

# APPENDIX B

Laboratory Analytical Reports



## ANALYTICAL RESULTS

Prepared by:

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2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

September 22, 2015

### Project: Former Olympia Bulk Plant

Submittal Date: 08/20/2015  
Group Number: 1586402  
PO Number: GP09BPNA.WA60  
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
AUS-SB-41(2-2.5) Grab Soil	8015041
AUS-SB-41(2-2.5)-MS Grab Soil	8015042
AUS-SB-41(2-2.5)-MSD Grab Soil	8015043
AUS-SB-52(2-2.5) Grab Soil	8015044
AUS-SB-62(2-2.5) Grab Soil	8015045
AUS-SB-1A(4.5-5) Grab Soil	8015046
AUS-SB-2(2-2.5) Grab Soil	8015047
AUS-SB-3(2-2.5) Grab Soil	8015048
AUS-SB-5A(4.5-5) Grab Soil	8015049
AUS-SB-6(2-2.5) Grab Soil	8015050
AUS-SB-7(2-2.5) Grab Soil	8015051
AUS-SB-8(2-2.5) Grab Soil	8015052
AUS-SB-51(2-2.5) Grab Soil	8015053
AUS-SB-9(2-2.5) Grab Soil	8015054
AUS-SB-10A(2-2.5) Grab Soil	8015055
AUS-SB-11(2-2.5) Grab Soil	8015056
AUS-SB-61(2-2.5) Grab Soil	8015057
AUS-SB-50(2-2.5) Grab Soil	8015058
AUS-SB-40(2-2.5) Grab Soil	8015059
AUS-SB-40(2-2.5)-MS Grab Soil	8015060
AUS-SB-40(2-2.5)-MSD Grab Soil	8015061
AUS-SB-12(2-2.5) Grab Soil	8015062
AUS-SB-13(2-2.5) Grab Soil	8015063
AUS-SB-30(2-2.5) Grab Soil	8015064
AUS-SB-14(2-2.5) Grab Soil	8015065
AUS-SB-20(2-2.5) Grab Soil	8015066
AUS-SB-21(2-2.5) Grab Soil	8015067
AUS-SB-29(2-2.5) Grab Soil	8015068
AUS-SB-19(2-2.5) Grab Soil	8015069
AUS-SB-39(2-2.5) Grab Soil	8015070
AUS-SB-18(2-2.5) Grab Soil	8015071
AUS-SB-17(2-2.5) Grab Soil	8015072

AUS-SB-28(2-2.5) Grab Soil	8015074
AUS-SB-38(2-2.5) Grab Soil	8015076
DUP-1 Grab Soil	8015078
DUP-2 Grab Soil	8015079
Trip Blank Water	8015080

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Myles Perkins
ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Brian Marcum

Respectfully Submitted,



Stacy L. Butt  
Specialist

(717) 556-7236

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Project Name: Former Olympia Bulk Plant  
LL Group #: 1586402

**General Comments:**

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****SW-846 8270C SIM, GC/MS Semivolatiles**

Sample #s: 8015070, 8015076, 8015078

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect.  
The reported data is from the initial analysis of the sample.

Batch #: 15236SLC026 (Sample number(s): 8015041-8015058, 8015064 UNSPK: 8015041)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Naphthalene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015044

Batch #: 15238SLE026 (Sample number(s): 8015059-8015063, 8015065-8015072, 8015074 UNSPK: 8015059)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

Batch #: 15238SLG026 (Sample number(s): 8015076, 8015078-8015079 UNSPK: P18592)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015076, 8015078

**ECY 97-602 NWT PH-Gx, GC Volatiles**

Batch #: 15235A34A (Sample number(s): 8015041-8015043, 8015045-8015058, 8015062-8015064 UNSPK: 8015041)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWT PH-GX Soil C7-C12

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: NWT PH-GX Soil C7-C12

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015053, 8015054, 8015055, 8015056, 8015057, 8015058, 8015062, 8015063, 8015064

Batch #: 15235A34B (Sample number(s): 8015044, 8015078 UNSPK: P15041)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWT PH-GX Soil C7-C12

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: NWT PH-GX Soil C7-C12

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015044, 8015078

Batch #: 15236A34A (Sample number(s): 8015059-8015061, 8015065-8015069, 8015071-8015072, 8015074, 8015076, 8015079 UNSPK: 8015059)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015059, 8015060, 8015061, 8015065, 8015066, 8015067, 8015068, 8015069, 8015071, 8015074, 8015079, MS, MSD

Batch #: 15236A34B (Sample number(s): 8015070 UNSPK: P15059)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015070, MS, MSD

**ECY 97-602 NWT PH-Dx modified, GC Petroleum Hydrocarbons w/Si**

Batch #: 152520004A (Sample number(s): 8015041-8015051, 8015064 UNSPK: 8015041)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8015064

Batch #: 152520005A (Sample number(s): 8015052-8015062, 8015078 UNSPK: 8015059)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: DRO C12-C24 w/Si Gel

**SM 2540 G-1997, Wet Chemistry**

Batch #: 15237820002B (Sample number(s): 8015041-8015044, 8015064 BKG: 8015041)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:  
Moisture, Moisture, Moisture Duplicate

Batch #: 15238820003B (Sample number(s): 8015045-8015063, 8015065-8015066 BKG: 8015059)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:  
Moisture, Moisture, Moisture Duplicate

**Sample Description:** AUS-SB-41(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015041  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB41

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0035	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0035	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.012	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0026	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.012	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0013 J	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0030	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.024	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.055	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.087	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	27	1.5	7.5	31.27
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	28	3.6	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	82	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	16.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 00:48	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 12:23	Marie D Beamenderfer	31.27
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 11:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 19:50	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15237820002B	08/25/2015 19:44	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-41(2-2.5)-MS Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015042  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB41

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.046	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.042	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.053	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.042	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.053	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.038	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.038	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.060	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.090	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.12	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	97	1.8	8.9	37.25
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	210	3.6	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	110	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	16.4	0.50	0.50	1

### General Sample Comments

State of Washington Lab Certification No. C457

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### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 01:21	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 13:23	Marie D Beamenderfer	37.25
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 11:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 20:12	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00118	Moisture	SM 2540 G-1997	1	15237820002B	08/25/2015 19:44	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-41(2-2.5)-MSD Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015043  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB41

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.041	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.041	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.050	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.045	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.051	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.031	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.030	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.075	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.12	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.17	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	45	1.4	6.8	28.37
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	170	3.6	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	71	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	16.4	0.50	0.50	1
00121	Moisture Duplicate	n.a.	14.3	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 01:53	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15235A34A	08/23/2015 13:58	Marie D	28.37
06647	GC-5g Field Preserved MeOH	NWTPH-Gx				Beamenderfer	
		SW-846 5035A	1	201523338620	08/17/2015 11:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520004A	09/11/2015 20:33	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-41(2-2.5)-MSD Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015043  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB41

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM 2540 G-1997	1	15237820002B	08/25/2015 19:44	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15237820002B	08/25/2015 19:44	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-52(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015044  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 12:00 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB52

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0084	0.021	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0084	0.021	10
10725	Benzo(b)fluoranthene	205-99-2	0.014 J	0.0084	0.021	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0084	0.021	10
10725	Chrysene	218-01-9	0.015 J	0.0042	0.021	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0084	0.021	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0084	0.021	10
10725	1-Methylnaphthalene	90-12-0	4.6	0.084	0.21	100
10725	2-Methylnaphthalene	91-57-6	7.7	0.084	0.21	100
10725	Naphthalene	91-20-3	1.9	0.0084	0.021	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	2,400	390	2,000	7673.56
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,300	38	89	10
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	130	380	10
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	22.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	08/31/2015 10:09	Brian K Graham	10
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	08/31/2015 10:42	Brian K Graham	100
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15235A34B	08/24/2015 18:03	Marie D	7673.56
06647	GC-5g Field Preserved MeOH	NWTPH-Gx				Beamenderfer	
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 12:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520004A	09/11/2015 23:48	Heather E Williams	10
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-52(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015044  
LL Group # 1586402  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/17/2015 12:00 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB52

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15237820002B	08/25/2015 19:44	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-62(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015045  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 12:15 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB62

