

SD&C

11210 NE 97th St. Kirkland, WA 98033

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Release # 493790
OAK HARBOR MOTORS
OAK HARBOR
LIST #8355

Subsurface Site Assessment Report

**Oak Harbor Motors
1333 W. Pioneer Way
Oak Harbor, Washington**

Prepared for:

*Mr. Jimmy Flowers
Flowers Marine Inc.
33490 State Route 20
Oak Harbor, WA 98277*

RECEIVED

OCT 07 2002

DEPT OF ECOLOGY

Submitted by:

*Slotta Design & Construction SD&C
11210 NE 97th St.
Kirkland, WA 98033*

June 10, 1999

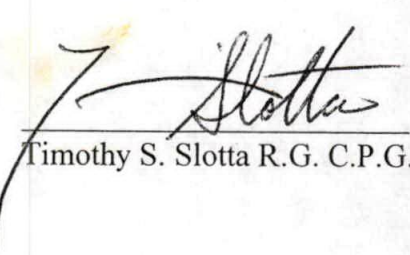

Timothy S. Slotta R.G. C.P.G.



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1.0 INTRODUCTION

1.1 General

This report presents the results of the subsurface site assessment recently conducted by Slotta Design and Construction (SD&C) at the Oak Harbor Motors Facility located at 1333 West Pioneer Way, in Oak Harbor, Washington (Figure 1). The subsurface investigation was conducted on May 24, 1999, in accordance with your request and SD&C's *Workplan and Cost Estimate for Environmental Services* dated May 11, 1999.

The site was previously studied by BEK Purnell Engineering Inc. during a *Phase I Environmental Site Assessment and Preliminary Subsurface Investigation* dated April 1, 1999. As part of the previous site assessment activities, a 1,000 waste oil underground storage tank (UST) was removed from the site, and seven soil samples were collected from the UST excavation, and from various locations at the site. Based on the results of the soil samples collected, the soil in the vicinity of the waste oil UST contained Diesel, oil range petroleum hydrocarbons, and lead at concentrations that exceeded the Model Toxics Control Act (MTCA) method A cleanup levels.

1.2 Scope of Work

The focus of SD&C's subsurface investigation was to evaluate the concentration and lateral extent of petroleum hydrocarbons in groundwater at the site. The limited subsurface investigation also was conducted to characterize the subsurface geologic conditions, and assess the possible impacts associated with the migration of petroleum hydrocarbon constituents.

The scope of work included the following:

- Selecting a subsurface boring subcontractor;
- Collecting groundwater samples from the eight subsurface boring locations for laboratory analysis;
- Providing geologic characterization and screening recovered soil samples; and
- Preparing a report to summarize the data, document site activities, and provide conclusions and recommendations.

1.3 Site Description

The level, approximately 2 acre, rectangular property is made up of three parcels, located on the south site of West Pioneer Way in Oak Harbor Washington (Figures 1 and 2). The property includes two buildings, as illustrated in Figure 2 that include the Oak Harbor Motors sales and repair building, and the Westside Auto Rebuild building. The buildings are constructed of concrete blocks on concrete slab on grade foundations. The Oak Harbor motors repair area contains two floor drains located near the east, and southern portions of the building. The discharge locations of the floor drains were not obvious during the site reconnaissance. The drains are currently used to collect water from leak testing, and automobile detailing operations.

The Oak Harbor Motors building had an approximately 1,000 gallon waste oil UST removed from the facility in February 1999. Two hydraulic hoists with subsurface pistons were formerly located in the auto repair building that had previously been removed. The subsurface reservoir for the pistons could not be inspected visibly during the site reconnaissance.

A floor drain is located in the Westside Auto Rebuild building. The floor drain is currently plugged, and the discharge location of the floor drain is unknown. The Westside Auto Rebuild building has a still, located on the east portion of the building used for recycling solvents.

The portions of the property not utilized by the buildings are level and generally paved with asphalt and used as car sales parking. The southeastern $\frac{1}{4}$ portion of the property is gravel covered and used for parking.

1.4 Site Location and Vicinity Description

The automobile dealership is located in a commercial south-central portion of downtown Oak Harbor, at the intersection with State Route 20 as shown in Figure 2. The property fronts Pioneer Way, an area that is developed with commercial and retail properties consisting of automobile dealerships, retail/commercial structures, fast food restaurants, banks and service stations. Pioneer Way is a main east-west arterial and connects downtown Oak Harbor with State Route 20. The property is bordered by:

- North - Pioneer Way forms the northern boundary of the site. Further north is a Chevron gas station;
- South - A slew associated with Oak Harbor forms the southern boundary of the site. Further south is the Oak Harbor City Beach Park;
- West - 80th Street SW forms the western boundary of the site. Further west is a car wash facility;
- East - A car wash facility and Frontier Chevrolet dealership are located east of the site.

2.0 FIELD ACTIVITIES

2.1 Subsurface Boring and Groundwater Sampling

Soil samples were collected from subsurface boring locations as shown in Figure 2. Transglobal Environmental Geosciences Inc. of Lacey, Washington, conducted the soil borings and sampling on May 24, 1999. The test borings were conducted under the supervision of a Certified Professional Geologist (CPG) who prepared test boring logs and collected representative soil samples for field evaluation, and groundwater samples for laboratory analysis. The standard sampling procedures of soil and groundwater samples from the geoprobe are included in Appendix I, and logs for the borings are included in Appendix II.

The characterization work was completed using a Geoprobe to collect soil and or groundwater samples. Borings were completed to a depth groundwater was encountered. Lithology from each of the borings was characterized, and screened for the presence of organic vapors. One groundwater sample was to be collected from each boring location.

