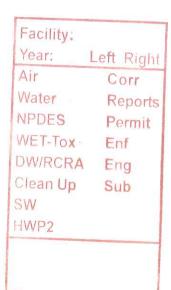


SLR INTERNATIONAL CORP 1800 Blankenship Road, Suite 440 West Linn, Oregon 97068 (503) 723-4423



Ecology W2R-Ind



GROUNDWATER MONITORING REPORT FIRST QUARTER 2010

FORMER COLUMBIA MARINE LINES SITE 6305 NW LOWER RIVER ROAD VANCOUVER, WASHINGTON

May 2010

Prepared for:

Crowley Marine Services 1100 SW Massachusetts Street Seattle, WA 98134

Prepared by:

SLR International Corp 1800 Blankenship Road West Linn, OR 97068

Project Number: 108.00205.00020



SLR INTERNATIONAL CORP 1800 Blankenship Road, Suite 440 West Linn, Oregon 97068 (503) 723-4423

SIGNATURE PAGE

This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of Steven R. Hammer, P.E.

Prepared By:	Reviewed By:
Chris Kramer Tryf Signature	Signature
Chris Kramer	Steven R. Hammer, P.E.
Name	Name
Staff Scientist	Senior Chemical Engineer
Title	Title
5/20/2010 MB	5/20/2010
Date	Date

1.0	INTI	RODUCI	ΓΙΟΝ		1
200					
2.0				ES	
	2.1	TASK	5 - Monit	ORED NATURAL ATTENUATION	2
		2.1.1	TASK 5B	- MONITORING AFTER BIOREMEDIATION CELL OPERATION	2
				Monitoring Well Installation	
			2.1.1.2	Quarterly Groundwater Monitoring	3
	2.2	TASK	6 - Instit	UTIONAL CONTROLS	4
	*			,	
3.0	LAB	ORATO	RY QA/Q	C	5
	3.1	LABO	RATORY C	A/QC	5
		3.1.1	PRECISIO		5
		3.1.2	ACCURA	CY	5
		3.1.3	COMPAR	ABILITY	
		3.1.4	COMPLE	TENESS	(
				8 0 H	
4.0	CLC	SING			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

LIST OF FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Site Plan and Monitoring Well Locations
FIGURE 3	Groundwater Elevations and Natural Attenuation Flow Paths
FIGURE 4	Groundwater TPH Concentrations
	¥

LIST OF TABLES

TABLE 1	Groundwater Elevation Data
TABLE 2	Groundwater Analytical Results - TPH-Gx and TPH-Dx
TABLE 3	Groundwater Analytical Results - Natural Attenuation Parameters

Note: Figures and Tables are presented at the end of the report.

LIST OF APPENDICES

APPENDIX A	Monitoring Well Boring Logs
APPENDIX B	Groundwater Sampling Field Data Sheets
APPENDIX C	Laboratory Analytical Reports

SLR International Corp prepared this Remedial Action Report for the First Quarter of 2010 on behalf of Crowley Marine Services, Inc. (Crowley), a successor to Columbia Marine Lines. On August 19, 1985, Columbia Marine Lines entered into Order No. DE 85-591 with the Washington State Department of Ecology (Ecology) to conduct a remedial action at the former Columbia Marine Lines site, located at 6305 Lower River Road in Vancouver, Washington. The site location is shown on **Figure 1**.

For the purposes of this report, the site is defined as the area illustrated on Figure 2, which includes portions of Clark County Tax Lots 153104000 and 152800000. The approximate area affected by the remediation activity is three acres. The site is currently vacant. Prior to remediation, the site was covered with grass, small trees, and other vegetation.

In February 2010, six groundwater monitoring wells were installed and one round of quarterly groundwater monitoring was completed. The work was completed per the Remedial Action Work Plan (SLR 2008b), dated December 8, 2008, which was approved by Ecology on January 7, 2009. Work completed in February 2010 followed sampling protocols presented in the Sampling and Analysis Plan (SAP) (Appendix A of the Remedial Action Work Plan) and the Site-Specific Health and Safety Plan (Appendix B of the Remedial Action Work Plan).

The remedial action conducted at the site consists of the following tasks:

- Task 1: Site Preparation
- Task 2: Excavation of Clean Overburden and TPH-Impacted Soil
- Task 3: Water Treatment and Subsurface Injection
- Task 4: On-Site Ex-Situ Soil Bioremediation
- Task 5: Monitored Natural Attenuation; and
- Task 6: Institutional controls

Tasks 1 through 4 were completed during 2009. Task 5 began in the first quarter of 2010.

2.1 Task 5 - Monitored Natural Attenuation

Petroleum hydrocarbon concentrations in groundwater typically naturally attenuate relatively rapidly once source materials have been removed. The groundwater cleanup component of the remedial action conducted for Task 5 is natural attenuation. This consists of monitoring the TPH concentrations in groundwater following the completion of the soil excavation and treatment. The existing groundwater monitoring network was repaired and expanded as part of the monitored natural attenuation task.

2.1.1 TASK 5B – MONITORING AFTER BIOREMEDIATION CELL OPERATION

Five groundwater monitoring wells (MW-7, MW-8, MW-19, RW-4, and RW-6/EX-2) were located within the extent of excavation and were destroyed during the excavation activities conducted during Task 2. These wells were decommissioned by a licensed well driller prior to the excavation commencing.

After completion of operation of the bioremediation cell in the fourth quarter of 2009, monitoring wells were installed to replace MW-7, MW-8, MW-19, and RW-4 (MW-7N, MW-8N, MW-19N, and MW-22). Two additional monitoring wells were also installed (MW-23, and MW-24). Decommissioned and new monitoring well locations are illustrated on **Figure 2**. The new wells were installed to monitor the attenuation of dissolved-phase TPH.

2.1.1.1 Monitoring Well Installation

On February 4, 2010 SLR met with Cascade Drilling LP to install six new monitoring wells on the Site. Prior to any drilling activities, the Washington public utility notification center was notified and the Site was cleared of any public utilities. Drilling activities were performed with a Geoprobe direct-push drill rig using a 4" casing size. The installed wells were completed as 2" monitoring wells with pre-pack sand filters around the ten foot screen intervals. Additional filter sand was used in the open annulus of the boring to two feet above the uppermost slot of the screen. The monitoring wells were

completed with a bentonite seal and concrete surface seal. Monitoring well boring logs have been attached as Appendix A.

Following installation of the monitoring wells, the wells were surged with a surge block and developed with a pump to minimize silt and sediment in samples and limit the potential for artificially inflated TPH concentrations due to the presence of silt and sediment in samples. In addition to the new wells, wells MW-1, MW-3, MW-4, and MW-18 were also developed because they were in the area of the bioremediation cell. The water samples collected from developed wells were clear, although some had some coloration to them, indicating that the well development was effective at reducing solids entering the wells.

2.1.1.2 QUARTERLY GROUNDWATER MONITORING

Groundwater monitoring was completed on February 9 and 10, 2010. All monitoring wells within the Site well network were sampled with the exception of MW-6, MW-15, and MW-18. MW-6 was destroyed or paved over during historical paving activities on the Tidewater property, MW-15 has not been sampled since the 1980s and has been decommissioned, and MW-18 was dry. The locations of the monitoring wells are depicted on **Figure 2**.

Groundwater levels were measured and recorded at all monitoring wells prior to sampling. The groundwater level data is presented in **Table 1** and displayed on **Figure 3**. Monitoring wells were purged prior to sampling using a peristaltic pump and flow through cell with a water quality meter. The meter measured temperature, conductivity, pH, dissolved oxygen, and oxidation reduction potential (ORP). If possible, purging was continued until these values stabilized; however, there is limited water in some of these wells, and in those instances purging may have been halted early. The Groundwater Monitoring Field Data Sheets for each well sampled are included in **Appendix B**.

Monitoring wells were sampled for Total Petroleum Hydrocarbons – Gasoline Range (TPH-Gx) per the NWTPH-Gx method and Total Petroleum Hydrocarbons – Diesel Range and Residual Range (TPH-Dx) per the NWTPH-Dx method. The results of the TPH-Gx and TPH-Dx analyses are presented in **Table 2**. TPH analytical data is also presented on **Figure 4**. As shown on **Table 2**, TPH concentrations in groundwater have fluctuated over time. TPH was detected at low levels just over the detection limits in MW-13 and MW-14. TPH sampling will be conducted in subsequent quarterly groundwater monitoring events, and the data from these wells will continue to be evaluated.

Three flow paths were determined from historical Site monitoring data for analysis of natural attenuation parameters. These parameters include: nitrate, sulfate, alkalinity, dissolved methane, ferrous iron and manganese. The monitoring wells included for natural attenuation analysis include: Flow Path 1 (MW-1, MW-3 and MW-11), Flow Path 2 (MW-7N, MW-19N and MW-21) and Flow Path 3 (MW-8N, MW-23, MW-24 and MW-13). The locations of these monitoring wells and the associated flow paths are depicted on **Figure 3**. The results of the natural attenuation parameter analyses are presented in **Table 3**. Laboratory analytical reports have been included as **Appendix C**.

The natural attenuation monitoring results for each flow path are as follows (evaluation of these results will be conducted after additional monitoring events):

- Flow Path 1 (MW-1, MW-3 and MW-11): pH and DO appear to be reduced in MW-1, but nitrate and sulfate are elevated and ferrous iron is low (indicating that the subsurface is not strongly reducing yet). MW-3 and MW-11 have higher pH and DO. MW-3 has lower nitrate and sulfate and higher ferrous iron than MW-1, indicative of biodegradation.
- Flow Path 2 (MW-7N, MW-19N and MW-21): DO is reduced in MW-7N and MW-19N. Sulfate and ferrous iron are elevated in MW-7N, indicating that biodegradation is in a ferric iron reducing stage. Sulfate concentrations in MW-19N and MW-21 are declining with distance from MW-7N, which is indicative of biodegradation.
- Flow Path 3 (MW-8N, MW-23, MW-24 and MW-13): DO is reduced and ferrous iron is high in the upgradient wells. Sulfate is still elevated in these wells, indicating that biodegradation is in a ferric iron reducing stage. In the downgradient well, DO, nitrate, ferric iron, and sulfate are all at relatively low levels.

After completing the first year of quarterly monitoring, SLR will assess the data in accordance with the Ecology's *Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Groundwater*. The results will be used to evaluate if the groundwater plume is shrinking, stable, or expanding; to assess the attenuation rate; and to identify the wells that will be sampled during the subsequent monitoring events.

2.2 TASK 6 - INSTITUTIONAL CONTROLS

The site is zoned for heavy industrial use by the City of Vancouver (Vancouver Municipal Code 20.160.020) and the uses allowed in this zone are consistent with MTCA's definition of industrial land use (WAC 173-340-745). It is Crowley's understanding that Alcoa and/or the Port of Vancouver will be designating institutional controls limiting the property use to industrial land use.

3.1 LABORATORY QA/QC

The data quality objectives (DQOs) for the laboratory data are listed in Table 1 and Table 2 of the SAP prepared for the Final Remedial Action Work Plan. These DQOs are used to assess the validity of the analytical data reported by the laboratory.

3.1.1 Precision

Laboratory precision is measured by assessing the results of laboratory duplicates. Based on the results of duplicate analysis, the relative percent difference (RPD) is calculated as a measure of QA/QC. RPD is defined as the difference between the duplicate results divided by the mean of the results, expressed as a percentage. Analytical error increases near the method detection limit (MDL); therefore the RPD is not normally calculated unless the concentrations of both the original and duplicate samples are greater than 5 times the MDL. If the RPD for a sample and its duplicate do not meet RPD standards for the parameters analyzed, an explanation is required to qualify the difference in values.

Results from the RPD calculations for the laboratory duplicates are in the Level II Quality Assurance Report included in the Laboratory Analytical Reports, **Appendix** C. In addition, groundwater sample MW-22 was submitted with a blind duplicate for this monitoring event. The RPD for MW-22 and the duplicate was 19% for TPH-Dx – Diesel Range, 10% for TPH-Dx – Residual Range and 2.5% for TPH-Gx. The laboratory and field RPDs were within the DQOs established in the SAP.

3.1.2 ACCURACY

Accuracy of laboratory analysis is assessed through laboratory control spikes, blank spikes, matrix spikes, and method blanks. The matrix spike results will provide additional information regarding the method performance on the actual samples. Professional judgment will be used to assess the data quality and any action that should be taken based on the matrix spike results.

Results from the laboratory spike and blank samples are in the Level II Quality Assurance Report included in the Laboratory Analytical Report, Appendix C. The matrix spike result for manganese was outside the MS/MSD control limits from Table 2 of the SAP, but all other samples and parameters were within the DQOs established in the SAP.

3.1.3 COMPARABILITY

Data comparability is achieved through the consistent use of standard field sampling procedures and trained personnel, as outlined in the SAP. Sampling procedures will be similar to historical field procedures. The laboratory will use standard analytical methods. Adherence to the QA/QC procedures described in the SAP will provide comparable data throughout the duration of this project.

One rinsate blank and one one trip blank were analyzed as part of this monitoring event. For the rinsate blank, distilled water was run through a section of unused tubing and collected in a laboratory-provided container in the same manner as all the groundwater samples. Results from the rinsate and trip blank are presented in **Table 2**. The rinsate sample was reported to contain a qualified concentration of $50 \mu g/L$ of TPH-Gx. For future sampling events rinsate blanks will continue to be collected.

3.1.4 COMPLETENESS

Completeness is evaluated through the following criteria:

- 1. The number of useable data points compared to the number of projected data points
- 2. Compliance with the data quality objectives
- 3. Compliance with standard method procedures (i.e. required holding times)

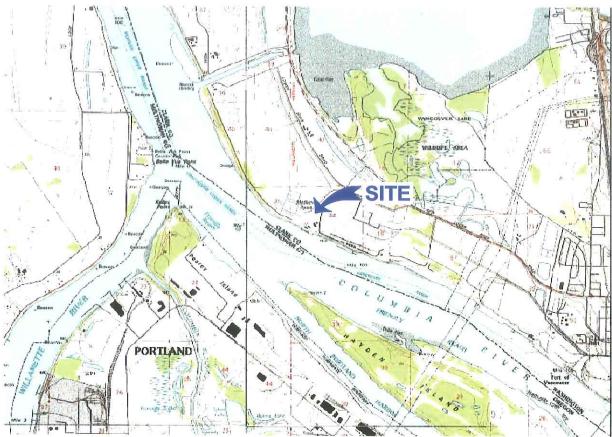
The goal is to achieve 100% data completeness. Where data are not complete, professional judgment is used to either qualify the data or reject the data. This sampling event met the DQO for completeness.

SLR prepared this report on behalf of Crowley to present the remedial action activities of First Quarter 2010, including the installation of six additional monitoring wells and one quarterly groundwater monitoring event (Task 5 of the Work Plan). Well installation and quarterly sampling were completed per the approved work plan. The next groundwater monitoring event is scheduled for May 2010. Evaluation of the results from the first year of post-remedial action groundwater monitoring event using Ecology's Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Groundwater will be completed after the fourth quarter sampling event.

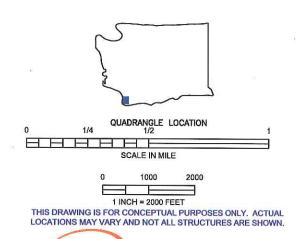
FIGURES

FIGURE 1	SITE LOCATION MAP
FIGURE 2	SITE PLAN AND MONITORING WELL LOCATIONS
FIGURE 3	GROUNDWATER ELEVATIONS AND NATURAL
	ATTENUATION FLOW PATHS
FIGURE 4	GROUNDWATER TPH CONCENTRATIONS