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00082	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.00098 J	0.00082	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0049	0.00082	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.00095 J	0.00082	0.0020	1
10725	Chrysene	218-01-9	0.0043	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00082	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00091 J	0.00082	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0011 J	0.00082	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0019 J	0.00082	0.0020	1
10725	Naphthalene	91-20-3	0.014	0.00082	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	2.0	9.9	40.14
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	6.6 J	3.7	8.6	1
02214	HRO C24-C40 w/Si Gel	n.a.	49	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	19.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 02:58	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 16:19	Marie D Beamenderfer	40.14
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 12:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 20:55	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-1A(4.5-5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015046  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 12:25 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB1A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0012 J	0.00085	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0014 J	0.00085	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.0035	0.00085	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0014 J	0.00085	0.0021	1
10725	Chrysene	218-01-9	0.0028	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00085	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00085	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0029	0.00085	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0049	0.00085	0.0021	1
10725	Naphthalene	91-20-3	0.0037	0.00085	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.5	7.7	29.91
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	9.2	3.8	8.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	64	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	22.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 03:32	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 16:54	Marie D Beamenderfer	29.91
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 12:25	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 21:17	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-2(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015047  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 12:35 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00083	0.0021	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00083	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.0012 J	0.00083	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00083	0.0021	1
10725	Chrysene	218-01-9	0.0012 J	0.00041	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00083	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00083	0.0021	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00083	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0011 J	0.00083	0.0021	1
10725	Naphthalene	91-20-3	0.0024	0.00083	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.5	26.04
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	5.7 J	3.7	8.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	49	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	20.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 04:04	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 17:29	Marie D Beamenderfer	26.04
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 12:35	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 21:38	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-3(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015048  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 12:45 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0056	0.00082	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0062	0.00082	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.013	0.00082	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0052	0.00082	0.0020	1
10725	Chrysene	218-01-9	0.010	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.00084 J	0.00082	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0028	0.00082	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0010 J	0.00082	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0020 J	0.00082	0.0020	1
10725	Naphthalene	91-20-3	0.0045	0.00082	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.5	7.3	29.4
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	8.7	3.7	8.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	68	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	19.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 04:37	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 18:05	Marie D Beamenderfer	29.4
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 12:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 22:00	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-5A(4.5-5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015049  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 12:55 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB5A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0029	0.00083	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0031	0.00083	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.0060	0.00083	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0020 J	0.00083	0.0021	1
10725	Chrysene	218-01-9	0.0043	0.00041	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00083	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0012 J	0.00083	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0053	0.00083	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.012	0.00083	0.0021	1
10725	Naphthalene	91-20-3	0.0074	0.00083	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.6	26.31
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	8.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	20.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 05:10	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 18:40	Marie D Beamenderfer	26.31
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 12:55	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 22:22	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-6(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015050  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 13:05 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.00095 J	mg/kg	mg/kg	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00091	0.0023	1
10725	Benzo(b)fluoranthene	205-99-2	0.0034	0.00091	0.0023	1
10725	Benzo(k)fluoranthene	207-08-9	0.00095 J	0.00091	0.0023	1
10725	Chrysene	218-01-9	0.0022 J	0.00045	0.0023	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00091	0.0023	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00091	0.0023	1
10725	1-Methylnaphthalene	90-12-0	0.0010 J	0.00091	0.0023	1
10725	2-Methylnaphthalene	91-57-6	0.0011 J	0.00091	0.0023	1
10725	Naphthalene	91-20-3	0.0070	0.00091	0.0023	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	2.4 J	mg/kg	mg/kg	32.37
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	13	mg/kg	mg/kg	1
02214	HRO C24-C40 w/Si Gel	n.a.	120	4.1	9.6	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	27.6	%	%	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 09:32	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 19:15	Marie D Beamenderfer	32.37
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 13:05	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 23:05	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-7(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015051  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 13:20 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0017 J	0.00086	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0020 J	0.00086	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.0051	0.00086	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0016 J	0.00086	0.0021	1
10725	Chrysene	218-01-9	0.0040	0.00043	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00086	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0010 J	0.00086	0.0021	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00086	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0011 J	0.00086	0.0021	1
10725	Naphthalene	91-20-3	0.0022	0.00086	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.4	7.1	27.33
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	5.9 J	3.9	9.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	22 J	13	39	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	23.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 05:43	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 19:51	Marie D Beamenderfer	27.33
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 13:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/11/2015 23:26	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-8(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015052  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 13:40 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0011 J	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0013 J	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0049	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0013 J	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.0039	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0018 J	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0025	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.0075	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.5	7.3	30.03
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 06:15	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 20:26	Marie D Beamenderfer	30.03
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 13:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 01:15	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-51(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015053  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 14:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB51

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0017 J	0.00087	0.0022	1
10725	Benzo(a)pyrene	50-32-8	0.0016 J	0.00087	0.0022	1
10725	Benzo(b)fluoranthene	205-99-2	0.0079	0.00087	0.0022	1
10725	Benzo(k)fluoranthene	207-08-9	0.0020 J	0.00087	0.0022	1
10725	Chrysene	218-01-9	0.0064	0.00043	0.0022	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00087	0.0022	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0013 J	0.00087	0.0022	1
10725	1-Methylnaphthalene	90-12-0	0.014	0.00087	0.0022	1
10725	2-Methylnaphthalene	91-57-6	0.022	0.00087	0.0022	1
10725	Naphthalene	91-20-3	0.021	0.00087	0.0022	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.7	8.4	32.19
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	24	3.9	9.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	15 J	13	39	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	23.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 09:00	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 21:01	Marie D Beamenderfer	32.19
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 14:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 01:36	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-9(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015054  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 14:20 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.035	0.00070	0.0018	1
10725	Benzo(a)pyrene	50-32-8	0.040	0.00070	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	0.13	0.00070	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	0.032	0.00070	0.0018	1
10725	Chrysene	218-01-9	0.080	0.00035	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0070	0.00070	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.020	0.00070	0.0018	1
10725	1-Methylnaphthalene	90-12-0	0.026	0.00070	0.0018	1
10725	2-Methylnaphthalene	91-57-6	0.042	0.00070	0.0018	1
10725	Naphthalene	91-20-3	0.038	0.00070	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	1.0 J	1.0	5.1	23.78
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	20	3.1	7.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	110	10	31	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	5.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 10:06	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 22:12	Marie D Beamenderfer	23.78
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 14:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 05:12	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-10A(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015055  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 14:30 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

AS10A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.033	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.035	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.095	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.041	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.079	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0050	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.017	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0067	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0099	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.013	0.00081	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.4	7.1	29.27
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 06:49	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 22:47	Marie D Beamenderfer	29.27
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 14:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 20:51	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-11(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015056  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 14:40 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0030	0.00083	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0040	0.00083	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.010	0.00083	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0033	0.00083	0.0021	1
10725	Chrysene	218-01-9	0.0076	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00083	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0021	0.00083	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0023	0.00083	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0028	0.00083	0.0021	1
10725	Naphthalene	91-20-3	0.0048	0.00083	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.7	26.83
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	8.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	20.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 07:21	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 23:22	Marie D Beamenderfer	26.83
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 14:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 02:19	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-61(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015057  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 15:10 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB61

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.00085 J	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0038	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.00094 J	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.0030	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0050	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.010	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.0073	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.6	27.76
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	12 J	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	15.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 07:54	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 23:57	Marie D Beamenderfer	27.76
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 15:10	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 03:03	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-50(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015058  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 15:45 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0011 J	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0041	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0012 J	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.0031	0.00038	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00077 J	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.0025	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0062	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.0036	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.4	27.99
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	10	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	18 J	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	12.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 08:27	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/24/2015 00:33	Marie D Beamenderfer	27.99
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 15:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 03:24	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-40(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015059  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:05 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0016 J	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0023	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0090	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0022	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.0075	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0018 J	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.010	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.029	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.014	0.00081	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	7.7 J	1.7	8.6	34.74
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	9.7	3.7	8.6	1
02214	HRO C24-C40 w/Si Gel	n.a.	71	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	18.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/03/2015 10:15	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 15:25	Jeremy C Giffin	34.74
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 08:05	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 03:46	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-40(2-2.5)-MS Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015060  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:05 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.036	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.038	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.050	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.043	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.043	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.027	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.027	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.045	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.064	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.049	0.00081	0.0020	1
<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>						
02005	NWT PH-GX Soil C7-C12	n.a.	31	1.5	7.5	30.36
<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	110	3.7	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	82	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	18.8	0.50	0.50	1

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/03/2015 10:49	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15236A34A	08/25/2015 16:01	Jeremy C Giffin	30.36
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 08:05	Client Supplied	n.a.
02214	NWT PH-Dx soil w/Si Gel	ECY 97-602 NWT PH-Dx modified	1	152520005A	09/12/2015 04:07	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWT PH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-40(2-2.5)-MSD Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015061  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:05 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.034	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.038	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.050	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.048	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.039	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.025	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.024	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.043	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.057	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.046	0.00081	0.0020	1
<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	32	1.6	8.1	33.03
<b>GC Petroleum</b>	<b>ECY 97-602 NWTPH-Dx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
<b>Hydrocarbons w/Si</b>	<b>modified</b>					
02214	DRO C12-C24 w/Si Gel	n.a.	100	3.7	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	89	12	37	1
<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00118	Moisture	n.a.	18.8	0.50	0.50	1
00121	Moisture Duplicate	n.a.	17.3	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 08:34	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15236A34A	08/25/2015 16:36	Jeremy C Giffin	33.03
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523338620	08/18/2015 08:05	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520005A	09/12/2015 04:29	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-40(2-2.5)-MSD Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015061  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:05 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB40

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-12(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015062  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:20 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.00084 J	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.0011 J	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0034	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0060	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.0081	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	2.4 J	1.5	7.5	30.9
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	3.6 J	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	16 J	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 02:15	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/24/2015 01:08	Marie D Beamenderfer	30.9
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 08:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 04:51	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-13(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015063  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.00097 J	0.00078	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0010 J	0.00078	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0026	0.00078	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00078	0.0019	1
10725	Chrysene	218-01-9	0.0028	0.00039	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00078	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00088 J	0.00078	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00078	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0010 J	0.00078	0.0019	1
10725	Naphthalene	91-20-3	0.0041	0.00078	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	1.6 J	1.4	7.1	30.2
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	14.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 02:50	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/24/2015 01:43	Marie D Beamenderfer	30.2
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 08:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 19:50	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-30(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015064  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 08:55 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB30

