

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

April 04, 2011

Project: Edmonds Terminal

Submittal Date: 03/23/2011

Group Number: 1238606

PO Number: 0015074659

Release Number: JOLITZ

State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
MW-150 Grab Water Sample	6237131
MW-147 Grab Water Sample	6237132
MW-8R Grab Water Sample	6237133
DUP-1 Grab Water Sample	6237134
MW-149R Grab Water Sample	6237135
MW-524 Grab Water Sample	6237136
MW-523 Grab Water Sample	6237137
MW-522 Grab Water Sample	6237138
Trip_Blank Water Sample	6237139

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO
Arcadis US, Inc.

Attn: Rebecca Andresen

ELECTRONIC COPY TO
Arcadis

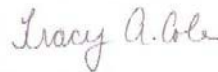
Attn: Scott Zorn

ELECTRONIC COPY TO
Arcadis

Attn: Dave Rasar

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,



Tracy A. Cole
Senior Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Sample Description: MW-150 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237131
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 09:30 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE150

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 14:36	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 14:36	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110820033A	03/24/2011 22:37	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110820033A	03/24/2011 08:00	Catherine R Wiker	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-147 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237132
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 10:45 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE147

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l 740	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 750	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	68	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 14:58	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 14:58	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110820033A	03/24/2011 23:39	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110820033A	03/24/2011 08:00	Catherine R Wiker	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-8R Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237133
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 11:50 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE08R

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 28	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	66	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 15:20	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 15:20	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110820033A	03/24/2011 22:58	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110820033A	03/24/2011 08:00	Catherine R Wiker	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: DUP-1 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237134
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UEFD1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 32	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 15:42	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 15:42	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 07:13	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-149R Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237135
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 09:25 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE149

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 61	ug/l 28	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	66	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 16:04	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 16:04	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 07:34	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-524 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237136
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 10:20 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE524

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 28	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	66	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 16:25	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 16:25	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 07:55	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1

Sample Description: MW-523 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237137
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 11:10 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE523

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 28	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	66	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 16:47	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 16:47	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 15:00	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-522 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237138
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011 12:30 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/23/2011 09:00

Reported: 04/04/2011 08:43

UE522

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 150	ug/l 28	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	66	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11083A20A	03/24/2011 17:09	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11083A20A	03/24/2011 17:09	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 16:44	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: Trip_Blank Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6237139
LLI Group # 1238606
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/22/2011

Chevron

Submitted: 03/23/2011 09:00

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Reported: 04/04/2011 08:43

UETR

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	ECY 97-602 NWTPH-Gx		ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/29/2011 23:12	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/29/2011 23:12	Elizabeth J Marin	1

Quality Control Summary

 Client Name: Chevron
 Reported: 04/04/11 at 08:43 AM

Group Number: 1238606

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 11083A20A NWTPH-Gx water C7-C12	Sample number(s): 6237131-6237138 N.D.	50.	ug/l	100	87	75-135	14	30
Batch number: 11088A20A NWTPH-Gx water C7-C12	Sample number(s): 6237139 N.D.	50.	ug/l	91		75-135		
Batch number: 110820033A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 6237131-6237133 N.D. N.D.	30. 70.	ug/l ug/l	86	86	56-103	0	20
Batch number: 110870006A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 6237134-6237138 N.D. N.D.	30. 70.	ug/l ug/l	80		56-103		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 11088A20A NWTPH-Gx water C7-C12	Sample number(s): 6237139 97	106	57-157	7	30	UNSPK: P238298			
Batch number: 110870006A DRO C12-C24 w/Si Gel	Sample number(s): 6237134-6237138 92	92	60-120	0	20	UNSPK: P238298			

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12
 Batch number: 11083A20A
 Trifluorotoluene-F

6237131	75
6237132	82
6237133	75
6237134	75

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 04/04/11 at 08:43 AM

Group Number: 1238606

Surrogate Quality Control

6237135	75
6237136	76
6237137	74
6237138	75
Blank	77
LCS	127
LCSD	114

Limits: 63-135

Analysis Name: NWT PH-Gx water C7-C12
Batch number: 11088A20A
Trifluorotoluene-F

6237139	75
Blank	74
LCS	117
MS	110
MSD	119

Limits: 63-135

Analysis Name: NWT PH-Dx water w/Si Gel
Batch number: 110820033A
Orthoterphenyl

6237131	106
6237132	108
6237133	102
Blank	106
LCS	116
LCSD	115

Limits: 50-150

Analysis Name: NWT PH-Dx water w/Si Gel
Batch number: 110870006A
Orthoterphenyl

6237134	90
6237135	97
6237136	89
6237137	100
6237138	97
Blank	107
LCS	110
MS	106
MSD	105