B-1 was located south of the Chevron station adjacent to Pioneer Way. The groundwater sample was analyzed for petroleum hydrocarbon constituents as gasoline, and benzene, toluene, ethylbenzene, and xylene;

B-2 was located in the vicinity of the former waste oil UST, the groundwater sample was analyzed for potential waste oil constituents; gasoline, Diesel, motor oil, solvents, metals, and PCBs.

B-3 was located in the vicinity of gasoline UST previously removed from the site. The groundwater sample was analyzed for petroleum hydrocarbon constituents as gasoline and Diesel.

B-4 was located in the vicinity of the oil water separator below the eastern end of the Oak Harbor Motors repair facility. The groundwater sample was analyzed for petroleum hydrocarbon constituents as gasoline, Diesel, and solvents.

B-5 was located in the vicinity of the floor drain oil water separator below the southern area of the Oak Harbor Motors repair facility. The groundwater sample was analyzed for petroleum hydrocarbon constituents as gasoline, and Diesel.

B-6 and B-7 were located east and south of the Westside Auto Rebuild building. The groundwater samples collected from the borings were analyzed for gasoline, Diesel, and solvents.

B-8 was located east of B-4 to evaluate the lateral extent of petroleum hydrocarbons identified near the oil water separator. The groundwater sample was analyzed for gasoline, and Diesel.

Soil encountered during the subsurface assessment was generally uniform at the site. The soil is comprised of approximately three feet of brown sandy silt, underlain by gray silty sand to the maximum depth explored. Groundwater was typically encountered at between 5 to 6 feet below ground surface. The silts and sands were stiff to medium dense. The gray soil encountered in the Borings B-2 and B-4 below the depth of 3 feet below ground surface (bgs) appeared to be visibly stained and had olfactory evidence of petroleum hydrocarbons.

3.0 CHEMICAL ANALYSES AND RESULTS

3.1 Laboratory Analyses for Groundwater Samples

Groundwater samples were submitted to Transglobal Environmental Geosciences of Bellevue, Washington for the following chemical analyses:

- TPH as Diesel and other heavy oils (TPH-O) including kerosene, and motor oil using Ecology Method WTPH-Dx, extended;
- TPH as Gasoline using Ecology Method WTPH-Gx;
- Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX), using EPA Method 8020 and 8021B;
- Volatile Organic Compounds (VOCs) using EPA method 8021B;
- Metals using EPA method 7000 series; and
- Polychlorinated Biphenyls (PCBs) using EPA method 8081.

3.2 Results of Sample Analyses

Copies of original laboratory reports are included as Appendix III. The laboratory results for groundwater samples collected from the monitoring wells are summarized in Table 1.

The results of the groundwater samples collected from the borings contained concentrations of petroleum hydrocarbons exceeding the MTCA method A cleanup levels in three (B-2, 4 and 6) of the eight sampling locations. The groundwater sample collected from Boring B-2 contained TPH-G, and TPH-O as motor oil, and benzene, ethyl benzene and xylenes at concentrations that exceeded the MTCA Method A cleanup levels. The sample collected from B-2 was additionally analyzed for pesticides, PCBs, and metals. The B-2 sample contained detectable concentrations of the metals arsenic, chromium, and lead. The concentrations of arsenic and lead in the B-2 sample exceeded the MTCA method A cleanup levels.

The groundwater sample collected from Boring B-4 contained TPH-G and xylenes at concentrations that exceeded the MTCA Method A cleanup levels. Evaluation of the chromatographs indicates that the chemicals encountered were mineral spirits, or solvents associated with degreasing activities. The groundwater sample collected from B-6 contained xylenes at concentrations that exceeded the MTCA Method A cleanup levels. Xylenes are likely associated with paint thinners used at the body shop.

4.0 SUMMARY AND CONCLUSIONS

SD&C was contracted by Flowers Marine to collect groundwater samples from eight sampling locations at the Oak Harbor Motors facility located at 1333 W. Pioneer Way in Oak Harbor, Washington. The subsurface site assessment activities were performed on May 24, 1999. The focus of the subsurface site assessment was to collect additional data regarding petroleum hydrocarbons and waste oil constituents identified in soil samples collected during a Phase I Environmental Site Assessment conducted by BEK Purnell Engineering Inc. during April, 1999.

Based on the results of geoprobe borings conducted, the depth to groundwater was between 5 to 6 feet and is expected to flow in a east direction toward Oak Harbor. Although the background research indicated there was previously a release of petroleum hydrocarbons to groundwater on the adjacent property, the results of the groundwater sample collected from the closest apparent down gradient location (B-1) did not contain detectable concentrations of petroleum hydrocarbons. The petroleum hydrocarbons identified at the property appear to be the result of onsite activities.

The results of groundwater samples collected from the borings contained concentrations of petroleum hydrocarbons exceeding the MTCA method A cleanup levels in three (B-2, 4, and 6) of the eight sampling locations. The specific areas of concern are the former waste oil UST excavation (B-2), the oil/water separator located in the Oak Harbor Motors central repair building (B-4), and the east end of the auto rebuild building (B-6). The extent of subsurface soil and groundwater impacted by the sources identified above appear to be relatively limited because the apparent down gradient sampling locations B-3 and B-8, that were completed within 30 ft of the source locations, did not contain detectable concentrations of petroleum hydrocarbon constituents.

The chemicals associated with each concern area appear to be the result of the activities conducted at the locations. The boring B-2 conducted near the waste oil UST contained TPH-G, TPH-O as motor oil, benzene, ethyl benzene, xylenes, arsenic and lead at concentrations that exceeded the MTCA Method A cleanup levels. The boring B-4 conducted near the oil water separator contained chemicals associated with degreasing activities (TPH-G as mineral spirits and xylenes), at concentrations that exceeded the MTCA Method A cleanup levels. The boring B-6 contained xylenes that are likely associated with paint thinners used at the body shop at concentrations that exceeded the MTCA Method A cleanup levels.