REFERENCE: USGS 7.5 MINUTE QUADRANGLE; VANCOUVER, WASHINGTON; 1990



FORMER COLUMBIA MARINE LINES FACILITY 6205 LOWER RIVER ROAD VANCOUVER, WASHINGTON

Report

REMEDIAL ACTION WORK PLAN

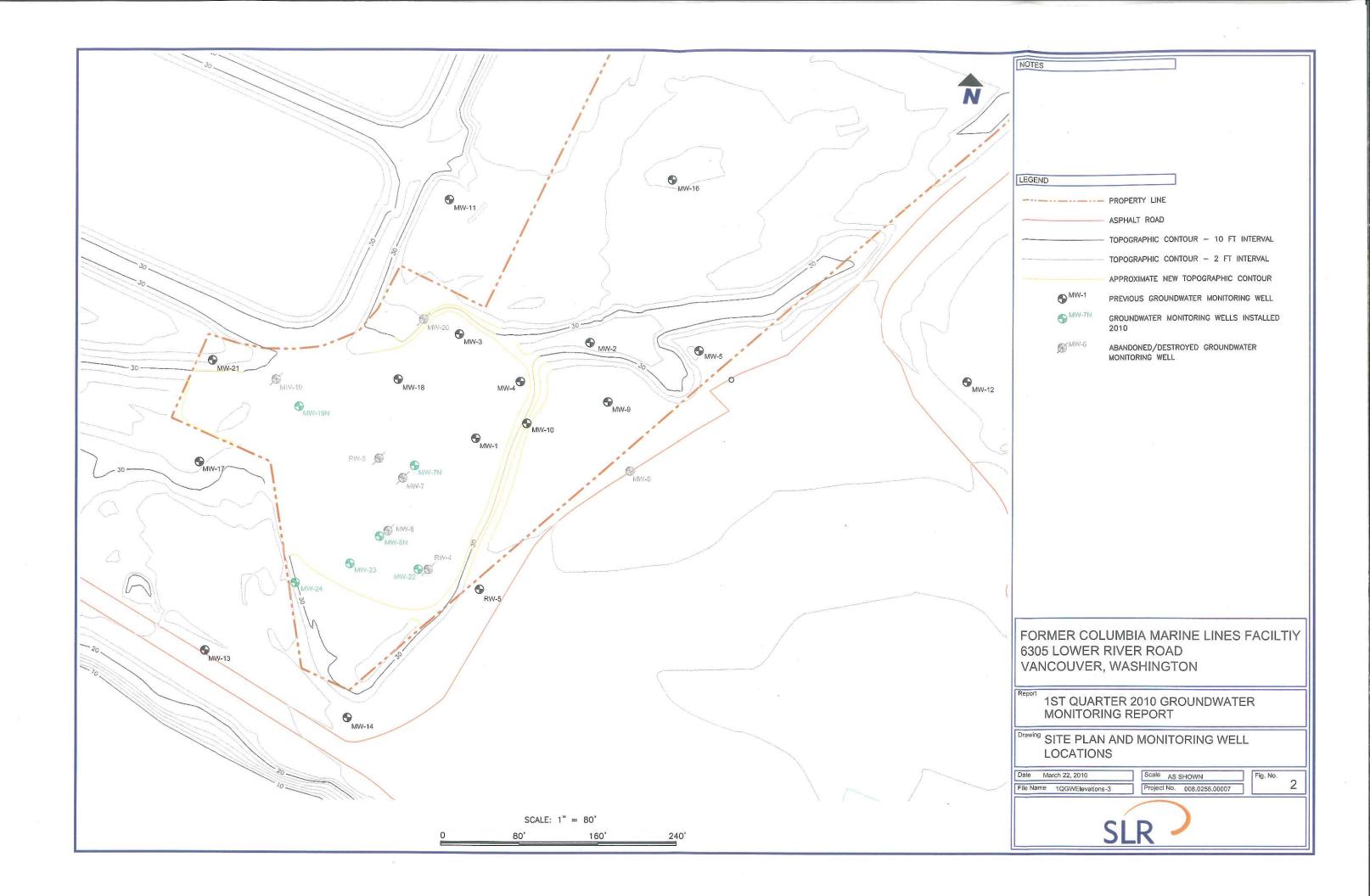
Drawing

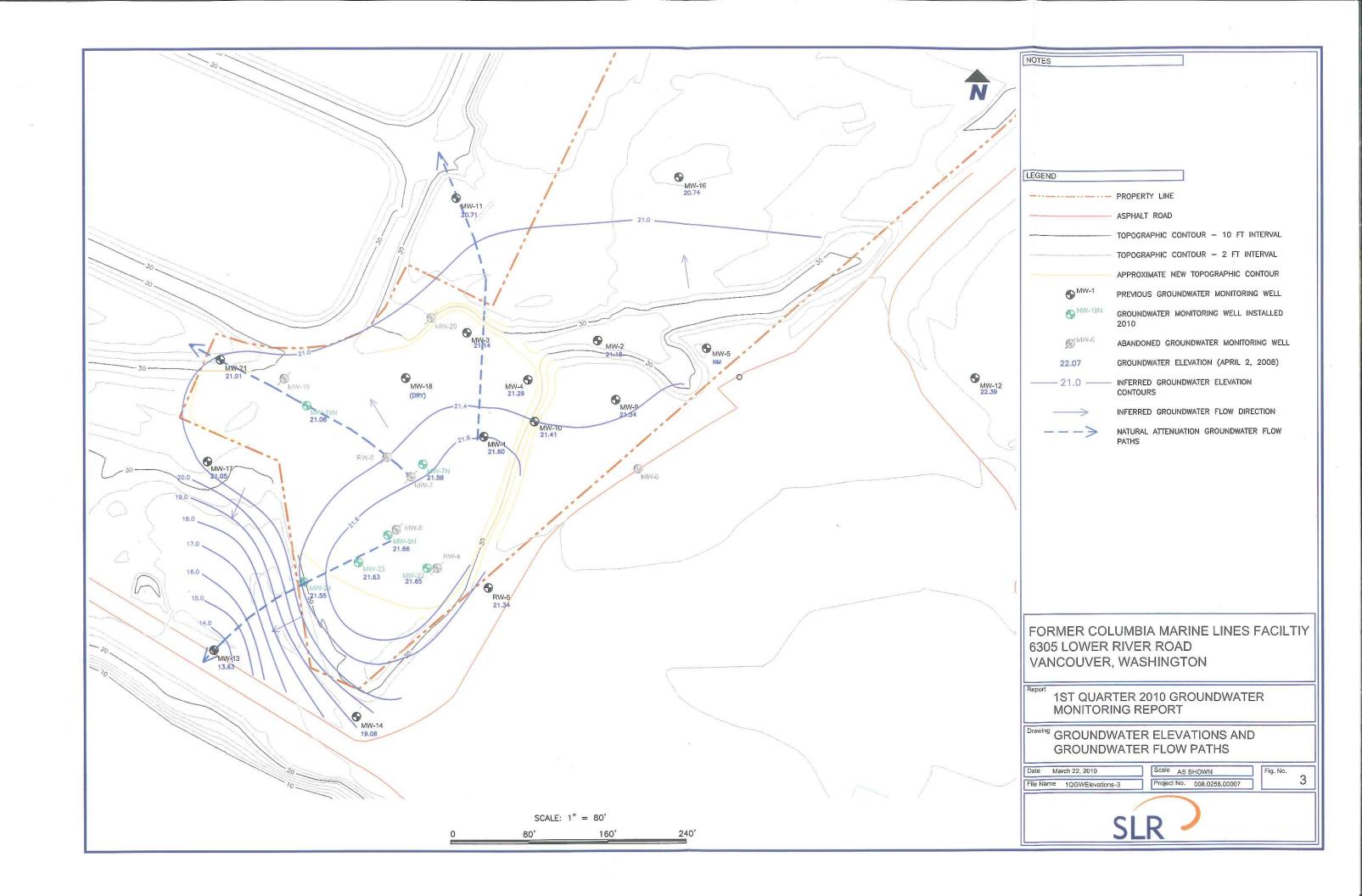
SITE LOCATION MAP

Date	November 26, 2008
File N	Name Figure 1 - Site Location Man-1

Scale AS SHOWN
Project No. 008.0205.00007

Fig. No.





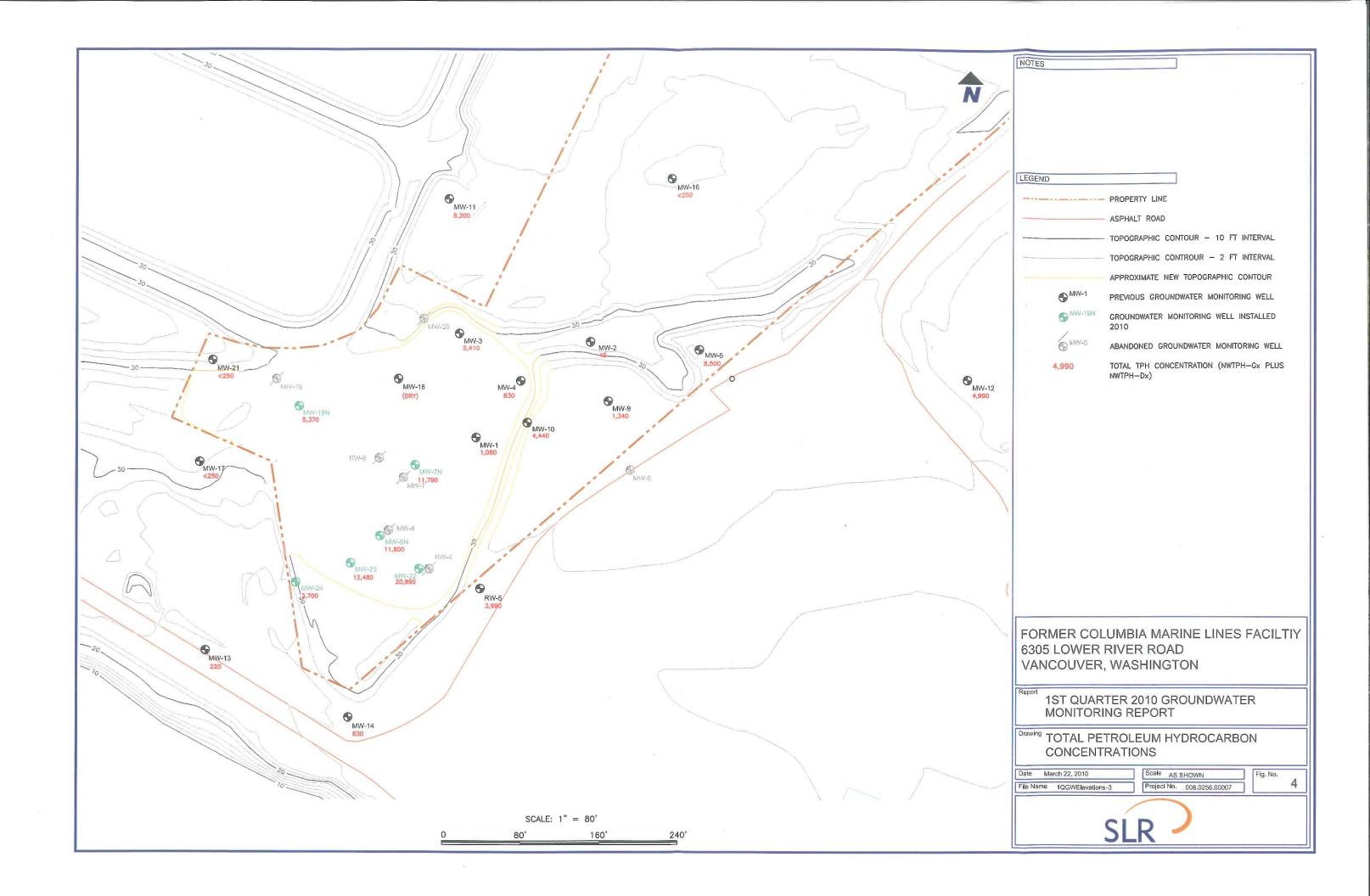


TABLE 1 GROUNDWATER ELEVATION DATA

TABLE 2 GROUNDWATER ANALYTICAL RESULTS – TPH-GX AND

TPH-DX

TABLE 3 GROUNDWATER ANALYTICAL RESULTS – NATURAL

ATTENUATION PARAMETERS

Table 1. Groundwater Elevation Data Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

Sample Location	Measurement Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
A	11/13/1995	9.19	0.00	22.47
MW-1 A	8/1/1996	10.23	0.00	21.43
31.66	10/30/1997	9.54	0.00	22.12
	10/29/1998	12.26	0.00	19.40
	5/7/1999	9,51	0.00	22.15
65. 32.	10/14/1999	12.39	0.00	19.27
31.69	6/28/2001	11.80	0.00	19.89
92	2/12/2002	9,65	0.00	22.04
	5/13/2005	10.09	0.00	21.60
	10/20/2005	13.49	0.00	18.20
101201-00001	2/9/2010	10,46	0.00	21.60
32.06	11/13/1995	12.95	0.00	21.02
MW-2	8/1/1996	13.75	0.00	20.22
33.97	10/30/1997	13.55	0.00	20.42
	10/29/1998	14.92	0.00	19.05
	5/7/1999	12.79	0.00	21.18
	10/14/1999	15.06	0.00	18.92
33.98	6/28/2001	14.93	0.00	19.05
	2/12/2002	12.28	0.00	21.70
	5/13/2005	14.61	0.00	19.37
	10/20/2005	16.27	0.00	17.71
100000000	2/9/2010	12.79	0.00	21.18
33.97	11/13/1995	11.24	0.00	19.66
MW-3 A	8/1/1996	11.11	0.00	19.79
30.90	10/30/1997	11.23	0.00	19.67
	10/30/1997	12.28	0.00	18.62
	5/7/1999	9.98	0,00	20.92
*****	10/14/1999	12.33	0.00	18.63
30.96	6/28/2001	12.27	0.00	18.69
	2/12/2002	9.42	0.00	21.54
	5/13/2005	11.83	0.00	19.13
	10/20/2005	13.50	0.00	17.46
	2/9/2010	9,82	0.00	21.14
A	11/13/1995	8.27	0.00	20.15
MW-4 ^A	8/1/1996	8.40	0.00	20.02
28.42	10/30/1997	8,45	0.00	19.97
	10/29/1998	9.65	0.00	18.77
	5/7/1999	7.26	0.00	21.16
20.64	10/14/1999	9.74	0.00	18.90
28.64	6/28/2001	10,68	0.00	17.96
	2/12/2002	6.68	0.00	21.96
	5/13/2005	8.12	0.00	20.52
	10/20/2005	10.88	0.00	17.76
32.70	2/9/2010	11.41	0.00	21.29

Table 1. Groundwater Elevation Data Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

Sample Location	Measurement Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
	11/13/1995	3.07	0,00	20.30
MW-5		3.60	0.00	19.77
23.37	8/1/1996	2.45	0.00	20.92
	5/7/1999	4.85	0.00	18.53
23.38	10/14/1999	2.16	0.00	21.22
	2/9/2010	5.23	0.00	20.91
MW-6	11/13/1995	5.50	0.00	20.64
26.14	8/1/1996	5.44	0.00	20.70
	10/30/1998	3.18	0.00	22.96
	5/7/1999	5.41	0.00	20.73
24.76	10/14/1999	5.28	0.00	19.48
	6/28/2001	2.87	0.00	21.89
	2/12/2002	Unable to locate - p		
and the second	4005	12.54	0.00	20,82
MW-7	11/13/1995	13.55	0.62	20.31
33.36	8/1/1996		0.17	20.26
	10/30/1997	13.24 14.51	0.07	18.91
	10/30/1998		0.02	21.56
	5/7/1999	11.82	0.00	18.70
33.40	10/14/1999	14.70	0.00	17.99
	6/28/2001	15.41	0.00	19.56
	5/13/2005	13.84	0,00	17.98
	10/21/2005	15.42	oandoned	
			0.00	21.58
MW-7N A	2/9/2010	13.54	0.00	600000000000
35.12		12.90	0.50	20.99
MW-8	11/13/1995	12.98	0.15	20.63
33.49	8/1/1996	13.20	0.21	20.46
	10/30/1997	- BESP	0.14	18.66
	10/30/1998	14.94	0.37	21.74
	5/7/1999	12.05	0.18	18.36
33.53	10/14/1999	15.31	0.00	17.54
	6/28/2001	15.99	0.00	19.76
	5/13/2005	13.77	0.00	18.08
24	10/21/2005	15,45	Abandoned	
			0.00	21.66
MW-8N A	2/9/2010	10.81	0.00	
32,47		100	0.00	22.11
MW-9	11/13/1995	4.25	0.00	20.55
26.36	8/1/1996	5.81	0.00	24.49
	10/30/1997	1.87	0.00	20.05
	10/30/1998	6.31	0.00	21.34
	5/7/1999	5.02	***************************************	19.13
26.38	10/14/1999	7.25	0.00	19.51
20,20	6/28/2001	6.87	0.00	21.97
	2/11/2002	4.41	0.00	20.64
	5/13/2005	5.74	0.00	
	10/20/2005	8.44	0.00	17.94
26.39	2/9/2010	5.05	0.00	21.34

Table 1. Groundwater Elevation Data Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

Sample Location	Measurement Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
	11/12/1006	5.09	0.00	20.80
MW-10 A	11/13/1995	5.62	0.00	20.27
25.89	8/1/1996	5.64	0.00	20.25
	10/30/1997	DRY	DRY	DRY
	10/30/1998	4,53	0,00	21.36
	5/7/1999	6.81	0.00	19.11
25.92	10/14/1999		0,00	18.88
	6/28/2001	7.04	0.00	21.91
	2/11/2002	4.01	0.00	20.46
	5/13/2005	5.46	DRY	DRY
	10/20/2005	DRY	0.00	21.41
30.36	2/9/2010	8,95	0.00	19.32
MW-11	11/13/1995	6.57		19.18
25.89	8/1/1996	6.71	0.00	19.14
	10/30/1997	6.75	0.00	17.77
	10/29/1998	8.12	0.00	20,40
	5/7/1999	5.49	0.00	Vyscock (1990)
25.90	10/14/1999	8.12	0.00	17.78
23.70	6/28/2001	3.90	0.00	22.00
	2/11/2002	4.91	0.00	20.99
	5/13/2005	6.21	0.00	19.69
	10/21/2005	9.26	0.00	16.64
25.02	2/9/2010	5.21	0.00	20.71
25.92	11/13/1995	6.07	0.00	22.10
MW-12	8/1/1996	7.15	0.00	21.02
28.17	10/30/1997	6.61	0.00	21.56
	10/29/1998	8.01	0.00	20,16
	A SECTION OF THE PROPERTY OF T	6.36	0.00	21.81
	5/7/1999	8.34	0.00	19.94
28.28	10/14/1999	8.24	0.00	20.04
	6/28/2001	5.76	0,00	22.52
	2/11/2002	6.61	0.00	21.67
	5/13/2005	1572	0.00	18.87
	10/20/2005	9.41	0.00	22.39
28.26	2/9/2010	5.87	0.00	12.18
MW-13	11/13/1995	10.60	0.00	12.08
22.78	8/1/1996	10.70	0.00	12.30
	10/30/1997	10.48	1. 1000000000	13.18
	5/7/1999	9.60	0.00	11.56
22.75	10/14/1999	11.19	0.00	11.57
2000-00-000-00-00-00-00-00-00-00-00-00-0	6/28/2001	11.18	0.00	13.42
	2/12/2002	9.33	0.00	man arres
	5/13/2005	9.91	0.00	12.84 11.03
i e	10/20/2005	11.72	0.00	Mary Common
1	9/13/2007	11.72	0.00	11.03
22.72	2/9/2010	9.09	0.00	13.63
MW-14	11/13/1995	8.08	0.00	18.17
26.25	8/1/1996	9.15	0.00	17.10
20,23	10/30/1997	8.89	0.00	17.36
	5/7/1999	8.03	0.00	18.22
06.00	10/14/1999	11.73	0.00	14.55
26,28	6/28/2001	11.95	0.00	14.33
1	2/12/2002	6.56	0.00	19.72
1		7.85	0.00	18.43
	5/13/2005	9.56	0,00	16.72
1	10/20/2005	7.20	0.00	19.08

Table 1. Groundwater Elevation Data Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

Sample Location	Measurement Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
	11/13/1995	9.94	0.00	21.19
MW-16	8/1/1996	10.36	0.00	20.77
31.13	10/30/1997	10.26	0.00	20.87
Į.	10/29/1998	11.43	0.00	19.70
	5/7/1999	9.33	0.00	21.80
_	10/14/1999	11,50	0.00	18.17
29.67	6/28/2001	11.35	0.00	18.32
	2/11/2002	8.60	0.00	21.07
	5/13/2005	9.87	0.00	19.80
	10/21/2005	12.65	0.00	17.02
	2/9/2010	8.93	0.00	20.74
) my 17	11/13/1995	DRY	DRY	DRY
MW-17	8/1/1996	14.62	0.00	19.32
33.94	10/30/1997	15.61	0.00	18.33
	10/29/1998	DRY	DRY	DRY
	5/7/1999	13.42	0.00	20.52
22.05	10/14/1999	DRY	DRY	DRY
33.97	6/28/2001	DRY	DRY	DRY
	2/11/2002	12.68	0.00	21.29
	5/13/2005	14.64	0.00	19.33
	10/20/2005	17.74	0.00	16.23
33,96	2/9/2010	12.91	0.00	21.05
MW-18 A	11/13/1995	8.47	0.00	24.72
MW-18 33.19	8/1/1996	9.96	0.00	23.23
33.19	10/30/1997	DRY	DRY	DRY
	10/29/1998	DRY	DRY	DRY
	5/7/1999	DRY	DRY	DRY
33.24	10/14/1999	DRY	DRY	DRY
33.24	6/28/2001	DRY	DRY	DRY
	2/11/2002	DRY	DRY	DRY
	5/13/2005	DRY	DRY	DRY
	10/20/2005	DRY	DRY	DRY
31.49	2/9/2010	DRY	DRY	DRY
MW-19	11/13/1995	14.77	0.00	18.90
33.67	8/1/1996	14.24	0.00	19.43
33.07	10/30/1997	14.47	0,00	19.20
	10/30/1998	16.11	0.75	18.16 20.72
	5/7/1999	12.95	0.00	171000000000000000000000000000000000000
33.72	10/14/1999	15.43	0.02	18.31 17.87
33.7.2	6/28/2001	15.85	0.00	19.64
	5/13/2005	14.08	0.00	16.79
	10/21/2005	16.93	0.00	10,75
	N STATE OF THE STA	Well A	Abandoned	21,08
MW-19N A	2/9/2010	13.98	0.00	
35.06 MW-20	11/13/1995	21.99	0.00	8.37
	8/1/1996	22.66	0.00	7.70
30.36	10/30/1997	23.72	0.00	6.64
	10/30/1998	27.70	0.00	2.60
	5/7/1999	19.30	0.00	11.0

Table 1. Groundwater Elevation Data Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

Sample Location	Measurement Date	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
	1.44241005	DRY	DRY	DRY
MW-21	11/13/1995	10.65	0,00	19.41
30.06	8/1/1996	11.50	0.00	18.56
	10/30/1997	DRY	DRY	DRY
	10/29/1998		0.00	20.49
	5/7/1999	9.57	DRY	DRY
30.08	10/14/1999	DRY	DRY	DRY
	6/28/2001	DRY	0.00	22.93
	2/11/2002	7.15	0.00	21.17
	5/13/2005	8.91		DRY
	10/20/2005	DRY	DRY	21.01
28.36	2/9/2010	7.35	0.00	21.65
MW-22 A	2/9/2010	10.14	0.00	21.05
31.79				21.62
MW-23 A	2/9/2010	10.50	0.00	21.63
32.13				
	2/9/2010	11.15	0.00	21.55
MW-24 A	2/3/2010			
32.70	6/28/2001	16.27	0.00	
RW-4	2/12/2002	12.38	0.00	
	5/13/2005	14.28	0.00	
	10/21/2005	16.40	0.00	
	10/21/2003	Well Ab	andoned	
	6/28/2001	9.42	0,00	-
RW-5	2/12/2002	6.7	0.00	
		8.12	0,00	-
	5/13/2005	9.74	0.00	1
	10/20/2005	7.41	0.00	21.34
28.75	2/9/2010	14.52	0.00	19.01
RW-6	6/28/2001	11.59	0.00	21.94
33.53	2/12/2002	13.40	0.00	20.13
	5/13/2005	15.21	0.00	18.32
	10/20/2005		bandoned	
			0,00	19.61
P-1	11/13/1995	9.74	0.00	5 N
29.35	e e e e e e e e e e e e e e e e e e e	125	0.00	20.87
P-2	11/13/1995	4.35	0.00	
25.22		11.00	0.00	17.58
EX-1	11/13/1995	14.72	0.00	₩ £.50486
32.3			0.00	21.50
GP1	5/7/1999	5.05		21.94
GP2	5/7/1999	10.3	0.00	21.19
GP3	5/7/1999	10.9	0.00	20,55
GP4	5/7/1999	10.2	0.00	20.11
GP5	5/7/1999	6.86	0.00	18.28
GP6	5/7/1999	8.89	0.00	20.37
GP7	5/7/1999	10.5	0.00	
GP8	5/7/1999	7.71	0.00	21,66
GP9	5/7/1999	8.06	0.00	21.60

Note

^{-- =} Top of casing elevation not known.