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



223421

For Lancaster Laboratories use only
 Acct. #: 11964 Sample #: 6237131-39 SCR#: _____

C# 1238606

Facility #: Edmonds Terminal
 Site Address: 11720 Union Rd, Edmonds WA
 Chevron PM: Kim Jolitz Lead Consultant: ARCADIS
 Consultant/Office: ARCADIS, Seattle
 Consultant Prj. Mgr.: Rebecca Andresen
 Consultant Phone #: 206-325-5254 Fax #: _____
 Sampler: DR, SM
 Service Order #: 80045762 Non SAR: _____

Matrix		Analyses Requested																
		Preservation Codes																
Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE	8021	8260	Naphth	H H									
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				5	<input type="checkbox"/>													
				2														

Preservative Codes
 H = HCl T = Thiosulfate
 N = HNO₃ B = NaOH
 S = H₂SO₄ O = Other

J value reporting needed
 Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
 Confirm MTBE + Naphthalene
 Confirm highest hit by 8260
 Confirm all hits by 8260
 Run ___ oxy s on highest hit
 Run ___ oxy s on all hits

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Total Number of Containers
MW-150	3/22/11	930	X			X			5
MW-147		1045							
MW-8R		1150							
Dup-1									
MW-149R		925							
MW-524		1020							
MW-523		1110							
MW-522		1230							
Trip Blank									2

Comments / Remarks
 page 1 of 1

Turnaround Time Requested (TAT) (please circle)

STD TAT 72 hour 48 hour
 24 hour 4 day 5 day

Data Package Options (please circle if required)

QC Summary Type I - Full
 Type VI (Raw Data) Disk / EDD
 WIP (RWQCB) Standard Format
 Disk _____ Other.

Relinquished by: <u>[Signature]</u>	Date: <u>3/22/11</u>	Time: <u>1500</u>	Received by: <u>FedEx</u>	Date: <u>3/22/11</u>	Time: <u>1500</u>
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by Commercial Carrier: _____	UPS FedEx Other _____		Received by: <u>[Signature]</u>	Date: <u>3/23/11</u>	Time: <u>900</u>
Temperature Upon Receipt: _____ °C	<u>1.2°C - 1.7°C</u>		Custody Seals Intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	l	liter(s)
m3	cubic meter(s)	ul	microliter(s)
<	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
J	estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers	Inorganic Qualifiers
A TIC is a possible aldol-condensation product	B Value is $<$ CRDL, but \geq IDL
B Analyte was also detected in the blank	E Estimated due to interference
C Pesticide result confirmed by GC/MS	M Duplicate injection precision not met
D Compound quantitated on a diluted sample	N Spike sample not within control limits
E Concentration exceeds the calibration range of the instrument	S Method of standard additions (MSA) used for calculation
N Presumptive evidence of a compound (TICs only)	U Compound was not detected
P Concentration difference between primary and confirmation columns $>$ 25%	W Post digestion spike out of control limits
U Compound was not detected	* Duplicate analysis not within control limits
X,Y,Z Defined in case narrative	+ Correlation coefficient for MSA $<$ 0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

April 05, 2011

Project: Edmonds Terminal

Submittal Date: 03/24/2011

Group Number: 1238796

PO Number: 0015074659

Release Number: JOLITZ

State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
MW-139R Grab Water Sample	6238297
MW-518 Grab Water Sample	6238298
MW-518MS Grab Water Sample	6238299
MW-518MSD Grab Water Sample	6238300
MW-101 Grab Water Sample	6238301
MW-104 Grab Water Sample	6238302
MW-20R Grab Water Sample	6238303
MW-109 Grab Water Sample	6238304
MW-108 Grab Water Sample	6238305
LM-2 Grab Water Sample	6238306
MW-129R Grab Water Sample	6238307
DUP-2 Grab Water Sample	6238308
Trip Blank Water Sample	6238309

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Arcadis US, Inc.	Attn: Rebecca Andresen
ELECTRONIC COPY TO	Arcadis	Attn: Scott Zorn
ELECTRONIC COPY TO	Arcadis	Attn: Dave Rasar

