

REPORT
GROUND WATER MONITORING
QUARTERLY REPORT
HALCO PROPERTIES, LLC
SEATTLE, WASHINGTON

JUNE 2006

5232 SHILGHOLE AVE NW, SEATTLE

11/8/2011 *Ar*

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Table No.

1

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Site Plan

Figure No.

1

2

**REPORT
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QUARTERLY REPORT
HALCO PROPERTIES, LLC
SEATTLE, WASHINGTON**

1.0 INTRODUCTION

1.1 GENERAL

This report presents the results of our Second Quarter (2006) Ground Water Monitoring of the property located at 5221 Ballard Avenue NW, Seattle, Washington. The subject site currently is owned by the HALCO PROPERTIES LLC. The property is currently operated by the Salmon Bay Sand & Gravel Company. The location of the subject site relative to surrounding physical features is shown in Figure 1. The general layout of the site is shown in Figure 2.

The property occupies 0.17 acres. Our monitoring studies concentrated on ten (10) pre-existing ground water monitoring wells.

1.2 PREVIOUS STUDIES AND HISTORICAL INFORMATION

While Morse Environmental did not review the following reports, the Washington State Department of Ecology has made their existence known:

Site Assessment C&C Paint Company Report, prepared for C&C Paint Company, prepared by Bison Environmental Northwest Inc., February 19, 1991

Ballard Avenue Landmark Letter, prepared for Mr. Robert Campbell - Cowen Campbell Paint Company, prepared by Ms. Susan Kunitatsu - Ballard Avenue Landmark District Board, April 17, 1991

Buried Tanks in Alley - Cracks in Ballard Hardware South Wall Letter, prepared for Mr. E Arthur Cowman - C&C Paints, prepared by Mr. Charles E. Kitchen - Pacific Testing Laboratories, April 19, 1991

Underground Storage Tank Closure in Place Site Assessment Report - Cowman-Campbell Paint Company, prepared for Cowman-Campbell Paint Company, prepared by Bison Environmental Northwest Inc., November 30, 1992

Groundwater Survey and Monitoring Well Installation - C&C Paint Company Property, prepared for Mr. Robert D. Allen - BettsPatterson & Mines - Attorneys At Law, prepared by Mr. Henry Perrin - Columbia Environmental Inc., December 11, 1995

Phase 2 Environmental Site Assessment - C&C Paint Company Property, prepared for Mr. Hal Cowman - CZS Enterprises mc, prepared by Mr. Henry Perrin - Columbia Environmental Inc., February 12, 1996

Cleanup Proposal - C&C Paint Company Property, prepared for Mr. Joseph Hickey - Department of Ecology, prepared by Mr. Ronald D. Allen - Betts, Patterson & Mines, PS., May 17, 1996

Quarterly Groundwater Monitoring Report - C&C Paint Company Property, prepared for Mr. Joseph Hickey - Department of Ecology, prepared by Mr. Ronald D. Allen - Betts, Patterson & Mines, PS, July 26, 1996

Quarterly Groundwater Monitoring Report - C&C Paint Company Property, prepared for Mr. Joseph Hickey - Department of Ecology, prepared by Mr. Ronald D. Allen - Betts, Patterson & Mines, PS, October 15, 1996

Quarterly Groundwater Monitoring Report - C&C Paint Company Property, prepared for Mr. Joseph Hickey - Department of Ecology, prepared by Mr. Ronald D. Allen - Betts, Patterson & Mines, PS, January 21, 1997

Quarterly Groundwater Monitoring Report - C&C Paint Company Property, prepared for Mr. Joseph Hickey - Department of Ecology, prepared by Mr. Ronald D. Allen - Betts, Patterson & Mines, PS, April 25, 1997

UST Closure In Place - Site Assessment Report - C&C Paints, prepared for Mr. Hal Cowman -C&C Paint Company, prepared by Mr. Michael Lam - Nowicki & Associates, February 10, 1998

