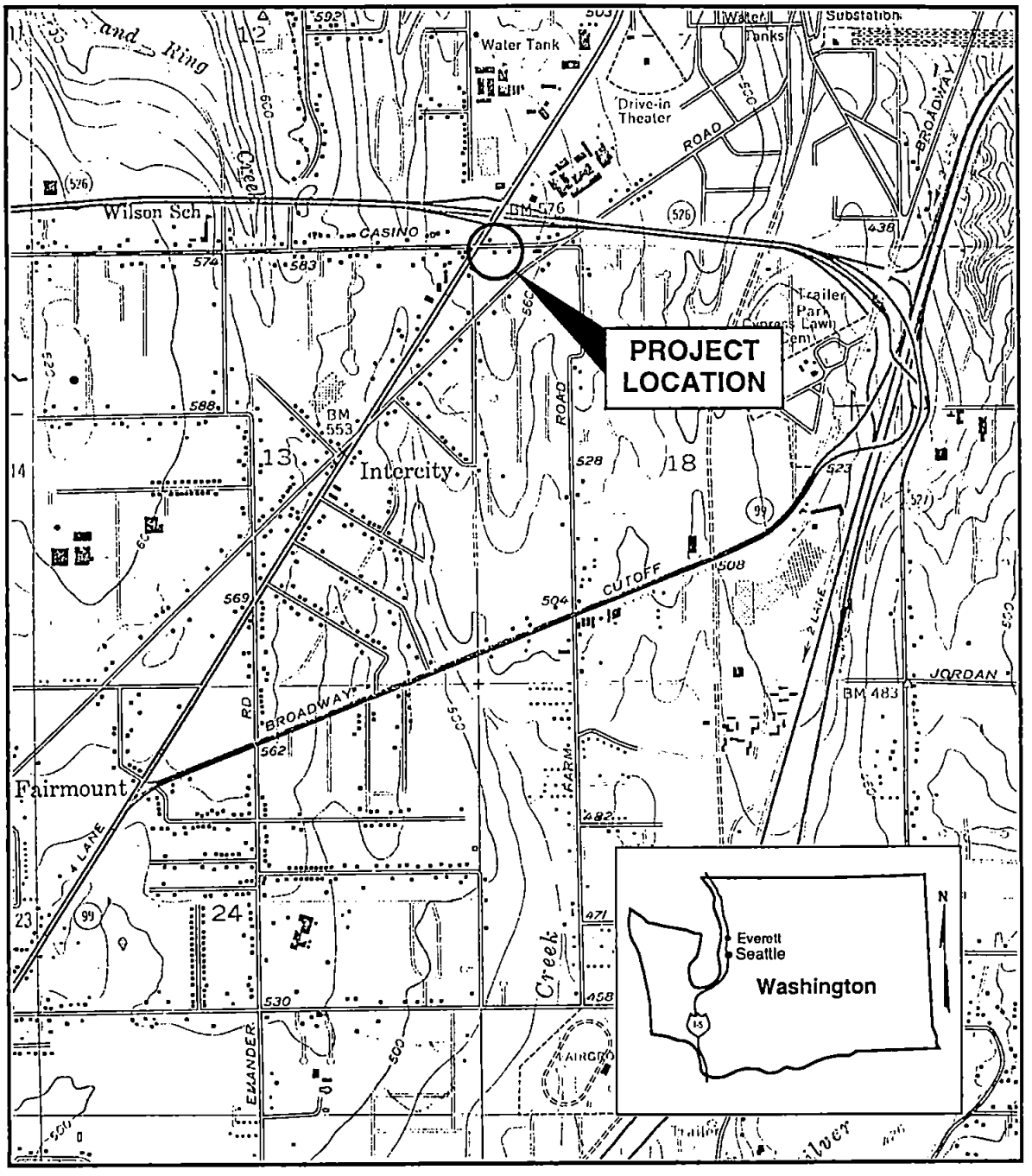
TABLE 1

ANALYTICAL DATA SUMMARY

Sample Designation	Location	Hanby Test Result	Total Petroleum Hydrocarbons	
			HCID	WTPH-D (ppm)
TI-001	Tank Excavation - Bottom	ND	NT	ND
TI-002	Tank Excavation - Wall	ND	NT	ND
TI-003	Tank Excavation - Wall	ND	NT	ND
TI-004	Tank Excavation - Wall	ND	NT	ND
TI-005	Tank Excavatoin - Wall	ND	NT	ND
TI-006	Duplicate of TI-005	ND	NT	ND
SPI-007	Stockpile	Detect	NT	30
SPI-008	Stockpile	Detect	NT	210
SPI-009	Stockpile	Detect	NT	38,000
SP2-010*	Stockpile	NT	NT	1,400
PT1-011	Near building	NT	NT	2,800
HB1-012	Near buiding	NT	Detect-Diesel Range	8,300
HB1-013	Near building	NT	NT	400
HB2-014	Below piping near building	NT	NT	ND
HB2-015	Below piping near building	NT	NT	ND
HB3-016	Near building	NT	NT	ND

NT - Not Tested
ND -Not Detected
See Figures 3 and 4 for locations
* Sample SP2-010 also tested for total metals. See Appendix A for test results.

7-28-93/TABLE.1/T1388-lkd/dgw



0 1/4 1/2 1

Scale in Miles

NOTE

Map adapted from USGS topographic map of Everett, WA quadrangle, dated 1973.