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0074	0.00076	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0076	0.00076	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.029	0.00076	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0079	0.00076	0.0019	1
10725	Chrysene	218-01-9	0.022	0.00038	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0015 J	0.00076	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0049	0.00076	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.073	0.00076	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.23	0.00076	0.0019	1
10725	Naphthalene	91-20-3	0.091	0.00076	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	24	1.6	8.2	35.44
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	430	17	40	5
02214	HRO C24-C40 w/Si Gel	n.a.	700	57	170	5
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	13.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15236SLC026	09/01/2015 02:26	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15236SLC026	08/24/2015 16:30	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34A	08/23/2015 14:33	Marie D Beamenderfer	35.44
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 08:55	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520004A	09/12/2015 00:10	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520004A	08/27/2015 19:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15237820002B	08/25/2015 19:44	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-14(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015065  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 09:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0013 J	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.0014 J	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.00084 J	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0016 J	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.011	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	2.4 J	1.3	6.7	27.56
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	5.9 J	3.6	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	18 J	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 03:25	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 20:31	Jeremy C Giffin	27.56
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 09:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 20:12	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-20(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015066  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 10:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0011 J	0.00078	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0015 J	0.00078	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0036	0.00078	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0011 J	0.00078	0.0020	1
10725	Chrysene	218-01-9	0.0036	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00078	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0013 J	0.00078	0.0020	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00078	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.00088 J	0.00078	0.0020	1
10725	Naphthalene	91-20-3	0.0016 J	0.00078	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.2	6.0	25.66
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.2	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	15.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 04:00	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 21:06	Jeremy C Giffin	25.66
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 10:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 20:33	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820003B	08/26/2015 19:13	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-21(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015067  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 10:35 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB21

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00078	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00078	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0015 J	0.00078	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00078	0.0019	1
10725	Chrysene	218-01-9	0.0015 J	0.00039	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00078	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00078	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00078	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00078	0.0019	1
10725	Naphthalene	91-20-3	0.0022	0.00078	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.3	27.06
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	14.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 04:35	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 21:42	Jeremy C Giffin	27.06
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 10:35	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 20:55	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-29(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015068  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 10:40 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB29

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0076	0.00083	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0079	0.00083	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.028	0.00083	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.011	0.00083	0.0021	1
10725	Chrysene	218-01-9	0.034	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0014 J	0.00083	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0053	0.00083	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0038	0.00083	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0044	0.00083	0.0021	1
10725	Naphthalene	91-20-3	0.0088	0.00083	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	3.8 J	1.7	8.3	32.95
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	5.5 J	3.7	8.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	20.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 05:10	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 22:17	Jeremy C Giffin	32.95
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 10:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 21:17	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-19(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015069  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 11:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/20/2015 10:00

630 Plaza Drive

Reported: 09/22/2015 16:07

Highlands Ranch CO 80129

ASB19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0012 J	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.0013 J	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.00075 J	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.7	29.74
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	10.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 05:44	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 22:52	Jeremy C Giffin	29.74
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 11:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 21:38	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-39(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015070  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 11:10 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB39

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0018 J	0.00094	0.0024	1
10725	Benzo(a)pyrene	50-32-8	0.0013 J	0.00094	0.0024	1
10725	Benzo(b)fluoranthene	205-99-2	0.0044	0.00094	0.0024	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00094	0.0024	1
10725	Chrysene	218-01-9	0.0047	0.00047	0.0024	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00094	0.0024	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0017 J	0.00094	0.0024	1
10725	1-Methylnaphthalene	90-12-0	0.011	0.00094	0.0024	1
10725	2-Methylnaphthalene	91-57-6	0.016	0.00094	0.0024	1
10725	Naphthalene	91-20-3	0.0082	0.00094	0.0024	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect.  
The reported data is from the initial analysis of the sample.

GC Volatiles	ECY 97-602 NWTTPH-Gx	mg/kg	mg/kg	mg/kg	
02005 NWTTPH-GX Soil C7-C12	n.a.	N.D.	52	260	918.64

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTTPH-Dx modified	mg/kg	mg/kg	mg/kg	
02214 DRO C12-C24 w/Si Gel	n.a.	190	21	49	5
02214 HRO C24-C40 w/Si Gel	n.a.	1,300	70	210	5

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111 Moisture	n.a.	29.6	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 06:19	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTTPH-GX Soil C7-C12	ECY 97-602 NWTTPH-Gx	1	15236A34B	08/26/2015 16:16	Marie D Beamenderfer	918.64
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 11:10	Client Supplied	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-39(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015070  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 11:10 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB39

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 23:05	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-18(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015071  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0020	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0023	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0054	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0020	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.0046	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0011 J	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0013 J	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.00094 J	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.4	7.0	30.6
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	26 J	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	12.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 06:54	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/25/2015 17:23	Jeremy C Giffin	30.6
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 11:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 23:26	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-17(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015072  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASB17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.012	0.00084	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.011	0.00084	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.046	0.00084	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.018	0.00084	0.0021	1
10725	Chrysene	218-01-9	0.043	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0016 J	0.00084	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0063	0.00084	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0085	0.00084	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.015	0.00084	0.0021	1
10725	Naphthalene	91-20-3	0.014	0.00084	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.5	7.5	29.5
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	8.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	20.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 07:28	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/26/2015 00:03	Jeremy C Giffin	29.5
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 11:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/11/2015 23:48	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-28(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015074  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 13:30 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB28

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0011 J	0.00082	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0016 J	0.00082	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0044	0.00082	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0010 J	0.00082	0.0020	1
10725	Chrysene	218-01-9	0.0029	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00082	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00082	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0038	0.00082	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0063	0.00082	0.0020	1
10725	Naphthalene	91-20-3	0.0069	0.00082	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	8.1	1.6	7.9	31.84
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	61	3.7	8.6	1
02214	HRO C24-C40 w/Si Gel	n.a.	410	12	37	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	19.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLE026	09/04/2015 08:01	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15238SLE026	08/27/2015 03:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/26/2015 00:38	Jeremy C Giffin	31.84
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 13:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520009A	09/12/2015 00:10	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520009A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-38(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015076  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 14:05 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB38

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.011	0.0016	0.0041	1
10725	Benzo(a)pyrene	50-32-8	0.010	0.0016	0.0041	1
10725	Benzo(b)fluoranthene	205-99-2	0.029	0.0016	0.0041	1
10725	Benzo(k)fluoranthene	207-08-9	0.012	0.0016	0.0041	1
10725	Chrysene	218-01-9	0.025	0.00081	0.0041	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0016	0.0041	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0033 J	0.0016	0.0041	1
10725	1-Methylnaphthalene	90-12-0	0.0094	0.0016	0.0041	1
10725	2-Methylnaphthalene	91-57-6	0.0081	0.0016	0.0041	1
10725	Naphthalene	91-20-3	0.0034 J	0.0016	0.0041	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect.  
The reported data is from the initial analysis of the sample.

<b>GC Volatiles</b>	<b>ECY 97-602 NWT PH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWT PH-GX Soil C7-C12	n.a.	17 J	5.4	27 54.91

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWT PH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02214	DRO C12-C24 w/Si Gel	n.a.	470	37	86 5
02214	HRO C24-C40 w/Si Gel	n.a.	1,700	120	370 5

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	59.4	0.50	0.50 1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 08:06	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherine V Dinan	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15236A34A	08/26/2015 01:13	Jeremy C Giffin	54.91
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 14:05	Client Supplied	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-38(2-2.5) Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015076  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 14:05 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASB38

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520006A	09/12/2015 01:15	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-1 Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015078  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASDP1

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0089	0.022	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0089	0.022	10
10725	Benzo(b)fluoranthene	205-99-2	0.0092 J	0.0089	0.022	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0089	0.022	10
10725	Chrysene	218-01-9	0.010 J	0.0045	0.022	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0089	0.022	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0089	0.022	10
10725	1-Methylnaphthalene	90-12-0	7.8	0.089	0.22	100
10725	2-Methylnaphthalene	91-57-6	12	0.089	0.22	100
10725	Naphthalene	91-20-3	2.9	0.0089	0.022	10

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	1,200	190	970 3569.5

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02214	DRO C12-C24 w/Si Gel	n.a.	3,800	40	94 10
02214	HRO C24-C40 w/Si Gel	n.a.	170 J	130	400 10

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	26.2	0.50	0.50 1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 10:50	Brian K Graham	10
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 11:56	Brian K Graham	100
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15235A34B	08/24/2015 21:15	Marie D Beamenderfer	3569.5

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-1 Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015078  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASDP1

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/17/2015 00:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520005A	09/12/2015 05:34	Heather E Williams	10
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520005A	08/28/2015 10:55	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** DUP-2 Grab Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # SW 8015079  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/18/2015 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/20/2015 10:00

Reported: 09/22/2015 16:07

ASDP2

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.00093 J	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.00071 J	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0017 J	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0032	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.0043	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	1.7 J	1.4	7.2	30.09
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	25 J	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	16.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 01:32	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15236A34A	08/26/2015 01:49	Jeremy C Giffin	30.09
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523338620	08/18/2015 00:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520006A	09/12/2015 01:36	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15238820004A	08/26/2015 19:46	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** Trip Blank Water  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Dr - Olympia, WA

LL Sample # WW 8015080  
LL Group # 1586402  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015

Atlantic Richfield c/o ARCADIS

Submitted: 08/20/2015 10:00

Suite 600

Reported: 09/22/2015 16:07

630 Plaza Drive

Highlands Ranch CO 80129

ASBTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>GC Volatiles</b>						
	<b>ECY 97-602</b>	<b>NWTPH-Gx</b>	ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1

### General Sample Comments

State of Washington Lab Certification No. C457  
State of Washington Lab Certification No. C457

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	15232C20A	08/21/2015 12:11	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	15232C20A	08/21/2015 12:11	Jeremy C Giffin	1