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,



Sarah M. Snyder
Senior Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-139R Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238297
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 09:25 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE139

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 00:40	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 00:40	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 17:05	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Sample Description: MW-518 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238298
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 10:40 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE518

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l 330	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 390	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	68	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 06:06	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 06:06	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 00:07	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Sample Description: MW-518MS Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238299
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 10:40 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE518

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l 1,400	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 1,100	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	82	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 06:28	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 06:28	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 00:29	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-518MSD Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238300
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 10:40 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE518

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l 1,500	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 1,100	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	99	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 06:50	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 06:50	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 00:50	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-101 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238301
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 12:15 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE101

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 34	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 01:01	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 01:01	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 17:26	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

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Sample Description: MW-104 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238302
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 13:15 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE104

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l 890	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 290	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	68	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 01:23	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 01:23	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110870006A	03/31/2011 17:47	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110870006A	03/27/2011 16:15	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Sample Description: MW-20R Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238303
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 13:45 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE20R

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	ECY 97-602 NWTPH-Gx		ug/l	ug/l	
08274	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1
GC Volatiles	SW-846 8021B		ug/l	ug/l	
02102	Benzene	71-43-2	5.3	0.2	1
GC Extractable TPH w/Si Gel	ECY 97-602 NWTPH-Dx modified		ug/l	ug/l	
02211	DRO C12-C24 w/Si Gel	n.a.	390	29	1
02211	HRO C24-C40 w/Si Gel	n.a.	190	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A53A	03/30/2011 23:05	Carrie E Miller	1
02102	Method 8021 Water Master	SW-846 8021B	1	11088A53A	03/30/2011 23:05	Carrie E Miller	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A53A	03/30/2011 23:05	Carrie E Miller	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110880007A	04/01/2011 16:47	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110880007A	03/28/2011 15:00	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-109 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238304
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 08:05 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE109

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 01:45	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 01:45	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110880007A	04/01/2011 16:05	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110880007A	03/28/2011 15:00	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-108 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238305
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 09:40 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE108

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 33	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 02:07	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 02:07	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110880007A	04/01/2011 16:26	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110880007A	03/28/2011 15:00	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: LM-2 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238306
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 11:50 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UELM2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 1,600	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	1,000	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 11:30	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 11:30	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110880007A	04/01/2011 17:08	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110880007A	03/28/2011 15:00	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-129R Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238307
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 14:55 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UE129

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 1,700	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	550	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 02:50	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 02:50	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110880007A	04/01/2011 17:28	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110880007A	03/28/2011 15:00	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: DUP-2 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238308
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/24/2011 09:45

Reported: 04/05/2011 09:06

UEFD2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 1,700	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	650	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 03:12	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 03:12	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110880007A	04/01/2011 17:49	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110880007A	03/28/2011 15:00	Kathryn I DeHaven	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: Trip Blank Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6238309
LLI Group # 1238796
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/23/2011

Chevron

Submitted: 03/24/2011 09:45

6001 Bollinger Canyon Rd L4310

Reported: 04/05/2011 09:06

San Ramon CA 94583

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	ECY 97-602 NWTPH-Gx		ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/29/2011 23:34	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/29/2011 23:34	Elizabeth J Marin	1

Quality Control Summary

 Client Name: Chevron
 Reported: 04/05/11 at 09:06 AM

Group Number: 1238796

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 11088A20A NWTPH-Gx water C7-C12	N.D.	50.	ug/l	91		75-135		
Batch number: 11088A53A Benzene NWTPH-Gx water C7-C12	N.D.	0.2	ug/l	105	105	80-120	0	30
	N.D.	50.	ug/l	100	100	75-135	0	30
Batch number: 110870006A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	N.D.	30.	ug/l	80		56-103		
	N.D.	70.	ug/l					
Batch number: 110880007A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	N.D.	30.	ug/l	79	85	56-103	8	20
	N.D.	70.	ug/l					

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 11088A20A NWTPH-Gx water C7-C12	97	106	57-157	7	30				
Batch number: 110870006A DRO C12-C24 w/Si Gel	92	92	60-120	0	20				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

 Analysis Name: NWTPH-Gx water C7-C12
 Batch number: 11088A20A
 Trifluorotoluene-F

6238297	73
6238298	75
6238299	110

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 04/05/11 at 09:06 AM

Group Number: 1238796

Surrogate Quality Control

6238300	119
6238301	72
6238302	79
6238304	77
6238305	74
6238306	73
6238307	72
6238308	81
6238309	74
Blank	74
LCS	117
MS	110
MSD	119