A - Surveyed by SLR on March 4, 2010

Table 2. Groundwater Analytical Results TPH-Dx and TPH-Gx

Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

		Silica Ge	el	TPH-I (µg/			TPH-Gx ^B	Tot TPI	
Sample Location	Sample Date	Cleanu _l (TPH-D		Diesel	Heav Oil	(5) N	(μg/L)		
			-	500	500		800	50	
ITCA Method	d A Cleanup L	evel	+	12,000	<5,00	0 D	<80		000
MW-1	11/13/1995	No		5,430	1,23		233		393
N.	10/29/1998	No_	-+-	10,400	2,85		57	-	250
	10/14/1999	No		8,140	1,00	60	269		169
	10/20/2000	No	_	1,980	<50	00			980
	10/20/2000	Yes	-	796	<62	25	392		188
	6/28/2001	Yes		271	<5	00		1 2	71
	2/12/2002	Yes		<250	<5	00		1-	0
	5/13/2005	Yes Yes		268	<4	76			268
	10/20/2005	No		5,600	1,2	250	<80		,850
	8/30/2007			910	1.	50	<100	_	,060
	2/9/2010	Yes		26,400		-	<50		5,400
MW-2	8/28/1990	No		10,000			3,100	_	3,100
	8/2/1994	177		40,000	7,	400	4,000		1,400
	11/13/1995	No		4,700			<80		1,700
	0.1	111330		9,030	<2	,500	3,220		2,250 2,520
	10/29/1998	- 37		9,060	3,	,460			0,212
	10/14/1999			7,740		,610	862		3,227
1	10/20/2000	**		2,480		747			11,540
1	10/20/2000	37		8,400		,240	900		7,450
1	6/28/2001 2/12/2002		es	5,700	1	,750		-	2,906
A.	5/13/2005	**	es	2,070		836			4,950
* e	10/20/200		es	3,760		1,190	100	-	12,420
V .	8/30/200	-	lo l	9,390		2,850	180	+	45
1	2/10/201	-	es	<100		<250	45	-	4,890
2 4771 2	11/13/199		No	4,600		<5,000	290 282		15,782
MW-3	10/30/199		No	11,400		4,100		+	20,390
4	10/14/199		No	15,500		4,890	529		2,089
	6/28/200		Yes	1,560		<588	323	+	435
	2/12/200		Yes	435		<500	 	-	710
1	5/13/200		Yes	710		<500		-	428
	10/20/20		Yes	428		<476	<80	-	13,310
	8/30/20		No	9,390		3,920	<100	-	5,410
	2/9/201		Yes	4,500		910	.390		8,190
MW-4	111111111111111111111111111111111111111		No	7,800		<5000	380		11,380
141 44	8/1/199		No	11,000		2,920	1,120		15,240
	10/29/1		No	11,200		5,180			22,380
	10/14/1		No	17,200		<500	-		965
	5/13/20		Yes	965		<476			319
1	10/20/2		Yes	319	_+	3,330	88		19,018
	8/30/20	007	No	15,60		100	<10		830
	2/10/2	010	Yes	730		770	<80		3,370
MW-5	-5 11/13/1		No	2,600		680	-		3,060
	10/14/		No	7,00		1,500	<10	00	8,500
	2/10/2	.010	Yes	48,00		<5,000	74	0	48,740
		100000000000000000000000000000000000000	No			6,790	<8	0	33,790
5,000	10/30/		No	19,70		2,810	-		22,510
	10/14/		No			2,360	0.0	6	33,496
	10/20/	2000	No	30,2 13,5		1,390		-	14,890
	10/20	2000	Yes	5,66		822		12	6,694
1	6/28/	2001	Yes	31,5		3,380			34,880

Table 2. Groundwater Analytical Results TPH-Dx and TPH-Gx

Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

	6	Silica Gel	ΤΡΗ-Ι (μg/J		TPH-Gx ^B	Total	
Sample Location	Sample Date	Cleanup (TPH-Dx)	Diesel	Heavy Oil	(µg/L)	TPH C	
ITTC A Mathe	l A Cleanup Lev	el	500	500	800	500	
	8/2/1994	No	7,700	144	1,600	9,300	
MW-7		No	43,000	<5,000	1,800	44,800	
	11/13/1995	No	35,800	<10,000	1948	35,800	
	8/24/1999	Yes	28,900	<5,000		28,900	
	8/24/1999	No	25,800	3,950		29,750	
	10/14/1999	No .	61,800	<10,000	2,110	63,910	
	10/20/2000	Yes	76,100	<5,000		76,100	
	10/20/2000	Yes	1,590	<500		1,590	
	2/12/2002	Yes	1,450	<500	<80	1,450	
	5/13/2005	Yes	4,540	<481	<800	4,540	
	10/21/2005	Yes	10,000	1,600	190	11,790	
MW-7N	2/9/2010	No	490,000	41,000	5,400	536,400	
MW-8	11/13/1995	No	19,500	2,400		21,900	
	10/14/1999	Yes	2,990	<500	-	2,990	
1 000 000	2/12/2002	Yes	9,600	2,000	<100	11,600	
MW-8N	2/9/2010	No	880	630	<80	1,510	
MW-9	11/13/1995	No	5,760	2,030	<80	7,790	
	10/30/1998	No	4,250	2,330		6,580	
	10/14/1999	Yes	446	811	22	1,257	
	10/14/1999	Yes	498	<500		498	
	5/13/2005	Yes	824	852		1,676	
	10/20/2005	Yes	600	740	<100	1,340	
	2/10/2010	No	<250	<500	760	760	
MW-10	11/13/1995	Yes	522	1,910		2,432	
	5/13/2005	Yes	3,500	940	<100	4,440	
	2/10/2010	No	<500		<200	0	
MW-11	8/2/1994 11/13/1995	No	11,000	<5000	<80	11,000	
	10/29/1998	No	3,160	698	<80	3,858	
	10/14/1999	No	3,160	<500		3,160	
	10/14/1999	Yes	<250	<500		0	
	5/13/2005	Yes	<250	<500		0	
	10/21/2005	Yes	<236	<472		0	
	8/31/2007	No	402	<476	<80	402	
	2/10/2010	Yes	6,400	1,800	<100	8,200	
2.077.10	11/13/1995	No	<250	<500	<80	0	
MW-12	8/1/1996	No	<250		<80	0	
	10/29/1998	No	<250	<500	<80	0	
	10/14/1999	No	<250	<500	**	0	
1	5/13/2005	Yes	<250	<500	-	0	
		Yes	<236	<472		0	
	10/20/2005 8/30/2007	No	<238	<476	<80	0	
1	2/10/2010	Yes	4,300	690	<100	4,990	
1 my 12	8/28/1990	No	<50		<50	0	
MW-13	8/2/1990	No	1,200	-	<200	1,200	
NI.			1,400	<500	<80	1,400	
	11/13/1995	No	900		<80	900	
	8/1/1996		1,530	750	<80	2,280	
1	10/30/1997	_	1,500	854	-	2,354	
			<250	<500		0	
	10/14/1999	Yes	<250	<500	<80	0	
	6/28/2001		<250	<500		0	
	2/12/2002	Yes	<250	<500		0	
	5/13/2005		<238	<476		0	
	10/20/2003		<243	<485	-	0	
	9/13/2007	res	7473		<100	220	

Table 2. Groundwater Analytical Results TPH-Dx and TPH-Gx

Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

		Silica Gel	TPH-D: (µg/L)		TPH-Gx ^B	Total
Sample Location	Sample Date	Cleanup (TPH-Dx)	Diesel	Heavy Oil	(μg/L)	TPH ^C
500 (B) (I -	d A Cleanup Le	val	500	500	800	500
		No	1,000	<500	<80	1,000
MW-14	11/13/1995	No	1,800		<80	1,800
	8/1/1996	No	<250	<500	<80	0
	10/30/1997	No	3,820	1,810	44	5,630
	10/14/1999 10/14/1999	Yes	<250	<500		0
	6/28/2001	Yes	<294	<588	108	108
	2/12/2002	Yes	<250	< 500		0
	5/13/2005	Yes	<250	< 500		0
	10/20/2005	Yes	<250	<500		0
	2/10/2010	Yes	500	130	<100	630
MW-16	8/28/1990	No	4,910		1,000	5,910
IAI AA - 1 O	8/2/1994	No	11,000		1,100	12,100
	11/13/1995	No	10,000	2,100	900	13,000
	8/1/1996	No	<500	-	740	740
	10/30/1997	No	9,010	2,700	1,220	12,930
	10/29/1998	No	11,600	2,590	482	14,672
1	8/24/1999	No	9,900	2,130		12,030 842
	8/24/1999	Yes	842	<500		14,950
	10/14/1999	No	12,300	2,650		1,190
	10/14/1999	Yes	1,190	<500	162	15,193
	10/20/2000	No	13,200	1,530	463	1,510
ł.	10/20/2000	Yes	1,510	<500	261	2,161
1	6/28/2001	Yes	1,800	<500	361	1,220
	5/13/2005	Yes	1,220	<500		572
	10/21/2005	Yes	572	<472	116	15,616
-	8/31/2007	No	12,700	2,800	<100	0
	2/10/2010	Yes	<100	<250		0
MW-17	5/13/2005	Yes	<250	<500 <472		0
1	10/20/2005	Yes	<236	<472	<80	0
1	8/30/2007	No	<236	<250	<100	0
	2/10/2010	Yes	<100	2,100	<80	7,000
MW-18	11/13/1995		4,900	2,100	<80	9,600
	8/1/1996	No	9,600 35,200		<50	35,200
MW-19		No	69,000	<25,000	4,300	73,300
	11/13/1995	2020	21,600	3,180	2,860	27,640
l l	10/30/1997		35,000	4,280	3-8	39,280
	10/14/1999		5,280	<500		5,280
	10/14/1999 2/12/2002		19,800	<5,000	==	19,800
	5/13/2005		9,990	1,260	390	11,640
	10/21/2003		35,500	4,140	<800	39,640
	8/31/2007		30,700	4,680	-	35,380
MW-19			4,700	670	<100	5,370
MW-19	200000000000000000000000000000000000000		870	730	<80	1,600
141 44 -50	10/30/199		<250	<500	<80	16 12/
	10/20/200		14,500	1,340	294	16,134
	10/20/200		878	<500	-	878
MW-2			-			0
171.11.2	5/13/200	2.0	<250	<500		0
	2/9/2010		<100	<250	<100	17,30
MW-2	The second secon		14,000	3,100	200	20,99
	Duplicat		17,000	3,800	190 380	12,48
MW-2	2/9/2010		11,000	1,100	520	3,700
MW-2) Yes	2,800	380	320	5,700

Table 2. Groundwater Analytical Results TPH-Dx and TPH-Gx

Former Columbia Marine Lines Facility 6305 Lower River Road, Vancouver, Washington

G10	Sample	Silica Gel	ΤΡΗ-I (μg/		TPH-Gx ^B	Total
Sample Location	Date	Cleanup (TPH-Dx)	Diesel	Heavy Oil	(µg/L)	TPH ^C
ITCA Method	A Cleanup Le	vel	500	500	800	500
	10/20/2000	No	10,400	1,020	782	12,202
KW-4	10/20/2000	Yes	<250	< 500		0
ļ-	6/28/2001	Yes	806	<588	550	1,356
-	2/12/2002	No	2,430	< 500		2,430
-	5/13/2005	Yes	2,280	< 500		2,280
-	10/21/2005	Yes	867	<476		867
-	8/30/2007	No	16,400	2,090		18,490
RW-5	10/20/2000	No	12,700	2,720	491	15,911
RW-5	10/20/2000	Yes	696	<500		696
-	6/28/2001	Yes	29,000	1,580	2,010	32,590
F	2/12/2002	Yes	405	<500	22	405
-	5/13/2005	Yes	2,120	<500	(57 /4	2,120
-	10/20/2005	Yes	502	<481		502
-	2/10/2010	Yes	2,900	490	<100	3,390
RW-6	2/3/1996	No	13,000	2,500	5,300	20,800
KW-6	6/28/2001	Yes	2,020	<500	1,580	3,600
22	2/12/2002	Yes	1,040	< 500	2-	1,040
+	5/13/2005	Yes	1,060	< 500	50	1,060
t	10/20/2005	Yes	384	<481		384
1	8/31/2007	100	11,600	1,270	104	12,974
GP1	5/7/1999	No	335	< 500	<80	335
GP1 GP2	5/7/1999	No	17,900	< 500	2,710	20,610
GP2 GP3	5/7/1999	No	13,100	<500	2,780	15,880
GP4	5/7/1999	No	486	< 500	<80	486
GP4 GP5	5/7/1999	No	1,970	< 500	<80	1,970
GP6	5/7/1999	No	<250	<500	<80	0
GP6	5/7/1999	No	11,800	<500	<80	11,800
GP7	5/7/1999	No	15,200	<500	479	15,679
GP9	5/7/1999	No	4,930	<500	<80	4,930
GPE-1-GW	8/24/2007	No	2,830	714	199	3,743
GPE-1-GW GPE-2-GW	8/24/2007	No	1,170	<490	<80	1,170
GPE-2-GW	8/24/2007	No	5,590	1,660	162	7,412
Rinsate Blank	2/10/2010	Yes	50 ^J	<250	<100	50
Trip Blank	2/10/2010	Yes	<100		<100	0

- A TPH Diesel Range and Residual Range per NWTPH-Dx method
- B TPH Gasoline Range per NWTPH-Gx method
- C Total Value of TPH Diesel, Residual and Gasoline
- D $<\!5,\!000$ indicates detected below laboratory detection limit of $5,\!000\mu\text{g/L}$

Laboratory Qualifiers from ESC

J - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Page 4 of 4

Table 3. Groundwater Analytical Results and Natural Attenuation Parameters Former Columbia Marine Lines Facility Vancouver, Washington

T		anganese μg/L ^G		390	1,000	68		6,200	1,700	2.8		5.500	5.100 V	230	310		1	1	1					1		٠		
		Σ		3	1,			. 6.	-	-		-	-	+	-		H	35	+	+	1	+	+	+	1	1		
		Methane $\mu g/L^E$		32	260	<10 H		200	240			350	1	1	-		1	-		1	1	+	1	+	+	+	-	
Analyses		Alkalinity ug/L ^D		19,000 1	120 000	61.000		150,000	40,000	16,000	2000	000	310,000	27,0,000	220,000	200,022	1	3	1	1	1	1	1	1	!	i i	;	ľ
Laboratory Analyses		SO ₄	l b	000 00	14,000	14,000	00000	000 000	3/0,000	150,000	7,000		110,000	180,000	100,000	1,500	,	1		1	1		3	1	1	1	1	
T		Ferrous Iron (Fe ⁺²)	hg/L	9	01	22,000	200		100,000	11,000	72		140,000	120,000	650	280		1	1	1		1	!	1	-	1	1	
			μg/L°	-	1,500	420	870		<100	10,000	410		<100	<100	13,000	350		1	1		-	1					: :	
-		-	Visual		SI. Cloudy	Cloudy	SI. Cloudy		Yellow tint	Clear	Clear		Yellow tint	Clear	Clear	Clear		Black tint	Clear	Clear	Clear	Cloudy	Clear	Clear	Clear	Clear	Yellow tint	Clear
		ORP	mV		43.6	-57.1	H		-33.5	29.5	-22.0		1001		49.7	-54.8		0.68-	-103.5	-103.9	-107.2	-59.9	-7.5	-85.8	-99.3	-36.4	-82.0	-55.6
\dagger \land \dagger	rements	Dissolved	mg/L		1.06	88 9	5.79		2.18	0.50	9 11		5	1.02	0.00	0.45	10:0	750	05.0	0.62	0.88	3.26	6.72	4.87	0.98	1.60	090	0.34
	Field Measurements	a a	Hd		5.16	2.10	7.10	00.00		0.30	2 /4	(5.7)		6.84	7.94	5.60	07.7	9	7.19	7.46	80.1	17.1	7.07	6.45	6.73	0.73	6 07	6.98
		-	uctivity mS/cm			0.334	0.324	0.154		1.166	0.337	0.056		1.033	1.181	0.442	0.751		0.240	0.528	0.763	0.378	0.502	0.178	0.152	0.287	0.001	0.520
		Temp-	erature	1		11.78	13.46	96.6		12.49	16.46	11.34		13.60	12.74	13.22	14.23		12.48	12.70	12.50	10.25	8.26	10.51	10.38	11.96	13.40	13.88
	L		_	Date		2/9/2010	2/9/2010	2/10/2010		2/9/2010	2/9/2010	2/9/2010		2/9/2010	2/9/2010	2/9/2010	2/9/2010		2/10/2010	2/10/2010	2/10/2010	2/10/2010	2/10/2010	2/10/2010	2/10/2010	2/10/2010	2/10/2010	2/10/2010
				Well Number	Flow Path 1				Flow Path 2	L			12	NW-8N	MW-23	MW-24	MW-13	Othor Wells	Cullet Well	7-MW-7	MAXIS	C-WIVI	MW-10	C1_WW	MW-12	MW-14	MW-10	MW-22

Notes:

B - Laboratory analyses performed by national laboratory Environmental Science Corp. of Mt. Juliet, TN C - Nitrates and Sulfates per 9056 method A - Field Measurements taken with YSI 556 Multi-meter

D - Alkalimity per 2320B method E - Methane per RSK175 method

G - Dissolved Manganese per 6020 method F - Ferrous Iron per 3500Fe-B method

H -<10 indicates analyte not detected above the laboratory detection limit of 10 micrograms per liter ($\mu g/L$) I - Low recharge, only 1 round of parameters were collected prior to sampling

Laboratory Qualifiers from ESC

J. Estimated value below the lowest calibration point. Confidence correlates with concentration - ESC

J. Estimated value below the lowest calibration is too high to evaluate accurate spike recoveries

V. Additional QC info: The sample concentration is too high to evaluate accurate spike recoveries

1 of 1

MONITORING WELL BORING LOGS

WELL NUMBER MW-7N PAGE 1 OF 1 1800 Blankenship Rd; Suite 440 West Linn, Oregon 97068 Telephone: (503) 723-4423 SLR International Corp Fax: (503) 723-4436 PROJECT NAME Former Columbia Marine Lines CLIENT Crowley Maritime Corporation PROJECT LOCATION Vancouver, WA DATE STARTED 2/5/10 COMPLETED 2/5/10 GROUND ELEVATION HOLE SIZE 4 DRILLING DRILLING CONTRACTOR Cascade Drilling GROUND WATER LEVELS: AT TIME OF DRILLING _---DRILLING DRILLING METHOD Direct Push LOGGED BY C. Kramer CHECKED BY AT END OF _---AFTER DRILLING _---NOTES SAMPLE TYPE NUMBER WELL DIAGRAM GRAPHIC U.S.C.S. MATERIAL DESCRIPTION DEPTH (ft) SAND: brown, fine grained, moist at 10', transition to gray sand Cement Seal Bentonite Seal Sand Filter 5 Pack 10 PVC Screen -Prepack Sand Filter SAND: with silt, wet SM SAND and SILT: moist to wet, soft, gray SP-15.0 15 SM SILT: gray, roots, dense Slough Backfill ML Bottom of hole at 17.0 feet. GENERAL BH / TP / WELL CROWLEY 2-11-10.GPJ GINT US.GDT 2/16/10

