Results of Ground Water Sampling
December 1998
Puget Sound Coatings Property
9220 8th Avenue South
Seattle, Washington

February 1, 1999

For

Sebco, Inc.

GeoEngineers

February 1, 1999

Consulting Engineers and Geoscientists
Offices in Washington, Oregon, and Alaska

Sebco, Inc.
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Attention: Jay Blasingame

Results of Ground Water Sampling
December 1998
Puget Sound Coatings Property
9220 8th Avenue South
Seattle, Washington
File No. 2455-031-01

INTRODUCTION

This letter summarizes the results of our discrete, one-time, ground water sampling event near a former 10,000-gallon diesel underground storage tank (UST) at the Puget Sound Coatings Property. The site is located at 9220 8th Avenue South in Seattle, Washington. The UST was removed in 1992. The removal is documented in our "Diesel Tank Remedial Excavation" report dated October 7, 1992. We understand that Ecology visited the site in August 1998 to check on the status of the UST. Puget Sound Coatings' staff notified Sebco, the property owner, of Ecology's visit in November 1998. Puget Sound Coatings stated that Ecology requested that ground water testing be completed in the vicinity of the former UST. According to Puget Sound Coatings, Ecology suggested using a direct-push boring to obtain a discrete water sample. Sebco contacted GeoEngineers to coordinate ground water sampling and testing. On December 1, 1998 GeoEngineers confirmed with Ecology that a one-time, discrete, water sample was acceptable to Ecology for evaluating ground water quality in the vicinity of the former UST.

The site is shown relative to surrounding features in Figure 1. The site layout is shown in Figure 2. Ground water sampling procedures are described in Attachment A. Chemical analytical data and review of laboratory quality control documentation are included in Attachment B.

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COMMENTS

MONITORING WELL INSTALLATION AND GROUND WATER SAMPLING

- On December 8, 1998 a GeoEngineers' representative monitored the construction of one temporary 15–foot deep, 2-inch diameter PVC monitoring well (TW-1) in the vicinity of the former diesel UST (Figure 2). No soil samples were obtained from the borehole.
- The temporary monitoring well was developed and sampled immediately following installation. Depth to ground water was measured at approximately 7 feet below ground surface.
- One discrete ground water sample (TW-1) was collected from the monitoring well. The sample was submitted to the Transglobal Environmental Geosciences (TEG) laboratory located in Bellevue, Washington for analysis of petroleum hydrocarbons using Ecology Method NWTPH-D extended. Petroleum hydrocarbons were not detected in the ground water sample (Table 1).

LIMITATIONS

We have prepared this report for use by Sebco, Inc. This report may be made available to regulatory agencies. The report is not intended for use by others and the information contained herein is not applicable to other sites.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

We appreciate the opportunity to provide these continued services to Sebco, Inc. Please contact us if you have questions regarding this letter.

Respectfully submitted,

GeoEngineers, Inc.

David A. Cook
Senior Geologist

Dana Carlisle, P.E.
Associate

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Attachments

Two copies submitted

cc: Joseph Hickey (1 copy)
Washington State Department of Ecology
3190 - 160th Avenue Southeast
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TABLE 1
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL RESULTS
Puget Sound Coatings Property
SEATTLE, WASHINGTON

Well[1]	Date Sampled	Depth to Water[2] (feet)	Kerosene- / Jet fuel-range Hydrocarbons[3] (mg/l)	Diesel-range Hydrocarbons[3] (mg/l)	Heavy Oil-range Hydrocarbons[3] (mg/l)
TW-1	10/24/98	6.8	<0.20	<0.20	<0.50
MTCA Method A Cleanup Level			1.0[4]		

Notes:

[1]Approximate well location is shown in Figure 2.

[2]Depth to water was measured relative to well casing rim.