\*=This limit was used in the evaluation of the final result

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15236SLC026      Sample number(s): 8015041-8015058,8015064									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	106		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	101		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	116		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	99		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	109		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	105		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	101		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	97		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	100		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	101		76-118		
Batch number: 15238SLE026      Sample number(s): 8015059-8015063,8015065-8015072,8015074									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	103		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	100		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	104		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	103		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	109		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	119		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	114		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	94		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	97		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	99		76-118		
Batch number: 15238SLG026      Sample number(s): 8015076,8015078-8015079									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	104		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	103		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	112		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	98		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	109		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	121		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	115		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	95		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	99		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	97		76-118		
Batch number: 15232C20A      Sample number(s): 8015080									
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	86		80-123		
Batch number: 15235A34A      Sample number(s): 8015041-8015043,8015045-8015058,8015062-8015064									
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	82		65-120		
Batch number: 15235A34B      Sample number(s): 8015044,8015078									
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	82		65-120		

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15236A34A	Sample number(s): 8015059-8015061,8015065-8015069,8015071-8015072,8015074,8015076,8015079								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	86		65-120		
Batch number: 15236A34B	Sample number(s): 8015070								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	86		65-120		
Batch number: 152520004A	Sample number(s): 8015041-8015051,8015064								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	84		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152520005A	Sample number(s): 8015052-8015062,8015078								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	84		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152520006A	Sample number(s): 8015076,8015079								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	85		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152520009A	Sample number(s): 8015063,8015065-8015072,8015074								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	95		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 15237820002B	Sample number(s): 8015041-8015044,8015064								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15238820003B	Sample number(s): 8015045-8015063,8015065-8015066								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15238820004A	Sample number(s): 8015067-8015072,8015074,8015076,8015078-8015079								
Moisture					100		99-101		

## 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: 15236SLC026	Sample number(s): 8015041-8015058,8015064 UNSPK: 8015041								
Benzo(a)anthracene	106	96	75-119	10	30				
Benzo(a)pyrene	99	94	77-114	5	30				
Benzo(b)fluoranthene	105	97	74-140	6	30				
Benzo(k)fluoranthene	100	107	74-115	7	30				
Chrysene	104	99	76-122	4	30				
Dibenz(a,h)anthracene	93	76*	77-126	20	30				
Indeno(1,2,3-cd)pyrene	88	69*	77-122	22	30				
1-Methylnaphthalene	90	129*	70-119	23	30				

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>BKG</u> <u>MAX</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
2-Methylnaphthalene	87	163*	66-123	28	30			
Naphthalene	76	198*	76-118	34*	30			
Batch number: 15238SLE026	Sample number(s): 8015059-8015063,8015065-8015072,8015074 UNSPK: 8015059							
Benzo(a)anthracene	84	81	75-119	5	30			
Benzo(a)pyrene	87	89	77-114	1	30			
Benzo(b)fluoranthene	101	102	74-140	0	30			
Benzo(k)fluoranthene	100	113	74-115	11	30			
Chrysene	87	78	76-122	10	30			
Dibenz(a,h)anthracene	67*	61*	77-126	10	30			
Indeno(1,2,3-cd)pyrene	61*	54*	77-122	12	30			
1-Methylnaphthalene	85	82	70-119	4	30			
2-Methylnaphthalene	86	70	66-123	11	30			
Naphthalene	86	80	76-118	5	30			
Batch number: 15238SLG026	Sample number(s): 8015076,8015078-8015079 UNSPK: P018592							
Benzo(a)anthracene	87	89	75-119	2	30			
Benzo(a)pyrene	90	87	77-114	3	30			
Benzo(b)fluoranthene	126	120	74-140	4	30			
Benzo(k)fluoranthene	110	105	74-115	4	30			
Chrysene	90	91	76-122	1	30			
Dibenz(a,h)anthracene	60*	56*	77-126	6	30			
Indeno(1,2,3-cd)pyrene	57*	53*	77-122	7	30			
1-Methylnaphthalene	100	88	70-119	12	30			
2-Methylnaphthalene	106	90	66-123	14	30			
Naphthalene	106	91	76-118	14	30			
Batch number: 15232C20A	Sample number(s): 8015080 UNSPK: P010890							
NWTPH-Gx water C7-C12	104	103	80-123	1	30			
Batch number: 15235A34A	Sample number(s): 8015041-8015043,8015045-8015058,8015062-8015064 UNSPK: 8015041							
NWTPH-GX Soil C7-C12	400*	140*	65-120	73*	30			
Batch number: 15235A34B	Sample number(s): 8015044,8015078 UNSPK: 8015041							
NWTPH-GX Soil C7-C12	400*	140*	65-120	73*	30			
Batch number: 15236A34A	Sample number(s): 8015059-8015061,8015065-8015069,8015071-8015072,8015074,8015076,8015079 UNSPK: 8015059							
NWTPH-GX Soil C7-C12	83	79	65-120	4	30			
Batch number: 15236A34B	Sample number(s): 8015070 UNSPK: 8015059							
NWTPH-GX Soil C7-C12	83	79	65-120	4	30			
Batch number: 152520004A	Sample number(s): 8015041-8015051,8015064 UNSPK: 8015041							
DRO C12-C24 w/Si Gel	112	90	60-120	19	20			
Batch number: 152520005A	Sample number(s): 8015052-8015062,8015078 UNSPK: 8015059							
DRO C12-C24 w/Si Gel	60	58*	60-120	3	20			
Batch number: 152520006A	Sample number(s): 8015076,8015079 UNSPK: P018592							
DRO C12-C24 w/Si Gel	70	81	60-120	14	20			

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
Batch number: 152520009A DRO C12-C24 w/Si Gel	82	89	60-120	7	20	8015063,8015065-8015072,8015074	UNSPK: 8015069		
Batch number: 15237820002B Moisture Moisture Moisture Duplicate						Sample number(s): 8015041-8015044,8015064 BKG: 8015041	16.4 16.4 16.4	14.3 14.3 14.3	14* 14* 14*
Batch number: 15238820003B Moisture Moisture Moisture Duplicate						Sample number(s): 8015045-8015063,8015065-8015066 BKG: 8015059	18.8 18.8 18.8	17.3 17.3 17.3	8* 8* 8*
Batch number: 15238820004A Moisture						Sample number(s): 8015067-8015072,8015074,8015076,8015078-8015079 BKG: P014957	12.3	11.9	3

### 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: SIM SVOA (microwave)  
Batch number: 15236SLC026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8015041	105	96	88
8015042	108	99	92
8015043	99	94	87
8015044	104	89	170*
8015045	91	83	80
8015046	94	94	84
8015047	99	98	85
8015048	101	98	86
8015049	101	98	86
8015050	89	92	81
8015051	102	101	88
8015052	100	98	86
8015053	109	96	84
8015054	103	86	89
8015055	82	93	88
8015056	104	100	89
8015057	100	88	84
8015058	101	91	84
8015064	98	89	102
Blank	98	101	90
LCS	96	100	88
MS	108	99	92
MSD	99	94	87
Limits:	49-151	62-137	39-152

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

### Surrogate Quality Control

Analysis Name: SIM SVOA (microwave)  
Batch number: 15238SLE026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8015059	97	94	86
8015060	92	88	82
8015061	96	94	86
8015062	70	88	85
8015063	74	93	86
8015065	74	92	85
8015066	94	93	87
8015067	72	91	84
8015068	108	94	88
8015069	103	97	90
8015070	89	76	71
8015071	97	95	87
8015072	96	95	84
8015074	101	95	87
Blank	92	99	88
LCS	89	98	87
MS	92	88	82
MSD	96	94	86
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)  
Batch number: 15238SLG026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8015076	19*	22*	21*
8015078	123	104	285*
8015079	88	89	82
Blank	77	101	91
LCS	94	100	91
MS	96	91	85
MSD	90	89	83
Limits:	49-151	62-137	39-152

Analysis Name: NWTPH-Gx water C7-C12  
Batch number: 15232C20A

	Trifluorotoluene-F
8015080	90
Blank	90
LCS	97
MS	96
MSD	98
Limits:	63-135

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15235A34A

	Trifluorotoluene-F
8015041	88
8015042	101
8015043	91
8015045	76

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

### Surrogate Quality Control

8015046	72
8015047	66
8015048	83
8015049	85
8015050	86
8015051	68
8015052	82
8015053	146*
8015054	152*
8015055	150*
8015056	147*
8015057	158*
8015058	166*
8015062	145*
8015063	161*
8015064	173*
Blank	99
LCS	103
MS	101
MSD	91

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15235A34B  
Trifluorotoluene-F

8015044	0*
8015078	0*
Blank	97
LCS	103
MS	101
MSD	91

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15236A34A  
Trifluorotoluene-F

8015059	158*
8015060	159*
8015061	155*
8015065	145*
8015066	167*
8015067	155*
8015068	148*
8015069	145*
8015071	167*
8015072	132
8015074	157*
8015076	132
8015079	151*
Blank	98
LCS	107
MS	159*
MSD	155*

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

### Surrogate Quality Control

Batch number: 15236A34B  
Trifluorotoluene-F

8015070	213*
Blank	102
LCS	107
MS	159*
MSD	155*

Limits: 50-142

Analysis Name: NWTTPH-Dx soil w/Si Gel  
Batch number: 152520004A  
Orthoterphenyl

8015041	121
8015042	115
8015043	115
8015044	107
8015045	110
8015046	106
8015047	119
8015048	119
8015049	112
8015050	108
8015051	105
8015064	288*
Blank	116
LCS	107
MS	115
MSD	115

Limits: 50-150

Analysis Name: NWTTPH-Dx soil w/Si Gel  
Batch number: 152520005A  
Orthoterphenyl

8015052	102
8015053	120
8015054	107
8015055	102
8015056	95
8015057	111
8015058	107
8015059	108
8015060	88
8015061	92
8015062	134
8015078	101
Blank	106
LCS	110
MS	88
MSD	92

Limits: 50-150

Analysis Name: NWTTPH-Dx soil w/Si Gel  
Batch number: 152520006A  
Orthoterphenyl

8015076	85
---------	----

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/22/2015 16:07

Group Number: 1586402

### Surrogate Quality Control

8015079	112
Blank	89
LCS	110
MS	101
MSD	112

---

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152520009A  
Orthoterphenyl

8015063	103
8015065	113
8015066	88
8015067	109
8015068	105
8015069	111
8015070	103
8015071	123
8015072	128
8015074	112
Blank	105
LCS	116
MS	104
MSD	106

---

Limits: 50-150

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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.