												1	WEL	LNU	JMB	ER I	MW-8N ge 1 of 1	
SLR Inter	R	West	Blankensh Linn, Oreg hone: (503 (503) 723-	on 97068 723-44	В	618		2					n norgh na -	noja artuminano				
	Crowle								_ PRO	JECT NAME	Former (Columbi	a Marine	Lines				-
PROJEC	CT NUMB	ER 00	08.0205.	00020					PRO	JECT LOCA	TION Vai	ncouver	, WA	HOLES	IZE 4			
DATES	STARTED	2/5/1	0		COMP	LETED	2/5/10		GRO	OUND ELEVA	TION	2.		IOLL O				
DRILLI	NG DRILL	ING C	ONTRAC	TOR _	Cascad	e Drilling	1			OUND WATE								_
DOLL II	NG DRILL	ING M	ETHOD	Direc	t Push_					AT END O								-
						KED B				AFTER DR	RILLING _							
NOTES	S												74					
DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG							ESCRIPTION	N					WELL [DIAGRAM	
0				S	AND: bro	own, fine	e grained	d, moist, tr	ace grave	el						1	- Cement Sea	al
										*							-Bentonite S	eal
5																	- Sand Filter Pack	
-		SP																
10																	— PVC Scre Prepack S	en - Sand
]	SP- SM		1.5	SAND a	ind SILT and SILT	: gray : gray, v	rery wet, sl	neen and	soil staining	at 14', stiff	silt at e	nd of run	j			Filter	
15		SP-																
									i i								- Slough B	ackfill
-	_			17.0					Bottom of	f hole at 17.0	feet.				±.40.			
1																		
0																		
DT 2/16/1									**				ģ0					
NT US.G																		
0.GPJ GI																		
SY 2-11-1													34 34					
CROWLE																		
/ WELL																	# #	
GENERAL BH / TP / WELL GROWLEY 2-11-10.GPJ GINT US.GDT 2/16/10					2										;; ;;			
GENE															18			

				WELL NUME	BER MW-19N PAGE 1 OF 1
SIR	1800 Blankenship F West Linn, Oregon Telephone: (503) 7:	23-4423		Li- Marino Lince	1
SLR International Corp	Fax: (503) 723-440	ation	PROJECT NAME Former Colum	nbia Marine Lines	
CLIENT Crowley M PROJECT NUMBER	antime Corpora	020		HOLE SIZE	4
	014140	COMPLETED ZIALIO	···		N
THE PER LINE	CONTRACT	OR Cascade Dilling	SE ZIME OF DRILLING		
1000	O SETUDD I	Direct Push			
LOGGED BY C. K	(ramer	CHECKED BY	AFTER DRILLING		
NOTES					
DEPTH (ft) SAMPLE TYPE NUMBER	U.S.C.S. GRAPHIC LOG		MATERIAL DESCRIPTION		WELL DIAGRAM
0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		SAND: brown, fine-grained			Cement Seal
5	SP				Bentonite Seal Sand Filter Pack
	SP	SAND: gray, fine-grained 17.0 SILT and SAND: gray, fine	e-grained sand, wet	. I	PVC Screen - Prepack Sand Filter
- +	ML			52 T	
20	ML	20.0 SILT: gray			Slough Backfill
T 2/16	1111	22.0	Bottom of hole at 20.0 feet.		
GENERAL BH / TP / WELL CROWLEY 2-11-10.GPJ GINT US.GDT 2/16/10					
IL CROWLEY		,		ë Æ	
FAL BH / TP / WE					
GENE					

	WELL NU	MBER MW-22. PAGE 1 OF 1
SIR 1800 Blankenship Rd; Suite 440 West Linn, Oregon 97068 Telephone: (503) 723-4423 SLR International Corp Fax: (503) 723-4436	The Marina Lines	
L. Maritimo Cornoration	PROJECT NAME Former Columbia Marine Lines PROJECT LOCATION Vancouver, WA	
PROJECT NUMBER 008.0205.00020 DATE STARTED 2/5/10 COMPLETED 2/5/10	PROJECT LOCATION VARIOUS HOLE SIZE	ZE _4
DATE STARTED 2/5/10 COMPLETED 2/5/10	GROUND WATER LEVELS:	
WILLIAM CONTRACTOR Cascade Diminis	AT TIME OF DRILLING	
Direct Push	AT END OF	
LOGGED BY C. Kramer CHECKED BY	AFTER DRILLING	
NOTES		
(#) SRAP SRAP COLOR COLOR	ATERIAL DESCRIPTION	WELL DIAGRAM
O SAND: brown, fine grained, trace g	gravel, trace plant roots, increasing silt and wetness, organio	Cement Seal
odor around 9'		Bentonite Seal
5 SP		Sand Filter Pack
10.0		
10.0 SAND and SILT: trace clay, wet	at end of furi	PVC Screen -
F 7 SM [:]]]]	n	Prepack Sand Filter
SAND and SILT: very wet		
SP- (3) (1) (15) (15) (15) (15) (15) (15) (15)		
- SILT: dense, gray		Slough Backfill
ML	Bottom of hole at 19.0 feet.	1992
	Bollott of Hole at 1918	
9		
27/6/		
IG9		
SO		(1)
3		
97		
12		
WILE)		
8		
WELL		
(AL)		
GENERAL BH / TP / WELL CROWLEY 2-11-10.GPJ GINT US.GDT 2/16/10		
SE SE		
Θ		

/		1800) Blankens	hip Rd; S	Buite 440		WELL N	PAGE 1 OF 1
SIRING	R	Wes	t Linn, Ore	gon 9706 (3) 723-4	58 423	0.1	umbio Marine Lines	
CLIENT	· Crowlev	Marit	ime Cor	ooration	1	PROJECT NAME Former Colu	uyer WA	
PROJE	CT NUMB	ER_0	08.0205	.00020)	PROJECT LOCATION Vancou GROUND ELEVATION GROUND WATER LEVELS:	HOLE	SIZE 4
DATES	STARTED	2/5/	10		COMPLETED 2/5/10	GROUND WATER LEVELS:		
DOULE	NG DPILL	ING C	:ONTRA	CTOR	Cascade Drilling	AT TIME OF DRILLING		
	NO DOLL	IMC B	METHOL	Dire	ct Pusn		****	
LOGG	ED BY _C	. Kran	ner		CHECKED BY	AFTER DRILLING		
NOTES	S							
DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG		MA	ATERIAL DESCRIPTION	II	WELL DIAGRAM
0	\	-	7.33.53		SAND: brown			Cement Seal
1 -					8			
1	-					8		Bentonite Seal
-	-							
-	+	SP						Sand Filter Pack
5_	-							
T	-			8		a v		
-	-	1						
-	1			9.0	SAND: gray, with silt, wood debri	s 11' to 12'		
10				1	SAND: gray, with siit, wood debit	, i i i i i i i i i i i i i i i i i i i		PVC Screen -
	0	SF	·					Prepack Sand Filter
]			12.0	SAND and SILT: gray, wet, soft			
					SAMD and OLEVY 5-197			
-		S						
1;	5	3	'' <u> </u>					Slough Backfi
1	4	-		16.0	SILT: gray, dense	No. 20 constant	-03	Clough Salam
-	4	N		17.0	AND SOCIOLOGY (AND \$100 AND	Bottom of hole at 17.0 feet.		
								2
16/10		1						*
DT 2	- 1							
US.G	1	- 1						
GINT		1			0			,
G G							*	,
1-10.								
CROWLEY 2-11-10.GPJ GINT US.GDT 2/16/10			AC .	1		8,		
OWLE			1					
, R						86		
WELI								,
(TP)								
GENERAL BH / TP / WELL			1					
ÉERA					2			
GE			$oldsymbol{\perp}$					

		WELL NUMBER MW-24
SLR International Co	1800 Blankenship Rd; Suite 440 West Linn, Oregon 97068 Telephone: (503) 723-4423 pp Fax: (503) 723-4436	PAGE 1 OF 1
CIENT Crowley	Maritime Corporation	PROJECT I OCATION Vancouver, WA
DO JECT NUMBI	ER 008.0205.00020	PROJECT LOCATION Vancouver, WA
· OT A DEED	O/F/10 COMPLET	ED 2/5/10 GROUND ELEVATION
DATESTARTED	ING CONTRACTOR Cascade Dri	lling GROUND WATER LLVELO.
DRILLING DRILL	ING METHOD Direct Push	AT THUL OF BRIDE
DRILLING DRILL	. Kramer CHECKED	BY AT END OF
NOTES		,
O DEPTH (ft) (ft) SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION WELL DIAGRAM WELL DIAGRAM
0	SAND: brown,	trace plant roots 0' to 0.5', trace silt @ 4.5', increasing silt and density — Cement Seal — Bentonite Seal — Sand Filter Pack
10 15	SP- SM	LT: gray, wet, increasing silt, odors around 7' to 10' PVC Screen- Prepack Sance Filter
	SILT: gray,	dense
20	ML	Bottom of hole at 20.0 feet.
GENERAL BH / TP / WELL CROWLEY 2-11-10.GPJ GINT US.GDT 2/16/10		BOITOM OF HORE AT 20.0 FOOT.

GROUNDWATER MONITORING FIELD DATA SHEETS

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MW-1 SAMPLE I.D.: MW-1 PURGED BY: ROJECT #: 008.0205.00020 SAMPLED BY: CLIENT NAME: Crowley Marine Services QA SAMPLES: LOCATION: Vancouver, WA START (2400hr) ______ END (2400hr) ____ DATE PURGED 2/9/10 SAMPLE TIME (2400hr) DATE SAMPLED 2/9 Treatment Effluent Surface Water Groundwater SAMPLE TYPE: 6" (1.50) (0.38) 4" (0.67) CASING DIAMETER: 2" (0.17) (1.02)(0.67)CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP CONDUCTIVITY (MS/cm) pH TEMP. (visual) VOLUME TIME (units) (degrees C) 0.319 11.65 11.60 11.68 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (PVC or _____disposable) Bailer (Stainless Steel) Bladder Pump Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Other: ____ Pump Depth: LOCK#: WELL INTEGRITY: Page SIGNATURE:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MW-2 SAMPLE I.D.: MW-2 PURGED BY: *ROJECT #: 008.0205.00020 SAMPLED BY: CLIENT NAME: Crowley Marine Services QA SAMPLES: LOCATION: Vancouver, WA START (2400hr) ______ END (2400hr) ___ DATE PURGED 7/10/10 SAMPLE TIME (2400hr) _____// 1/O DATE SAMPLED 2/10/10 Treatment Effluent Surface Water Groundwater X SAMPLE TYPE: 5" (1.02) 6" (1.50) 8" CASING DIAMETER: 2" (0.17) (2.60)(0.67)(0.38) CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY . DO ORP CONDUCTIVITY pH TEMP. VOLUME (visual) TIME DATE (units) (xS/cm) (degrees C) plack (2400hr) 0.242 black 11:02 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bladder Pump Bailer (PVC or disposable) Bailer (Stainless Steel) Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) ____ Dedicated _____ Peristalic Pump Submersible Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY: REMARKS: Cheen Was Page SIGNATURE:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MW-3 PURGED BY: RF4CK ROJECT #: 008.0205.00020 SAMPLE I.D.: MW-3 SAMPLED BY: LFOCK CLIENT NAME: Crowley Marine Services QA SAMPLES: LOCATION: Vancouver, WA START (2400hr) 4:45 END (2400hr) DATE PURGED 49110 SAMPLE TIME (2400hr) DATE SAMPLED Treatment Effluent Surface Water Groundwater SAMPLE TYPE: 6" (1.50) CASING DIAMETER: 2" (2.60)(0.38) (1.02)Casing Volume: (gallons per foot) (0.17) (0.67)CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP CONDUCTIVITY pH TEMP. VOLUME . (visual) TIME DATE (units) (µS/cm) (degrees C) (2400hr) 7.03 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bladder Pump Bailer (PVC or ____ disposable) Bailer (Stainless Steel) Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated ____ Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY: REMARKS: Slight petroleum odor of SIGNATURE:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MIND PURGED BY: FORCK ROJECT #: 008.0205.00020 SAMPLE I.D.: WWW. SAMPLED BY: REACK CLIENT NAME: Crowley Marine Services OA SAMPLES: Vancouver, WA LOCATION: END (2400hr) DATE PURGED 2/60/60 START (2400hr) //1, 7 7 SAMPLE TIME (2400hr) 2/10/10 DATE SAMPLED Treatment Effluent Surface Water Groundwater SAMPLE TYPE: CASING DIAMETER: (1.50) (2.60)(1.02)(0.38) Casing Volume: (gallons per foot) (0.17) (0.67)CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MÉASUREMENTS TURBIDITY ORP CONDUCTIVITY pH TEMP. VOLUME (visual) TIME DATE (units) (µS/cm) (degrees C) (2400hr) 2,499 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES ____NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (____ PVC or ____ disposable) Bladder Pump Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Bailer (Stainless Steel) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Other: Pump Depth: ___ LOCK#: WELL INTEGRITY: Page _ SIGNATURE:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET PURGED BY: CK+RF WELL I.D.: MUZ-5 ROJECT #: 008.0205.00020 SAMPLE I.D.: MW5 SAMPLED BY: CKTRF CLIENT NAME: Crowley Marine Services QA SAMPLES: LOCATION: Vancouver, WA START (2400hr) 10 : 30 END (2400hr) DATE PURGED 2/10/10 SAMPLE TIME (2400hr) // 10:40 DATE SAMPLED 2/10/10 Surface Water _____ Treatment Effluent Groundwater SAMPLE TYPE: 5" (1.02) 6" (1.50) 8" (2.60) CASING DIAMETER: 2" Casing Volume: (gallons per foot) (0.17)(0.67) (0.38)CASING VOLUME (gal) = ___ DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS ORP TURBIDITY pН CONDUCTIVITY TEMP. VOLUME TIME DATE (visual) (units) (xS/cm) (degrees C) (2400hr) Clear dear SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES ____NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bladder Pump Bailer (____ PVC or ____ disposable) Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Centrifugal Pump Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Submersible Pump Dedicated Peristalic Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY: SIGNATURE: __

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELLI.D.: MW-71 PURGED BY: CK & FF 008.0205.00020 'ROJECT#: SAMPLE I.D.: MW-71 SAMPLED BY: CKYRF CLIENT NAME: Crowley Marine Services OA SAMPLES: Vancouver, WA LOCATION: START (2400hr) 18:45 END (2400hr) 2/109/10 DATE PURGED SAMPLE TIME (2400hr) 2/9/10 DATE SAMPLED Other Treatment Effluent Surface Water Groundwater SAMPLE TYPE: CASING DIAMETER: (1.50) (2.60)((1.02)(0.17)(0.67) (0.38)Casing Volume: (gallons per foot) CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP CONDUCTIVITY DO pH TEMP. VOLUME TIME DATE (visual) (AS/cm) (units) (degrees C) cloudy-yellow (2400hr) 1.163 1.163 1.166 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES____ SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bladder Pump Bailer (Teflon) Bladder Pump PVC or __disposable) Bailer (Centrifugal Pump Bailer (PVC) Centrifugal Pump Bailer (Stainless Steel) Submersible Pump Bailer (Stainless Steel) Submersible Pump Dedicated Peristalic Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#:

Page ___

WELL INTEGRITY:

SIGNATURE:

setpleum odor

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELLI.D.: MW 891 SAMPLE I.D.: MW-8 PURGED BY: ROJECT #: 008.0205.00020 SAMPLED BY: CK CLIENT NAME: __Crowley Marine Services OA SAMPLES: Vancouver, WA LOCATION: __ END (2400hr) _ START (2400hr) 10 119 DATE PURGED 2/9/10 Treatment Effluent DATE SAMPLED Surface Water Groundwater SAMPLE TYPE: 5" (1.02) (1.50) (2.60)CASING DIAMETER: (0.67)(0.38)(0.17) Casing Volume: (gallons per foot) CASING VOLUME (gal) = __ CALCULATED PURGE (gal) = DEPTH TO BOTTOM (feet) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP CONDUCTIVITY pH TEMP. VOLUME (units) TIME (43/cm) (degrees C) (L) (2400hr) 10:21 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (PVC or _____ disposable) Bailer (Stainless Steel) Bailer (Teflon) Bladder Pump Bailer (Teflon) Centrifugal Pump Bladder Pump Bailer (PVC) Submersible Pump Centrifugal Pump Dedicated Bailer (Stainless Steel) Peristalic Pump Submersible Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY: REMARKS: Jetnleum Dage

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MURG PURGED BY: PT+CK SAMPLED BY: PETTER SAMPLE I.D.: MW-9 ROJECT #: 008.0205.00020 CLIENT NAME: Crowley Marine Services QA SAMPLES: Vancouver, WA LOCATION: DATE PURGED 2/10/10 START (2400hr) ______ END (2400hr) ____ SAMPLE TIME (2400hr) _ 10 ; 10 DATE SAMPLED 2/10/10 Treatment Effluent Surface Water Groundwater SAMPLE TYPE: 5" (1.02) 2" (0.17) (2.60)(1.50)CASING DIAMETER: (0.67) (0.38)Casing Volume: (gallons per foot) CASING VOLUME (gal) = __ DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP pH CONDUCTIVITY TEMP. (visual) VOLUME TIME (units) DATE (µS/cm) (degrees C) dear (2400hr) 0.352 10:21 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (____ PVC or ____ disposable) Bladder Pump Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (Stainless Steel) Bailer (PVC) Submersible Pump Centrifugal Pump Bailer (Stainless Steel) Dedicated_ Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: _____ WELL INTEGRITY: Page SIGNATURE:

1000

	SLR Interna				
GROU	INDWATER SAMPL	ING FIELD DA	ATA SHEET	11. (2)	
ROJECT #: 008.0205.00020 CLIENT NAME: Crowley Marine Services LOCATION: Vancouver, WA	PURGED BY: C	. I Com	WELL I.D.:	MW-10 : MW-10 ::	_
DATE PURGED 1/10/10 DATE SAMPLED 7/10/10 SAMPLE TYPE: Groundwater .	START (2400hr) SAMPLE TIME (2400 X Surface Water)hr)	ent Effluent	Other	
CASING DIAMETER: 2" Casing Volume: (gallons per foot) (0.	3" (0.38)	(0.67) 5" (1.02	2) 6" 8	(2.60) Other (7
		CALC			1
	FIELD MEA	ASUREMENTS			
DATE TIME VOLUM (2400hr) (L)	TEMP. (degrees C)	CONDUCTIVITY (μS/cm) OSDZ	pH DO (units)	ORP TURBIDI (visua	
SAMPLE DEPTH TO WATER:	ŠAMPLĒ	INFORMATION	SAMPLE TURBIC	лтү:	
80% RECHARGE: YES NO	ANAL	YSES:			_
ODOR; SAM	MPLE VESSEL / PRESERVA	TIVE:			
PURGING EQUIPM	ENT Bailer (Teflon) Bailer (PVC) Bailer (Stainless Steel) Dedicated	Bladder F Centrifug Submersi Peristalio	SAMPLING EQU Pump Bail gal Pump Bail ible Pump Bail	er (Teflon)	disposable
WELL INTEGRITY: REMARKS: VALUE LAW VALUE	se supta	Toblecte		Page	of

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MWW PURGED BY: SAMPLE I.D.: MW-11 008.0205.00020 ROJECT #: SAMPLED BY: CACH CLIENT NAME: Crowley Marine Services QA SAMPLES: Vancouver, WA LOCATION: START (2400hr) 8:20 END (2400hr) DATE PURGED 2/10/10 SAMPLE TIME (2400hr) 8:30 DATE SAMPLED 110/10 Treatment Effluent Surface Water Groundwater SAMPLE TYPE: (0.38) (1.02) (1.50) (2.60)CASING DIAMETER: (0.67)(0.17)Casing Volume: (gallons per foot) CASING VOLUME (gal) = ___ DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP CONDUCTIVITY pH TEMP. (visual) VOLUME TIME DATE (units) (aS/cm) (degrees C) (2400hr) sedimenty 6.80 0.150 9.95 8:22 6.74 0.152 dearer SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES ____YES ____ SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bladder Pump Bailer (____ PVC or_ disposable) Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Bailer (Stainless Steel) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY: Page

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D .: MW12 PURGED BY: CK+PF SAMPLE I.D.: MW-12 'ROJECT #: 008.0205.00020 SAMPLED BY: CK+RF CLIENT NAME: _ Crowley Marine Services QA SAMPLES: LOCATION: Vancouver, WA END (2400hr) ___ START (2400hr) 9:20 DATE PURGED 2/10/10 SAMPLE TIME (2400hr) 49, 35 DATE SAMPLED 2/10/10 Treatment Effluent Surface Water Groundwater X SAMPLE TYPE: Other (1.02) (1.50) (2.60) 2" (0.17) 3" (0.38) CASING DIAMETER: (0.67)Casing Volume: (gallons per foot) CASING VOLUME (gal) = CALCULATED PURGE (gal) = DEPTH TO BOTTOM (feet) = DEPTH TO WATER (feet) = _ ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP pН CONDUCTIVITY (visual) TEMP. VOLUME (units) (uS/cm) TIME (degrees C) DATE (L) (2400hr) 0.183 10.79 0.181 10.68 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: ____YES ____NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (____ PVC or ____ disposable) Bailer (Stainless Steel) Bladder Pump Bailer (Teflon) Centrifugal Pump Bladder Pump Bailer (PVC) Submersible Pump Centrifugal Pump Bailer (Stainless Steel) ____ Dedicated ____ Peristalic Pump Submersible Pump Dedicated___ Peristalic Pump Other: Pump Depth: LOCK#: WELL INTEGRITY: SIGNATURE: __