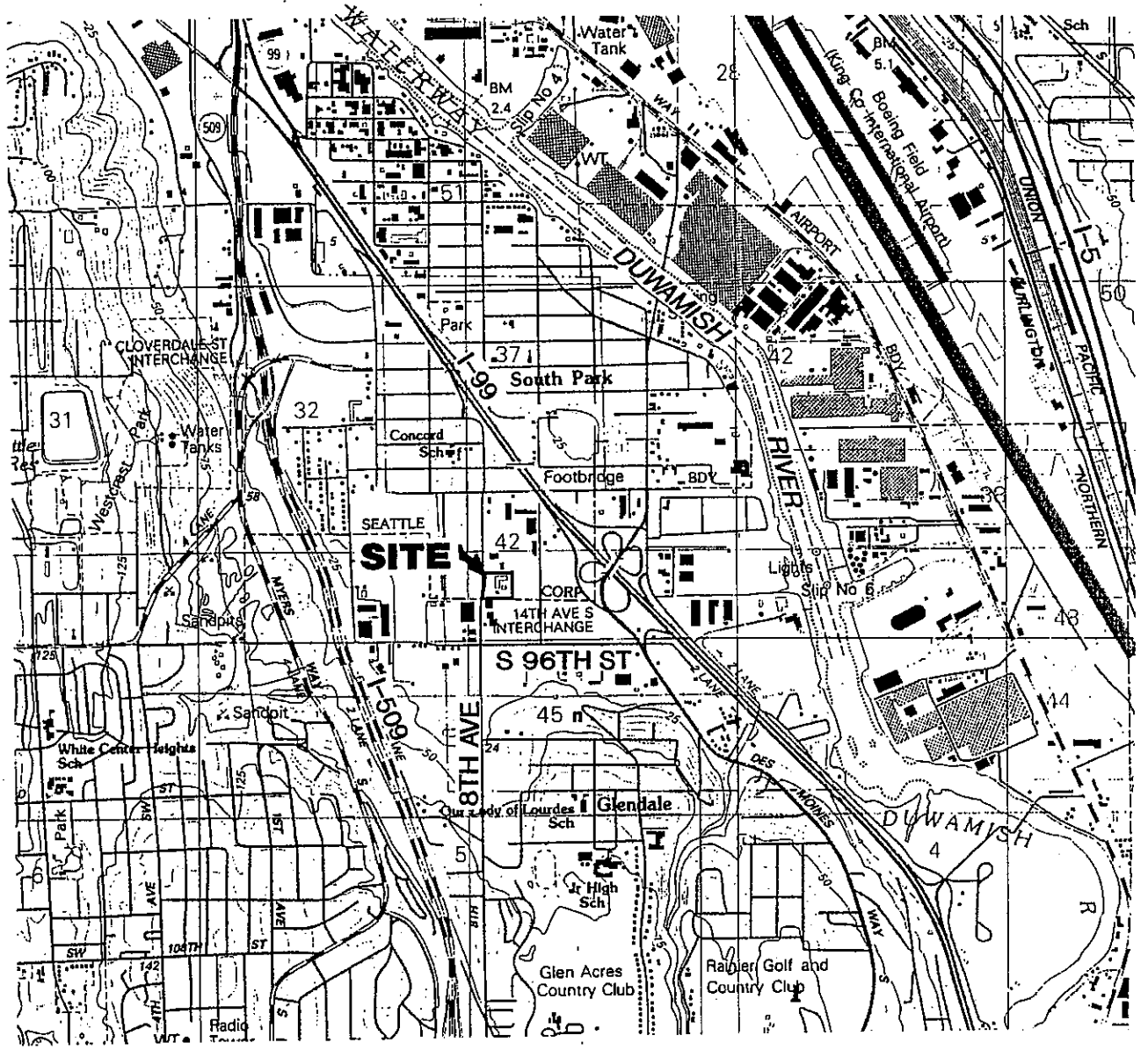
[3]Analyzed by EPA Method NWTPH-Dx with a sulfuric acid/silica gel cleanup.