GTE Northwest Incorporated
Everett Primary Center
Everett, Washington

VICINITY MAP

July 1993 T-1388-01

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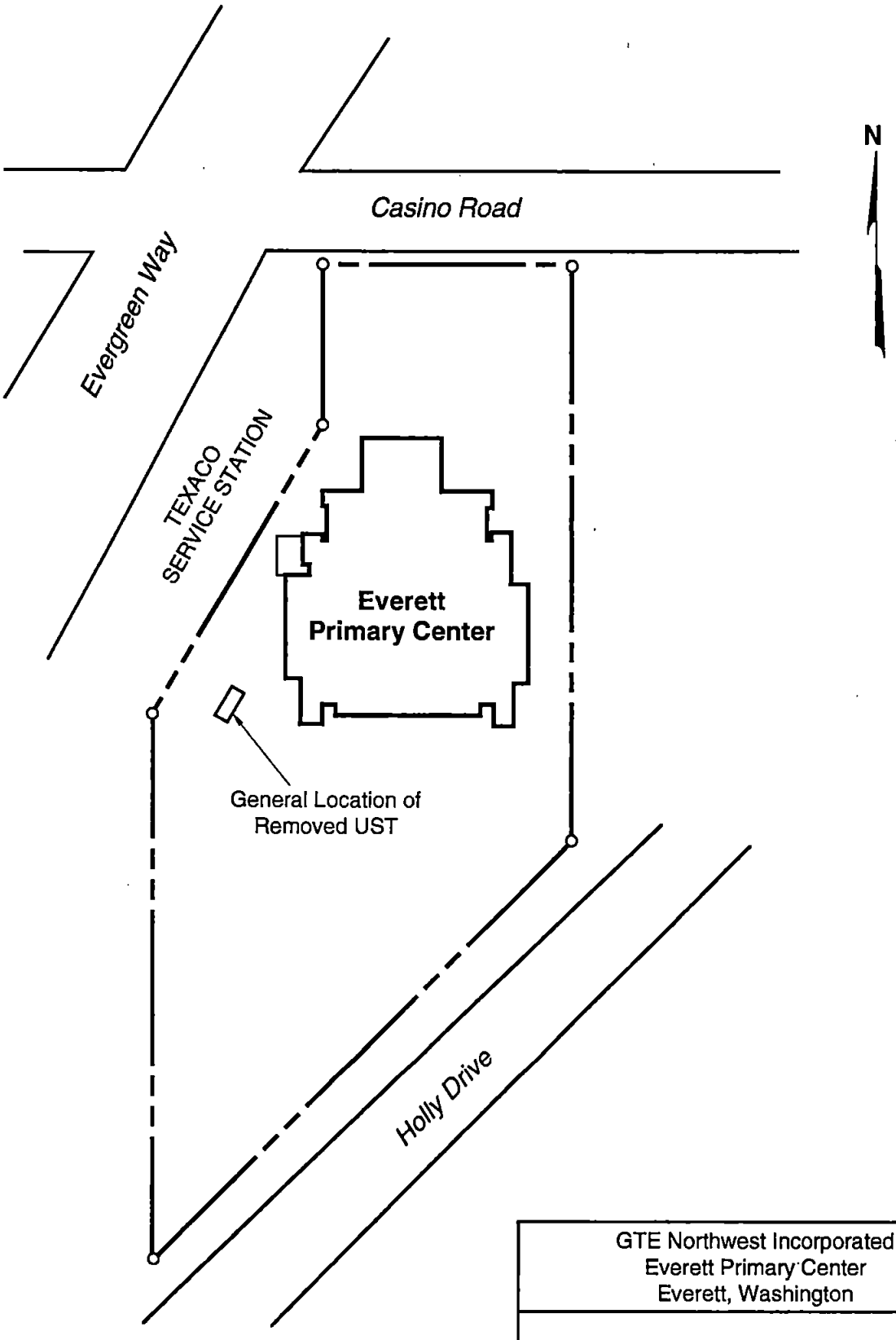
Geotechnical and Environmental Consultants