V	SLR Interna		
	GROUNDWATER SAMPL	ING FIELD DATA SHEET	
ROJECT #: 008.0205.0002 CLIENT NAME: Crowley Marine S LOCATION: Vancouver, V	SAMPLED BY: 2	SAMP SAMP	I.D.: <u>MW-13</u> LE I.D.: <u>MW2-13</u> AMPLES:
DATE PURGED 2/9/10 DATE SAMPLED 2/0/10 SAMPLE TYPE: Grounds		(4:25)	2400hr) Other
CASING DIAMETER: Casing Volume: (gallons per foot)	2" (0.17) 3" (0.38) 4"	(0.67) (1.02) (1.50)	(2.60)
DEPTH TO BOTTOM (feet) = DEPTH TO WATER (feet) = WATER COLUMN HEIGHT (feet) =) =
	The state of the s	ASUREMENTS	8
DATE TIME (2400hr) 2/9/10 /4:20 14:22 14:24	VOLUME (L) (degrees C) 1 14.04 2 14.15 3 14.23	0.763 7.37	DO ORP TURBIDITY (visual) 1.83 -53.1 Clear 1.00 -52.1 Clear 1.01 -54.8 Clear
TO WATER	SAMPLE	INFORMATION SAMPLE T	TURBIDITY:
SAMPLE DEPTH TO WATER:			
80% RECHARGE: YES	_110	YSES:	
ODOR:	SAMPLE VESSEL / PRESERVA	TIVE:	G EQUIPMENT
Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Other:		Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Other:	Bailer (Teflon) Bailer (PVC or disposabl Bailer (Stainless Steel) Dedicated
REMARKS:			#:
			Page of

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MW-14 PURGED BY: ____ SAMPLE I.D.: MU)-14 008.0205.00020 ROJECT #: SAMPLED BY: Cl CLIENT NAME: Crowley Marine Services QA SAMPLES: Vancouver, WA LOCATION: START (2400hr) 13:37 END (2400hr) DATE PURGED 2/10/10 SAMPLE TIME (2400hr) 13'40 DATE SAMPLED 2/10/10 Treatment Effluent Surface Water Groundwater SAMPLE TYPE: 5" 6" (1.50) Other (0.38) 4" (0.67) CASING DIAMETER: (0.17) Casing Volume: (gallons per foot) CASING VOLUME (gal) = ___ DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY pН CONDUCTIVITY (visual) TEMP. VOLUME TIME (units) DATE (µS/cm) (degrees C) (2400hr) 10.77 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES SAMPLE VESSEL / PRESERVATIVE: _ SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (____ PVC or ____ disposable) Bladder Pump Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Bailer (Stainless Steel) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Pump Depth: LOCK#: WELL INTEGRITY: Page SIGNATURE:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: MW-16 SAMPLE I.D.: MW-16 PURGED BY: CKARF ROJECT #: 008.0205.00020 SAMPLED BY: CK+ RT= CLIENT NAME: Crowley Marine Services QA SAMPLES: Vancouver, WA LOCATION: END (2400hr) START (2400hr) 901 DATE PURGED 2/10/10 SAMPLE TIME (2400hr) 9:10 DATE SAMPLED 110110 Treatment Effluent Surface Water Groundwater SAMPLE TYPE: (0.38) 4" (0.67) (1.02) CASING DIAMETER: (1.50)(0.17) Casing Volume: (gallons per foot) CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY pН CONDUCTIVITY TEMP. VOLUME (visual) TIME (units) (j/S/cm) (degrees C) (2400hr) 0.277 11.70 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (____ PVC or ____ disposable) Bladder Pump Bailer (Teflon) Bladder Pump Centrifugal Pump Bailer (PVC) Bailer (Stainless Steel) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY: Page ___

7		LR Intern				4,50	
	GROUNDWA	TER SAMP	ĻING FIEL	D DATA SE	IEET	111.1	12
ROJECT #: 008.0205.0002 CLIENT NAME: Crowley Marine S LOCATION: Vancouver, V	0 PUI	RGED BY:			WELL LD.: SAMPLE I.D.: QA SAMPLES:		
DATE PURGED	ST	ART (2400hr) MPLE TIME (240 Surface Water	00hr) / //	reatment Efflue		Other	ther
CASING DIAMETER: Casing Volume: (gallons per foot)	2" (0.17)	(0.38)	(0.67)	(1.02)	(1.50)	(2.60)	(),
DELLINIO					JME (gal) = D PURGE (gal) = GE (gal) =		
and the second second		FIELD M	EASUREMENT	S	8		
DATE TIME (2400hr) (259 (1404 (407) (407) (407)	VOLUME (L)	TEMP. (degrees C) 12,56 13,17 13,136 13,40	CONDUCTIV (μS/cm) (μS	TY pH (units)	7.57 (.38 (.32 (.60	ORP - 10.7 - 13.5 - 12.6 - 36.4	TURBIDITY (visual) Sto Close "" Eller
SAMPLE DEPTH TO WATER:			E INFORMATI	S/	AMPLE TURBIDI		× 4 1
80% RECHARGE: YES	NO		LYSES:				
ODOR:		SSEL / PRESERV	ATIVE:	Sa	AMPLING EQUI	PMENT	
PURGING I Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Other:	Bailer (To Bailer (P' Bailer (So Dedicated	QUIPMENT Bailer (Teflon) Bailer (PVC) Bailer (Stainless Steel) Dedicated		Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Other:		r (Teflon) r (PV r (Stainless Stocated	eel)
					LOCK#:		
REMARKS:							
	4						Page of

100

	SLR Internal			
G	ROUNDWATER SAMPLI	NG FIELD DATA SE	HEET	
'ROJECT #: 008.0205.00020 CLIENT NAME: Crowley Marine Serv LOCATION: Vancouver, WA			WELL I.D.: MW-19N SAMPLE I.D.: MW-19N QA SAMPLES:	
DATE PURGED 2/9/10 DATE SAMPLED 2/9/10 SAMPLE TYPE: Groundwate	START (2400hr) SAMPLE TIME (2400h erX Surface Water	. 110	END (2400hr)	
CASING DIAMETER: 2" Casing Volume: (gallons per foot)	(0.17) 3" (0.38) 4"	5" (1.02)	(1.50) 8" Other (1.50)	
DEPTH TO BOTTOM (feet) = DEPTH TO WATER (feet) = WATER COLUMN HEIGHT (feet) =	,	CASING VOLUE CALCULATED ACTUAL PURG	PURGE (gal) =	
	FIELD MEAS	SUREMENTS	¥	
DATE TIME (2400hr) 2/9/10 11:13 11:15 11:17 11:19 SAMPLE DEPTH TO WATER:	(L) (degrees C) (e · 22 76 · 33 16 · 34 16 · 46	DNDUCTIVITY (AS/cm) (units) 0.530 536 0.523 5.71 0.337 5.71 D.337 5.71	DO ORP TURBIDITY (visual) 4.10 37.6 Clear 1.41 38.0 Clear 0.85 35.1 Clear 0.68 19.5 Clear	
GOOV DECEMANCE. VEC. N	IO ANALYS	SES:		
ODOR:	SAMPLE VESSEL / PRESERVATI	VE:	APLING EQUIPMENT	
PURGING EQUI	Bailer (Teflon) Bailer (PVC) Bailer (Stainless Steel) Dedicated	Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Other:	Bailer (Teflon) Bailer (PVC or disposa Bailer (Stainless Steel) Dedicated	
		I	LOCK#:	
WELL INTEGRITY: REMARKS: Slight pet	roleum odor		3	
SIGNATURE:			Pageof	

SLR International Corp

RECOGNING ATEPOTATE IRECTION DATECTATIONS

POISCE #: 008.0205,00020 PURGED BY: WELL I.D.: MW-2/	
ROJECT #: 008.0205.00020 PURGED BY: The and budget to perform in the same to perform in the	
ROJECT #: 008.0205.00020 PURGED BY:	
LOCATION: Valoration;	
Report Preparer/Junior Level Review DATE PURGED 2910 START (2400hr) 12:49 END (2400hr) DATE PURGED 2910 START (2400hr) 2:49 END (2400hr)	
16 /46 A template ensure that this proper template is veing used and energy	•
Igh grisge/sections (QUII t Overly the Water)	
SAMPLE TYPE: language is used compared to similar reports Ensure that consistent language is used compared to similar reports (asing Volume: (gallons Verifot) that the copyer page in some page in so	
CASING DIAMETER: 2" 3" 4" (2.4) of the cover page information is sorrect including the diam name (2.6) ress, project	
Casing Volume: (gallons Verion) that the (0.5%) that the (0.5%) the Casing Volume: (gallons Verion) that the (0.5%) the (0.5%) the (0.5%) the	
remove, the conjust the text tables not good suppendices attachments	
DEPTH TO BOTTOM (Compare the Table of Contents against the text, the less than the appendices/ DEPTH TO WATER (Compare the information in the tables and figures against the text, the appendices/ DEPTH TO WATER (Compare the information in the tables and figures against the text, the appendices/ DEPTH TO WATER (Compare the information in the tables and figures against the text, the appendices/ DEPTH TO WATER (Compare the information in the tables and figures against the text, the appendices/ DEPTH TO WATER (Compare the information in the tables and figures against the text, the appendices/ DEPTH TO WATER (Compare the information in the tables and figures against the text, the appendices/	
DEPTH TO WATER (feel) mpare the information in the tages ACTUAL PURGE (gal) =	
WATER COLUMN HEattachagents (no self-checks) • Make sure all tables, figures, and appendices/attachments are referenced in the text FIELD MEASUREMENTS • Make sure all tables, figures, and appendices/attachments are numbered in the text in order of TURBIDITY	
• Make sure all tables, figures, and appendices/attachments are numbered in the text in order of TURBIDITY	
Make sure all tables, figures, and approximately ph conductivity ph (visual)	
(2400hr) (L) (degrees) and other formatting electronics (2400hr)	
2/9/10 • 120/5 for consistency in use of tons, size of the form of all abbreviated the father clear of the latter	
Neith that all acronyms are defined without the state of	
Werffighat all acronyms are defined whom this mentioning phone minuters) have been checked and affect that all calculations/insproces (including phone minuters) have been checked and affect that all calculations/insproces (including phone minuters)	
	1
If calculations are included, determine if the appropriate calculation is being used	1
Ensure that the language tense is consistent throughout document	1
Ensure that headers/footers are on all pages and are correct	١
	\dashv
SAMPLE INFORMATION	١
Droiect/Associate Level 1001011	-
De 1.11 - 1 report to ensure that all of the required comments	
ONOV DECHARGE: inoltified NO	
Verify that 644 MILE ROFF SEATING SHANK A EXPORT IS COLLECT	-
and nunctualion are correct	
Della (Tedanda well/flows and is casado comprehena	e)
Centrifugal Pump Baller (1 4 6) Submersible Pump Baller (statilless steel)	
Submersible Pump Bailer (Statilless Steet) Poristalic Pump Dedicated	
Peristalic Pump Dedicated Other:	
Other:	_
Pump Depth: Review the report for general content and report logic WELL INTEGRITY: Ensure that the report is being written for the proper audience (agency vs. client) and	
WELL INTEGRITY: Ensure that the report is being written for the proper discretive.	
fulfilling the brober objective	_
REMARKS: Ensure that the summary and conclusions are as expected	_
• Ensure the cc list is correct Page of	12.181
Determine if report should be sent out as draft of final	
SIGNATURE: Determine if reports	

	GROUND	WATER SAME			v	VELL I.D.:	MW-2	2
OJECT #: 008.0205.00020						SAMPLE I.D.:		
JENT NAME: Crowley Marine Se		SAMPLED B1: _				QA SAMPLES:	Ambien	
OCATION: Vancouver, W.	Α				A. Comments			
		START (2400hr)	1226	20		END (2400hr)		
ATE PURGED		SAMPLE TIME (2			5			
ATE SAMPLED	nter X	or we before we			ent Effluent	-	Other	
AMPLE TYPE: Groundwa	iter	- 6		5"	6"	8"	(Other
ASING DIAMETER: asing Volume: (gallons per foot)	(0.17)	3" (0.38)	(0.67)	(1.0	2).	(1.50)	(2.60)	()
					NG VOLUM			
, Li tti to z z				CALC	ULATED P	URGE (gal) =	S	
PENSE FOR MINISTER IN THE COLUMN				ACTU	JAL PURĢE	(gal) =		
WATER COLUMN HEIGHT (feet) =			· · · · · · · · · · · · · · · · · · ·	PNITE		16		
		FIELD N	MEASUREMI		T.T.	DO	ORP	TURBIDITY
DATE TIME	VOLUME	TEMP.	CONDUC'		pH (units)	DO	M	(visual)
(2400hr)	(L)	(degrees C)		18	202	5202	-65.6	- Vella
7/10/10 1668		13.53		25	7.12	1.35	- 783	
1232		13.77	1-4		7.02		-80.9	
1734		13.88	1.4	31_	697	2 2,60	- 0 E 10	
			-					
		_						
		-	. —		-			
		SAMP	LE INFORM	ATION	(6-		ron (
SAMPLE DEPTH TO WATER:		5,			SAM	IPLE TURBID	ITY:	
SAMPLE DEPTH TO WATER.			<u>}</u>					ii
80% RECHARGE: YES	NO	3.5	IALYSES: _					i)
ODOR:	SAMPLE	VESSEL / PRESER	VATIVE: _				- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
PURGING E	OUIPMENT				SAN	APLING EQUI		
# Red 1		er (Tellon)	_	Bladder	Pump		er (Teflon) er (P	VC or disposa
Bladder Pump Centrifugal Pump	Baile	er (PVC)	_		igal Pump sible Pump	Baile	er (Stainless S	Steel)
Submersible Pump		er (Stainless Steel) icated	-	Peristal		Dedi	cated	
Peristalic Pump	Deu		Ot	ner:				
Other:		-					i i	
Pump Depth:						LOCK#:	н	
WELL INTEGRITY:			 /	1		AND	8	
DEMARKS.	Duni	wate c	plecte	:d	<u></u>	115	0	
REMARKS:	for VI FI	the state of the s		2.50	100047			
	/							

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: 10-23 SAMPLE I.D.: 10-23 PURGED BY: RACK 008.0205.00020 SAMPLED BY: PFTCK PROJECT #: CLIENT NAME: Crowley Marine Services QA SAMPLES: Vancouver, WA LOCATION: END (2400hr) DATE PURGED 2/9/10 SAMPLE TIME (2400hr) DATE SAMPLED Treatment Effluent Surface Water Groundwater SAMPLE TYPE: 2" (0.17) (2.60)(1.02) (1.50)CASING DIAMETER: (0.67)(0.38)Casing Volume: (gallons per foot) CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP pН CONDUCTIVITY (visual) TEMP. VOLUME TIME (units) (aS/cm) DATE (degrees C) Clear -112.1 (2400hr) (L) clear clear SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: _____ 80% RECHARGE: YES____ SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bladder Pump PVC or __disposable) Bailer (PVC or Bailer (Stainless Steel) Bailer (Teflon) Centrifugal Pump Bladder Pump Bailer (PVC) Submersible Pump Centrifugal Pump Bailer (Stainless Steel) Dedicated Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: _ Other: Pump Depth: LOCK#: WELL INTEGRITY: REMARKS: Detvoleum & mell SIGNATURE:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET PURGED BY: RF+CK WELL I.D.: MW-14 SAMPLE I.D.: MU-24 ROJECT #: _____ 008.0205.00020 SAMPLED BY: RF+ CK CLIENT NAME: Crowley Marine Services QA SAMPLES: LOCATION: Vancouver, WA START (2400hr) 13:46 END (2400hr) DATE PURGED 2/9/10 SAMPLE TIME (2400hr) 13:555 DATE SAMPLED 2/9/10 Other Treatment Effluent Surface Water Groundwater SAMPLE TYPE: 5" (1.02) 6" (1.50) Other CASING DIAMETER: 2" (0.17) (2.60)(0.38) (0.67) CASING VOLUME (gal) = CALCULATED PURGE (gal) = DEPTH TO BOTTOM (feet) = DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP pН CONDUCTIVITY (visual) TEMP. VOLUME (units) TIME (MS/cm) clear? (degrees C) 13.30 clear clear SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES NO SAMPLE VESSEL / PRESERVATIVE: __ SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (PVC or _____disposable) Bailer (Stainless Steel) Bladder Pump Bailer (Teflon) Centrifugal Pump Bladder Pump Bailer (PVC) Submersible Pump Centrifugal Pump Bailer (Stainless Steel) Dedicated Peristalic Pump Submersible Pump Dedicated Peristalic Pump Other: Other: Pump Depth: LOCK#: WELL INTEGRITY:

SLR International Corp GROUNDWATER SAMPLING FIELD DATA SHEET WELL I.D.: RW-1 PURGED BY: UK RE SAMPLE I.D.: PW-(008.0205.00020 ROJECT #: SAMPLED BY: CK RF CLIENT NAME: Crowley Marine Services QA SAMPLES: Vancouver, WA LOCATION: START (2400hr) 12:54 END (2400hr) DATE PURGED SAMPLE TIME (2400hr) DATE SAMPLED Other Treatment Effluent Surface Water Groundwater SAMPLE TYPE: Other 2" (2.60)(1.50)(1.02)CASING DIAMETER: (0.17) (0.67)(0.38)Casing Volume: (gallons per foot) CASING VOLUME (gal) = DEPTH TO BOTTOM (feet) = CALCULATED PURGE (gal) = _____ DEPTH TO WATER (feet) = ACTUAL PURGE (gal) = WATER COLUMN HEIGHT (feet) = FIELD MEASUREMENTS TURBIDITY ORP pH CONDUCTIVITY (visual) TEMP. VOLUME TIME (units) (µS/cm) DATE (degrees C) (2400hr) 0.491 1500 0.502 0,520 SAMPLE INFORMATION SAMPLE TURBIDITY: SAMPLE DEPTH TO WATER: ANALYSES: 80% RECHARGE: YES ____YES ____ SAMPLE VESSEL / PRESERVATIVE: SAMPLING EQUIPMENT PURGING EQUIPMENT Bailer (Teflon) Bailer (____PVC or ____ Bailer (Stainless Steel) Bladder Pump disposable) Bailer (Teflon) Centrifugal Pump Bladder Pump Bailer (PVC) Centrifugal Pump Submersible Pump Bailer (Stainless Steel) ____ Dedicated ___ Submersible Pump Peristalic Pump Dedicated Peristalic Pump Other: Pump Depth: » LOCK#: WELL INTEGRITY: of

LABORATORY ANALYTICAL REPORTS

Chain of Custody Page 1 of 1 L. A. B. S. C. 1. E. N. C. E. S 12065 Lebanon Road Mt. Juliet, TN 37122	Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859 Acchum: SLRWLOR (lab use only) Cooler # 22/2/10 Shipped Via: FedEX Saver Shipped Via: FedEX Saver Cooler # 22/2/10 Temp Cooler # 22/2/10 Temp Cooler # 22/2/10 Cooler # 22/2/2/10 Cooler # 22/2/2	Condition of the condit
Press	Number of the state of the	Flow 1,2 5 - 92 55 93.2 Samples returned via: UUPS Samples returned via: UUPS FedEx Counter Temp. Bottles Received 2,20. 4(+5) Aloffu UPS
Accounts Payable 1800 Blankenship Rd, Ste 440 West Linn, OR 97068	Counter Coun	Time: Received by: (Signature) 4: 70 Received by: (Signature) Time: Received for lab by: (Signature)
SLR International Corp West Linn, OR 1800 Blankenship Road. Suite 440 West Linn, OR 97068	Page	Remarks: Remarks: Reinquished by, (Signature) Relinquished by (Signature) Relinquished by (Signature) Relinquished by (Signature) Date:



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-7859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Chris Kramer SLR International Corp. - West Linn, OR 1800 Blankenship Road, Suite 440