October 2000 Annual Groundwater Monitoring - C&C Paints Site, prepared for Mr. Hal Cowman, prepared by Mr. Michael Lam - Nowicki & Associates, October 28, 2000

300-Gallon Diesel Heating Oil UST Closure Site Assessment Report - C&C Paint, prepared for Mr. Hal Cowman - C&C Paint Company, prepared by Mr. Michael Lam - Nowicki & Associates, November 28, 2000

September 2002 Annual Groundwater Monitoring - C&C Paints Site, prepared for Mr. Hal Cowman, prepared by Mr. Michael Lam - Nowicki & Associates, September 26, 2002

1.3 PURPOSE AND SCOPE

The purpose of our Ground Water Monitoring was to evaluate any residual petroleum soil contamination after the removal of an Underground Storage Tank (UST).

Our specific scope of services included the following:

1. Develop a site safety plan for use by Morse Environmental staff during field activities.
2. Identify measurement of ground water level.
3. Removed (purge) stagnant water within the monitoring well using a peristaltic pump.
4. Obtain well samples using existing bailers.
5. Monitoring of pH, temperature and specific conductance.
6. Obtain ten (10) Ground Water Samples for Laboratory Analysis using the HCID method to screen and the WTPH-Dx method to quantify.
7. Quarterly Report of Findings.

2.0 SITE DESCRIPTION

2.1 SURFACE CONDITIONS

The site occupies approximately 0.17 acres and consists of a developed lot occupied by the Salmon Bay Sand & Gravel Company. The approximate location of the on-site building is shown in Figure 2.

3.0 FINDINGS

3.1 FIELD EXPLORATIONS

Morse Environmental monitored eight (8) of the ten (10) wells present on the site. Access for the two (2) remaining wells was not available at the time on monitoring.

3.2 SUBSURFACE CONDITIONS

3.2.1 Soil

No soil was considered in this evaluation.

3.2.2. Ground Water

Ground water sampling results appear in Table 1. These results show a presence of the stoddard solvent-gasoline range hydrocarbons (MW1) and a presence of heavy oil range hydrocarbons (MW2) which may or may not be in excess of the Model Toxic Control Act (MTCA) Clean-up Standard, Method A.

MW2 is undergoing further examination to quantify the amount of heavy oil range hydrocarbons.

MW1 will be further examined during the next quarterly ground water monitoring event (3rd Qtr 2006).

3.3 SUBSURFACE ENVIRONMENTAL CONDITIONS

3.3.1 Field Screening Results

Field screening was performed on wells upon arrival. The field screen results are found in Table 1.

Field screening results indicated no probable presence of volatile petroleum in any of the samples.

3.3.2 Soil Chemical Analyses

No soil samples were taken or analyzed

3.3.3 Ground Water Chemical Analyses

NWTPH-HCID is a qualitative and semi-quantitative screen to determine the presence and type of petroleum products that may exist in water or soil. This method should be used if the type of petroleum contamination is unknown. It should be performed on contaminated soil or water that is representative of the contamination at the site. The results of this method will determine what fully quantitative method/methods, if any, are to be used in determining compliance with the matrix criteria. Should the value of the analysis for gasoline, diesel or heavy oils (or any other identified petroleum product) exceed the reporting limits, then the specific analytical method for that product must be employed.

NWTPH-Dx is the qualitative and quantitative method (extended) for semi-volatile ("diesel") petroleum products in soil and water. Petroleum products applicable for this include jet fuels, kerosene, diesel oils, hydraulic fluids, mineral oils, lubricating oils and fuel oils.

4.0 CONCLUSIONS

Petroleum hydrocarbons were detected in Monitoring Wells 1 and 2. These monitoring wells show a presence of hydrocarbons in the ground water. Additional quantification of these two monitoring wells (along with MW 3 and MW7) will be completed during the next quarterly sampling event (3rd QTR 2006).

The previous monitoring report (dated 6/16/05) showed petroleum hydrocarbons in Monitoring Wells 2, 3, 4, and 6; with 2 and 7 above the cleanup standard.