Limits: 63-135

Analysis Name: Method 8021 Water Master
Batch number: 11088A53A

	Trifluorotoluene-P	Trifluorotoluene-F
6238303	79	70
Blank	77	72
LCS	78	73
LCSD	77	76

Limits: 58-146 63-135

Analysis Name: NWTPH-Dx water w/Si Gel
Batch number: 110870006A

Orthoterphenyl

6238297	95
6238298	93
6238299	106
6238300	105
6238301	84
6238302	96
Blank	107
LCS	110
MS	106
MSD	105

Limits: 50-150

Analysis Name: NWTPH-Dx water w/Si Gel
Batch number: 110880007A

Orthoterphenyl

6238303	76
6238304	95
6238305	66
6238306	105
6238307	112
6238308	112
Blank	97
LCS	107
LCSD	112

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 04/05/11 at 09:06 AM

Group Number: 1238796

Surrogate Quality Control

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody

220893



For Lancaster Laboratories use only
 Acct. #: 11964 Sample #: 6238297-309 SCR#: _____

Grp #1238796

Facility #: <u>Edmonds Terminal</u> Site Address: <u>11720 Union Rd, Edmonds</u> Chevron PM: <u>Kim Dolitz</u> Lead Consultant: <u>ARCADIS</u> Consultant/Office: <u>ARCADIS, Seattle</u> Consultant Prj. Mgr.: <u>Rebecca Andresen</u> Consultant Phone #: <u>206 325 5254</u> Fax #: _____ Sampler: <u>Dr. SW</u> Service Order #: <u>B6045362</u> <input type="checkbox"/> Non SAR: _____				Matrix <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air		Analyses Requested Preservation Codes BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan Oxygenates MW TPH G MW TPH D <input checked="" type="checkbox"/> Extended Ring, Silica Gel Cleanup Lead Total <input type="checkbox"/> Diss. <input type="checkbox"/> Method VP/IEPH NWT/PH HClID <input type="checkbox"/> quantification <u>Benzene-80215</u>										Preservative Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ O = Other <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ___ oxy s on highest hit <input type="checkbox"/> Run ___ oxy s on all hits										
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE 8021	8260	Naphth	8260 full scan	Oxygenates	MW TPH G	MW TPH D	Lead Total	Diss.	Method	VP/IEPH	NWT/PH HClID	quantification	Benzene-80215	Comments / Remarks		
MW-139R	3/23/11	925	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			5															page 1 of 1		
MW-518		1040																								
MW-518MS		1040																								
MW-518MSD		1040																								
MW-101		1215																								
MW-104		1315																								
MW-20R		1245																								
MW-109		805																								
MW-108		940																								
MW-129R		1455																								
Dup-2																										
Trip Blank									2																	

Turnaround Time Requested (TAT) (please circle) STD. TAT <input checked="" type="radio"/> 72 hour 48 hour 24-hour 4 day 5 day	Relinquished by: <u>[Signature]</u> Date: <u>3/23/11</u> Time: <u>1600</u> Relinquished by: _____ Date: _____ Time: _____	Received by: <u>[Signature]</u> Date: <u>3/23/11</u> Time: <u>1600</u> Received by: _____ Date: _____ Time: _____
Data Package Options (please circle if required) QC Summary Type I - Full Type VI (Raw Data) Disk / EDD WIP (RWQCB) Standard Format Disk _____ Other.	Relinquished by: _____ Date: _____ Time: _____ Relinquished by Commercial Carrier: UPS <input checked="" type="radio"/> FedEx Other: _____	Received by: <u>[Signature]</u> Date: <u>3/24/11</u> Time: <u>0945</u> Received by: _____ Date: _____ Time: _____ Temperature Upon Receipt: <u>0.8 - 1.2C</u> Custody Seals Intact? <input checked="" type="radio"/> Yes No

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	l	liter(s)
m3	cubic meter(s)	ul	microliter(s)
<	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
J	estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers	Inorganic Qualifiers
A TIC is a possible aldol-condensation product	B Value is $<$ CRDL, but \geq IDL
B Analyte was also detected in the blank	E Estimated due to interference
C Pesticide result confirmed by GC/MS	M Duplicate injection precision not met
D Compound quantitated on a diluted sample	N Spike sample not within control limits
E Concentration exceeds the calibration range of the instrument	S Method of standard additions (MSA) used for calculation
N Presumptive evidence of a compound (TICs only)	U Compound was not detected
P Concentration difference between primary and confirmation columns $>$ 25%	W Post digestion spike out of control limits
U Compound was not detected	* Duplicate analysis not within control limits
X,Y,Z Defined in case narrative	+ Correlation coefficient for MSA $<$ 0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Chevron
6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