West Linn, OR 97068

Report Summary

Wednesday February 17, 2010

Report Number: L444110 Samples Received: 02/10/10 Client Project: 008.0205.00020

Description: Crowley-Vancouver

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesifate to call. Representative Jarred Willis, LSC

Entire Report Reviewed By:

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, MC - ENV375, DW21704, ND - R-140 NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2406, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

This report may not be reproduced, except in full, without written approval from Environmental Science Corp.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

9 Samples Reported: 02/17/10 10:02 Printed: 02/17/10 10:02 Page 1 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444110-01

Date Received Description

February 10, 2010 Crowley-Vancouver

MW-1

Site ID : VANCOUVER, WA

Sample ID

008.0205.00020 Project # :

Collected By : Raechel Fragner Collection Date : 02/09/10 09:56

Collected By : Raechel Fragner Collection Date : 02/09/10 09:56		MDI	RDL	Units	Qualifier	Method	Date	Dil.
	Result	MDL	NDL			2256	02/10/10	1
Parameter		0.1	100	ug/1			02/12/10	1 5
Levy N	1500	31.	25000	ug/l		9056	02/12/10	
Nitrate	99000	1100	23000	-5/	50	00000	02/16/10	1
Sulfate	19000	3000	20000	ug/l	J	2320B		
Alkalinity	19000					RSK175	02/15/10	1 1 1
Alkalinioi	32.	2.0	10.	ug/l		RSK175	02/15/10	1
Methane		4.0	13.	ug/l		RSK175	02/15/10	1
	U U	5.7	13.	ug/l				
Ethane	U	3.		2507		3500Fe-	02/10/10) 1
Ethene	440	12.	50.	ug/l	11.			
Ferrous Iron		N1 AND 121	2.0	ug/l		6020	02/10/10	, 1
	390	0.25	2.0	ug/ I			- 00/10/11	0 1
Manganese, Dissolved			1.00	ug/l		NWTPHG	(02/10/1	J
	U	33.	100	ug/ ±		·	x 02/10/1	0 1
Gasoline Range Organics-NWTPH				% Rec.		NWIPHG.	X 02/10/1	
Surrogate Recovery	96.8						x 02/15/1	0 1
a,a,a-Trifluorotoluene(FID)		- 0	100	ug/l		MMIPHD	X 02/15/1	0 1 0 1
	910	33.	250	ug/l	J	MMIPHD	X 02/15/1	0 -
Diesel Range Organics (DRO)	150	82.	250	4972		192	00/15/1	0 1
Posidual Range Organico				% Rec	07.1	NWTPHD	X 02/15/1	.0 1
Surrogate Recovery o-Terphenyl	82.0			o Rec	• 11			

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 2 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

February 10, 2010 Crowley-Vancouver

Date Received Description

Sample ID

Raechel Fragner 02/09/10 14:55

ESC Sample # : L444110-02

Site ID : VANCOUVER, WA

008.0205.00020 Project # :

Collected By : Raechel Fragner Collection Date : 02/09/10 14:55				Units	Qualifier	Method	Date	Dil.
	Result	MDL	RDL	UNITES	2443			-i
Parameter Nitrate	420	31. 210	100 5000	ug/l ug/l		9056 9056	02/10/10 02/10/10	1 1
Sulfate	14000	3000	20000	ug/l		2320B	02/16/10	1
Alkalinity Methane	260 U	2.0	10. 13.	ug/l ug/l ug/l	9	RSK175 RSK175 RSK175	02/15/10 02/15/10 02/15/10	1
Ethane Ethene	U 22000	5.7 600	13. 2500	ug/1			02/10/10	50
Ferrous Iron	1000	0.25	2.0	ug/l		6020	02/10/10	
Manganese, Dissolved	U	33.	100	ug/l			02/10/10	
Gasoline Range Organics-NWTPH Surrogate Recovery	97.3			% Rec.			02/10/10	100
a,a,a-Triffluorotoluene (FID)	4500	33. 82.	100 250	ug/l ug/l		NWTPHD:	02/15/10 02/15/10	0 1 0 1
Residual Range Organics (RRO) Surrogate Recovery o-Terphenyl	910 88.4	02.	250	% Rec		NWTPHD	X 02/15/1	0 1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 3 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444110-03

Date Received Description

February 10, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

Sample ID

MW-7N

Project #: 008.0205.00020

Collected By :

Raechel Fragner 02/09/10 10:55

Collection Date : 02/09/10 10:55		100000	RDL	Units	Qualifier	Method	Date	Dil.
5	Result	MDL	ממא	GHILCE			02/10/10	1
Parameter		0.1	100	ug/l		2000	02/10/10	
WITCH FR	U	31. 2100	50000	ug/l		9056	02/12/10	10
Nitrate	370000	2100	3000-			00000	02/16/10	1
Sulfate	150000	3000	20000	ug/l		2320B	02/10/10	-
Alkalinity	120000	5000	A CONTRACTOR OF THE PROPERTY O			RSK175	02/15/10	1
AIRGITHICY		2.0	10.	ug/1		RSK175	02/15/10	1 1 1
	500	4.0	13.	ug/1		RSK175	02/15/10	1
Methane	U		13.	ug/l		RSK175	02/13/10	-
Ethane	U	5.7	10.	~ 3.		000000000000000000000000000000000000000	00/10/10	50
Ethene		W20120 AURS	2500	ug/l		3500Fe-	02/10/10	50
	100000	600	2500	ug/ I) 5
Ferrous Iron			CATTANT	ug/l		6020	02/10/10) 5
50 W	6200	1.2	10.	ug/1			N1 2 1000	22 Jun 1
Manganese, Dissolved	02			/1		NWTPHGX	02/10/10) 1
	190	33.	100	ug/1				
Gasoline Range Organics-NWTPH	100					MUTPHGX	02/10/10) 1
L- DOGOTION	97.3			% Rec.		MATTION		
a,a,a-Trifluorotoluene (FID)	91.3					VIII III III III V	02/16/1	0 20
		660	2000	ug/l		NWIPHDA	02/15/1	0 20 0 1
Diesel Range Organics (DRO)	10000	82.	250	ug/l		MMILBUDA	1 02/15/1	
Residual Range Organics (RRO)	1600	82.	250	21		11	. 00/16/1	0 20
Residual Kange Organico (1887)				% Rec.	J7	NWTPHD:	x 02/16/1	0 20
Surrogate Recovery	0.00			o iteo.	6	60		
o-Terphenyl								

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 4 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-75859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

February 10, 2010 Crowley-Vancouver

Date Received Description Sample ID

MW-8N

Raechel Fragner

ESC Sample # : L444110-04

Site ID : VANCOUVER, WA

Project # : 008.0205.00020

Collected By : Raechel Fragner Collection Date : 02/09/10 10:27			RDL	Units	Qualifier	Method	Date	Dil.
14 F PA.25	Result	MDL	KDH	69		9056	02/10/10	1 2
Parameter	U	31.	100 10000	ug/l ug/l		9056	02/12/10	
Nitrate Sulfate	110000	420		ug/1		2320B	02/16/10	1
	310000	3000	20000			RSK175	02/15/10	1 1 1
Alkalinity		2.0	10.	ug/1		RSK175	02/15/10	1
Methane	350 U U	4.0	13. 13.	ug/l ug/l		RSK175	02/15/10	1
Ethane	U	5.7	13.			250050-	02/10/10	50
Ethene	140000	600	2500	ug/l			02/10/10	
Ferrous Iron	5500	1.2	10.	ug/l		6020		
Manganese, Dissolved	U	33.	100	ug/l	9		x 02/10/10	
Gasoline Range Organics-NWTPH		37.5		% Rec.	•:	NWTPHG	X 02/10/1	ž
Surrogate Recovery a,a,a-Trifluorotoluene(FID)	99.0			ug/l		NWTPHD	X 02/16/1	0 20
	9600	660 82.	2000 250	ug/1			x 02/15/1	•
Diesel Range Organics (DRO) Residual Range Organics (RRO)	2000	02.	(00000, 10)	% Rec	. J7	NWTPHI	X 02/16/1	0 20
Surrogate Recovery o-Terphenyl	0.00							

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 5 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received

February 10, 2010 Crowley-Vancouver

Description Sample ID

MW-24

Collected By : Collection Date :

Raechel Fragner 02/09/10 13:55

L444110-05 ESC Sample # :

Site ID : VANCOUVER, WA 008.0205.00020 Project # :

Dil. Qualifier Method Date Units RDL MDL Result 02/10/10 9056 10 ug/1 02/10/10 1000 9056 13000 100000 310 ug/l 50000 2100 1 Nitrate 02/16/10 2320B Sulfate 20000 ug/1 3000 36000 02/15/10 RSK175 ug/l ug/l ug/l Alkalinity 02/15/10 10. RSK175 2.0 1 13. RSK175 02/15/10 4.0 U U Methane 13. 1 3500Fe- 02/10/10 Ethane ug/l Ethene 50. 12. 650 1 02/10/10 6020 Ferrous Iron ug/l 2.0 0.25 230 1 NWTPHGX 02/10/10 Manganese, Dissolved ug/l 100 33. Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID) 520 NWTPHGX 02/10/10 % Rec. NWTPHDX 02/15/10 NWTPHDX 02/15/10 98.0 ug/l 100 250 33. 82. 2800 Diesel Range Organics (DRO) Residual Range Organics (RRO) Surrogate Recovery o-Terphenyl ug/l 380 NWTPHDX 02/15/10 % Rec. 78.6

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 6 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444110-06

Date Received Description

February 10, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

Sample ID

MW-13

008.0205.00020 Project # :

Collected By : Collection Date :

Raechel Fragner 02/09/10 14:25

Collected By : Raechel Flagher Collection Date : 02/09/10 14:25			RDL	Units	Qualifier	Method	Date	Dil.	
	Result	MDL	RDII	-		0056	02/10/10	1	
Parameter	350	31.	100	ug/l	J	9056 9056	02/10/10	1	
Nitrate	1500	210	5000	ug/l	U		/1 - /10	1	
Sulfate		3000	20000	ug/1		2320B	02/16/10		
Alkalinity	220000	3000	20000	2430 5 49		RSK175	02/15/10	1	
Alkalinicy	21.	2.0	10.	ug/l ug/l		RSK175	02/15/10	1 1 1	94
Methane	ט ט	4.0 5.7	13. 13.	ug/1		RSK175	02/15/10		
Ethane	U	5.1	10.			3500Fe-	02/10/10) 1	
Ethene	280	12.	50.	ug/l					
Ferrous Iron		0.25	2.0	ug/1		6020	02/10/10	,	
Manganese, Dissolved	310	0.25	2.0	70.00		NWTPHG	(02/10/1	0 1	
	U	33.	100	ug/l					
Gasoline Range Organics-NWTPH			45	% Rec.		NWTPHG:	x 02/10/1	U I	
Surrogate Recovery a,a,a-Trifluorotoluene(FID)	96.8			100		NWTPHD	x 02/15/1	0 1 1	
	220	33.	100	ug/1		NWTPHD	X 02/15/1	0 1	
Diesel Range Organics (DRO)	บ	82.	250	ug/l		- verm DIII	X 02/15/1	0 1	
Pasidual Range Organics (1811)	21 7			% Rec		NWIPHL	V 05/12/2	W.	
Surrogate Recovery o-Terphenyl	91.3								

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 7 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

> February 10, 2010 Crowley-Vancouver

Date Received Description Sample ID

MW-19N

Collected By : Collection Date : Raechel Fragner 02/09/10 11:21 ESC Sample # : L444110-07

Site ID : VANCOUVER, WA

Project # : 008.0205.00020

Collection Date: 02/09/10 11:21			201	Units	Qualifier	Method	Date	Dil.
	Result	MDL	RDL	OHILLS	×		02/10/10	5
Parameter		5-37-VV =-0-V	= 0.0	uq/1	19		02/10/10	5 5
Nitrate	10000	150 1100	500 25000	ug/1		50505000	02/10/10	
	130000			¥9 20		2320B	02/16/10	1
Sulfate	49000	3000	20000	ug/1				
Alkalinity			37.20	/1		RSK175	02/15/10	1 1 1
MEANT SI	240	2.0	10.	ug/l		RSK175	02/15/10	1
Methane	U U	4.0	13. 13.	ug/1 ug/1		RSK175	02/15/10	1
Ethane	U	5.7	10.	-5/			00/10/10	25
Ethene	11000	300	1300	ug/l		3500Fe-	02/10/10	· needoor
Ferrous Iron	11000			334000		6020	02/10/10) 1
	1700	0.25	2.0	ug/1				
Manganese, Dissolved	-		100	ug/l		NWTPHG	02/10/10) 1
Gasoline Range Organics-NWTPH	U	33.	100	~9/ =		митрис.	x 02/10/1	0 1
Gasoline Range Organi	2000 DEC			% Rec.		MATERIO		
Surrogate Recovery	99.3						x 02/15/1	0 1
a,a,a-Trifluorotoluene(FID)		2.2	100	ug/1		NWTPHD.	$\times 02/15/1$ $\times 02/15/1$	0 1 0 1
1 - 1DEO)	4700	33.		ug/l		MALLAHD	X 02/13/1	
Diesel Range Organics (DRO) Residual Range Organics (RRO)	670	82.	250			митрир	X 02/15/1	.0 1
Residual Range of J	1001-010			% Rec		TAAA T E IIID	ARC DENSEMBLE	
Surrogate Recovery o-Terphenyl	104.			m -82				
1000 English Trimes 2004		**						

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:
The reported analytical results relate only to the sample submitted.
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 8 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444110-08

Date Received : Description

February 10, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

Sample ID

MW-21

008.0205.00020 Project # :

Collected By : Collection Date :

Raechel Fragner 02/09/10 12:59

ollection Date : 02/09/10 12:59			RDL	Units	Qualifier	Method	Date	Dil.
	Result	MDL	בועא	011		0056	02/10/10	1
arameter	410	31.	100 5000	ug/l ug/l	J	9056 9056	02/10/10	1 1
Nitrate	2800	210	3000	50-400		0220B	02/16/10	1
Sulfate	16000	3000	20000	ug/l	J	20202		
Alkalinity	10000		1000				02/15/10	1 1 1
Alkarinicy .	n	2.0	10.	ug/1		RSK175	02/15/10	1
Methane	บ บ	4.0	13. 13.	ug/l ug/l		RSK175	02/15/10	1
Ethane	U	5.7	13.			0.5.0.011-	02/10/10	1
Ethene	72.	12.	50.	ug/l		3500Fe-		
Ferrous Iron	12.			75		6020	02/10/10	1
	2.8	0.25	2.0	ug/l			00/10/10) 1
Manganese, Dissolved		33.	100	ug/l			02/10/10	
Gasoline Range Organics-NWTPH	U	22.		% Rec.		NWTPHG	(02/10/10) 1
	99.0			& Rec.			x 02/15/1	0 1
a,a,a-Trifluorotoluene(FID)	STT A	33.	100	ug/l		NWTPHD.	x 02/15/1	0 1 0 1
Diesel Range Organics (DRO)	U U	82.	250	ug/1				
Posidual Range Organics (1870)				% Rec	• 11	NWTPHD	X 02/15/1	U I
Surrogate Recovery o-Terphenyl	114.							

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 9 of 17



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received Description

February 10, 2010 Crowley-Vancouver

Sample ID

MW-23

Collected By

Raechel Fragner 02/09/10 13:30

ESC Sample # : L444110-09

Site ID : VANCOUVER, WA

Project # : 008.0205.00020

ug/1 ug/1 ug/1	(8)	9056 2320B	02/10/10 02/12/10 02/16/10 02/15/10	1
ug/1 ug/1 ug/1	591	9056 2320B	02/12/10	1
ug/l				
ug/1		RSK175	00/15/10	-
		RSK175	02/15/10	1 1 1
ug/l ug/l		RSK175	02/15/10	
ug/l		3500Fe-	02/10/10	
ug/l	V	6020	02/10/10	
ug/l				
% Rec.				
ug/l ug/l		NWTPHD)	(02/16/1 (02/15/1	0 20 0 1
	. J7	NWTPHD	x 02/16/1	0 20
	ug/l % Rec. ug/l ug/l	ug/l % Rec. ug/l ug/l	ug/1 NWTPHGX % Rec. NWTPHGX ug/1 NWTPHD1 ug/1 NWTPHD1	ug/1 ug/1 NWTPHGX 02/10/10 Rec. NWTPHGX 02/10/10 NWTPHDX 02/16/1 NWTPHDX 02/15/1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 10:02 Printed: 02/17/10 10:03

Page 10 of 17

$\begin{array}{c} \text{Attachment A} \\ \text{List of Analytes with QC Qualifiers} \end{array}$

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L444110-01	WG463222 WG462882	SAMP SAMP	Alkalinity Residual Range Organics (RRO)	R1117588 R1116310 R1116310	ว J J7
L444110-03 L444110-04 L444110-06 L444110-08	WG462882 WG462882 WG462761 WG462761 WG463222	SAMP SAMP SAMP SAMP SAMP	o-Terphenyl o-Terphenyl Sulfate Sulfate Alkalinity	R1116310 R1110888 R1110888 R1117588 R1110108	ガ 7 ガ ガ ブ V
L444110-09	WG462785 WG462882	SAMP SAMP	Manganese, Dissolved o-Terphenyl	R1116310	J7

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
	(EPA) - Estimated value below the lowest calibration point. Confidence
J	(EPA) - Estimated value correlated value correlates with concentration. Surrogate recovery limits cannot be evaluated; surrogates were diluted out
	Surrogate recovery limits cannot be evaluated; Surrogate
J7	Surrogate 100 mbg sample concentration is too high to
V	Surrogate recovery limits to the sample concentration is too high to (ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries etc. surrogate recoveries, etc. The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the surrogate and carried through all stages of preparation and analyses. Surrogate -

 Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates. TIC

Summary of Remarks For Samples Printed 02/17/10 at 10:03:17

TSR Signing Reports: 358 R5 - Desired TAT

Sample: L444110-01 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Log all arsenic gw samples as ASG. Sample: L444110-02 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-03 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-04 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-05 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-06 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-07 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-08 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02 Sample: L444110-09 Account: SLRWLOR Received: 02/10/10 09:00 Due Date: 02/17/10 00:00 RPT Date: 02/17/10 10:02



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444110

February 17, 2010

		Laborato	ory Blank	retenant.		Limit	Batch	Date An	alyzed
	Result	Units	% I	Rec		22 21 - 124 -	WG462755	02/10/1	0 11:04
nalyte	< .05	mg/l							
errous Iron		- Till (1971)					WG462785	02/10/1	0 19:20
anganese, Dissolved	< .002	mg/1					WG462761	02/10/1	10 11:03
Manganese, Dissolved	< .1	mg/1					WG462761	02/10/2	10 11:03
Nitrate	< 5	mg/1					WG462772	00/10/	10 14.08
Sulfate		2002277				m seepale	WG462772	02/10/	10 14:08
Gasoline Range Organics-NWTPH a,a,a-Trifluorotoluene(FID)	< .1	mg/l % Rec		98.99		62-128			10 00:02
	< 5	mg/l					WC46311	02/12/	10 10:26
Sulfate		mg/l							
Sulfate	< 5						WG46309	8 02/12/	/10 11:04
	< 5	mg/l					WC46336	9 02/15	/10 12:07
Sulfate	- 12	mg/l					WC16336	9 02/15	/10 12:07
Dibana	< .013 < .013	mg/1					WG46336	9 02/15	/10 12:07
Ethane Ethene	< .013	mg/l						12.92.4	(10 11.20
Methane	.01						WG46288	32 02/15	/10 11:39 /10 11:39
Diesel Range Organics (DRO)	< .1	ppm % Re	c.	92.72		50-150			
O-Terphenyl		0 110	7. is				WG46322	22 02/16	5/10 14:24
O Telphoni	< 20	mg/1							
Alkalinity			ouplicate			Limit	Ref S	amp	Batch
		Result	Duplica	te	RPD	Fimit			
Analyte	Units	Resure				20	L4441		WG462755 WG462755
Allaryco	mg/l	0.0750	0.0720		4.35	20	L4441	22-01	WG462133
Ferrous Iron	mg/1	4.40	4.40		0.913		- 4 4 4 1	10-09	WG462785
Ferrous Iron		0.0000	5.10		0.985	20	L4441	10-03	
Di roolwed	mg/1	5.00	5.10			122	T.4440	90-04	WG462761
Manganese, Dissolved	2000	0.600	0.600		0.333	20		122-01	WG462761
	mg/l		0		0 .	20		122-01	WG462761
Nitrate	mg/1	0	10.0		0	2.0	2		
Nitrate	mg/l	10.0	10.0			0.01	T.444	350-03	WG46299
Sulfate	82	- 22	9.20		0.109	20		110-01	WG46299
	mg/l	9.20	99.0		2.00	20	D111		
Sulfate	mg/l	100.	55.0				T A A A	110-09	WG46311
Sulfate			180.		1.65	20	TAVA	174-01	WG46311
	mg/1	180.	24.0		0.837	20	Pada	714 01	
Sulfate	mg/l	24.0	24.0		E(S)		T 4 4 /	1110-04	WG46309
Sulfate		100000000000000000000000000000000000000	110.		0.913	20	1.4.4.4	1110 01	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
	mg/l	110.	110.	1 -		oc Qualifiers.			

mg/l 110. III. Sulfate
Sulfate

* Performance of this Analyte is outside of established criteria.