[4]The MTCA Method A ground water cleanup level for the sum total of petroleum hydrocarbon concentrations is 1.0 mg/l if carbon ranges are distinctly quantified using gas chromatography methods.

mg/l = milligrams per liter

MTCA = Model Toxics Control Act.

Chemical analyses performed by Transglobal Environmental Geosciences in Bellevue, Washington. Laboratory reports in Attachment B.



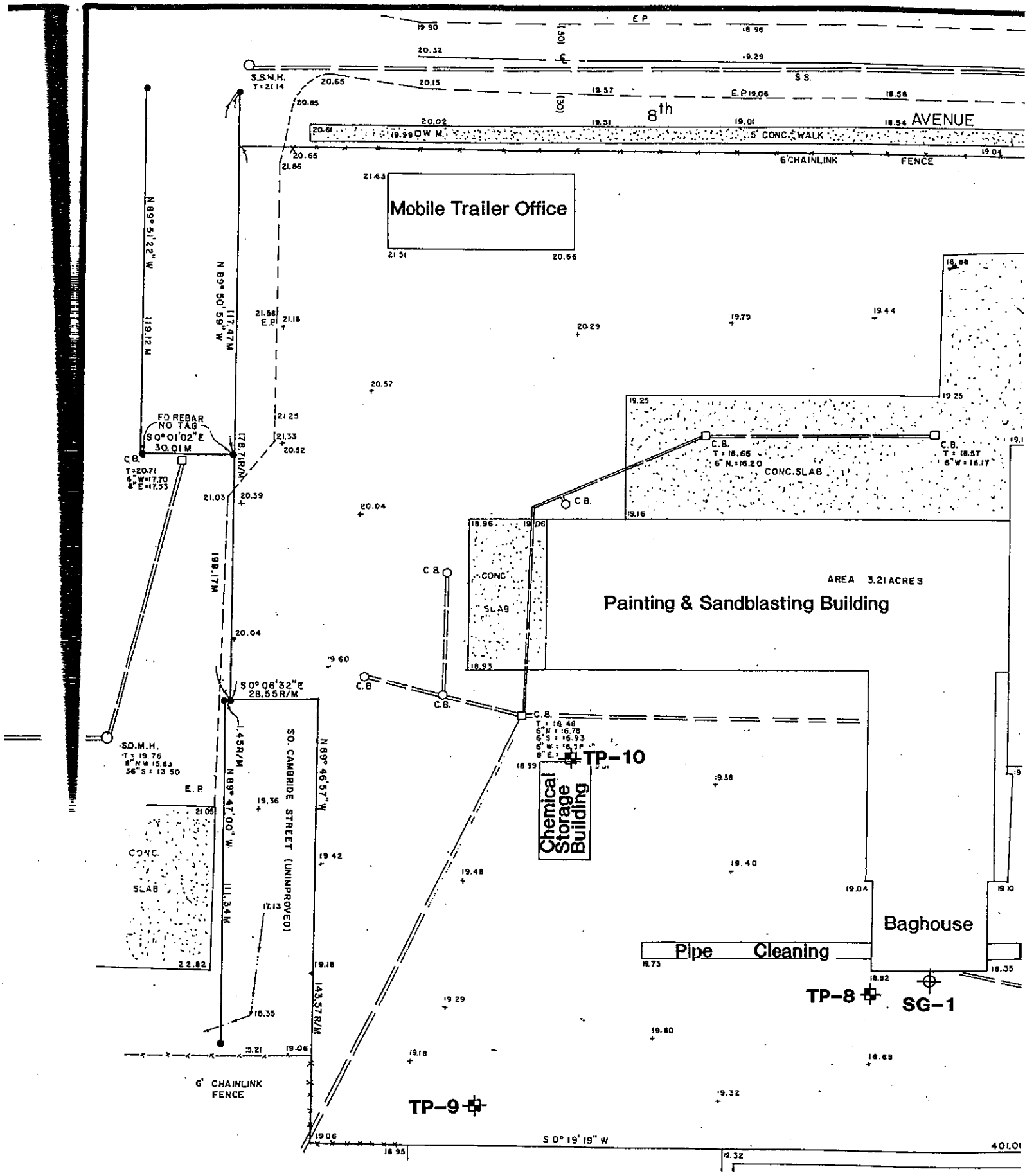
Reference: USGS topographic bathymetric map "Seattle South, Wash.," dated 1983.