FIG. 1



GTE Northwest Incorporated
Everett Primary Center
Everett, Washington

SITE LAYOUT

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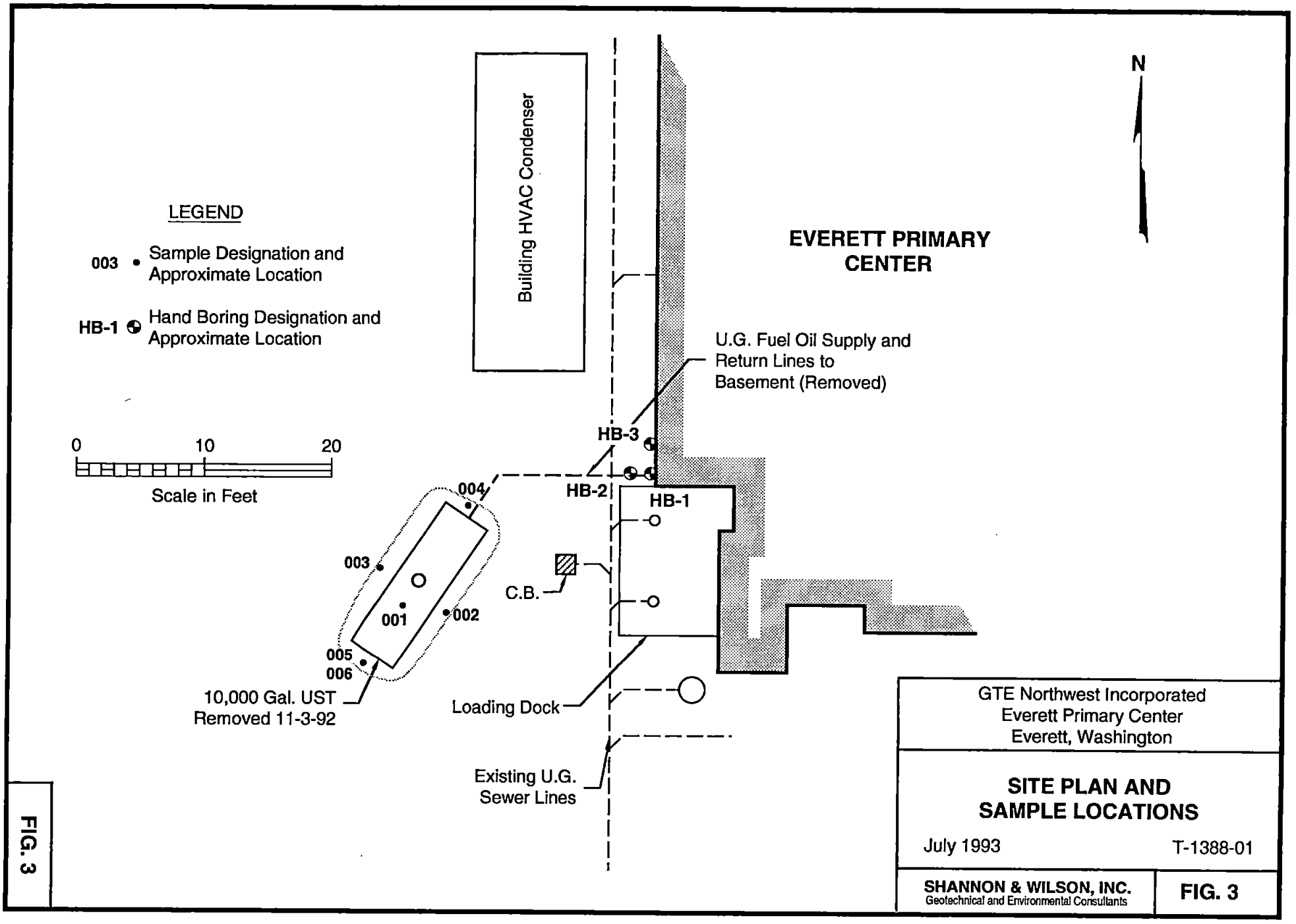
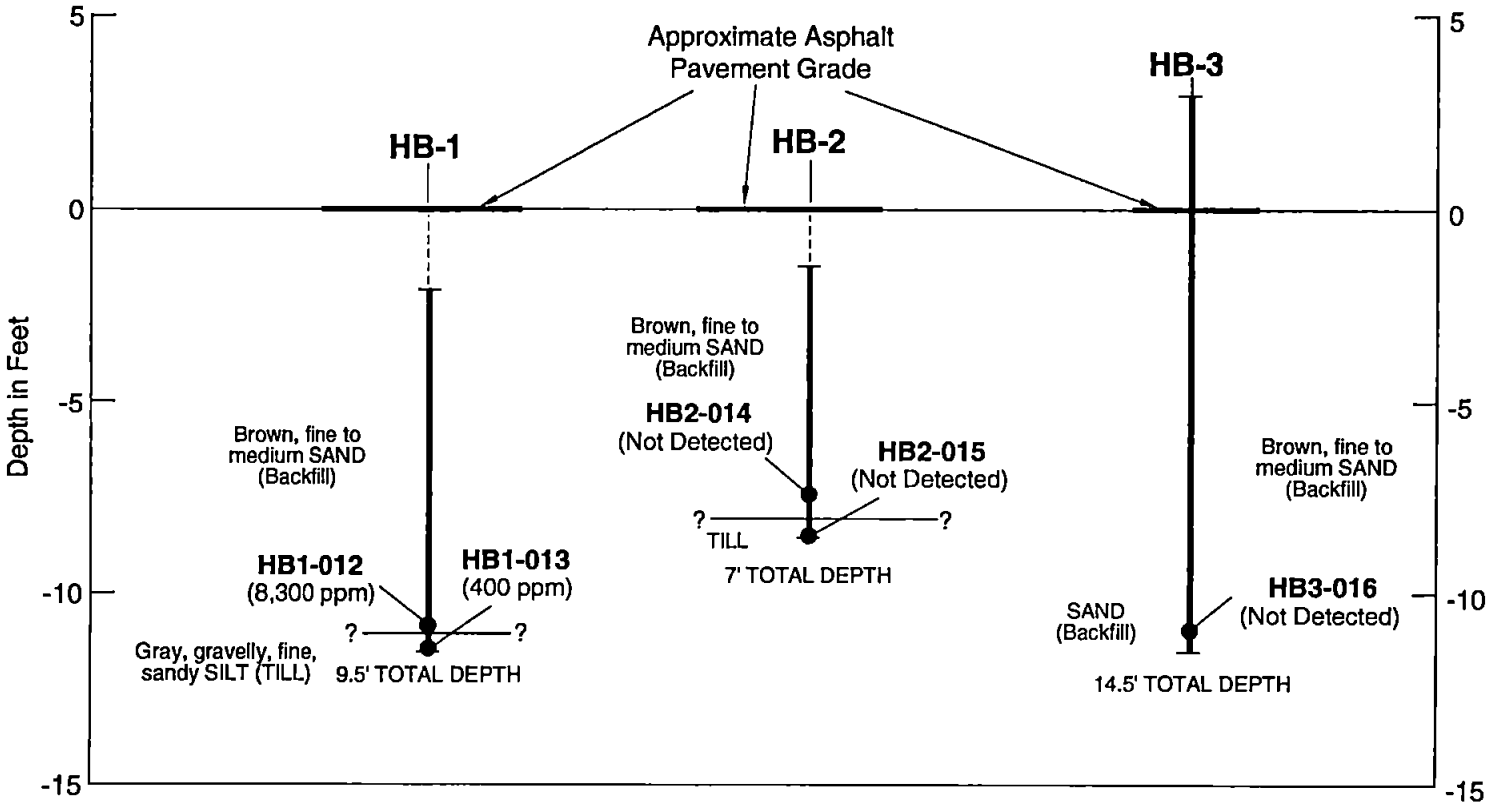
FIG. 2


LEGEND
003 • Sample Designation and Approximate Location
HB-1 ⊕ Hand Boring Designation and Approximate Location
0
10
20
Scale in Feet
Building HVAC Condenser
EVERETT PRIMARY CENTER
N
U.G. Fuel Oil Supply and Return Lines to Basement (Removed)
HB-3
HB-2
HB-1
004
003
001
002
005
006
C.B.
10,000 Gal. UST Removed 11-3-92
Loading Dock
Existing U.G. Sewer Lines
GTE Northwest Incorporated
Everett Primary Center
Everett, Washington
SITE PLAN AND SAMPLE LOCATIONS
July 1993
T-1388-01
SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants
FIG. 3
FIG. 3



No Horizontal Scale

LEGEND

HB-1 — Hand Boring Designation and Approximate Location

HB1-012 (8,300 ppm) — Sample Designation and Approximate Location; Test Results for WTPH-D.

? — ? Approximate Geologic Contact

Bottom of Boring

NOTES

1. This profile is generalized from materials encountered in the borings. Variations between the profile and actual conditions may exist.
2. See Figure 3 for boring locations.

GTE Northwest Incorporated
Everett Primary Center
Everett, Washington

HAND BORING PROFILE SKETCH

July 1993 T-1388-01

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Geotechnical and Environmental Consultants

FIG. 4

FIG. 4

APPENDIX A

ENVIRONMENTAL LABORATORY TEST RESULTS

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

November 9, 1992

Dale Topham, Project Leader
Shannon & Wilson, Inc.
P.O. Box C-30313
Seattle, WA 98103

Dear Mr. Topham:

Enclosed are the results of the analyses of the samples submitted on November 4, 1992 from Project T-1388-02, GTE-Everett PC.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this material, or if you just want to discuss any aspect of your projects, please do not hesitate to contact me.