* Performance of this Analyte is outside of established criteria.

* For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444110

February 17, 2010

			Ouplicate Duplicate	RPD	Limit	Ref S	amp	Batch
1	Units	Result	Duplicate	IXI D	94550	1,4441	24-01	WG463222
Analyte		4 0 0 0	1000	1.98	20	L4441		WG463222
and the face	mg/1	1000	19.0	7.76	20	14441	10.01	
Alkalinity	mg/l	18.0	15.0					
Alkalinity		7 JOSEPH STREET, STREE	ry Control Sa	mple				Batch
		Laborato	ry Concide be	Result	% Rec	Limit		Bacon
	Units	Known V	al	resure				WG462755
Analyte			1.	11	101.	85-115	0	WG402133
	mg/l	1	n Bel) 1				WG462785
Ferrous Iron	V 8			0550	98.6	85-11	5	WG402103
2 2	mg/l	.0567	0.	0559	(2) 4.5/5/			
Manganese, Dissolved	mg/ =				102.	90-11	0	WG462761
6	mq/l	8	8.		99.0	90-11	0	WG462761
Nitrate	mg/1	40	39	. 6	37.0			172383
Sulfate	mg/ 1				94.0	70-12	4	WG462772
A THE COLUMN TO SEE THE COLUMN	ATTROOPEN AND	5.5	5.	17		62-12		WG462772
Gasoline Range Organics-NWTPH	mg/1	3.5			97.89	02.32		
a,a,a-Trifluorotoluene (FID)					Xi	90-11	n	WG462997
a, a, a-IIIII dolocollo			38	3.9	97.3	90-11	.0	
	mg/l	40				02.2		WG463119
Sulfate			2	3.3	95.8	90-11	LU	W0100111
	mg/l	40	31	5.5			waren.	WG463098
Sulfate			2	9.0	97.5	90-1	10	WG4 620 20
	mg/l	40	3	9.0	E2 12			WG463369
Sulfate	*******		10	000	98.7	70-1	30	
	mg/1	.645		.637	93.4	70-1	30	WG463369
Ethane	mg/l	.635		.593	81.0	70-1	30	WG463369
Ethene	mg/1	.339	0	.274	01.0			
Methane	mg/1	10.75				50-1	50	WG462882
	20.00	.75	C	.700	93.3	0-0		WG462882
Diesel Range Organics (DRO)	mg/l	.75	0	.506	67.5*	50-1	50	WG462882
Residual Range Organics (RRO)	mg/l	. 13			92.23	20-1	.50	
Residual Range organi						85-1	15	WG463222
o-Terphenyl			i.	11.5	104.	85-1	.13	
50 E2 CROH #01 (00 F) (00 F)	mg/1	40						
Alkalinity			Control Samp	o Duplicat	ie.		Limit	Batch
		Laboratory	Control Samp	Rec	Limit	RPD	Limit	Dacen
	Units	Result	Ref	8 Vec			10/02/	WG462755
Analyte			6	1.00	85-115	0.995	20	WG402133
	mg/1	1.00	1.01	100.	99			
Ferrous Iron				1000	90-110	0	20	WG462761
	mg/l	8.16	8.16	102.	90-110	0.253	20	WG462761
Nitrate	mg/1	39.5	39.6	99.0	30-110			#/ 5055000000000000000000000000000000000
Sulfate	mg/1	33.0			EG 104	1.03	20	WG462772
		5.12	5.17	93.0	70-124	1.00		WG46277
Gasoline Range Organics-NWTPH	mg/l	3.12	1274.0-2011/1	98.94	62-128			
a,a,a-Trifluorotoluene (FID)							20	WG46299
a, a, a-IIIII dolocoza			38.9	97.0	90-110	0	20	
200 B 200000	mg/l	38.9	30.9	(B)(1, (B)(B))				
Sulfate								

^{*} Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444110

February 17, 2010

West Linn, OK 37000			Б11.1						
				3 8 31	-ato			5 79	Batch
		aboratory	Control San	mple Dupiio %Rec	Limit	RPI)	Limit	
Analyte	Units	Result		96.0	90-110	0.3	261	20	WG463119
G	mg/l	38.2	38.3	96.0		127		20	WG463098
Sulfate	100000000000000000000000000000000000000	39.1	39.0	98.0	90-110	0.	256	20	
Sulfate	mg/l	39.1		1000 HOSE	70-130	1.	06	2.5	WG463369 WG463369
our real real real real real real real rea	mg/l	0.630	0.637	98.0	70-130	1.	03	25	
Ethane	mg/l	0.587	0.593	92.0	70-130	0.	749	25	WG463369
Ethene	mg/l	0.272	0.274	0.08	70 133			20120	WG462882
Methane	mg/ =			93.0	50-150		356	20	WG462882
(570)	ma/l	0.697	0.700	93.0 67*	150 CARRES	0.	590*	0	WG462882
Diesel Range Organics (DRO)	mg/1	0.503	0.506	87.41	50-150				MG101200-
'Residual Range Organics (Rico,				01.41				20	WG463222
o-Terphenyl			44 E	105.	85-115	1	.20	20	
	mg/l	42.0	41.5	105.					
Alkalinity			Matrix Sp	ike				Ref Samp	Batch
		VIO 40. 0		TV	% Rec	Limit	_	Rel Jamp	
20 APRIL 20	Units	MS Res	Ker nes			00 100		L444110-06	WG462755
Analyte		1.76	0.280	1.5	98.7	80-120		Вили	
Twon	mg/1	1.76	0.20*			75-125		L444110-09	WG462785
Ferrous Iron	110009-0	5.19	5.10	.0113	159.*	15-125			2.525557400
Manganese, Dissolved	mg/l	5.19	3,10			80-120		L444110-08	WG462761
Manganese, Discour	27	5.48	0.410	5	101.	80-120		L444110-08	WG462761
Nitrate	mg/l	53.6	2.80	50	102.	80-120			
Sulfate	mg/l	55.0				58-122		L443871-07	WG462772
	mg/l	5.06	0.802	5.5	77.5	62-128			WG462772
Gasoline Range Organics-NWTPH	mg/ ±				98.34				WG462997
a,a,a-Trifluorotoluene (FID)				11.00	104.	80-120		L444350-02	WG462991
	mg/l	85.0	33.0	50	104.	#270 BOSO		5.822	WG463119
Sulfate	mg/ =			* 0	103.	80-120		L444680-08	MG402TT2
	mg/l	51.6	0	50	103.			- 62	WG463098
Sulfate	mg/ -		200	5.0	103.	80-120		L444350-06	WG402020
	mg/1	62.6	11.0	50	103.				WG463222
Sulfate				200	98.0	80-120		L444110-05	HOTOGRAM
	mg/l	232.	36.0	200					
Alkalinity			atrix Spike	Duplicate			0200100001	n - E Comp	Batch
				%Rec	Limit	RPD	Limi	t Ref Samp	
	Unit	s MSD	Ref	*Nec		1000	0.0	L444110-06	WG462755
Analyte	1100		1.76	98.0	80-120	0.570	20	THAILTTO 00	
¥	mg/1	1.75	1.70	50.0			20	L444110-09	WG462785
Ferrous Iron	100	- 01	5.19	372.*	75-125	2.29	20	Tidditte	
Di ano lund	mg/l	5.31	3.19	0,4			20	L444110-08	WG462761
Manganese, Dissolved	29		5.48	99.0	80-120	2.21	20	L444110-08	WG462761
	mg/		53.6	99.2	80-120	2.26	20	11	
Nitrate	mg/	1 52.4	33.0	A SANDER POLICE					
Sulfate	20 20		-hishad cr	iteria.					

^{*} Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444110

February 17, 2010

	Units		Matrix Spik Ref	e Duplicate %Rec	Limit	RPD	Limi	t Ref Samp	Batch
Analyte Gasoline Range Organics-NWTPH	mg/l	4.84	5.06	73.4 98.36	58-122 62-128	4.53	20	L443871-07	WG462772 WG462772
a,a,a-Trifluorotoluene (FID)	mg/l	83.5	85.0	101.	80-120	1.78	20	L444350-02	WG462997
Sulfate	mg/1	51.3	51.6	103.	80-120	0.583	20	L444680-08	WG463119
Sulfate	mg/1	62.7	62.6	103.	80-120	0.160	20	L444350-06	WG463098
Sulfate	mg/1	236.	232.	100.	80-120	1.71	20	L444110-05	WG463222
Alkalinity	23.5								

Batch number /Run number / Sample number cross reference

WG462755: R1108668: L444110-01 02 03 04 05 06 07 08 09 WG462785: R1110108: L444110-01 02 03 04 05 06 07 08 09 WG462761: R1110888: L444110-01 02 03 04 05 06 07 08 09 WG462772: R1111090: L444110-01 02 03 04 05 06 07 08 09 WG462997: R1112248: L444110-01 WG463119: R1114008: L444110-01 WG46319: R114028: L444110-09 WG46398: R1114028: L444110-03 04 WG463369: R1115708: L444110-01 02 03 04 05 06 07 08 09 WG462882: R1116310: L444110-01 02 03 04 05 06 07 08 09 WG463222: R1117588: L444110-01 02 03 04 05 06 07 08 09

^{* *} Calculations are performed prior to rounding of reported values .

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

Quality Assurance Report Level II

L444110

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits their that the analytic process is "in control". If a indicating that the analytic process is "in control" target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate — is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

February 17, 2010

Chain of Custody	F090	L. A. B. S. G. 1. E. N. C. E. S 12065 Lebanon Road	Mt_Juliet,TN 37122 Dhane (800) 767-5859	phone: (615) 758-5858 Fax: (615) 758-5859		Acctnum SLRWLOR (ab use only) Templatel Preligin T 62780 P310372	Shipped Ma FedEX Saver	Remarks/Contaminant Sample # (lab only)		800		50	90	to 00		Other	192 192	PS Condition: (lab use only) eived: COC Seal Infact: Y N NA pH Checked: NCF:	
Analysis/Container/Preservative			e >	bE-M Al HCI 13 C	MoPres mb-HC nb-Add Amb HC MilhD S-MoPres	AlmO23 ACIHlim A-JI > JmO4 >	SHE SOUTH TO SHE	LEEK AUGU	X X X X X X X X X X X X X X X X X X X	X		* X X			5 X X	Hd	6 26 26	A335 9743 / 108 Samples returned via: □ UPS	
Billing information:	Accounts Payable 1800 Blankenship Rd, Ste 440	West Linn, OR 97068	Emait ckramer@slrcorp.com, shami	Collected Collected	Lab Project # SLRWLOR-CROWLEYVAN	P.O.#: 008.0205.00020 T Be Notified Date Results Needed	100% Email? No Yes No.	Depth Date Time	4/10/10 8:30 11	9 7 7	1040		148	988	V 1340	ing Water OT - Other	20	Time: Received by: (Signature) 7: 30 Time: Received by: (Signature) Time: Received for lab by: (Signature)	
	al Corp West	8 8		er		Site/Facility ID#: P.O VANCOUVER, WA VANCOUVER, WA Rush? (Lab MUST Be Notified)	Same Day	Three Day	MS	MS CW	M5 M5	CW	MS	W2	MS	GW - Groundwater WW - Waste Water DW - Drinking Water OT -		Date: Date: Date:	
	SLK International Corp West Linn, OR	1800 Blankenship Ko West Linn, OR 97068	Report to:	Project Crowley-Vancouver		Collected by (print):	Collected by (signature)		II-MW-II	MW-2	MW-4	WW-5	MW-9	MW-10	MW-12 MW-14	Soil	Remarks:	Relinquished by: (Signature) Relinquished by (Signature)	A DESCRIPTION

Chain of Custody Page Not	L-A-B S-C-1-E-N-C-E-S T2065 Lebanon Road MA tulis Tri 27172	Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859		Remarks/Contaminant Sample # (lab only) / \psi \psi \psi \psi \psi \psi \psi \psi	12 12 13 14 14
Analysis/Container/Preservative	SA TALL	PHDBE-Nobre P-Yqq HCI HNO3	MDG 500mHDPB-WDBG 40mHDPX 40mHPm WTPHGX 40mHPm WTPHGX 40mHPm WTF 40mHPmb-P		X X X X X X X X X X X X X X X X X X X
Analysi	polymers (Control of Control of C		EKOSEE S20mlAmp EKOSEE S20mlAmp	CONTRACTOR OF CONTRACTOR AND PERSONS AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERS	
Billing information:	Accounts Payable 1800 Blankenship Rd, Ste 440 West Linn,OR 97068	ckramer@slrcorp.com, shamı City/State Collected (AMCCITYLT, WA Lab Project # SLRWLOR-CROWLEYVAN	P.O.#: 008.0205.00020 ST Be Notified Date Results Needed	7/10/10 9 10	GW 12.36 5 GW 12.36 5 GW 12.25 5 GW 12.25 5 GW 12.28 5
	nal Corp West Road. Suite 440 58		008.0205.00020 P.0	Comp/Grab Matrix* GW GW	
	SLR International Corp West Linn, OR 1800 Blankenship Road. Suite 440 West Linn, OR 97068	Report to: Chris Kramer Project Description: Crowley-Vancouver Phone: (503) 723-4423	Collected by (print): Collected by (signature): Immediately Packed on ice N Y X	Sample ID MW-16 MW-17	MW-22 RW-1 RW-1 Duplicate

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other___

Remarks:

Samples returned via: □ UPS Condition:
Samples returned via: □ UPS
PedEx□Courier □
Temp: Bottles Received:

Flow

T34373 COCSeal Intact

Tracks.

ENVIRONMENTAL SCIENCE CORP.

SAMPLE NON-CONFORMANCE FORM

Login No. : Date: Evaluated by	2-11-10 y: femily		
Client:			
Non-Confor	Chain of Custody is missing Improper container type Chain of custody is incomplete Parameter(s) past holding time Broken container(s) see below		Login Clarification Needed Improper prescryation Container lid not intact Improper temperature Broken container: sufficient sample olume remains for analysis requested
Comments DB The	Sample was frozen	g material insi	und container ide cooler dex/UPS/Courier) came in out of Hold and I Oro Amb LTB. NoTon -: LTRS Id Ouplicate
Client info			TSR Initials: _ gw/pm.



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Chris Kramer SLR International Corp. - West Linn, OR 1800 Blankenship Road, Suite 440

West Linn, OR 97068

Report Summary

Wednesday February 17, 2010

Report Number: L444418 Samples Received: 02/11/10 Client Project: 008.0205.00020

Description: Crowley-Vancouver

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call. Jarred Willis Representative

Entire Report Reviewed By:

, CT - PH-0197, FL - E87487 ENV375, DW21704, ND - R-140 A - 00109, WV - 233 Laboratory Certification Numbers A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-327, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, CA - I-327, NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2606, VA AZ - 0612, MN - 047-999-395, NY - 11742, WI - 996093910

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

This report may not be reproduced, except in full, without written approval from Environmental Science Corp.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

14 Samples Reported: 02/17/10 17:24 Printed: 02/17/10 17:24



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received : Description :

February 11, 2010 Crowley-Vancouver

Sample ID

MW-11

Collected By :

Chris Kramer 02/10/10 08:30

ESC Sample # : L444418-01

Site ID : VANCOUVER, WA

Project # : 008.0205.00020

Collected By : Chils Riams Collection Date : 02/10/10 08:30			DDI.	Units	Qualifier	Method	Date	Dil.
V175887	Result	MDL	RDL	UILLES	2		(10 /10	1
Parameter	0.00000000	2.1	100	ug/1		2000	02/12/10	1
	870	31.	5000	ug/l		9056	02/12/10	+
Nitrate	6600	210	3000	- 3,		0.002.202	02/16/10	1
Sulfate		3000	20000	ug/l		2320B	02/16/10	
Alkalinity	61000	3000	20000				02/15/10	1
Alkalinicy	199	2.0	10.	ug/l			02/15/10	1 1 1
Methane	U	4.0	13.	ug/1		RSK175	02/15/10	1
Ethane	U	5.7	13.	ug/l		RSK175	02/13/10	
Ethene	U	٧.,	£745)	Di co		250050-	02/11/10	1
Echene	200	12.	50.	ug/l		3500re-	02/11/10	
Ferrous Iron	200			12		6020	02/15/10) 1
	89.	0.25	2.0	ug/1		6020	02,,	
Manganese, Dissolved	07.			and the state of t		NWTPHGX	02/11/10) 1
	U	33.	100	ug/1				
Gasoline Range Organics-NWTPH				121 1211111		NWTPHGX	02/11/10) 1
a Pacovery	88.0			% Rec.				
a,a,a-Trifluorotoluene(FID)	(22) (20) (20)		222			NWTPHDX	02/16/1	0 20
	6400	660	2000	ug/1		NWTPHD	02/15/1	0 1
Diesel Range Organics (DRO)	1800	82.	250	ug/l				
Residual Range Organics (Mac)				% Rec.	J7	NWTPHD	< 02/16/1	0 20
Surrogate Recovery o-Terphenyl	0.00			a Rec.				

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 2 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer
SLR International Corp. - West Linn
1800 Blankenship Road, Suite 440
West Linn, OR 97068

Date Received Description

February 11, 2010 Crowley-Vancouver

Sample ID

MW-2

Chris Kramer 02/10/10 11:10

Site ID : VANCOUVER, WA Project # : 008.0205.00020

ESC Sample # : L444418-02

Collected By : Chris Kramer 02/10/10 11:10					Qualifier	Method 1	Date	Dil.
Collection Date : 02/10/10 11:13	Result	MDL	RDL	0112-0-	J	NWTPHGX	02/11/10	1
Parameter	45.	33.	100	ug/l		NWTPHGX		
Gasoline Range Organics-NWTPH Surrogate Recovery a;a,a-Trifluorotoluene(FID)	88.9	33.	100	% Rec.		NWTPHDX NWTPHDX	02/15/10) 1
Diesel Range Organics (DRO) Residual Range Organics (RRO)	U U	82.	250	ug/l % Rec.		NWTPHDX	02/15/10	0 1
Residual Range Organ Surrogate Recovery o-Terphenyl	95.0							

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 3 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-03

Date Received Description

February 11, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

Sample ID

MW-4

008.0205.00020 Project # :

Chris Kramer 02/10/10 11:35

Collected By : Chris Kramer Collection Date : 02/10/10 11:35			DIDI	Units	Qualifier	Method	Date	Dil
	Result	MDL	RDL	0112		NWTPHGX	02/11/10	1
Parameter Gasoline Range Organics-NWTPH	U	33.	100	ug/l % Rec.		NWTPHGX	02/11/10	1
Surrogate Recovery a,a,a-Trifluorotoluene(FID)	88.8	23	100	ug/l	J	NWTPHDX	02/15/10 02/15/10	1 1
Diesel Range Organics (DRO) Residual Range Organics (RRO)	730 100	33. 82.	250	ug/l % Rec.			X 02/15/10	
Surrogate Recovery o-Terphenyl	82.3			Ø.				

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 4 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

YOUR LAB OF CHOICE

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-04

Date Received Description

February 11, 2010 Crowley-Vancouver

Sample ID

Site ID : VANCOUVER, WA 008.0205.00020 Project # :

Sample 15 : Chris Kramer						Lad Date	Dil.
Collected By : Chris Richard Collection Date : 02/10/10 10:40	Result	MDL	RDL	0112.02	Qualifier	Method Date NWTPHGX 02/11/10) 1
Parameter	U	33.	100	ug/l		NWTPHGX 02/11/1	
Gasoline Range Organics-NWTPH Surrogate Recovery a, a, a-Trifluorotoluene(FID)	88.8	3 22	500	% Rec.		NWTPHDX 02/16/1 NWTPHDX 02/15/1	0 5 0 1
aige (DRO)	7000 1500	160 82.	250	ug/l		NWTPHDX 02/15/1	
Diesel Range Organics (RRO) Residual Range Organics (RRO) Surrogate Recovery o-Terphenyl	96.1			% Rec.			