MTCA contains alternative cleanup levels that are less stringent in comparison to method A. Although the site is an industrial facility, the cleanup levels determined by a risk based (method B) calculation would likely be as stringent to method A levels because of the presence of benzene in groundwater.

5.0 LIMITATIONS

SD&C's conclusions are based on conditions encountered at the time of field activities, information provided, and the results of qualitative sampling. The opinions expressed in this report reflect our best estimate of the project requirements based on an evaluation of the subsurface conditions encountered at the boring locations, and the assumption that the soil and groundwater conditions in proximity to the sample sites do not deviate appreciably from those examined. Any unusual conditions not identified during this site assessment should be brought to the attention of SD&C so that modifications may be made if necessary.

SD&C's work was performed in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the area. No other warranty, expressed or implied, is made.

6.0 REFERENCES

Ecology. October 1992. *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*. Washington State Department of Ecology, Olympia, Washington. 35 pp.

Table 1
Laboratory Chemical Analyses Results
Groundwater Samples
Oak Harbor Motors

Sample ID	Sample Location	WTPH-G (ug/L, ppb)	WTPH-D (ug/L, ppb)	WTPH-O (ug/L, ppb)	Benzene (ug/L, ppb)	Toluene (ug/L, ppb)	Ethyl Benzene (ug/L, ppb)	Xylenes (ug/L, ppb)
Borings								
B-1	Adjacent to Pioneer Way	<100	--	--	<1.0	<1.0	<1.0	<1.0
B-2	South of Former Waste Oil UST	3,800	<200	20,000	31	13	90	350
B-3	South of Former Gasoline UST	<100	<200	--	--	--	--	--
B-4	North Central in Repair Building	42,000	<200	<400	<1.0	<1.0	<1.0	370
B-5	South Central in Repair Building	<100	<200	<400	<1.0	<1.0	<1.0	<1.0
B-6	West of Auto Rebuild Building	<100	<200	--	<1.0	3.8	5.3	23
B-7	South of Auto Rebuild Building	<100	<200	--	<1.0	<1.0	<1.0	<1.0
B-8	West of Repair Building	<100	<200	<400	--	--	--	--
MTCA Method A cleanup level / Groundwater		1,000	1,000	1,000	5	40	30	20
Method Reporting Limit		100	200	400	1.0	1.0	1.0	1.0

Metals Analysis

Sample ID	Sample Location	Barium (ug/kg, ppb)	Chromium (ug/kg, ppb)	Selenium (ug/kg, ppb)	Silver (ug/kg, ppb)	Arsenic (ug/kg, ppb)	Cadmium (ug/kg, ppb)	Lead (ug/kg, ppb)	Mercury (ug/kg, ppb)
B-2	South of Former Waste Oil UST	<5	14	<400	<1.0	32	<1.0	23	<0.20
MTCA Method A cleanup level / Groundwater			50			5	5	5	2
Method Reporting Limit		5	10	400	1.0	1.0	1.0	1.0	0.20

Notes:

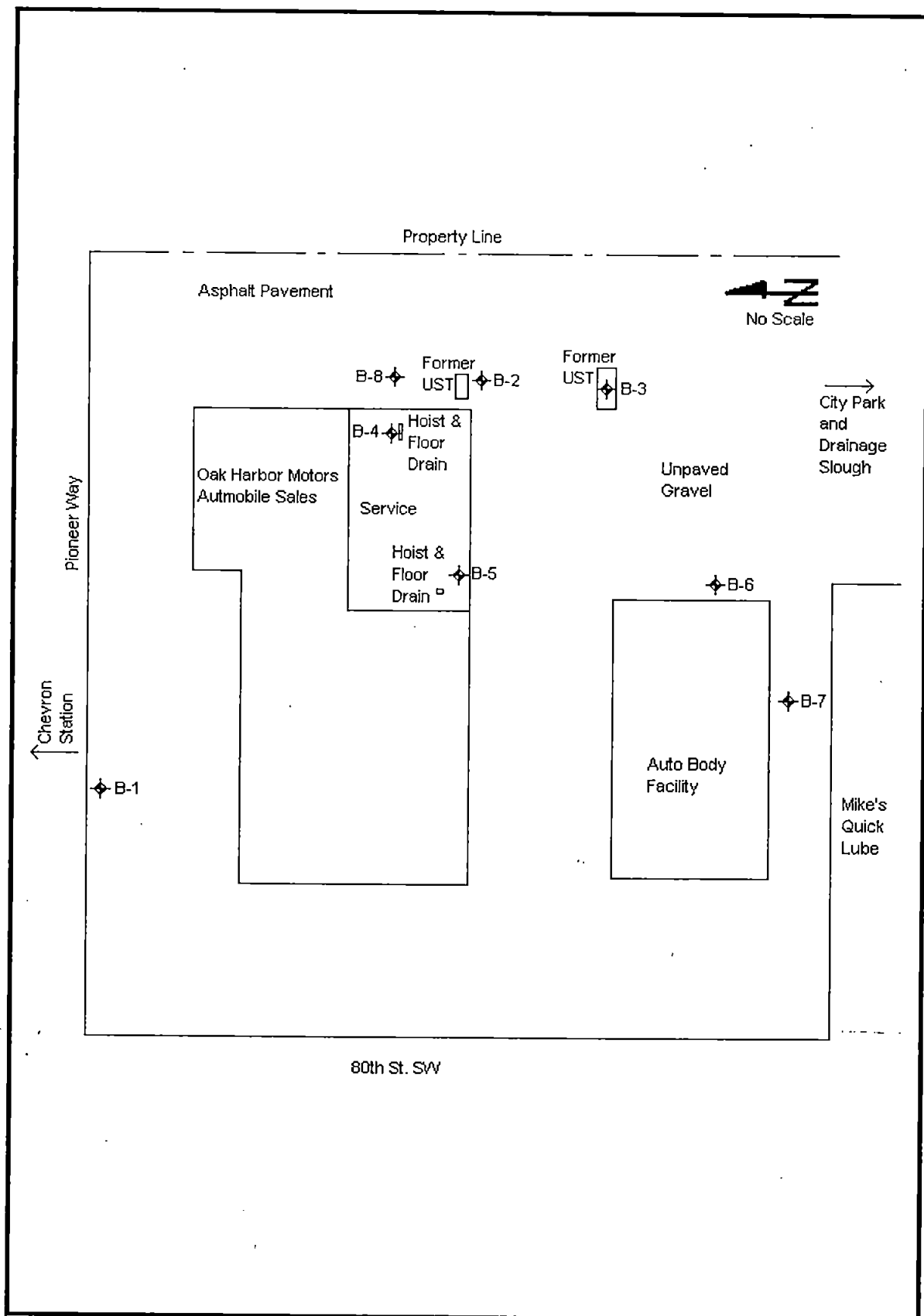
ug/L = micrograms per Liter, parts per billion (ppb).