Sincerely,

Kelly K. Greenhaw
Chemist

KKG

Enclosures

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: November 9, 1992
Date Submitted: November 4, 1992
Project: T-1388-02, GTE-Everett PC

RESULTS OF ANALYSES OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (MODIFIED 8015) Results Reported as µg/g (ppm)

Sample #	Diesel (ppm)	Internal Standard (% Recovery)
GTEE-T1-001-SL-0	<10	110%
GTEE-T1-002-SL-0	<10	110%
GTEE-T1-003-SL-0	<10	110%
GTEE-T1-004-SL-0	<10	110%
GTEE-T1-005-SL-0	<10	110%
GTEE-T1-006-SL-0	<10	110%
GTEE-SP1-007-SL-0	30	98%
GTEE-SP1-008-SL-0	210	90%
GTEE-SP1-009-SL-0	38,000	140%
Quality Assurance		
Method Blank	<10	110%
GTEE-T1-005-SL-0 (Duplicate)	<10	110%
GTEE-T1-005-SL-0 (Matrix Spike) Percent Recovery	110%	110%
GTEE-T1-005-SL-0 (Matrix Spike Duplicate) Percent Recovery	110%	100%
Spike Blank Percent Recovery	98%	110%
Spike Level	500	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

November 25, 1992

Dale Topham, Project Leader
Shannon & Wilson, Inc.
P.O. Box C-30313
Seattle, WA 98103

Dear Mr. Topham:

Enclosed are the results of the analyses of the samples submitted on November 23, 1992 from Project T-1388-02, GTE Everett.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this material, or if you just want to discuss any aspect of your projects, please do not hesitate to contact me.

Sincerely,

Kelly K. Greenhaw

Kelly K. Greenhaw
Chemist

KKG/dp

Enclosures

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: November 25, 1992
Date Submitted: November 23, 1992
Project: T-1388-02, GTE Everett

RESULTS OF ANALYSES OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (MODIFIED 8015) Results Reported as µg/g (ppm)

Sample #	Diesel (ppm)	Internal Standard (% Recovery)
GTEE-SP2-010-SL-O	1,400	120%
GTEE-PT1-011-SL-O	2,800	93%
Quality Assurance		
Method Blank	<10	100%
GTEE-PT1-011-SL-O (Duplicate)	2,500	83%
GTEE-PT1-011-SL-O (Matrix Spike) Percent Recovery	**ai**	110%
GTEE-PT1-011-SL-O (Matrix Spike Duplicate) Percent Recovery	**ai**	100%
Spike Blank Percent Recovery	91%	83%
Spike Level	500	

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

January 21, 1993

Dale Topham, Project Leader
Shannon & Wilson, Inc.
P.O. Box C-30313
Seattle, WA 98103

Dear Mr. Topham:

Enclosed are the results of the additional testing of material submitted on November 23, 1992 from Project T-1388-02, GTE Everett.

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

Sincerely,

Bradley T Benson

Bradley T. Benson
Chemist

BTB/dp

Enclosures

Date of Report: January 21, 1993
Date Received: November 23, 1992
Project: T-1388-02, GTE Everett

RESULTS FROM THE ANALYSIS OF SOIL SAMPLE FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)
Results Reported as µg/g (ppm)

Sample ID	GTEE-SP2-010-SL-0
Analyte:	
Arsenic	1.7
Barium	16
Cadmium	<1.0
Chromium	4.0
Lead	1.7
Mercury	<1.0
Selenium	<1.0
Silver	<1.0
Copper	6.2
Nickel	12
Zinc	8.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: January 21, 1993
Date Received: November 23, 1992
Project: T-1388-02, GTE Everett

RESULTS FROM THE ANALYSIS OF SOIL SAMPLE FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)

Results Reported as µg/g (ppm)

Quality Assurance

Sample #	Blank	GTEE-SP2-010-SL-0 (Duplicate)
Analyte:		
Arsenic	<1.0	1.7
Barium	<1.0	17
Cadmium	<1.0	<1.0
Chromium	<1.0	6.4
Lead	<1.0	1.8
Mercury	<1.0	<1.0
Selenium	<1.0	<1.0
Silver	<1.0	<1.0
Copper	<1.0	7.1
Nickel	<1.0	13
Zinc	<1.0	10

Date of Report: January 21, 1993
Date Received: November 23, 1992
Project: T-1388-02, GTE Everett

RESULTS FROM THE ANALYSIS OF SOIL SAMPLE FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)
Results Reported as % Recovery
Quality Assurance

Sample #	GTEE-SP2-010-SL-0 Matrix Spike % Recovery	GTEE-SP2-010-SL-0 Matrix Spike Duplicate % Recovery	Spike Level (ppm)
Analyte:			
Arsenic	95%	113%	50
Barium	91%	82%	25
Cadmium	92%	114%	25
Chromium	89%	105%	25
Lead	93%	114%	50
Mercury	na	na	na
Selenium	88%	103%	50
Silver	60%	80%	10
Copper	90%	94%	25
Nickel	94%	106%	50
Zinc	98%	116%	25

[na] The analyte indicated was not added to the matrix spike sample.

Date of Report: January 21, 1993
Date Received: November 23, 1992
Project: T-1388-02, GTE Everett

RESULTS FROM THE ANALYSIS OF SOIL SAMPLE FOR TOTAL METALS BY INDUCTIVELY COUPLED PLASMA (ICP) (METHOD 6010)
Results Reported as % Recovery
Quality Assurance

Sample #	Spike Blank	Spike Level (ppm)
Analyte:		
Arsenic	99%	50
Barium	96%	25
Cadmium	102%	25
Chromium	100%	25
Lead	102%	50
Mercury	na	na
Selenium	96%	50
Silver	54%	10
Copper	93%	25
Nickel	104%	50
Zinc	107%	25

[na] The analyte indicated was not added to the matrix spike sample.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

December 4, 1992

Dale Topham, Project Leader
Shannon & Wilson, Inc.
P.O. Box C-30313
Seattle, WA 98103

Dear Mr. Topham:

Enclosed are the results of the analyses of the samples submitted on December 2, 1992 from Project T-1388-02, GTE-Everett.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this material, or if you just want to discuss any aspect of your projects, please do not hesitate to contact me.