April 06, 2011

Project: Edmonds Terminal

Submittal Date: 03/25/2011

Group Number: 1238967

PO Number: 0015074659

Release Number: JOLITZ

State of Sample Origin: WA

Client Sample DescriptionMW-501 Grab Water Sample
MW-500 Grab Water Sample
MW-135 Grab Water Sample
MW-136 Grab Water Sample
RB-1 Grab Water Sample
Trip_Blank Water SampleLancaster Labs (LLI) #6239338
6239339
6239340
6239341
6239342
6239343

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC Arcadis US, Inc.

COPY TO

Attn: Rebecca Andresen

ELECTRONIC Arcadis

COPY TO

Attn: Scott Zorn

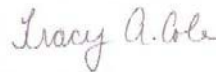
ELECTRONIC Arcadis

COPY TO

Attn: Dave Rasar

Questions? Contact your Client Services Representative
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,



Tracy A. Cole
Senior Specialist



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-501 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6239338
LLI Group # 1238967
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/24/2011 09:25 by DR

Chevron

6001 Bollinger Canyon Rd L4310
 San Ramon CA 94583

Submitted: 03/25/2011 09:15

Reported: 04/06/2011 08:03

ED501

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 89	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 03:34	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 03:34	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110900044A	04/05/2011 08:20	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110900044A	04/01/2011 13:30	Olivia I Santiago	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-500 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6239339
LLI Group # 1238967
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/24/2011 10:55 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/25/2011 09:15

Reported: 04/06/2011 08:03

ED500

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 32	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	68	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 03:56	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 03:56	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110900044A	04/05/2011 08:41	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110900044A	04/01/2011 13:30	Olivia I Santiago	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-135 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6239340
LLI Group # 1238967
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/24/2011 09:45 by DR

Chevron

6001 Bollinger Canyon Rd L4310
 San Ramon CA 94583

Submitted: 03/25/2011 09:15

Reported: 04/06/2011 08:03

ED135

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 500	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	170	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 04:17	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 04:17	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110900044A	04/05/2011 09:11	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110900044A	04/01/2011 13:30	Olivia I Santiago	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Sample Description: MW-136 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6239341
LLI Group # 1238967
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/24/2011 11:10 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/25/2011 09:15

Reported: 04/06/2011 08:03

ED136

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l 540	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	78	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 04:39	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 04:39	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110900044A	04/05/2011 09:33	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110900044A	04/01/2011 13:30	Olivia I Santiago	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: RB-1 Grab Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6239342
LLI Group # 1238967
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/24/2011 11:30 by DR

Chevron

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Submitted: 03/25/2011 09:15

Reported: 04/06/2011 08:03

EDRB1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles					
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx n.a.	ug/l N.D.	ug/l 50	1
GC Extractable TPH w/Si Gel					
02211	DRO C12-C24 w/Si Gel	ECY 97-602 NWTPH-Dx modified n.a.	ug/l N.D.	ug/l 29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	67	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/30/2011 05:01	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/30/2011 05:01	Elizabeth J Marin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	110900044A	04/05/2011 09:54	Melissa McDermott	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	110900044A	04/01/2011 13:30	Olivia I Santiago	1



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: Trip_Blank Water Sample
Unocal Edmonds Terminal
11720 Unoco Road - Edmonds, WA

LLI Sample # WW 6239343
LLI Group # 1238967
Account # 11964

Project Name: Edmonds Terminal

Collected: 03/24/2011

Chevron

Submitted: 03/25/2011 09:15

6001 Bollinger Canyon Rd L4310
San Ramon CA 94583

Reported: 04/06/2011 08:03

EDMTB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC Volatiles	ECY 97-602 NWTPH-Gx		ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

General Sample Comments

State of Washington Lab Certification No. C259

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11088A20A	03/29/2011 23:56	Elizabeth J Marin	1
01146	GC VOA Water Prep	SW-846 5030B	1	11088A20A	03/29/2011 23:56	Elizabeth J Marin	1