Laboratory Management Program LaMP Chain of Custody Record

R224113

BP Site Node Path: \_\_\_\_\_  
 BP Facility No: Former Olympia Bulk Plant

Req Due Date (mm/dd/yy): Standard TAT  
 Lab Work Order Number: 175798

Lab Name: Lancaster Laboratories	Facility Address: 1117 West Bay Drive	Consultant/Contractor: ARCADIS
Lab Address: 2425 New Holland Drive	City, State, ZIP Code: Olympia, WA	Consultant/Contractor Project No: CPO9BPNA.WA60
Lab PM: Stacy Butt	Lead Regulatory Agency: WADOE	Address: 1100 Olive Way, Suite 800
Lab Phone: 717-656-2500	California Global ID No.: —	Consultant/Contractor PM: Brian Marcum
Lab Shipping Acct: —	Enfos Proposal No: —	Phone: — Email: Brian.marcum@arcadis-us.com
Lab Bottle Order No: 175798	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: Brian Marcum and to lab_enfosdoc@bp.com
Other Info:	Stage: Activity:	Invoice To: BP ___ Contractor X

BP Project Manager (PM):				Matrix		No. Containers / Preservative					Requested Analyses										Report Type & QC Level															
BP PM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Container:	Unpreserved	H2SO4	HNO3	HCl	Methanol	PAHs + NapH by S201 SJM	CRD by NWTM-6x	PRD by NWTM-Dx											Standard X	Full Data Package ___								
BP PM Email:																											Comments									
Lab No.	Sample Description	Date	Time																	Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.																
	AUS-SP-15 (2-2.5)	08-18-15	1340	X				3	2					X	X	X																				
	AUS-SP-38 (2-2.5)	08-18-15	1405	X				3	2					X	X	X																				
	AUS-SP-49 (2-2.5)	08-18-15	1445	X				3	2					X	X	X																				
	DVP-1	08-17-15	—	X				3	2					X	X	X																				
	DVP-2	08-18-15	—	X				3	2					X	X	X																				
	TRIP BLANK	—	—		X			3								X																				

Sampler's Name: Eric Eppe	Relinquished By / Affiliation: Eric Eppe	Date: 08-14	Time: 1700	Accepted By / Affiliation: [Signature]	Date: 8-20-15	Time: 1000
Sampler's Company: ARCADIS						
Shipment Method: UPS	Ship Date: 08-19-15					
Shipment Tracking No:	[Signature] / ELLE					

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 15-24 °F(C) | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No





# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m3</b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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 per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

## Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

**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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC 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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL 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 Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

## ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

September 14, 2015

### Project: Former Olympia Bulk Plant

Submittal Date: 08/22/2015  
Group Number: 1586959  
PO Number: GP09BPNA.WA60  
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
AUS-SB-62-Offset(4.5-5) Soil	8018583
AUS-SB-41-Offset(2-2.5) Soil	8018584
AUS-SB-52-Offset(2-2.5) Soil	8018585

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

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ARCADIS U.S., Inc.  
ARCADIS U.S., Inc.

Attn: Myles Perkins  
Attn: Brian Marcum

Respectfully Submitted,



Stacy L. Butt  
Specialist

(717) 556-7236

---

Project Name: Former Olympia Bulk Plant  
LL Group #: 1586959

**General Comments:**

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****SW-846 8270C SIM, GC/MS Semivolatiles**

Batch #: 15243SLE026 (Sample number(s): 8018583-8018585 UNSPK: P27307)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Dibenz(a,h)anthracene

**ECY 97-602 NWT PH-Dx modified, GC Petroleum Hydrocarbons**

Batch #: 152430020A (Sample number(s): 8018583-8018585 UNSPK: 8018583)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Diesel Range Organics C12-C24

**ECY 97-602 NWT PH-Dx modified, GC Petroleum Hydrocarbons w/Si**

Sample #s: 8018583, 8018584, 8018585

The holding time was not met. The analysis was added to the sample with insufficient time remaining in the holding time.

**Sample Description:** AUS-SB-62-Offset(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224127  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018583  
LL Group # 1586959  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 15:45 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 09/14/2015 17:32

AVS62

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.84	2.1	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.84	2.1	1
10725	Benzo(b)fluoranthene	205-99-2	2.6	0.84	2.1	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.84	2.1	1
10725	Chrysene	218-01-9	2.6	0.42	2.1	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.84	2.1	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	1.0 J	0.84	2.1	1
10725	1-Methylnaphthalene	90-12-0	3.4	0.84	2.1	1
10725	2-Methylnaphthalene	91-57-6	4.4	0.84	2.1	1
10725	Naphthalene	91-20-3	25	0.84	2.1	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	33	2.7	13	52.03
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons modified</b>						
08272	Diesel Range Organics C12-C24	n.a.	29	3.8	8.8	1
08272	Heavy Range Organics C24-C40	n.a.	58	13	38	1
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	11	3.8	8.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
The holding time was not met. The analysis was added to the sample with insufficient time remaining in the holding time.						
<b>Wet Chemistry SM 2540 G-1997</b>						
02111	Moisture	n.a.	21.6	1.0	1.0	1
"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15243SLE026	09/03/2015 04:34	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15243SLE026	09/01/2015 09:30	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15243A34A	09/01/2015 14:33	Jeremy C Giffin	52.03

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-62-Offset(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224127  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018583  
LL Group # 1586959  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 15:45 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 09/14/2015 17:32

630 Plaza Drive

Highlands Ranch CO 80129

AVS62

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524038693	08/20/2015 15:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	152430020A	09/01/2015 12:03	Christine E Dolman	1
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520029A	09/12/2015 14:15	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	152430020A	08/31/2015 18:45	Sally L Appleyard	1
02111	Moisture	SM 2540 G-1997	1	15244912201A	09/01/2015 12:26	Nancy J Shoop	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-41-Offset(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224127  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018584  
LL Group # 1586959  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 16:20 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 09/14/2015 17:32

AVS41

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.91 J	ug/kg	ug/kg	1
10725	Benzo(a)pyrene	50-32-8	N.D.	ug/kg	ug/kg	1
10725	Benzo(b)fluoranthene	205-99-2	1.5 J	ug/kg	ug/kg	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	ug/kg	ug/kg	1
10725	Chrysene	218-01-9	2.7	ug/kg	ug/kg	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	ug/kg	ug/kg	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	ug/kg	ug/kg	1
10725	1-Methylnaphthalene	90-12-0	36	ug/kg	ug/kg	1
10725	2-Methylnaphthalene	91-57-6	99	ug/kg	ug/kg	1
10725	Naphthalene	91-20-3	63	ug/kg	ug/kg	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	55	mg/kg	mg/kg	119.02
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons modified</b>						
08272	Diesel Range Organics C12-C24	n.a.	30	mg/kg	mg/kg	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	mg/kg	mg/kg	1
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	44	mg/kg	mg/kg	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	mg/kg	mg/kg	1
The holding time was not met. The analysis was added to the sample with insufficient time remaining in the holding time.						
<b>Wet Chemistry SM 2540 G-1997</b>						
02111	Moisture	n.a.	14.4	%	%	1
"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15243SLE026	09/03/2015 05:18	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15243SLE026	09/01/2015 09:30	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15243A34A	09/01/2015 02:29	Jeremy C Giffin	119.02

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-41-Offset(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224127  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018584  
LL Group # 1586959  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 16:20 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 09/14/2015 17:32

Highlands Ranch CO 80129

AVS41

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524038693	08/20/2015 16:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	152430020A	09/01/2015 10:39	Christine E Dolman	1
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520029A	09/12/2015 14:58	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	152430020A	08/31/2015 18:45	Sally L Appleyard	1
02111	Moisture	SM 2540 G-1997	1	15244912201A	09/01/2015 12:40	Nancy J Shoop	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-52-Offset(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224127  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018585  
LL Group # 1586959  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 16:35 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600  
630 Plaza Drive

Reported: 09/14/2015 17:32

Highlands Ranch CO 80129

AVS52

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.82	2.1	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.82	2.1	1
10725	Benzo(b)fluoranthene	205-99-2	2.0 J	0.82	2.1	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.82	2.1	1
10725	Chrysene	218-01-9	2.5	0.41	2.1	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.82	2.1	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.82	2.1	1
10725	1-Methylnaphthalene	90-12-0	1.4 J	0.82	2.1	1
10725	2-Methylnaphthalene	91-57-6	3.0	0.82	2.1	1
10725	Naphthalene	91-20-3	14	0.82	2.1	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.2	6.2	25.02
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons modified</b>						
08272	Diesel Range Organics C12-C24	n.a.	5.7 J	3.7	8.6	1
08272	Heavy Range Organics C24-C40	n.a.	20 J	12	37	1
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
The holding time was not met. The analysis was added to the sample with insufficient time remaining in the holding time.						
<b>Wet Chemistry SM 2540 G-1997</b>						
02111	Moisture	n.a.	18.8	1.0	1.0	1
"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15243SLE026	09/03/2015 05:50	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15243SLE026	09/01/2015 09:30	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15243A34A	08/31/2015 20:58	Jeremy C Giffin	25.02