Sincerely,

Kelly K. Greenhaw

Kelly K Greenhaw
Chemist

KKG/dp

Enclosures

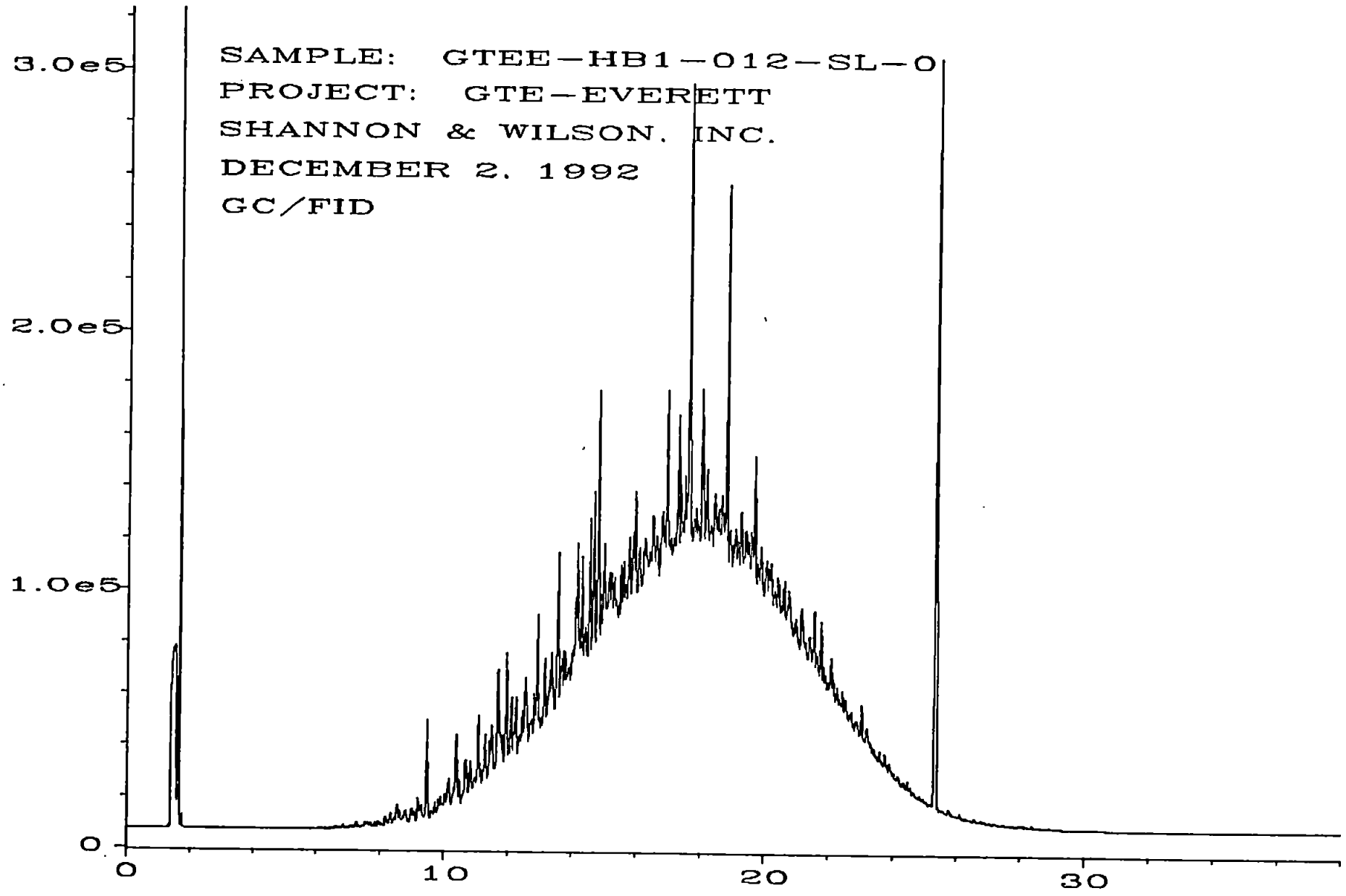
FRIEDMAN & BRUYA, INC.