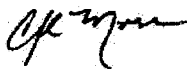
No contamination was present in MW 6 during this sampling event.

5.0 LIMITATIONS

Morse Environmental has prepared this report in a professional manner, using the level of skill and care normally exercised for similar projects under similar conditions by reputable and competent environmental consultants currently practicing in the area, and in accordance with the directives provided by the facility management. Morse Environmental is not responsible for conditions or consequences arising from relevant facts that were not disclosed at the time of our visit. We also note that the facts and conditions referenced in this report may change over time, and that the conclusions set forth here are applicable to the facts and conditions at the time of this report. Conclusions were made within the operative constraints of the scope, budget and schedule for this project. We believe that the conditions stated here are factual, but no guarantee is made or implied.

4.0 Signature of Environmental Professional

MORSE ENVIRONMENTAL, INC.



Chadrick Morse
Principal Chemist

TABLE 1
SUMMARY OF GROUND WATER CHEMICAL ANALYTICAL RESULTS
PETROLEUM HYDROCARBONS
HALCO PROPERTIES LLC
Seattle, Washington

Sample Number	Depth to Water Table	Date Sampled	Sheen	Headspace Vapors (ppm)	pH	Conductivity	HCID ¹	Diesel-range Hydrocarbons (ug/L)
MW-1		6/21/06	NS	0	6.19	600	Gas	Re-Test
MW-2		6/21/06	NS	0	6.97	249	Diesel	Testing
MW-4		6/21/06	NS	0	6.3	484	ND	ND
MW-5		6/21/06	NS	0	6.05	430	ND	ND
MW-6		6/21/06	NS	0	6.79	619	ND	ND
MW-8		6/21/06	NS	0	6.67	521	ND	ND
MW-9		6/21/06	NS	0	6.70	511	ND	ND
MW-10		6/21/06	NS	0	6.60	579	ND	ND
MTCA Method A Cleanup Levels								500

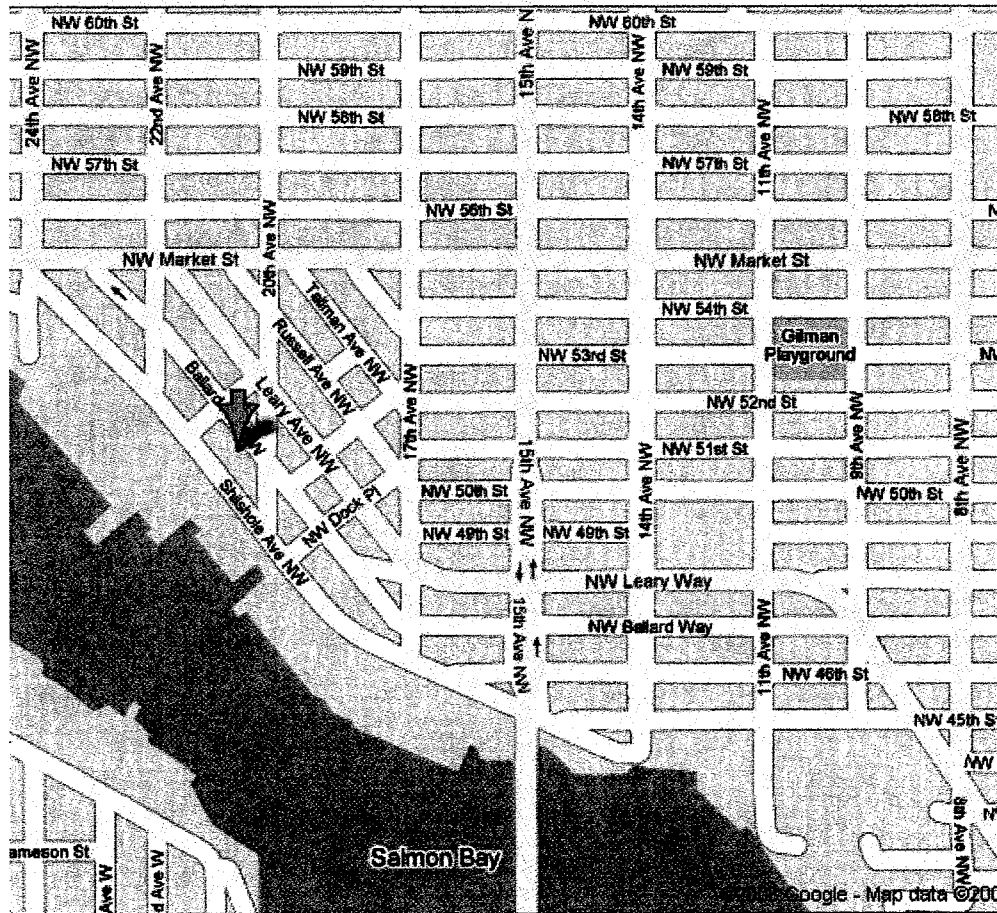
Notes:

¹ Analyzed by Ecology Method Hydrocarbon Identification Presence Absence Testing for G: Gas, D: Diesel, O: Heavy Oil

² Analyzed by Ecology Method TPH-Dx

Chemical analyses conducted by Spectra Labs, Tacoma, Washington. The laboratory report is presented in Appendix B.

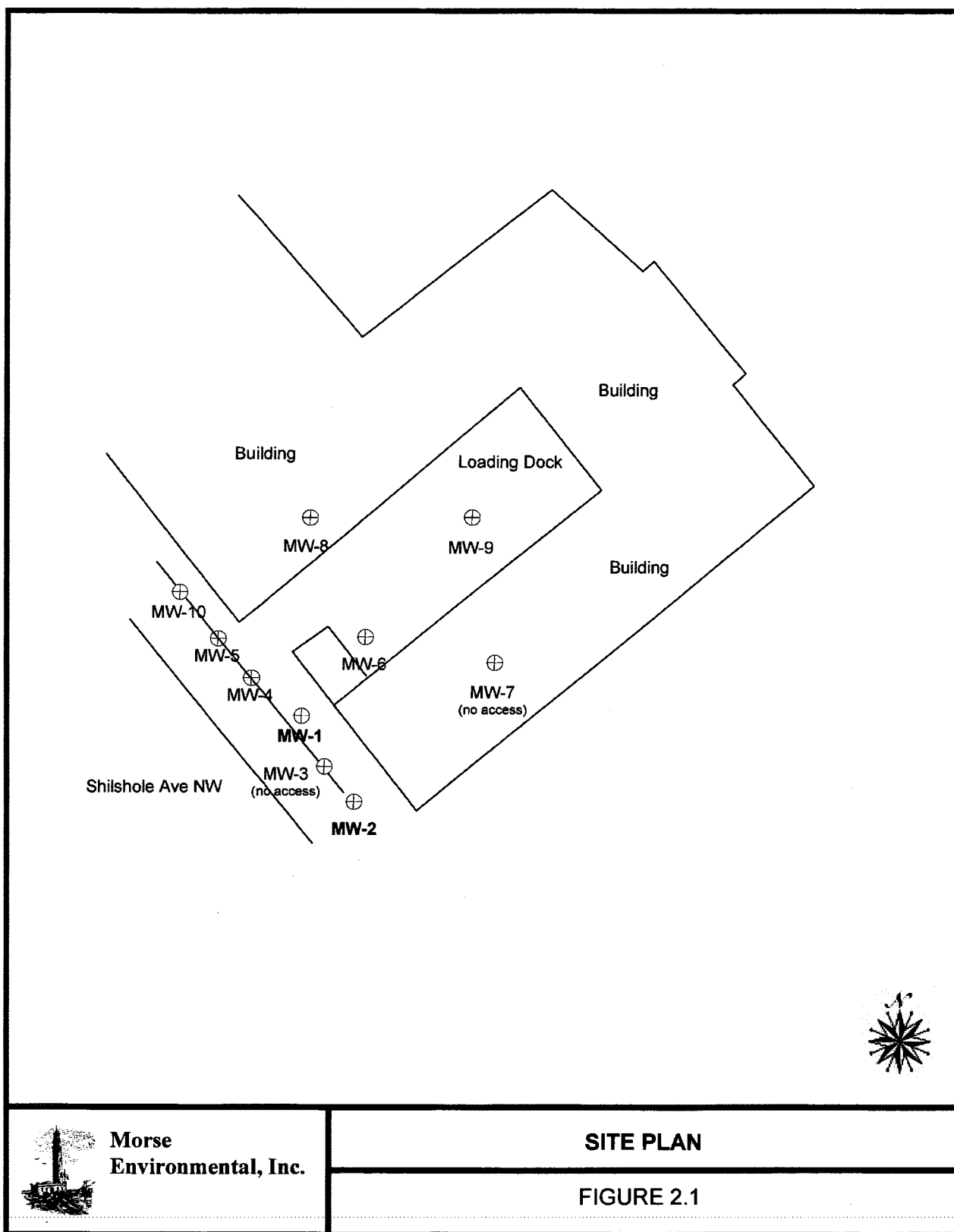
SS = Slight Sheen, NS= No Sheen ND=Not Detected above 10mg/Kg for Diesel and 100 mg/Kg for Oil.