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-52-Offset(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224127  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018585  
LL Group # 1586959  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 16:35 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 09/14/2015 17:32

630 Plaza Drive

Highlands Ranch CO 80129

AVS52

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524038693	08/20/2015 16:35	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	152430020A	09/01/2015 11:00	Christine E Dolman	1
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520029A	09/12/2015 15:20	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	152430020A	08/31/2015 18:45	Sally L Appleyard	1
02111	Moisture	SM 2540 G-1997	1	15244912201A	09/01/2015 12:48	Nancy J Shoop	1

\*=This limit was used in the evaluation of the final result

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 09/14/2015 17:32

Group Number: 1586959

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15243SLE026	Sample number(s): 8018583-8018585								
Benzo(a)anthracene	N.D.	0.67	1.7	ug/kg	106		75-119		
Benzo(a)pyrene	N.D.	0.67	1.7	ug/kg	102		77-114		
Benzo(b)fluoranthene	N.D.	0.67	1.7	ug/kg	107		74-140		
Benzo(k)fluoranthene	N.D.	0.67	1.7	ug/kg	108		74-115		
Chrysene	N.D.	0.33	1.7	ug/kg	111		76-122		
Dibenz(a,h)anthracene	N.D.	0.67	1.7	ug/kg	118		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.67	1.7	ug/kg	113		77-122		
1-Methylnaphthalene	N.D.	0.67	1.7	ug/kg	97		70-119		
2-Methylnaphthalene	N.D.	0.67	1.7	ug/kg	102		66-123		
Naphthalene	N.D.	0.67	1.7	ug/kg	104		76-118		
Batch number: 15243A34A	Sample number(s): 8018583-8018585								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	87	82	65-120	5	30
Batch number: 152430020A	Sample number(s): 8018583-8018585								
Diesel Range Organics C12-C24	N.D.	3.0	7.0	mg/kg	78		71-115		
Heavy Range Organics C24-C40	N.D.	10.	30	mg/kg					
Batch number: 152520029A	Sample number(s): 8018583-8018585								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	66	74	50-133	12	20
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 15244912201A	Sample number(s): 8018583-8018585								
Moisture					99		98-101		

### 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: 15243SLE026	Sample number(s): 8018583-8018585 UNSPK: P027307								
Benzo(a)anthracene	-2*	93	75-119	24	30				
Benzo(a)pyrene	-55 (2)	56 (2)	77-114	26	30				
Benzo(b)fluoranthene	-42 (2)	127 (2)	74-140	17	30				
Benzo(k)fluoranthene	-22*	65*	74-115	26	30				
Chrysene	-34 (2)	107 (2)	76-122	23	30				
Dibenz(a,h)anthracene	34*	78	77-126	22	30				
Indeno(1,2,3-cd)pyrene	-48 (2)	62 (2)	77-122	26	30				

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/14/2015 17:32

Group Number: 1586959

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
1-Methylnaphthalene	80	94	70-119	7	30				
2-Methylnaphthalene	83	93	66-123	5	30				
Naphthalene	91	98	76-118	3	30				
Batch number: 152430020A	Sample number(s): 8018583-8018585 UNSPK: 8018583								
Diesel Range Organics C12-C24	54*	58*	60-120	5	20				
Batch number: 15244912201A	Sample number(s): 8018583-8018585 BKG: 8018583								
Moisture						21.6	21.2	2	3

### 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: SIM SVOA (microwave)  
Batch number: 15243SLE026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8018583	105	93	82
8018584	105	93	93
8018585	98	87	83
Blank	90	100	88
LCS	93	101	90
MS	82	66	84
MSD	95	71	85
Limits:	49-151	62-137	39-152

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15243A34A

	Trifluorotoluene-F
8018583	107
8018584	87
8018585	65
Blank	104
LCS	104
LCSD	102
Limits:	50-142

Analysis Name: NWTPH-Dx soil  
Batch number: 152430020A

	Orthoterphenyl
8018583	100
8018584	105
8018585	99
Blank	97
LCS	98
MS	93

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/14/2015 17:32

Group Number: 1586959

### Surrogate Quality Control

---

MSD	95
Limits:	50-150

---

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152520029A  
Orthoterphenyl

---

8018583	95
8018584	103
8018585	97
Blank	104
LCS	91
LCSD	98
Limits:	50-150

---

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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.





Client: Arcadis

**Delivery and Receipt Information**

Delivery Method: UPS                      Arrival Timestamp: 08/22/2015 10:25  
 Number of Packages: 3                      Number of Projects: 1

**Arrival Condition Summary**

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	7
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	Yes		

*Unpacked by Timothy Cubberley (6520) at 12:31 on 08/22/2015*

**Samples Chilled Details**

*Thermometer Types:    DT = Digital (Temp. Bottle)    IR = Infrared (Surface Temp)    All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	1.2	DT	Wet	Y	Bagged	N
2	DT121	2.0	DT	Wet	Y	Bagged	N
3	DT121	2.2	DT	Wet	Y	Bagged	N

**Container Quantity Discrepancy Details**

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
AUS-SB-24(2-2.5)	6	3	Recieved one extra vial and 2 extra jars.

**Sample Date/Time Discrepancy Details**

Sample ID on COC	Date/Time on Label	Comments
AUS-SB-42(2-2.5)	8/20/2015 12:30	Time on CoC is marked at 10:00.

# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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 per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

**Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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## ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

October 08, 2015

**Project: Former Olympia Bulk Plant**Submittal Date: 08/22/2015  
Group Number: 1586960  
PO Number: GP09BPNA.WA60  
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
AUS-SB-60(2-2.5) Soil	8018587
AUS-SB-59(4.5-5) Soil	8018588
AUS-SB-48(2-2.5) Soil	8018589
AUS-SB-58(2-2.5) Soil	8018590
AUS-SB-47(2-2.5) Soil	8018591
AUS-SB-57(2-2.5) Soil	8018592
AUS-SB-57(2-2.5)MS Soil	8018593
AUS-SB-57(2-2.5)MSD Soil	8018594
AUS-SB-46(2-2.5) Soil	8018595
AUS-SB-56(4.5-5) Soil	8018596
AUS-SB-55(4.5-5) Soil	8018597
AUS-SB-45(2-2.5) Soil	8018598
AUS-SB-34(4.5-5) Soil	8018599
AUS-SB-35(2-2.5) Soil	8018600
AUS-SB-36(2-2.5) Soil	8018601
AUS-SB-37(2-2.5) Soil	8018602
AUS-SB-27(2-2.5) Soil	8018603
AUS-SB-31(2-2.5) Soil	8018604
AUS-SB-32(2-2.5) Soil	8018605
AUS-SB-44(4.5-5) Soil	8018606
AUS-SB-22(2-2.5) Soil	8018607
AUS-SB-22(2-2.5)MS Soil	8018608
AUS-SB-22(2-2.5)MSD Soil	8018609
AUS-SB-54(2-2.5) Soil	8018611
AUS-SB-4A(2-2.5) Soil	8018612
AUS-SB-42(2-2.5) Soil	8018613
AUS-SB-26A(2-2.5) Soil	8018615
AUS-SB-25A(2-2.5) Soil	8018616
AUS-SB-43A(2-2.5) Soil	8018617
AUS-SB-63(2-2.5) Soil	8018620
DUP-3 Soil	8018621
DUP-4 Soil	8018622

TRIP BLANK Water

8018623

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC COPY TO  
ELECTRONIC COPY TO  
ARCADIS U.S., Inc.  
ARCADIS U.S., Inc.

Attn: Myles Perkins

Attn: Brian Marcum

Respectfully Submitted,



Stacy L. Butt  
Specialist

(717) 556-7236

---

Project Name: Former Olympia Bulk Plant  
LL Group #: 1586960

**General Comments:**

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

**SW-846 8270C SIM, GC/MS Semivolatiles**

Sample #s: 8018615

Reporting limits were raised due to interference from the sample matrix.

Sample #s: 8018606

The holding time was not met. Per client request, the sample was placed on hold. When released for analysis, the holding time had already expired.

Sample #s: 8018621

The recovery for a target analyte(s) in the Laboratory Control Spike(s) and the recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.

The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial.

Sample #s: 8018613

The recovery for a target analyte(s) in the Laboratory Control Spike(s) and the recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.

The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Sample #s: 8018607, 8018608, 8018609, 8018611, 8018612, 8018616, 8018617, 8018620

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Sample #s: 8018598, 8018599, 8018600, 8018601, 8018603, 8018604

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:

The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

Sample #s: 8018592

The recovery for the sample internal standard(s) is outside the QC acceptance limits. The recovery for the internal standard(s) is also outside the QC acceptance limits in the associated matrix spike(s), indicating a matrix effect.



Batch #: 15238SLG026 (Sample number(s): 8018587-8018605 UNSPK: 8018592)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene  
Batch #: 15240SLF026 (Sample number(s): 8018607-8018609, 8018611-8018613, 8018615-8018617, 8018620-8018622 UNSPK: 8018607)

The recovery(ies) for the following analyte(s) in the LCS exceeded the acceptance window indicating a positive bias: Benzo(k)fluoranthene

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8018613, 8018621  
Batch #: 15273SLE026 (Sample number(s): 8018606 UNSPK: 8018606)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Chrysene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8018606, MS, MSD  
**ECY 97-602 NWTPH-Gx, GC Volatiles**

Sample #s: 8018587, 8018588, 8018589, 8018590, 8018591, 8018595, 8018596, 8018597, 8018598, 8018600, 8018601, 8018602, 8018603, 8018604, 8018605, 8018607, 8018611, 8018612, 8018613, 8018615, 8018616, 8018617, 8018621  
Reporting limits were raised due to sample foaming.