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 5 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SIR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-05

Date Received Description

February 11, 2010 Crowley-Vancouver

Sample ID

MW-9

Site ID : VANCOUVER, WA 008.0205.00020 Project # :

Chris Kramer						Mathod Date	Dil
Collected By : Chris Ridam Collection Date : 02/10/10 10:10	Result	MDL	RDL	0112 + 1	Qualifier	NWTPHGX 02/11/10	1
Parameter	U	33.	100	ug/1		NWTPHGX 02/11/10	
Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID)	88.4	2.2	100	% Rec.		NWTPHDX 02/15/10 NWTPHDX 02/15/10	1
Diesel Range Organics (DRO) Residual Range Organics (RRO)	600 740	33. 82.	250	ug/l % Rec.		NWTPHDX 02/15/10	
Residual Range 0194 Surrogate Recovery o-Terphenyl	70.7			3 9 1 6 173			

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 6 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received : Description :

February 11, 2010 Crowley-Vancouver

Sample ID

MM-10

Chris Kramer 02/10/10 11:48

ESC Sample # : L444418-06

Site ID : VANCOUVER, WA

Project # : 008.0205.00020

Sample : Chris Kran	mer					b.ad	Date	Dil
Collected By : Chris Rtd. Collection Date : 02/10/10	11:48 Result	MDL	RDL	Units	Qualifier	METHOX	02/11/10	1.
Parameter		33.	100	ug/l			02/11/10	
Gasoline Range Organics-NWI Surrogate Recovery a,a,a-Trifluorotoluene(FID	00.2		. 20	% Rec. ug/l		· · · · · · · · · · · · · · · · · · ·	02/15/10	1
a, a, a-Trilluoissics (DRO) 040	33. 82.	100 250	ug/1			x 02/15/10	
Diesel Range Organics (R Residual Range Organics (R Surrogate Recovery O-Terphenyl	83.5			% Rec.				

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 7 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Dil.

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received Description

Sample ID

MW-12

Collected By : Collection Date :

Chris Kramer 02/10/10 09:35

February 11, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA 008.0205.00020 Project # :

ESC Sample # : L444418-07

Method Date Qualifier Units RDL MDL Result NWTPHGX 02/11/10 Parameter ug/1 100 Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID) 33. U 1 NWTPHGX 02/11/10 % Rec. 88.5 NWTPHDX 02/15/10 NWTPHDX 02/15/10 ug/l ug/l 100 Diesel Range Organics (DRO) Residual Range Organics (RRO) Surrogate Recovery o-Terphenyl 4300 33. 250 82. 690 1 NWTPHDX 02/15/10 % Rec. 71.8

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 8 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-08

Date Received Description

February 11, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

Sample ID

MW-14

Project # : 008.0205.00020

Collected By : Collection Date :

Chris Kramer 02/10/10 13:40

Collected By : Chris Kramer Collection Date : 02/10/10 13:40)			n-iko	Qualifier	Method	Date	Dil.
Collection pas-	Result	MDL	RDL	Units			02/11/10	1
Parameter		33.	100	ug/l				
Gasoline Range Organics-NWTPH	U	55.		% Rec.		NWTPHGX	02/11/10	1
	88.4			6 Nec.		ATTAITED H D X	02/16/10	1
a, a, a-Trifluorocoldene (122)	500	33.	100	ug/1	J	NWIPHDX	02/16/10) 1
Diesel Range Organics (DRO) Residual Range Organics (RRO)	130	82.	250	ug/l % Rec.	7.9		02/16/19	
Surrogate Recovery o-Terphenyl	85.3			o Kec.				

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 9 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received : Description :

February 11, 2010 Crowley-Vancouver

Sample ID

MW-16

Collected By : Collection Date :

Chris Kramer 02/10/10 09:10

ESC Sample # : L444418-09

Site ID : VANCOUVER, WA Project # : 008.0205.00020

Collection Date: Chris Rights Collection Date: 02/10/10 09:10				Units	Qualifier	Method	Date	Dil.
COLLEGE	Result	MDL	RDL	UNICS			00/11/10	1
Parameter		2.2	100	ug/l		NWTPHGX	02/11/10	
Gasoline Range Organics-NWTPH	U	33.	100	% Rec.		NWTPHGX	02/11/10	1
Surrogate Recovery a,a,a-Trifluorotoluene(FID)	89.1					NUMBRIDA	02/15/10	1
	U	33. 82.	100 250	ug/l ug/l		NWTPHDX	02/15/10	1
Diesel Range Organics (DRO) Residual Range Organics (RRO)	U	62.	200	% Rec.		NWTPHD	02/15/10) 1
Surrogate Recovery o-Terphenyl	101.							

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 10 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-10

Date Received Description

February 11, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

MW-17

008.0205.00020 Project # :

Sample ID

Sample 15 : Chris Kramer						u-thod	Date	Dil
Collected By : Chis Real Collection Date : 02/10/10 14:07	Result	MDL	RDL	011	Oualifier	NWTPHGX		1
Parameter	U	33.	100	ug/1		NWTPHGX		
Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID)	88.5	33.	100	% Rec.		NWTPHDX NWTPHDX	02/16/10 02/16/10	1
Diesel Range Organics (DRO)	Ü	82.	250	ug/l % Rec.		NWTPHDX	02/16/10) 1
Surrogate Recovery o-Terphenyl	91.1							

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 11 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-11

Date Received Description

February 11, 2010 Crowley-Vancouver

VANCOUVER, WA Site ID :

Sample ID

MW-22

008.0205.00020 Project # :

Chris Kramer 02/10/10 12:36

Collected By : Collection Date : Dil. Method Date Units Qualifier RDL MDLNWTPHGX 02/11/10 Result ug/1 Parameter 100 33. Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID) NWTPHGX 02/11/10 1 200 % Rec. NWTPHDX 02/16/10 NWTPHDX 02/15/10 20 89.4 ug/l 2000 250 660 Diesel Range Organics (DRO) Residual Range Organics (RRO) Surrogate Recovery o-Terphenyl 14000 ug/1 82. NWTPHDX 02/16/10 20 3100 J7 % Rec. 0.00

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 12 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

ESC Sample # : L444418-12

Date Received Description

February 11, 2010 Crowley-Vancouver

Site ID : VANCOUVER, WA

Sample ID

RW-1

Project # : 008.0205.00020

Chris Kramer 02/10/10 15:15

Collected By : Chris Kramer Collection Date : 02/10/10 15:15			-51	Units	Qualifier	Method	Date	Dil.
Collection Date	Result	MDL	RDL	0112 0		NWTPHGX	02/11/10	1
Parameter	U	33.	100	ug/l			02/11/10	
Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID)	89.4		Turba de	% Rec. ug/l		MARGINA	02/17/10	5
organics (DRO)	2900 490	160 82.	500 250	ug/l			02/16/10 x 02/16/10	
Diesel Range Organics (RRO) Residual Range Organics (RRO) Surrogate Recovery O-Terphenyl	67.4			% Rec.		MALLIE		

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

. Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 13 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

Date Received Description

February 11, 2010 Crowley-Vancouver

Sample ID

RINSATE

Collected By : Collection Date :

Chris Kramer 02/10/10 14:25

ESC Sample # : L444418-13

Site ID : VANCOUVER, WA 008.0205.00020

Project # :

Collected By : Chris Kramer Collection Date : 02/10/10 14:25				Units	Qualifier	Method Date	Dil.
001100-	Result	MDL	RDL	OHIES		NWTPHGX 02/12/1	0 1
Parameter		33.	100	ug/l			
Gasoline Range Organics-NWTPH	U	33.	(##.W.)	% Rec.		NWTPHGX 02/12/1	.0 1
	87.7					NWTPHDX 02/16/1	10 1
a,a,a-Trifluorotoluene (FID)	50.	33.	100 250	ug/l ug/l	J	NWTPHDX 02/16/	10 1
Diesel Range Organics (DRO) Residual Range Organics (RRO)	U	82.	250			NWTPHDX 02/16/	10 1
Surrogate Recovery o-Terphenyl	93.4			% Rec.			

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 14 of 21



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2010

Chris Kramer SLR International Corp. - West Linn 1800 Blankenship Road, Suite 440 West Linn, OR 97068

February 11, 2010 Crowley-Vancouver

Date Received Description Sample ID

DUPLICATE

Chris Kramer 02/10/10 12:38

ESC Sample # : L444418-14

Site ID : VANCOUVER, WA Project #: 008.0205.00020

Collected By : Chris Kramer 02/10/10 12:38				Statement of the section	Qualifier	Method Date	Dil.
Collection Date : 02/10/10 12.33	Result	MDL	RDL	0112	Quartra	NWTPHGX 02/12/10	1
Parameter Company Company	190	33.	100	ug/l		NWTPHGX 02/12/10	
Gasoline Range Organics-NWTPH Surrogate Recovery a,a,a-Trifluorotoluene(FID)	90.2	660	2000	% Rec.		NWTPHDX 02/17/10 NWTPHDX 02/16/10	20
Diesel Range Organics (DRO) Recidual Range Organics (RRO)	17000 3800	82.	250	ug/l % Rec.	J7	NWTPHDX 02/17/10	
Surrogate Recovery o-Terphenyl	0.00						

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/10 17:24 Printed: 02/17/10 17:25

Page 15 of 21

Attachment A List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID R1116310	Qualifier
L444418-01 L444418-02 L444418-03 L444418-08 L444418-11 L444418-13 L444418-14	WG462882 WG462946 WG462882 WG463394 WG463394 WG463394	SAMP SAMP SAMP SAMP SAMP SAMP SAMP	o-Terphenyl Gasoline Range Organics-NWTPH Residual Range Organics (RRO) Residual Range Organics (RRO) o-Terphenyl Diesel Range Organics (DRO) o-Terphenyl	R1117569 R1116310 R1118488 R1116310 R1118488 R1118488	J J J J J J7

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
1 grayer (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
	correlates with concentration. Surrogate recovery limits cannot be evaluated; surrogates were diluted out
J7	Parent Information
	Qualifier Report Information by the EPA Contract Laboratory Program and

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples.

Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 02/17/10 at 17:25:12

TSR Signing Reports: 358 R5 - Desired TAT

Sample: L444418-01 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Run Ferruos Fe out of hold per NCF Sample: L444418-02 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-03 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-04 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-05 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-06 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-07 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-08 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-09 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-10 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-11 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-12 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-13 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24 Sample: L444418-14 Account: SLRWLOR Received: 02/11/10 09:00 Due Date: 02/18/10 00:00 RPT Date: 02/17/10 17:24



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444418

February 17, 2010

	Laboratory Blank			T.i mi t	Batch Date	nalyzed
Result	Units	8	Rec	HIMIC		
	75				WG462938 02/11	/10 11:36
< .05	mg/l				0.12	440 00-00
	977- 4 50				WG462904 02/11	/10 23:28
< .1					WG462904 02/11	./10 23:20
< 5	mg/l					- /- 0 14 - 52
					WG463388 02/15	7/10 14:55
					WG463388 02/1	5/10 14:53
					WG463388 02/1	5/10 14:33
< .01	mg/1					- (10 11.70
					WG462882 02/1	5/10 11:39
< .1			02 72	50-150	WG462882 02/1	5/10 11:39
	% Re	c.	32.12		VC-18800 APPLICATE AND ADDRESS OF THE	- /20 00.30
					WG463437 02/1	2/10 50:39
< .002	mg/l				1777-1700 (100-1700) - 200-1800 (100-1700)	
	72				WG462946 02/1	1/10 16:14
< .1			00 03	62-128	WG462946 02/1	1/10 16:14
	% Re	c.	89.03		The second secon	- 4- 2- 1- 27
					WG463223 02/1	6/10 16:37
< 20	mg/l				Annual Language Control Contro	
					WG463394 02/1	6/10 15:46
< .1			OF 46	50-150	WG463394 02/1	6/10 15:46
	% R€	ec.	85.46	99 -		
						2-2014 COM
			to RPD	Limit	Ref Samp	Batch
Units	Result	Duplica	LE KID			mg4C2020
7944 7944	70 TUTSEY	1 10	1.83	20	L444384-03	WG462938
mg/l	1.10	1.10	1.00		1222	WG462904
	4700	0	0	20		WG462904 WG462904
	-			20		WG462904 WG462904
	N (5)	- 70		20	L444350-01	WG462504
mg/l	34.0	34.0				WG463437
	80 V 0008 1242P	0.0000	2 27	20	L444418-01	WG463437
mg/l	0.0870	0.0890	2.2.			WG463223
	1900	130	2.28	20		WG463223
				20	L444384-04	WG46322~
mg/l	310.	310.				
200	200	Contro	1 Sample		A. C. C. C. A. C. C.	Batch
	Laborace	ory concre	Result	% Rec	Limit	Batti
Units	Known	/ai	TODG = -		10000 NORTH	WG462938
2000	-		0.955	95.5	85-115	WG40233
mg/l	1		0.55-		1012 1012 21	WG46290
	_		8 15	102.		WG46290
				99.5	90-110	WG46250
mg/1	40		55.5			WG46338
	645		0.628	97.4		WG46338
				92.3		WG46338
mg/l				78.7	70-130	MG40220
mg/l		aritar	Cian .			
1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	of ostablish	en crirer.	LU.	TO THE CONTRACTOR OF THE PARTY	No.	
is outside	OI escapian	IIIat of	Analytes W	th OC Qualifiers.		
	< .05 < .1 < 5 < .013 < .013 < .013 < .01 < .1 < .002 < .1 < 20 < .1 Units mg/l mg/l	Result Units < .05	Result Units %	Result Units % Rec	New Note	New No.



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444418

February 17, 2010

est minn,			Г444410						
		Laborat	ory Control	Sample Result	욈	Rec	Li	mit	Batch
nalyte	Units	Known	Val	Resure					WG462882
	72	.75		0.700	9	3.3		-150	WG462882
iesel Range Organics (DRO)	mg/l	.75		0.506		7.5*	0-		WG462882
esidual Range Organics (RRO)	mg/l	. /5		W. 25.5		92.23	50	-150	WG402002
-Terphenyl									WG463437
	/3	.0567		0.0572	1	01.	85	5-115	WGdGJdJ
anganese,Dissolved	mg/l	.0507					5200		WG462946
	13	5.5		4.37	5	9.5)-124	WG462946
asoline Range Organics-NWTPH	mg/l	3.3				94.64	6.	2-128	M0402510
,a,a-Trifluorotoluene (FID)								115	WG463223
• 000 • 1222 20 02 10 02 02 02 02 02 02 02 02 02 02 02 02 02	/2	40		40.2		101.	8:	5-115	110103220
lkalinity	mg/l	40					ir.	0-150	WG463394
		.75		0.689		91.9			WG463394
Diesel Range Organics (DRO)	mg/1	.75		0.538	2.9	71.8*		-0	WG463394
Residual Range Organics (RRO)	mg/l	. 15				90.38	5	0-150	W0403373
-Terphenyl									
	T.	aboratory	Control Sam	ple Dupli	cate		m D D	Limit	Batch
	Units	Result	Ref	%Rec	Li	mit	RPD	DIREC	Daton
Analyte	UNITES	Kesare			1000	OGRANIZO	0 430	20	WG462938
	mg/l	0.959	0.955	96.0	85	-115	0.418	20	11020-110
Ferrous Iron	mg/ ±	0.555				5711960	0 202	20	WG462904
	mq/l	8.14	8.15	102.	107010	-110	0.123	20	WG46290
Nitrate	mg/l	39.7	39.8	99.0	90	-110	0.252	20	
Sulfate	mg/ ±	33.1				12 1000 talear	0.25	25	WG463388
	mg/l	0.643	0.628	100.		-130	2.35	25	WG46338
Ethane	mg/1	0.599	0.586	94.0)-130	2.29	25	WG46338
Ethene	mg/1	0.273	0.267	80.0	70)-130	2.20	23	
Methane	mg/ 1	0.275					0.056	20	WG46288
440-600 (100-600 TO 100 TO	mg/l	0.697	0.700	93.0	50)-150	0.356	0	WG46288
Diesel Range Organics (DRO)	mg/l	0.503	0.506	67*	-		0.590*	Ü	WG46288
Residual Range Organics (RRO)	mg/1	0.505		87.41	5	0-150			11010200
o-Terphenyl								20	WG46294
Service - March Commission (Commission Commission Commi	mg/l	4.44	4.37	81.0		0-124	1.49	20	WG46294
Gasoline Range Organics-NWTPH	mg/1	4.44	(T-1.78)	94.84	6	2-128			1101001
a,a,a-Trifluorotoluene (FID)						0.410 144440-0001	2 26	20	WG46322
one-flatter at Del	mg/l	39.3	40.2	98.0	8	5-115	2.26	20	
Alkalinity	mg/ I	33.3				1774 - 1811 P. 1924	0 101	20	WG46339
A STATE OF THE STA	mg/l	0.688	0.689	92.0	5	0-150	0.191		WG46339
Diesel Range Organics (DRO)	mg/l	0.543	0.538	72*			0.875*	·	WG46339
Residual Range Organics (RRO)	mg/1	0.545	100100000000	83.86	5	0-150			
o-Terphenyl									
			Matrix Sp	ike			econd as	Ref Samp	Batch
	Units	MS Res	Ref Res		% Rec	L	imit	VET Damb	
Analyte	Unites	225 2150			44000 220		0 120	L444384-02	WG4629
The Control of the Co	mg/1	1.69	0.210	1.5	98.7	8	0-120	District or	
Ferrous Iron	mg/ I	170,000,000			00000 020	-	0 120	L444384-02	WG4629
	mg/l	4.89	0	5	97.8		0-120	L444384-02	WG4629
Nitrate	m=/1	49 8	0	50	99.6	8	0-120	Tadanor OF	
Sulfate * Performance of this Analyt	mg/ I	e	ished orite	ria.	s with QC				

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report Level II

L444418

February 17, 2010

			Matrix						
Analyte	Units	MS Res	Ref F	es TV	% Rec	Limit		Ref Samp	Batch
Manganese, Dissolved	mg/l	0.145	0.089	.0567	98.8	75-12	5	L444418-01	WG46343
Gasoline Range Organics-NWTPH a,a,a-Trifluorotoluene(FID)	mg/l	4.39	0	5.5	79.8 94.86	58-12: 62-12:		L444418-01	WG46294 WG46294
Alkalinity	mg/l	398.	300.	200	49.0*	80-12	0	L444643-02	WG46322
		Mat	rix Spike	Duplicate					
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Ferrous Iron	mg/l	1.78	1.69	105.	80-120	5.19	20	L444384-02	WG46293
Nitrate	mg/l	4.86	4.89	97.2	80-120	0.615	20	L444384-02	WG46290
Sulfate	mg/l	49.6	49.8	99.2	80-120	0.402	20	L444384-02	WG46290
Manganese, Dissolved	mg/l	0.137	0.145	84.6	75-125	5.67	20	1,444418-01	WG46343
Gasoline Range Organics-NWTPH a,a,a-Trifluorotoluene(FID)	mg/l	4.42	4.39	80.4 94.10	58-122 62-128	0.743	20	L444418-01	WG4629 WG4629
Alkalinity	mg/l	398.	398.	49.0*	80-120	0	20	L444643-02	WG4632

Batch number /Run number / Sample number cross reference

WG462938: R1110988: L444418-01 WG462904: R1112469: L444418-01 WG463388: R1115728: L444418-01

WG463388: R1115728: L4444418-01 WG462882: R1116310: L4444418-01 02 03 04 05 06 07 09 11 WG463437: R1116888: L444418-01 WG463246: R1117569: L444418-01 02 03 04 05 06 07 08 09 10 11 12 13 14 WG463223: R1118048: L444418-01 WG463394: R1118488: L444418-08 10 12 13 14

^{* *} Calculations are performed prior to rounding of reported values .

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



SLR International Corp. - West Linn, OR Chris Kramer 1800 Blankenship Road, Suite 440

West Linn, OR 97068

Quality Assurance Report Level II

L444418

February 17, 2010

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate — is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.