<1.0 = not detected at or above the method reporting limit.

BTEX results were determined from EPA methods 8020 and 8021B - Sample results vary slightly by the analyses completed.

MTCA Method A cleanup levels for Groundwater as promulgated in Washington Administrative Code (WAC) chapter 173-340.

Results in **Bold** exceeded the MTCA Cleanup Levels.



APPENDIX I

STANDARD SAMPLING PROCEEDURES

APPENDIX II

BORING LOGS

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
 Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Asphalt</u>	
			1	Gray Silty Fine to Medium Sandy <u>GRAVEL</u> Moist, Medium Dense	GM
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
			7	Gray Silty Fine to Coarse <u>SAND</u> with gravel, Moist, Dense with Decaying Organics	SM
			8	Groundwater @ 8.5'	
			9		
			10		

END OF BORING

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Asphalt</u>	
				Gray Silty Fine to Medium Sandy	GM
			1	<u>GRAVEL</u> Moist, Medium Dense	
				Hydrocarbon Odor	
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
				Gray Silty Fine to Coarse <u>SAND</u>	SM
			7	with gravel, Moist, Dense with	
				Decaying Organics Hydrocarbon Sheen	
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

SD&C

Boring Log

Boring: B-2

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Asphalt</u>	
			1	Gray Silty Fine to Medium Sandy <u>GRAVEL</u> Moist, Medium Dense	GM
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
			7	Gray Silty Fine to Coarse <u>SAND</u> with gravel, Moist, Dense with Decaying Organics	SM
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Concrete</u>	
				Gray Silty Fine to Medium Sandy	GM
			1	<u>GRAVEL</u> Moist, Medium Dense	
				Hydrocarbon Odor	
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
				Gray Silty Fine to Coarse <u>SAND</u>	SM
			7	with gravel, Moist, Dense with	
				Decaying Organics Hydrocarbon Sheen	
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

SD&C

Boring Log

Boring: B-4

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Concrete</u>	
			1	Gray Silty Fine to Medium Sandy <u>GRAVEL</u> Moist, Medium Dense	GM
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
			7	Gray Silty Fine to Coarse <u>SAND</u> with gravel, Moist, Dense with Decaying Organics	SM
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Gravel</u>	
				Gray Silty Fine to Medium Sandy	GM
			1	<u>GRAVEL</u> Moist, Medium Dense	
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
				Gray Silty Fine to Coarse <u>SAND</u>	SM
			7	with gravel, Moist, Dense with	
				Decaying Organics	
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Gravel</u>	
			1	Gray Silty Fine to Medium Sandy <u>GRAVEL</u> Moist, Medium Dense	GM
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
			7	Gray Silty Fine to Coarse <u>SAND</u> with gravel, Moist, Dense with Decaying Organics	SM
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

Project Oak Harbor Motors Location 1333 W. Pioneer Way Oak Harbor, Washington
Date: 6-10-99 Subcontractor and Equipment TEG, Geoprobe

Penetration Results	Sample Depth (feet)	PID (ppm)	Depth (feet)	Lithologic Description	Soil Classification
			0	<u>Asphalt</u>	
			1	Gray Silty Fine to Medium Sandy <u>GRAVEL</u> Moist, Medium Dense	GM
			2		
			3		
			4		
			5		
			6	<u>Alluvial Deposits</u>	
			7	Gray Silty Fine to Coarse <u>SAND</u> with gravel, Moist, Dense with Decaying Organics	SM
			8	Groundwater @ 6.5'	
			9		
			10		

END OF BORING

SD&C

Boring Log

Boring: B-8

APPENDIX III

LABORATORY REPORTS

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

800 Sleater-Kinney SE, PMB #262
Lacey, Washington 98503-1127

Mobile Environmental Laboratories
Environmental Sampling Services

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

May 26, 1999

Tim Slotta
S. D. & C., Inc.
11210 NE. 97th
Kirkland, WA 98033

Dear Mr. Slotta:

Please find enclosed the analytical data report for the Flowers Marine Project in Oak Harbor, Washington. One water sample was analyzed for Hydrocarbon Identification by NWTPH-HCID and Specific Halogenated Hydrocarbons and BTEX by Method 8021B on May 24, 1999.