Quality Control Summary

Client Name: Chevron
Reported: 04/06/11 at 08:03 AM

Group Number: 1238967

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 11088A20A NWTPH-Gx water C7-C12	Sample number(s): 6239338-6239343 N.D.	50.	ug/l	91		75-135		
Batch number: 110900044A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 6239338-6239342 N.D. N.D.	30. 70.	ug/l ug/l	93	94	56-103	1	20

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 11088A20A NWTPH-Gx water C7-C12	Sample number(s): 6239338-6239343 UNSPK: P238298 97	106	57-157	7	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 11088A20A
Trifluorotoluene-F

6239338	74
6239339	74
6239340	73
6239341	74
6239342	74
6239343	72
Blank	74
LCS	117
MS	110
MSD	119

Limits: 63-135

Analysis Name: NWTPH-Dx water w/Si Gel

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 04/06/11 at 08:03 AM

Group Number: 1238967

Surrogate Quality Control

Batch number: 110900044A
Orthoterphenyl

6239338	84
6239339	81
6239340	92
6239341	90
6239342	91
Blank	91
LCS	98
LCSD	99

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



223423

For Lancaster Laboratories use only

Acct. #: 11964 Sample #: 6239338-43 SCR#: _____

1238967

Facility #: <u>Edmonds Terminal</u> Site Address: <u>11720 Unco Rd, Edmonds WA</u> Chevron PM: <u>Km Jolitz</u> Lead Consultant: <u>ARCADIS</u> Consultant/Office: <u>ARCADIS, Seattle</u> Consultant Prj. Mgr.: <u>Rebecca Andresen</u> Consultant Phone #: <u>2063255254</u> Fax #: _____ Sampler: <u>RR/SM</u> Service Order #: <u>130045362</u> <input type="checkbox"/> Non SAR: _____			Matrix Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air <input type="checkbox"/>		Analyses Requested <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="10">Preservation Codes</th> </tr> <tr> <td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td> </tr> <tr> <td>BTEX + MTBE 8021</td><td><input type="checkbox"/> 8260</td><td><input type="checkbox"/> Naphth</td><td colspan="3"></td><td colspan="3"></td><td colspan="3"></td> </tr> <tr> <td>8260 full scan</td><td colspan="2">Oxygenates</td><td colspan="2">N/TPH G</td><td colspan="2">N/TPH D</td><td>Lead Total</td><td>VP/IEPH</td><td colspan="2">N/TPH H/COID <input type="checkbox"/> quantification</td> </tr> <tr> <td colspan="2"></td><td colspan="2">Extended Rpt. Silica Gel Cleanup</td><td colspan="2">Diss.</td><td colspan="2">Method</td><td colspan="3"></td> </tr> </table>										Preservation Codes										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BTEX + MTBE 8021	<input type="checkbox"/> 8260	<input type="checkbox"/> Naphth										8260 full scan	Oxygenates		N/TPH G		N/TPH D		Lead Total	VP/IEPH	N/TPH H/COID <input type="checkbox"/> quantification				Extended Rpt. Silica Gel Cleanup		Diss.		Method					Preservative Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ O = Other <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ___ oxy s on highest hit <input type="checkbox"/> Run ___ oxy s on all hits	
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MW-136			1110																																																																			
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Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx Other: _____											Received by: <u>May M.L.</u> Date: <u>3/25/11</u> Time: <u>915</u>		Temperature Upon Receipt: <u>0.8-1.3</u> °C Custody/Seals Intact? <input checked="" type="checkbox"/> Yes No																																																									

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
ug	microgram(s)	mg	milligram(s)
ml	milliliter(s)	l	liter(s)
m3	cubic meter(s)	ul	microliter(s)
<	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
J	estimated value – The result is \geq the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers	Inorganic Qualifiers
A TIC is a possible aldol-condensation product	B Value is $<$ CRDL, but \geq IDL
B Analyte was also detected in the blank	E Estimated due to interference
C Pesticide result confirmed by GC/MS	M Duplicate injection precision not met
D Compound quantitated on a diluted sample	N Spike sample not within control limits
E Concentration exceeds the calibration range of the instrument	S Method of standard additions (MSA) used for calculation
N Presumptive evidence of a compound (TICs only)	U Compound was not detected
P Concentration difference between primary and confirmation columns $>$ 25%	W Post digestion spike out of control limits
U Compound was not detected	* Duplicate analysis not within control limits
X,Y,Z Defined in case narrative	+ Correlation coefficient for MSA $<$ 0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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