Batch #: 15238A34A (Sample number(s): 8018592-8018594 UNSPK: 8018592)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWTPH-GX Soil C7-C12  
Batch #: 15239A34A (Sample number(s): 8018607-8018609, 8018611-8018613, 8018615-8018617, 8018620, 8018622 UNSPK: 8018607)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWTPH-GX Soil C7-C12

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8018622

**ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons w/Si**

Batch #: 152520007A (Sample number(s): 8018596-8018604, 8018607-8018609 UNSPK: 8018607)

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: DRO C12-C24 w/Si Gel

**SM 2540 G-1997, Wet Chemistry**

Batch #: 15240820002B (Sample number(s): 8018600-8018605, 8018607-8018609, 8018611-8018612 BKG: 8018607)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture, Moisture, Moisture Duplicate

Batch #: 15240820003A (Sample number(s): 8018613, 8018615-8018617, 8018620-8018622 BKG: P18541)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture

**Sample Description:** AUS-SB-60(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018587  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 07:15 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS60

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0012 J	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0017 J	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0051	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0014 J	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.0048	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0018 J	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.00093 J	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0017 J	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.0092	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	17	86	357.53
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 02:04	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 13:16	Jeremy C Giffin	357.53
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 07:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 01:58	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-60(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018587  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/19/2015 07:15 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS60

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-59(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018588  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 07:30 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS59

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0034	0.00088	0.0022	1
10725	Benzo(a)pyrene	50-32-8	0.0048	0.00088	0.0022	1
10725	Benzo(b)fluoranthene	205-99-2	0.0081	0.00088	0.0022	1
10725	Benzo(k)fluoranthene	207-08-9	0.0031	0.00088	0.0022	1
10725	Chrysene	218-01-9	0.0070	0.00044	0.0022	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00088	0.0022	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0029	0.00088	0.0022	1
10725	1-Methylnaphthalene	90-12-0	0.0072	0.00088	0.0022	1
10725	2-Methylnaphthalene	91-57-6	0.013	0.00088	0.0022	1
10725	Naphthalene	91-20-3	0.040	0.00088	0.0022	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	16	79	299.37
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	10	3.9	9.2	1
02214	HRO C24-C40 w/Si Gel	n.a.	69	13	39	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	24.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 02:37	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 13:52	Jeremy C Giffin	299.37
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 07:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 02:19	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-59(4.5-5) Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018588  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 07:30 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS59

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-48(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018589  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 07:50 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS48

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0011 J	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0031	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.0024	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0055	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0043	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.0079	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	68	283.5
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	20	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	17.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 03:10	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 14:27	Jeremy C Giffin	283.5
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 07:50	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 03:03	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-48(2-2.5) Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018589  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 07:50 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS48

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-58(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018590  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS58

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.00092 J	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0012 J	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0045	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0011 J	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.0042	0.00038	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00097 J	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0012 J	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.0034	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	68	295.7
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	8.0	1
02214	HRO C24-C40 w/Si Gel	n.a.	12 J	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	12.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 03:43	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 15:02	Jeremy C Giffin	295.7
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 08:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 03:24	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-58(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018590  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/19/2015 08:00 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS58

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-47(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018591  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:15 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS47

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0021	0.00078	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0030	0.00078	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0085	0.00078	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0022	0.00078	0.0020	1
10725	Chrysene	218-01-9	0.0082	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00078	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0015 J	0.00078	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0028	0.00078	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0048	0.00078	0.0020	1
10725	Naphthalene	91-20-3	0.0038	0.00078	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	69	292.22
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	370	3.5	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	210	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	15.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 04:16	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 15:37	Jeremy C Giffin	292.22
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 08:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 03:46	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-47(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018591  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/19/2015 08:15 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS47

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-57(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018592  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS57

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.00097 J	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0018 J	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0052	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.00094 J	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.0035	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.0012 J	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0018 J	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.0030	0.00075	0.0019	1

The recovery for the sample internal standard(s) is outside the QC acceptance limits. The recovery for the internal standard(s) is also outside the QC acceptance limits in the associated matrix spike(s), indicating a matrix effect.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg	
02005 NWTPH-GX Soil C7-C12	n.a.	N.D.	1.2	6.2	27.39

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg	
02214 DRO C12-C24 w/Si Gel	n.a.	4.1 J	3.4	7.9	1
02214 HRO C24-C40 w/Si Gel	n.a.	25 J	11	34	1

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111 Moisture	n.a.	11.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/04/2015 10:47	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherine V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15238A34A	08/27/2015 17:54	Jeremy C Giffin	27.39
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201523538634	08/19/2015 08:40	Client Supplied	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-57(2-2.5) Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018592  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS57

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520006A	09/12/2015 04:07	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-57(2-2.5)MS Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018593  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS57

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.033	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.035	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.052	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.042	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.037	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	0.023	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.021	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.038	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.041	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.042	0.00075	0.0019	1
<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	17	1.4	7.1	31.36
<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02214	DRO C12-C24 w/Si Gel	n.a.	110	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	24 J	11	34	1
<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>		<b>%</b>	<b>%</b>	<b>%</b>	
00118	Moisture	n.a.	11.5	0.50	0.50	1

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/04/2015 11:21	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15238A34A	08/27/2015 18:33	Jeremy C Giffin	31.36
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/19/2015 08:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520006A	09/12/2015 04:29	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-57(2-2.5)MSD Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018594  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS57

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.034	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.034	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.050	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.040	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.038	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	0.021	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.020	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.034	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.036	0.00075	0.0019	1
10725	Naphthalene	91-20-3	0.037	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	17	1.2	5.9	25.91
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	120	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	26 J	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	11.5	0.50	0.50	1
00121	Moisture Duplicate	n.a.	11.6	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/04/2015 11:55	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherine V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15238A34A	08/27/2015 19:09	Jeremy C Giffin	25.91
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201523538634	08/19/2015 08:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 04:51	Heather E Williams	1
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	152520006A	08/30/2015 15:30	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-57(2-2.5)MSD Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018594  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 08:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS57

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-46(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018595  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 10:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS46

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0055	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0061	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.013	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0042	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.011	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0025	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.013	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.022	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.019	0.00081	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	18	91	372.92
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	110	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	170	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 04:48	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 16:13	Jeremy C Giffin	372.92
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 10:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520006A	09/12/2015 05:12	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520006A	08/30/2015 15:30	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-46(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018595  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/19/2015 10:00 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS46

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-56(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018596  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 10:15 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS56

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0016 J	0.00088	0.0022	1
10725	Benzo(a)pyrene	50-32-8	0.0025	0.00088	0.0022	1
10725	Benzo(b)fluoranthene	205-99-2	0.0070	0.00088	0.0022	1
10725	Benzo(k)fluoranthene	207-08-9	0.0017 J	0.00088	0.0022	1
10725	Chrysene	218-01-9	0.0046	0.00044	0.0022	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00088	0.0022	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0013 J	0.00088	0.0022	1
10725	1-Methylnaphthalene	90-12-0	0.0084	0.00088	0.0022	1
10725	2-Methylnaphthalene	91-57-6	0.015	0.00088	0.0022	1
10725	Naphthalene	91-20-3	0.028	0.00088	0.0022	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	16	79	296.61
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	23	3.9	9.2	1
02214	HRO C24-C40 w/Si Gel	n.a.	81	13	39	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	25.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 07:00	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 16:48	Jeremy C Giffin	296.61
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 10:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520007A	09/12/2015 06:18	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-56(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018596  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/19/2015 10:15 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS56

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-55(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018597  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 10:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00094	0.0023	1
10725	Benzo(a)pyrene	50-32-8	0.0011 J	0.00094	0.0023	1
10725	Benzo(b)fluoranthene	205-99-2	0.0019 J	0.00094	0.0023	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00094	0.0023	1
10725	Chrysene	218-01-9	0.0011 J	0.00047	0.0023	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00094	0.0023	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00094	0.0023	1
10725	1-Methylnaphthalene	90-12-0	0.0011 J	0.00094	0.0023	1
10725	2-Methylnaphthalene	91-57-6	0.0017 J	0.00094	0.0023	1
10725	Naphthalene	91-20-3	0.0074	0.00094	0.0023	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	17	86	305.23
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	9.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	42	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	29.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 05:22	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 17:58	Jeremy C Giffin	305.23
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/19/2015 10:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520007A	09/12/2015 07:01	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-55(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018597  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/19/2015 10:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS55

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-45(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018598  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 11:20 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS45

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.016	0.00095	0.0024	1
10725	Benzo(a)pyrene	50-32-8	0.040	0.00095	0.0024	1
10725	Benzo(b)fluoranthene	205-99-2	0.069	0.00095	0.0024	1
10725	Benzo(k)fluoranthene	207-08-9	0.014	0.00095	0.0024	1
10725	Chrysene	218-01-9	0.031	0.00047	0.0024	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0027	0.00095	0.0024	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0073	0.00095	0.0024	1
10725	1-Methylnaphthalene	90-12-0	0.034	0.00095	0.0024	1
10725	2-Methylnaphthalene	91-57-6	0.079	0.00095	0.0024	1
10725	Naphthalene	91-20-3	0.060	0.00095	0.0024	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	19	94	329.79

Reporting limits were raised due to sample foaming.