The results of these analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical services to S. D. & C. for this project. It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec
President

QA/QC FOR ANALYTICAL METHODS

GENERAL

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

When analyses are taking place on-site with the mobile lab, the need for Field Blanks or Travel/Trip Blanks is eliminated. If there is going to be a delay before sample preparation for analysis, the sample is stored at 4⁰ C.

ANALYTICAL METHODS

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

TPH-Hydrocarbon Identification (NWTPH-HCID)

Calibration standards are run at the beginning of the day. The standards must be within 15% of the continuing calibration curve value. Check standards are run at the close of the day. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. A duplicate sample is run at a rate of 1 per 10 samples. At least 1 method blank is run per 20 samples analyzed.

Purgeable Volatile Halocarbons

(Chlorinated Hydrocarbons, EPA 601/8021B)

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

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

FLOWERS MARINE PROJECT
Oak Harbor, Washington
SD & C, Inc.

Hydrocarbon Identification by NWTPH-HCID for Waters

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)	Diesel (ug/l)	Heavy Oil (ug/l)
Method Blank	5/25/99	110	nd	nd	nd
B-1	5/25/99	95	nd	nd	nd
B-1 Dup.	5/25/99	133	nd	nd	nd
Method Detection Limits			250	630	630

"nd" Indicates not detected at listed detection limits.

"D" Indicates detected above the listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Tim McCall, Michael Dee, Chantel Kamm

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

FLOWERS MARINE PROJECT
Oak Harbor, Washington
SD & C, Inc.

Specific Halogenated and Aromatic Hydrocarbons (EPA 8021B) in Water

Sample Description	Method	B-1
	Blank	
Date Sampled		
Date Analyzed	5/25/99	5/25/99
	MDL	
	(ug/l)	(ug/l)
Vinyl chloride	5.0	nd
Benzene	1.0	nd
Toluene	1.0	nd
Ethylbenzene	1.0	nd
Total Xylenes	1.0	nd
1,1-Dichloroethene	1.0	nd
Methylene chloride	1.0	nd
<i>trans</i> -1,2-Dichloroethene	1.0	nd
1,1-Dichloroethane	1.0	nd
<i>cis</i> -1,2-Dichloroethene	1.0	nd
Chloroform	1.0	nd
1,1,1-Trichloroethane (TCA)	1.0	nd
Carbon tetrachloride	1.0	nd
1,2-Dichloroethane	1.0	nd
Trichloroethene (TCE)	1.0	nd
1,1,2-Trichloroethane	1.0	nd
Tetrachloroethene (PCE)	1.0	nd
1,1,1,2-Tetrachloroethane	1.0	nd
1,1,2,2-Tetrachloroethane	1.0	nd
Surrogate Recovery (%)	109	86

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65%- 135%

ANALYSES PERFORMED BY: Tim McCall, Michael Dee, Chantel Kamm

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

FLOWERS MARINE PROJECT
Oak Harbor, Washington
SD & C, Inc.

QA/QC Data - EPA 8021B Analyses

	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	(%)
Benzene	5.00	5.63	113	5.00	4.75	95	16.96
Toluene	5.00	5.83	117	5.00	5.66	113	2.96
1,1-Dichloroethene	5.00	5.57	111	5.00	4.66	93	17.79
Trichloroethene (TCE)	5.00	5.39	108	5.00	5.64	113	4.53
Surrogate Spike	12.00	15.29	127	12.00	15.00	125	1.91

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%

ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: Tim McCall, Michael Dee, Chantel Kamm

DATA REVIEWED BY: Mike Korosec



CHAIN-OF-CUSTODY RECORD

CLIENT: SD9C
ADDRESS: 11210 NE 97th ST. KIRKLAND WA
PHONE (425) 822-6722 FAX: _____
CLIENT PROJECT #: _____ PROJECT MANAGER: _____

DATE: 5-24-99 PAGE 1 OF 1
PROJECT NAME: OAK HARBOR MOTORS
LOCATION: OAK HARBOR
COLLECTOR: T. SLOTTA DATE OF COLLECTION: _____

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES															FIELD NOTES	Total Number of Containers	Laboratory	Note Number																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
					VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (Gasoline)	TPH 8015 (Diesel)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PH	ASBESTOS	METALS (Low Level)					KLH	HL10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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RELINQUISHED BY (Signature) T. Slotta DATE/TIME 5-24-99 RECEIVED BY (Signature) Ken Verduyn DATE/TIME 5-24-99
RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____ DATE/TIME _____

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ \$2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

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

LABORATORY NOTES:

STD Turn
Change from T. Slotta ~ 9:00
on 5/15/99

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

800 Sleater-Kinney SE, PMB #262
Lacey, Washington 98503-1127

Mobile Environmental Laboratories
Environmental Sampling Services

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

June 9, 1999

Tim Slotta
S. D. & C., Inc.
11210 NE. 97th
Kirkland, WA 98033

Dear Mr. Slotta:

Please find enclosed the analytical data report for the Oak Harbor Motors Project in Oak Harbor, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, Pesticides and PCB's by Method 8081/8082, and Specific Halogenated Hydrocarbons and BTEX by Method 8021B on May 24 - 29, 1999.

The results of these analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical services to S. D. & C. for this project. It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec
President

QA/QC FOR ANALYTICAL METHODS

GENERAL

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

When analyses are taking place on-site with the mobile lab, the need for Field Blanks or Travel/Trip Blanks is eliminated. If there is going to be a delay before sample preparation for analysis, the sample is stored at 4⁰ C.