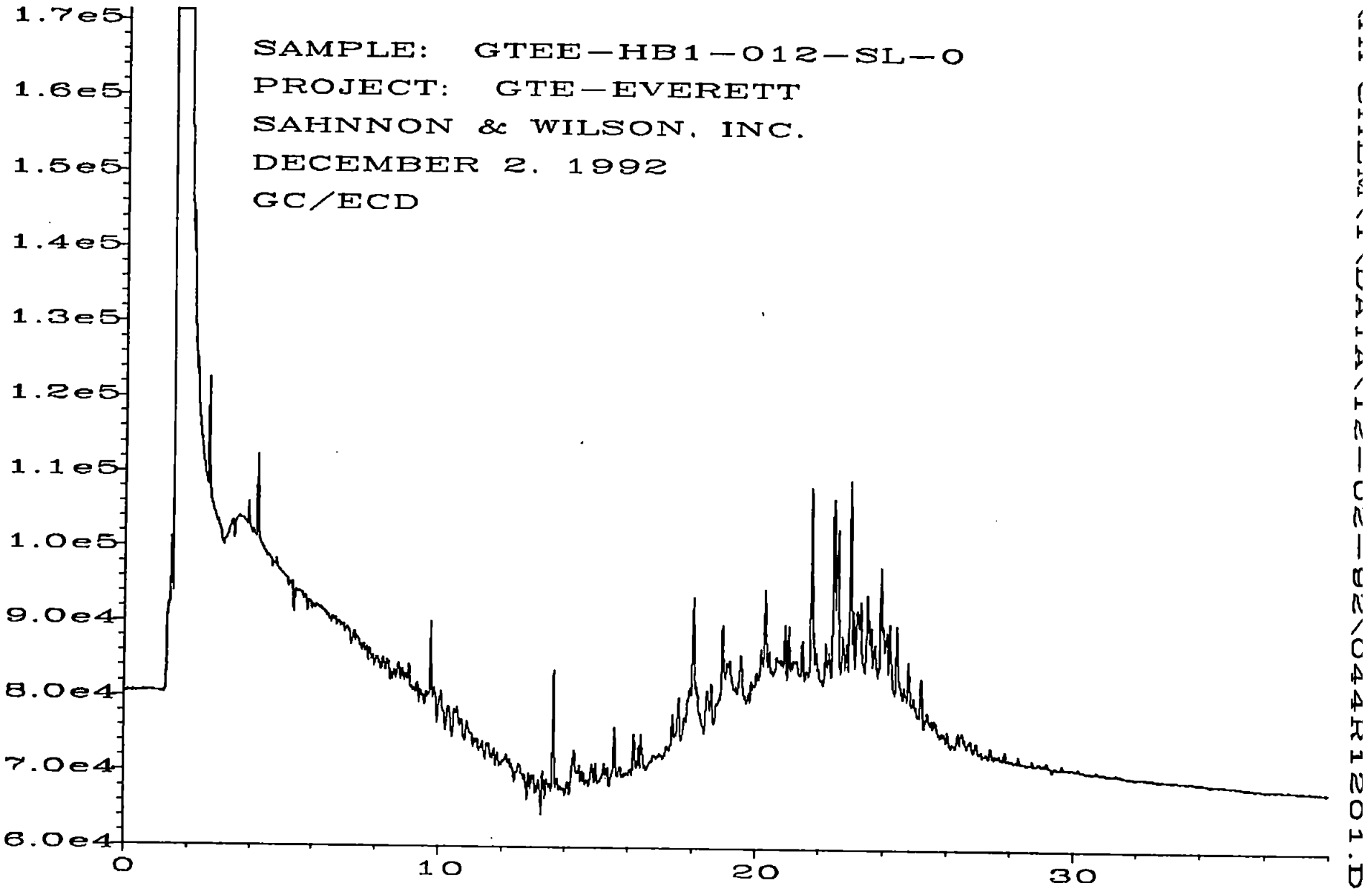
ENVIRONMENTAL CHEMISTS

Date of Report: December 4, 1992
Date Submitted: December 2, 1992
Project: T-1388-02, GTE-Everett

RESULTS OF ANALYSES OF THE SOIL SAMPLE FOR FINGERPRINT CHARACTERIZATION BY CAPILLARY GAS CHROMATOGRAPHY USING FLAME IONIZATION DETECTION (FID) AND ELECTRON CAPTURE DETECTION (ECD)

Sample #	GC Characterization
GTEE-HB1-012-SL-0	The gas chromatographic FID trace showed the presence of medium to high boiling compounds, such as those found in degraded diesel fuel. This characterization is based on the presence of a relatively ragged envelope of peaks present from ca *n*-C_{10} to beyond *n*-C_{27} with a maximum near *n*-C_{17}. The material appeared to be mostly weathered due to the loss of the *n*-alkanes. The GC/ECD trace showed the presence of oxidizing compounds. The large peak seen at 25 minutes is pentacosane, a compound added as a QA/QC check.


SAMPLE: GTEE-HB1-012-SL-0
PROJECT: GTE-EVERETT
SHANNON & WILSON, INC.
DECEMBER 2, 1992
GC/FID
3.0e5
2.0e5
1.0e5
0
0
10
20
30


SAMPLE: GTEE-HB1-012-SL-0
PROJECT: GTE-EVERETT
SAHNNON & WILSON, INC.
DECEMBER 2, 1992
GC/ECD
1.7e5
1.6e5
1.5e5
1.4e5
1.3e5
1.2e5
1.1e5
1.0e5
9.0e4
8.0e4
7.0e4
6.0e4
0
10
20
30

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: December 4, 1992
Date Submitted: December 2, 1992
Project: T-1388-02, GTE-Everett

RESULTS OF ANALYSES OF THE SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL BY GC/FID (MODIFIED 8015) Results Reported as µg/g (ppm)

Sample #	Diesel (ppm)	Internal Standard (% Recovery)
GTEE-HB1-012-SL-0	8,300	120%
GTEE-HB1-013-SL-0	400	120%
GTEE-HB2-014-SL-0	<10	110%
GTEE-HB3-016-SL-0	<10	110%
GTEE-HB2-015-SL-0	<10	110%
Quality Assurance		
Method Blank	<10	120%
GTEE-HB2-015-SL-0 (Duplicate)	<10	110%
GTEE-HB2-015-SL-0 (Matrix Spike) Percent Recovery	110%	110%
GTEE-HB2-015-SL-0 (Matrix Spike Duplicate) Percent Recovery	130%	110%
Spike Blank Percent Recovery	120%	120%
Spike Level	500	

APPENDIX B

UNDERGROUND STORAGE TANK
SITE CHECK/SITE ASSESSMENT CHECKLIST

T-1388-01
WO#: 2240-B01-3C001AA

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

For Office Use Only
Owner # U000297
Site # 012302

INSTRUCTIONS:

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

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

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

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

CHECKLIST: Please initial each item in the appropriate box.

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

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

SITE INFORMATION

Site ID Number (on invoice or available from Ecology if the tanks are registered): 012302

Site/Business Name: GTE Northwest Incorporated

Site Address: 426 Casino Road (Street) Telephone: (206) 261-7600

Everett (City) WA (State) 98203 (ZIP-Code)

TANK INFORMATION

Tank ID No.	Tank Capacity	Substance Stored
2240-B01-1	10,000 gallons	Diesel

DEPARTMENT OF ECOLOGY
UNDERGROUND STORAGE TANKS
RECEIVED
AUG 03 1993

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

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

CHECKLIST

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

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

SITE ASSESSOR INFORMATION

Dale E. Topham — Person registered with Ecology

Shannon & Wilson, Inc. — Firm Affiliated with

Business Address: 400 N. 34th Street, Ste 100 (Street)

Telephone: (206) 632-8020

Seattle (City) WA (State) 98103 (ZIP+Code)

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

7/26/93 — Date

Dale E. Topham — Signature of Person Registered with Ecology

[redacted]

APPENDIX C

MEMORANDUM TO WASHINGTON STATE DEPARTMENT OF ECOLOGY, DATED FEBRUARY 11, 1993.

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100 • P.O. Box 300303 • Seattle, Washington 98103 • (206)632-8020

MEMORANDUM

TO: Ben Forson, Ecology

FROM: Dale Topham DET

DATE: February 11, 1993

RE: **GTE EVERETT PRIMARY CENTER,**
426 CASINO ROAD, EVERETT, WASHINGTON

I have prepared this memo to confirm our telephone conversation on January 27, 1993 regarding the GTE Everett Primary Center located at 426 Casino Road, Everett, Washington. Also included is additional ground water information which you requested during a telephone conversation on February 10, 1993.