Geo Engineers

VICINITY MAP

FIGURE 1

2455-001-R04 DAC:ANG 8/28/92



Reference: Drawing by Gary L. Van Ness, Professional Land Surveyor, entitled " Topographic & Boundary Survey Map, Puget Sound Coatings, 9220 8th Avenue South, Seattle, Wash.," dated 10/30/87.

ATTACHMENT A

FIELD PROCEDURES

ATTACHMENT A

FIELD EXPLORATION PROGRAM

DRILLING

Subsurface conditions at the site were explored by completing one boring using hollow-stem auger drilling equipment. A representative from our staff selected the exploration location based on the former UST location. The hollow stem auger boring was drilled to a depth of 15 feet using truck-mounted, hollow-stem auger equipment owned and operated by Holt Testing Incorporated of Puyallup, Washington. The hollow-stem auger drilling equipment was cleaned with a hot-water pressure washer before drilling. Soil samples from the boring were not obtained because drilling was completed in the backfill of the former UST excavation.

MONITORING WELL CONSTRUCTION

A temporary ground water monitoring well was constructed in boring TW-1 at the completion of drilling. Two-inch-diameter, Schedule 40 PVC (polyvinyl chloride) pipe was installed in the boring. The lower of the PVC pipe is machine-slotted (0.02-inch slot width) to allow entry of water, free product and vapors into the well casing. A limited volume of medium sand was placed in the borehole annulus surrounding the slotted portion of the well. The temporary monitoring well was developed and sampled by GeoEngineers at the conclusion of monitoring well installation. Before sampling approximately 10 gallons of ground water was removed from the well using a stainless steel bailer. Development water was placed in a 55-gallon drum located on site. After ground water samples had been obtained the temporary monitoring well was removed and the boring was backfilled with bentonite.

GROUND WATER MEASUREMENTS

Depths to ground water were measured in the temporary monitoring well on December 8, 1998. The ground water measurements were obtained using an electronic water level indicator. The water level indicator was cleaned with a Liquinox wash and distilled water rinse prior to use in the well.

GROUND WATER SAMPLING PROGRAM

Ground water samples were obtained from temporary monitoring well TW-1 December 8, 1998. The water samples were obtained after a minimum of three well volumes of water was purged from the well. After purging, ground water samples were obtained from the well using a disposable polyethylene bailer and transferred to laboratory-prepared bottles in the field and kept cool during transport to the testing laboratory. Chain-of-custody procedures were observed during transport of the samples to the laboratory.

PURGE WATER AND DRILL CUTTINGS

Purge water was collected from the well development and sampling activities and placed in one 55-gallon drum located on site pending disposal. Additionally, soil cuttings generated during drilling activities remains in 55-gallon drums at the site.

ATTACHMENT B

CHEMICAL ANALYTICAL PROGRAM

ATTACHMENT B

CHEMICAL ANALYTICAL PROGRAM

ANALYTICAL METHODS

Chain-of-custody procedures were followed during the transport of the field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control records are included in this attachment.

ANALYTICAL DATA REVIEW

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. The data quality exceptions documented by the laboratory in the laboratory reports were reviewed by GeoEngineers using the applicable data validation guidelines from the following documents: "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" dated July 1988 (EPA document number EPA540/R94/083) and "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" dated February 1994 (EPA document number EPA540/R94/012).

ANALYTICAL DATA REVIEW SUMMARY

No significant data quality exceptions were documented in the laboratory report or noted during our review. Based on our data quality review, it is our opinion that the analytical data are of acceptable quality for their intended use.