ANALYTICAL METHODS

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

TPH-Gasoline, TPH-Diesel

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

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

Purgeable Volatile Aromatics
(BTEX, EPA 602/8020)

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

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

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

PCBs, Polychlorinated Biphenyls
(EPA 8080, 8081)

A method blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The check standard may be run at the end of the day. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. Samples which measure outside of the linear range of the calibration curve must be carefully diluted to fall into the upper range of the linear calibration. A duplicate sample is run at a rate of 1 per 10 samples. At least 1 method blank is run per 20 samples analyzed.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

Specific Halogenated and Aromatic Hydrocarbons (EPA 8021B) in Water

Sample Description	Method	B-2	B-5	B-6	B-7
	Blank	1:4 dil			
Date Sampled	5/24/99	5/24/99	5/24/99	5/24/99	5/24/99
Date Analyzed	5/25/99	5/25/99	5/25/99	5/25/99	5/25/99
	MDL				
	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Vinyl chloride	5.0	nd	nd	nd	nd
Benzene	1.0	nd	25	nd	nd
Toluene	1.0	nd	13	nd	3.8
Ethylbenzene	1.0	nd	59	nd	5.3
Total Xylenes	1.0	nd	500	nd	23.0
1,1-Dichloroethene	1.0	nd	nd	nd	nd
Methylene chloride	1.0	nd	nd	nd	nd
<i>trans</i> -1,2-Dichloroethene	1.0	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd	nd	nd	nd
<i>cis</i> -1,2-Dichloroethene	1.0	nd	nd	nd	nd
Chloroform	1.0	nd	nd	nd	nd
1,1,1-Trichloroethane (TCA)	1.0	nd	nd	nd	nd
Carbon tetrachloride	1.0	nd	nd	nd	nd
1,2-Dichloroethane	1.0	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd	nd	nd
Surrogate Recovery (%)	114	116	69	90	134

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65%- 135%

ANALYSES PERFORMED BY: Chantel Kamm

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

QA/QC Data - EPA 8021B Analyses

Sample Description: B-5							
Matrix Spike				Matrix Spike Duplicate			RPD
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	(%)
Benzene	5.00	5.63	113	5.00	4.75	95	16.96
Toluene	5.00	5.83	117	5.00	5.66	113	2.96
1,1-Dichloroethene	5.00	5.57	111	5.00	4.66	93	17.79
Trichloroethene (TCE)	5.00	5.39	108	5.00	5.64	113	4.53
Surrogate Spike	12.00	15.29	127	12.00	15.00	125	1.91

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%

ACCEPTABLE RPD IS 20%

ACCEPTABLE SPIKE RECOVERY IS 65%-135%.

ANALYSES PERFORMED BY: Chantel Kamm

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

Specific Halogenated and Aromatic Hydrocarbons (EPA 8021B) in Water

Sample Description	Method	B-4	B-4
	Blank		Dup
Date Sampled		5/24/99	5/24/99
Date Analyzed	5/28/99	5/28/99	5/28/99
	MDL		
	(ug/l)	(ug/l)	(ug/l)
Vinyl chloride	5.0	nd	nd
Benzene	1.0	nd	nd
Toluene	1.0	nd	nd
Ethylbenzene	1.0	nd	nd
Total Xylenes	1.0	nd	370
1,1-Dichloroethene	1.0	nd	nd
Methylene chloride	1.0	nd	nd
<i>trans</i> -1,2-Dichloroethene	1.0	nd	nd
1,1-Dichloroethane	1.0	nd	nd
<i>cis</i> -1,2-Dichloroethene	1.0	nd	nd
Chloroform	1.0	nd	nd
1,1,1-Trichloroethane (TCA)	1.0	nd	nd
Carbon tetrachloride	1.0	nd	nd
1,2-Dichloroethane	1.0	nd	nd
Trichloroethene (TCE)	1.0	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd
Surrogate Recovery (%)	95	98	113

"nd" Indicates not detected at listed detection limit.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65%- 135 %

ANALYSES PERFORMED BY: Tim McCall, Chantel Kamm, & Michael Dee

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

CLAMPITT'S CLEANERS PROJECT

Mercer Island, Washington

Hart Crowser

Client Project #4928-02

QA/QC Data - EPA 8021B Analyses

Sample Description:							
Matrix Spike				Matrix Spike Duplicate			RPD
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)	(%)
Benzene	15.00	15.10	101	15.00	16.00	107	5.79
Toluene	15.00	16.00	107	15.00	19.20	128	18.18
1,1-Dichloroethene	15.00	15.10	101	15.00	17.90	119	16.97
cis-1,2-Dichloroethene	15.00	13.40	89	15.00	14.00	93	4.38
Surrogate Spike			110			126	13.56

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)
Method Blank	5/26/99	110	nd
B-5	5/26/99	100	nd
B-8	5/26/99	116	nd
Method Detection Limits			100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65 % TO 135 %

ANALYSES PERFORMED BY: Michael Dee, Chantel Kamm, & Tim McCall

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT
Oak Harbor, Washington
SD & C

Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)
Method Blank	5/25/99	116	nd
B-1	5/25/99	84	nd
B-2	5/25/99	int	3800
B-3	5/25/99	122	nd
B-3 Dup.	5/25/99	72	nd
B-4	5/25/99	int	42000
B-6	5/25/99	118	nd
B-7	5/25/99	101	nd
Method Detection Limits			100

"*" Indicates that component was detected, although the analysis was not requested.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: Chantel Kamm

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

Analyses of BTEX (EPA Method 8021B) in Water

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Surrogate Recovery (%)
Method Blank	5/25/99	nd	nd	nd	nd	116
B-1	5/25/99	nd	nd	nd	nd	84
B-2	5/25/99	31	13	90	350	int
Method Detection Limits		1	1	1	1	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: Chantel Kamm