Laboratory test results indicate that levels of diesel-range petroleum hydrocarbons in the soil near the building exceed regulatory levels. The source of these petroleum hydrocarbons appears to have been a leaky pipe near or at the point where the fuel line penetrates the basement wall of the building. Based on hand boring information and analytical results, the amount of soil with elevated petroleum hydrocarbons is estimated not to exceed about 20 to 25 cubic yards.

In this case, GTE Northwest, Inc. would prefer not to excavate further at this location for the following reasons:

- The amount of soil with elevated levels of petroleum hydrocarbons appears to be relatively small; however, removal of the contaminated soil would result in a relatively deep excavation (about 12 feet below asphalt grade) immediately adjacent to the building, loading dock, and retaining wall.
- The leaky pipe which appears to have been the source of the diesel in the soil has been removed.
- The native soils at the site consist of till which would inhibit migration of the diesel if migration were to occur.
- No ground water was observed in the excavation for the tank removal or in the hand borings.
- Only two water well logs were found during a review of water well logs on file at Ecology for the four sections nearest the site. Based on the locations of the wells

shown on the logs, neither well is within 1/2 mile of the site.

- A geologic map included in a U.S.G.S. publication titled "Ground-Water Resources of Snohomish County, Washington shows the elevation of the regional water table below the site to be approximately 360 feet. The U.S.G.S. topographic map of the Everett, Washington quadrangle shows the site elevation to be about 560 feet. Therefore, the regional water table appears to be approximately 200 feet below the site and not likely to be impacted by the elevated levels of diesel-range petroleum hydrocarbons in the soil at the site. Copies of portions of the referenced maps are attached.

It is my understanding that Ecology will not require GTE to excavate further at this time. The site would be given a "limited cleanup" status. GTE would still be responsible for any migration of the petroleum hydrocarbons, if it were to occur.

A report documenting our site activities is being prepared. Please contact me if you have any questions regarding the site or this memo.

cc: Scott Kindle, GTE Northwest, Inc.

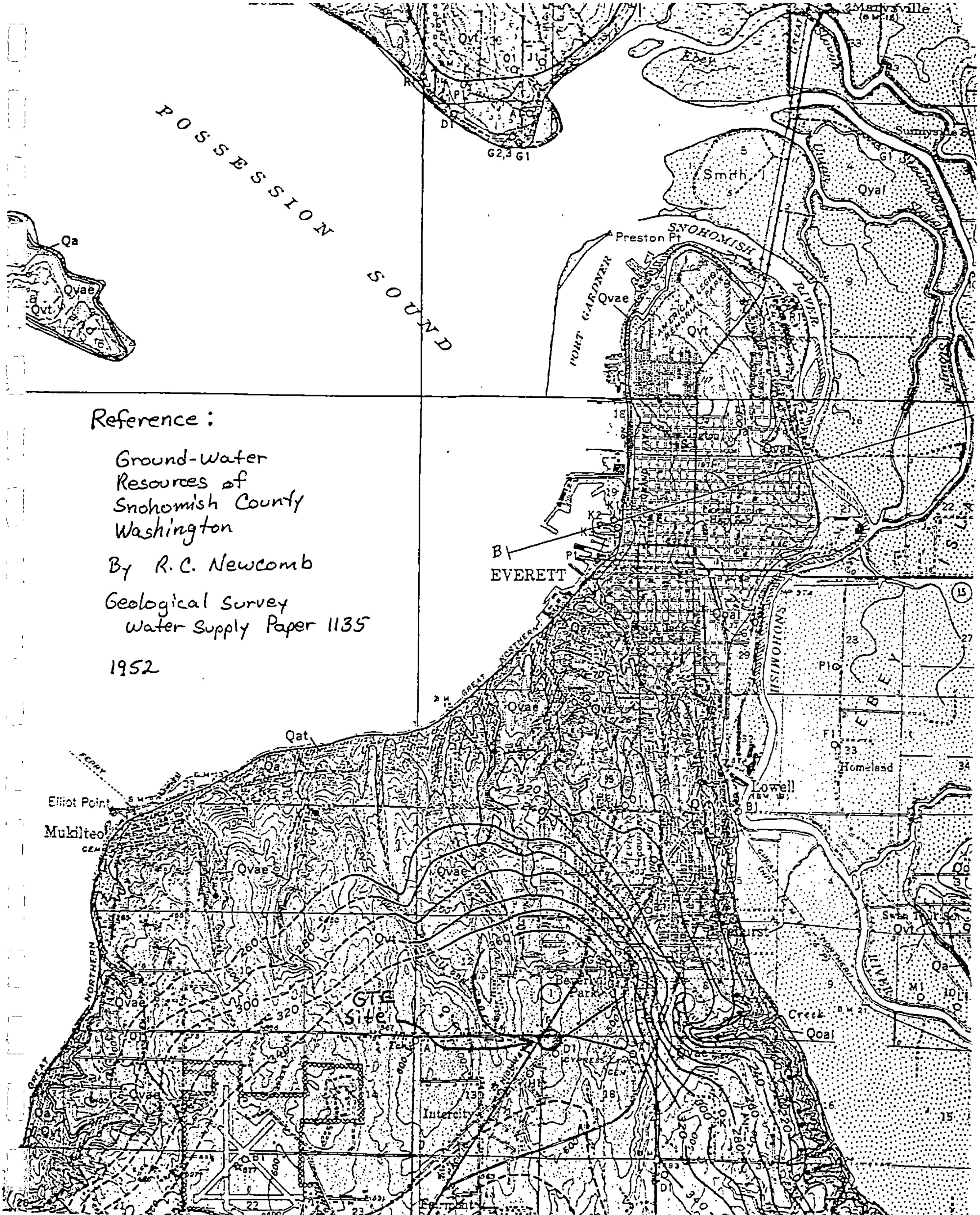
Reference:

Ground-Water Resources of Snohomish County Washington

By R. C. Newcomb

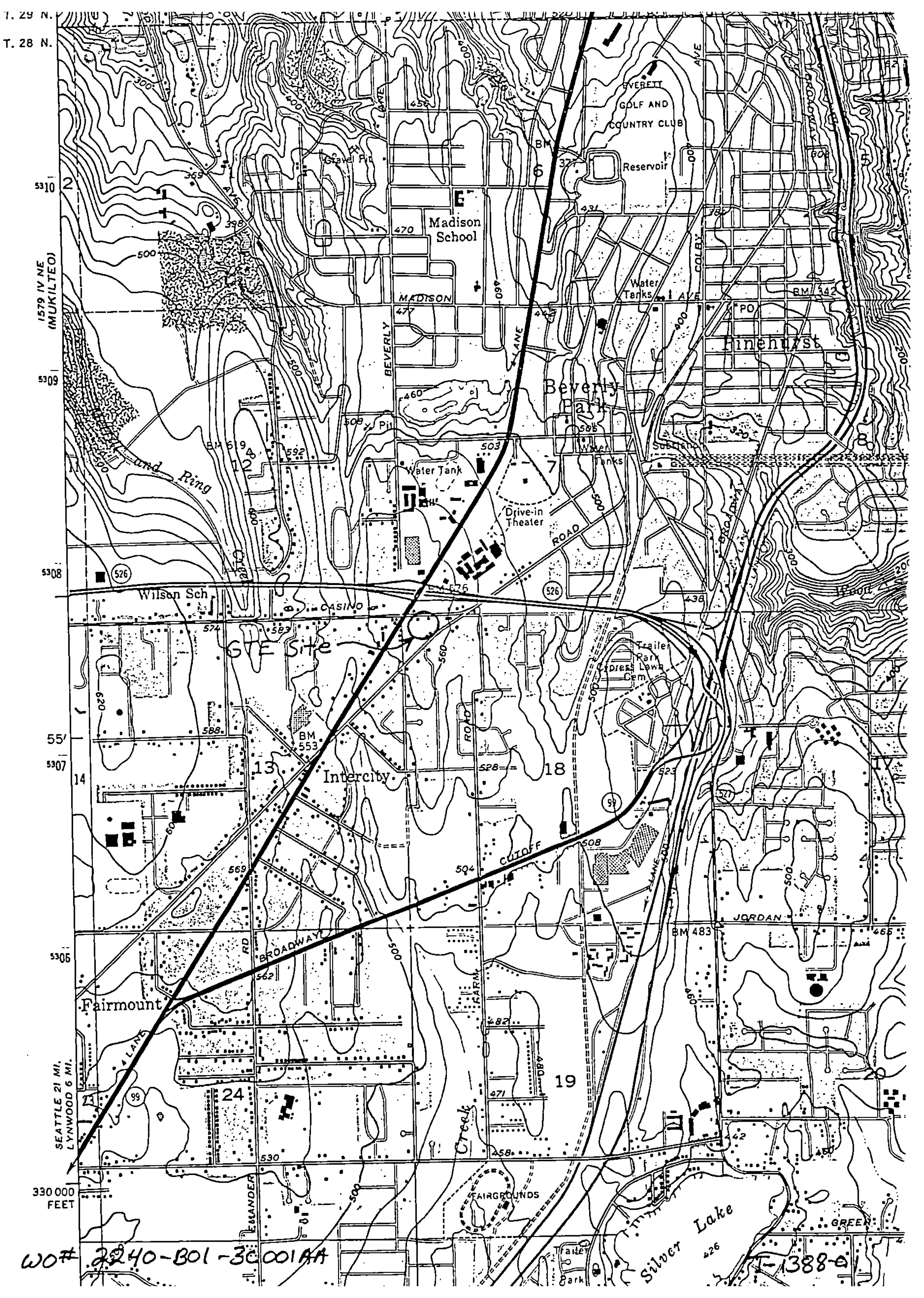
Geological Survey Water Supply Paper 1135

1952



WO #2240-B01-3C001AA

T-1388-01



T. 29 N.
T. 28 N.
1579 IV NE (MUKILTEO)
EVERETT GOLF AND COUNTRY CLUB
Reservoir
Gravel Pit
Madison School
MADISON
BEVERLY
COLBY
AVE
Water Tanks
PO
Pinehurst
Beverly Park
Water Tank
Drive-in Theater
ROAD
BROADWAY
Wilson Sch
CASINO
GTE Site
Trailer Park
Cypress Lawn Cem
Intercity
CUTOFF
JORDAN
Fairmount
FARM
Creek
FAIRGROUNDS
ELLANDER
Silver Lake
GREEN
SEATTLE 21 MI.
LYNWOOD 6 MI.
330 000 FEET
WO# 2240-B01-3C001AA
T-1388-0

APPENDIX D

IMPORTANT INFORMATION ABOUT YOUR WASTE MANAGEMENT (REMEDIATION) REPORT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Important Information About Your Geotechnical Engineering/ Subsurface Waste Management (Remediation) Report

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS.

Consulting geotechnical engineers 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 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 geotechnical engineer/geoscientist.

AN ENGINEERING REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical engineering/subsurface waste management (remediation) 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, have the consulting engineer(s)/scientist(s) evaluate how any factors which change subsequent to the date of the report, may affect the recommendations. Unless your consulting geotechnical/ civil engineer and/or scientist 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. Geotechnical/civil engineers and/or scientists cannot accept responsibility for problems which 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 changes or human influence. Because a geotechnical/waste management engineering report is based on conditions which existed at the time of subsurface exploration, construction decisions should not be based on an engineering report whose adequacy may have been affected by time. Ask the geotechnical/waste management 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/waste management report. The geotechnical/civil engineer and/or scientist should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST GEOTECHNICAL 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 minimize their impact. 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 geotechnical engineer'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. Because actual

subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize conclusions. Only the geotechnical engineer 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 geotechnical engineer 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 GEOTECHNICAL ENGINEERING/SUBSURFACE WASTE MANAGEMENT (REMEDIATION) REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical engineering/subsurface management (remediation) report. To help avoid these problems, the geotechnical/civil engineer and/or scientist should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological and waste management 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 ENGINEERING/WASTE MANAGEMENT REPORT.

Final boring logs developed by the geotechnical/civil engineer and/or scientist 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 engineering/waste management 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 minimize the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/waste management 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 which aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical engineering/subsurface waste management (remediation) 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 geotechnical/ waste management consultants. To help prevent this problem, geotechnical/civil engineers and/or scientists 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 engineer's or scientist's liabilities to other parties; rather, they are definitive clauses which identify where the engineer's or scientist'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 engineer/scientist 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