**Morse
Environmental, Inc.**

VICINITY MAP

FIGURE 1





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06/28/2006


Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-10
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 8

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	579	umhos/cm	EPA 120.1
pH	6.60	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	100	NWTPH-HCID

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Steve Hibbs, Laboratory Manager
a6/lip

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06/28/2006

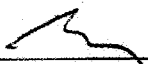
Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-9
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 7

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	511	umhos/cm	EPA 120.1
pH	6.70	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

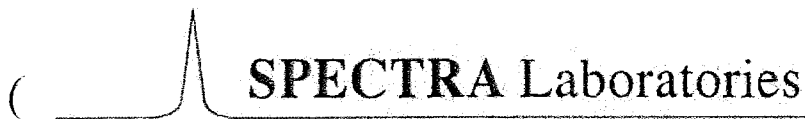
<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	82	NWTPH-HCID

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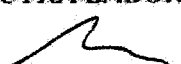
Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-8
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 6

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	521	umhos/cm	EPA 120.1
pH	6.67	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	94	NWTPH-HCID

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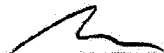
Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-6
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 5

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	619	umhos/cm	EPA 120.1
pH	6.79	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	94	NWTPH-HCID

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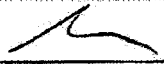
Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-5
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 4

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	430	umhos/cm	EPA 120.1
pH	6.05	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	82	NWTPH-HCID

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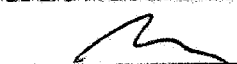
Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-4
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 3

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	484	umhos/cm	EPA 120.1
pH	6.3	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	86	NWTPH-HCID

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Morse Environmental
P.O. Box 1557
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Attn: Chad Morse

Project: Cowan
Client ID: MW-2
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 2

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	249	umhos/cm	EPA 120.1
pH	6.97	pH Units	EPA 150.1
HCID- Gasoline	<250	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	present	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	72	NWTPH-HCID

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Morse Environmental
P.O. Box 1557
Auburn, WA 98071
Attn: Chad Morse

Project: Cowan
Client ID: MW-1
Sample Matrix: Water
Date Sampled: 06/21/2006
Date Received: 06/21/2006
Spectra Project: 2006060360
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Conductivity	600	umhos/cm	EPA 120.1
pH	6.19	pH Units	EPA 150.1
HCID- Gasoline	present	µg/L	NWTPH-HCID
HCID-Diesel	<500	µg/L	NWTPH-HCID
HCID-Oil	<500	µg/L	NWTPH-HCID

<u>Surrogate</u>	<u>Recovery</u>	<u>Method</u>
p-Terphenyl	80	NWTPH-HCID

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