DATA REVIEWED BY: Mike Korosec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)	Oil (ug/l)
Method Blank	5/26/99	121	nd	nd
B-2	5/26/99	88	nd	20000
Method Detection Limits			200	400

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65 % TO 135 %

ANALYSES PERFORMED BY: Michael Dee, Chantel Kamm, & Tim McCall

DATA REVIEWED BY: Mike Korošec

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

OAK HARBOR MOTORS PROJECT

Oak Harbor, Washington

SD & C

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)	Oil (ug/l)
Method Blank	5/25/99	110	nd	nd
B-4	5/25/99	88	nd	nd
B-5	5/25/99	100	nd	nd
B-8	5/25/99	116	nd	nd
B-3	5/25/99	122	nd	--
B-3 Dup.	5/25/99	72	nd	--
B-6	5/25/99	118	nd	--
B-7	5/25/99	101	nd	--
Method Detection Limits			200	400

"--" Indicates analysis not run.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Chantel Kamm

DATA REVIEWED BY: Mike Korosec

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

TEG Job Number: S90526-3
Client: TEG-Lacey
Client Job Name: Oak Harbor Motors
Client Job Number: NA
Printed: 5/28/99 12:50

Analytical Results

MS

8081(PEST), µg/l	MTH BLK		LCS	B-2	B-2
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	05/26/99	05/26/99	05/26/99	05/26/99
Date analyzed	Limits	05/26/99	05/26/99	05/26/99	05/26/99
Aldrin	0.02	nd	102%	nd	110%
a-BHC	0.02	nd		nd	
b-BHC	0.02	nd		nd	
g-BHC (Lindane)	0.02	nd	98%	nd	99%
d-BHC	0.02	nd		nd	
4,4'-DDD	0.02	nd		nd	
4,4'-DDE	0.02	nd		nd	
4,4'-DDT	0.02	nd	104%	nd	102%
Dieldrin	0.02	nd	101%	nd	110%
Endosulfan I	0.02	nd		nd	
Endosulfan II	0.02	nd		nd	
Endosulfan Sulfate	0.02	nd		nd	
Endrin	0.02	nd	103%	nd	125%
Endrin Aldehyde	0.02	nd		nd	
Heptachlor	0.02	nd	100%	nd	120%
Heptachlor Epoxide	0.02	nd		nd	
Methoxychlor	0.02	nd		nd	
Chlordane (tech.)	4.0	nd		nd	
Toxaphene	10	nd		nd	

Surrogate recoveries:

Tetrachloro-m-xylene	99%	91%	91%	91%
Decachlorobiphenyl	107%	89%	85%	86%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

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

TEG Job Number: S90526-3
Client: TEG-Lacey
Client Job Name: Oak Harbor Motors
Client Job Number: NA
Printed: 5/28/99 12:50

Analytical Results

MS

8082(PCBs), µg/l	MTH BLK		LCS	B-2	B-2
Matrix	Water	Water	Water	Water	Water
Date extracted	Reporting	05/26/99	05/26/99	05/26/99	05/26/99
Date analyzed	Limits	05/26/99	05/26/99	05/26/99	05/26/99
A1221	10	nd		nd	
A1232	10	nd		nd	
A1242 (A1016)	4.0	nd		nd	
A1248	4.0	nd		nd	
A1254	4.0	nd		nd	
A1260	4.0	nd	78%	nd	101%

Surrogate recoveries:

Tetrachloro-m-xylene	99%	97%	94%	101%
Decachlorobiphenyl	107%	91%	84%	90%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%



CLIENT: SDGC
ADDRESS: 11210 NE 97th ST. KIRKLAND WA
PHONE (425) 822-6722 FAX: _____
CLIENT PROJECT #: _____ PROJECT MANAGER: _____

DATE: 5-24-99 PAGE 1 OF 1
PROJECT NAME: OAK HARBOR MOTORS
LOCATION: OAK HARBOR
COLLECTOR: T. SLOTTA DATE OF COLLECTION: _____

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	VOA 601/8010	VOA 602/8020 (2x10)	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (diesel)	TPH 8015 (diesel)	TPH 8015 (9 & 9)	PAH 610/8100	PESTPCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	PH	ASBESTOS	METALS (low level)	FIELD NOTES	Total Number of Containers	Laboratory Note Number
B-1			WATER	304S						X														
B-2			"	"		X				X				X						X				
B-3			"	"		X					X													
B-4			"	"		X					X													
B-5			"	"		X					X													
B-6			"	"		X					X													
B-7			"	"		X					X													
B-8			"	"							X													
FLOWERS MARINE			"	"																				
B-1			"	"		X															X			

RELINQUISHED BY (Signature) T. Slotta DATE/TIME 5-24-99
RECEIVED BY (Signature) Karen [Signature] DATE/TIME 5/24/99

RELINQUISHED BY (Signature) _____ DATE/TIME _____
RECEIVED BY (Signature) _____ DATE/TIME _____

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ \$2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD

NOTES:

LABORATORY NOTES:

STD Turn

Change from T. Slotta ~ 9:10
on 5/15/99

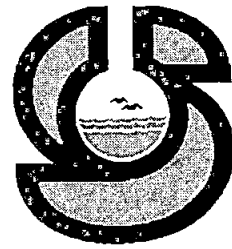
Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 Pacific Hwy East • Tacoma, WA 98424

(253) 922-2310 • FAX (253) 922-5047

e-mail: saincl@uswest.net



TRANSMITTAL MEMORANDUM

DATE: June 4, 1999

TO: Michael Dee
TEG Northwest, Inc.
677 Woodland Square Loop SE, Ste. D
Lacey, WA 98503

PROJECT: Oak Harbor

REPORT NUMBER: 81435

Enclosed are the test results for one sample received at Sound Analytical Services on May 26, 1999.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest, Inc.
Client ID:	B-2
Lab ID:	81435-01
Date Received:	5/26/99
Date Prepared:	5/27/99
Date Analyzed:	5/29/99
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Barium	ND	0.005	
Chromium	0.014	0.01	
Selenium	ND	0.4	
Silver	ND	0.026	

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest, Inc.
Client ID:	B-2
Lab ID:	81435-01
Date Received:	5/26/99
Date Prepared:	5/27/99
Date Analyzed:	6/3/99
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	0.032	0.001	
Cadmium	ND	0.001	
Lead	0.23	0.001	

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest, Inc.
Client ID:	B-2
Lab ID:	81435-01
Date Received:	5/26/99
Date Prepared:	5/28/99
Date Analyzed:	5/29/99
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - T827
Date Received:	-
Date Prepared:	5/27/99
Date Analyzed:	5/29/99
Dilution Factor	1

Metals by ICP - USEPA Method 6010

Analyte	Result (mg/L)	PQL	Flags
Barium	ND	0.005	
Chromium	ND	0.01	
Selenium	ND	0.4	
Silver	ND	0.026	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike Report

Client Sample ID: B-2
Lab ID: 81435-01
Date Prepared: 5/27/99
Date Analyzed: 5/29/99
QC Batch ID: T827

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Barium	0	4	1.77	44	X7
Chromium	0.014	0.4	0.417	101	
Selenium	0	4	4.18	105	
Silver	0	0.6	0.584	97	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike Report

Lab ID: T827
Date Prepared: 5/27/99
Date Analyzed: 5/29/99
QC Batch ID: T827

Metals by ICP - USEPA Method 6010

Compound Name	Blank Result (mg/L)	Spike Amount (mg/L)	BS Result (mg/L)	BS % Rec.
Barium	0	4	3.71	92.7

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID: B-2
Lab ID: 81435-01
Date Prepared: 5/27/99
Date Analyzed: 5/29/99
QC Batch ID: T827

Metals by ICP - USEPA Method 6010

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	--RPD %	Flag
Barium	0	0	NC	
Chromium	0.014	0.014	0.0	
Selenium	0	0	NC	
Silver	0	0	NC	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - T827
Date Received:	-
Date Prepared:	5/27/99
Date Analyzed:	6/3/99
Dilution Factor	1

Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	PQL	Flags
Arsenic	ND	0.001	
Cadmium	ND	0.001	
Lead	ND	0.001	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike Report

Client Sample ID: B-2
Lab ID: 81435-01
Date Prepared: 5/27/99
Date Analyzed: 6/3/99
QC Batch ID: T827

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Arsenic	0.032	4	3.3	82	
Cadmium	0	0.1	0.102	102	
Lead	0.23	1	1.25	102	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID: B-2
Lab ID: 81435-01
Date Prepared: 5/27/99
Date Analyzed: 6/3/99
QC Batch ID: T827

Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Arsenic	0.032	0.03	6.5	
Cadmium	0	0	NC	
Lead	0.23	0.22	4.4	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - T337
Date Received:	-
Date Prepared:	5/28/99
Date Analyzed:	5/29/99
Dilution Factor	1

Mercury by CVAA - USEPA Method 7470

Analyte	Result (mg/L)	PQL	Flags
Mercury	ND	0.0002	

SOUND ANALYTICAL SERVICES, INC.

Duplicate Report

Client Sample ID: B-2
Lab ID: 81435-01
Date Prepared: 5/28/99
Date Analyzed: 5/29/99
QC Batch ID: T337

Mercury by CVAA - USEPA Method 7470

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Mercury	0	0	NC	

SOUND ANALYTICAL SERVICES, INC.

Matrix Spike Report

Client Sample ID: B-2
Lab ID: 81435-01
Date Prepared: 5/28/99
Date Analyzed: 5/29/99
QC Batch ID: T337

Mercury by CVAA - USEPA Method 7470

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Mercury	0	0.002	0.00165	83	

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq 40\%$.
- C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be $> 40\%$. The higher result was reported unless anomalies were noted.
- M: GC/MS confirmation was performed. The result derived from the original analysis was reported.
- D: The reported result for this analyte was calculated based on a secondary dilution factor.
- E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- PQL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.
- X2: Contaminant does not appear to be "typical" product.
- X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
- X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike recovery was not determined due to the required dilution.
- X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.
- X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
- X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
- X8: Surrogate recovery was not determined due to the required dilution.
- X9: Surrogate recovery outside advisory QC limits due to matrix interference.

Sound Analytical Services, Inc.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

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(253) 922-2310 • FAX (253) 922-5047

e-mail: saincl@uswest.net

SAS Lab No. 81435

TURNAROUND REQUEST (business days)

Standard (10 days) _____

RUSH: 24 hrs 48 hrs 5 day ✓

CHAIN OF CUSTODY/REQUEST FOR LABORATORY ANALYSIS

[illegible]

	Signature	Printed Name	Firm	Time/Date	Special Instructions
Relinquished By:	<i>Michael Doe</i>	Michael Doe	TEG	5-26/10:45	Sample marked MW2 shall be B-2. MGD 5.26.99 low level Det limits
Received By:	<i>M Hodgman</i>	M Hodgman	SAS	10:45 5/26/99	
Relinquished By:					
Received By:					
Relinquished By:					
Received By:					

COC No.

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