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	48	4.3	10	1
02214	HRO C24-C40 w/Si Gel	n.a.	130	14	43	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	29.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 08:39	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15242A34A	08/30/2015 18:34	Jeremy C Giffin	329.79

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-45(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018598  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 11:20 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS45

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/19/2015 11:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 09:33	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-34(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018599  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 11:55 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS34

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0056	0.0012	0.0029	1
10725	Benzo(a)pyrene	50-32-8	0.047	0.0012	0.0029	1
10725	Benzo(b)fluoranthene	205-99-2	0.073	0.0012	0.0029	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0012	0.0029	1
10725	Chrysene	218-01-9	0.012	0.00058	0.0029	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0015 J	0.0012	0.0029	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0029 J	0.0012	0.0029	1
10725	1-Methylnaphthalene	90-12-0	1.3	0.012	0.029	10
10725	2-Methylnaphthalene	91-57-6	1.7	0.012	0.029	10
10725	Naphthalene	91-20-3	0.38	0.0012	0.0029	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

<b>GC Volatiles</b>	<b>ECY 97-602 NWT PH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWT PH-GX Soil C7-C12	n.a.	180	27	130 383.19

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWT PH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02214	DRO C12-C24 w/Si Gel	n.a.	420	5.2	12 1
02214	HRO C24-C40 w/Si Gel	n.a.	51 J	17	52 1

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	42.4	0.50	0.50 1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 09:12	Brian K Graham	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/07/2015 00:57	Brian K Graham	10
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15242A34A	08/30/2015 19:09	Jeremy C Giffin	383.19

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-34(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018599  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 11:55 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS34

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/19/2015 11:55	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 07:23	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002A	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-35(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018600  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 12:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM mg/kg</b>						
10725	Benzo(a)anthracene	56-55-3	0.029	0.0078	0.020	10
10725	Benzo(a)pyrene	50-32-8	0.055	0.0078	0.020	10
10725	Benzo(b)fluoranthene	205-99-2	0.21	0.0078	0.020	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0078	0.020	10
10725	Chrysene	218-01-9	0.072	0.0039	0.020	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0078	0.020	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.014 J	0.0078	0.020	10
10725	1-Methylnaphthalene	90-12-0	0.013 J	0.0078	0.020	10
10725	2-Methylnaphthalene	91-57-6	0.025	0.0078	0.020	10
10725	Naphthalene	91-20-3	0.026	0.0078	0.020	10

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	15	77	328.08
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	200	18	41	5
02214	HRO C24-C40 w/Si Gel	n.a.	1,900	59	180	5

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	15.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 11:23	Brian K Graham	10
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15242A34A	08/30/2015 19:44	Jeremy C Giffin	328.08

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-35(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018600  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 12:00 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS35

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/19/2015 12:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 12:48	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-36(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018601  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 14:15 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS36

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM mg/kg</b>						
10725	Benzo(a)anthracene	56-55-3	0.014	0.00074	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.013	0.00074	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.036	0.00074	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.012	0.00074	0.0019	1
10725	Chrysene	218-01-9	0.024	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0021	0.00074	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0048	0.00074	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.0022	0.00074	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0036	0.00074	0.0019	1
10725	Naphthalene	91-20-3	0.0043	0.00074	0.0019	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect.  
The reported data is from the initial analysis of the sample.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	15	73	323.55
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	21	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	240	11	34	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	10.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 09:44	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15242A34A	08/30/2015 20:19	Jeremy C Giffin	323.55

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-36(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018601  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 14:15 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS36

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/19/2015 14:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 09:54	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-37(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018602  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 07:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS37

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.00083 J	0.00074	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0014 J	0.00074	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0047	0.00074	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.00095 J	0.00074	0.0019	1
10725	Chrysene	218-01-9	0.0031	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00074	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00074	0.0019	1
10725	Naphthalene	91-20-3	0.00080 J	0.00074	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	15	73	328.2
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	10	3.3	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	68	11	33	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	10.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 05:54	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 20:55	Jeremy C Giffin	328.2
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/20/2015 07:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520007A	09/12/2015 07:44	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-37(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018602  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/20/2015 07:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS37

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-27(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018603  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 08:05 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS27

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0021	0.00084	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.026	0.00084	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.031	0.00084	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00084	0.0021	1
10725	Chrysene	218-01-9	0.0053	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00084	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0011 J	0.00084	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0022	0.00084	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0045	0.00084	0.0021	1
10725	Naphthalene	91-20-3	0.0077	0.00084	0.0021	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	21	110	417.27
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	52	19	44	5
02214	HRO C24-C40 w/Si Gel	n.a.	500	63	190	5

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	20.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 07:33	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15242A34A	08/30/2015 21:30	Jeremy C Giffin	417.27

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-27(2-2.5) Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018603  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 08:05 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS27

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 08:05	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 10:16	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-31(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018604  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 09:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS31

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0092	0.0013	0.0032	1
10725	Benzo(a)pyrene	50-32-8	0.013	0.0013	0.0032	1
10725	Benzo(b)fluoranthene	205-99-2	0.037	0.0013	0.0032	1
10725	Benzo(k)fluoranthene	207-08-9	0.0086	0.0013	0.0032	1
10725	Chrysene	218-01-9	0.017	0.00065	0.0032	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0013	0.0032	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0045	0.0013	0.0032	1
10725	1-Methylnaphthalene	90-12-0	0.016	0.0013	0.0032	1
10725	2-Methylnaphthalene	91-57-6	0.020	0.0013	0.0032	1
10725	Naphthalene	91-20-3	0.030	0.0013	0.0032	1

The recovery for the sample internal standard is outside the QC acceptance limits. The following corrective action was taken:  
The sample was re-analyzed and internal standard areas are again outside of the QC acceptance limits, indicating a matrix effect. The reported data is from the initial analysis of the sample.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	28	140	354.54

Reporting limits were raised due to sample foaming.

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	53	5.8	14	1
02214	HRO C24-C40 w/Si Gel	n.a.	170	19	58	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	48.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 10:17	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katherlyne V Dinan	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15242A34A	08/30/2015 22:05	Jeremy C Giffin	354.54

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-31(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018604  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 09:00 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS31

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 09:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 08:06	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-32(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018605  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 09:10 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS32

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0014 J	0.00084	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0021	0.00084	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.0046	0.00084	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0012 J	0.00084	0.0021	1
10725	Chrysene	218-01-9	0.0036	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00084	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00090 J	0.00084	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0028	0.00084	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0055	0.00084	0.0021	1
10725	Naphthalene	91-20-3	0.0053	0.00084	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	69	275.19
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	8.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	20.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15238SLG026	09/05/2015 06:27	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	2	15238SLG026	08/27/2015 07:45	Katheryne V Dinan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15242A34A	08/30/2015 22:40	Jeremy C Giffin	275.19
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201523538634	08/20/2015 09:10	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520008A	09/12/2015 07:44	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: AUS-SB-32(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018605  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/20/2015 09:10 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS32

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-44(4.5-5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018606  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 09:55 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS44

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.027	0.068	20
10725	Benzo(a)pyrene	50-32-8	N.D.	0.027	0.068	20
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.027	0.068	20
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.027	0.068	20
10725	Chrysene	218-01-9	0.028 J	0.014	0.068	20
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.027	0.068	20
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.027	0.068	20
10725	1-Methylnaphthalene	90-12-0	2.6	0.027	0.068	20
10725	2-Methylnaphthalene	91-57-6	2.3	0.027	0.068	20
10725	Naphthalene	91-20-3	0.71	0.027	0.068	20

The holding time was not met. Per client request, the sample was placed on hold. When released for analysis, the holding time had already expired.

<b>GC Volatiles</b>	<b>ECY 97-602 NWT PH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWT PH-GX Soil C7-C12	n.a.	1,900	64	320	778.26

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWT PH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02214	DRO C12-C24 w/Si Gel	n.a.	820	6.1	14	1
02214	HRO C24-C40 w/Si Gel	n.a.	34 J	20	61	1

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00111	Moisture	n.a.	51.0	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15273SLE026	10/02/2015 16:14	Holly B Ziegler	20
10811	BNA Soil Microwave SIM	SW-846 3546	1	15273SLE026	10/01/2015 09:30	Jessica M Velez	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15268A31B	09/30/2015 04:40	Marie D Beamenderfer	778.26
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201527138944	08/20/2015 09:55	Client Supplied	n.a.
02214	NWT PH-Dx soil w/Si Gel	ECY 97-602 NWT PH-Dx modified	1	152750011A	10/06/2015 19:46	Christine E Dolman	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-44(4.5-5) Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018606  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 09:55 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS44

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152750011A	10/03/2015 15:25	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15268820001A	09/25/2015 20:03	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-22(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018607  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0082	0.00084	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0074	0.00084	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.018	0.00084	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0051	0.00084	0.0021	1
10725	Chrysene	218-01-9	0.016	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0015 J	0.00084	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0052	0.00084	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.011	0.00084	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.015	0.00084	0.0021	1
10725	Naphthalene	91-20-3	0.016	0.00084	0.0021	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	18	90	353.72
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.7	8.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	37	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	21.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 03:15	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-22(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018607  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS22

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 01:37	Jeremy C Giffin	353.72
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 11:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 08:27	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-22(2-2.5)MS Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018608  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.060	0.00083	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.056	0.00083	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.079	0.00083	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.058	0.00083	0.0021	1
10725	Chrysene	218-01-9	0.074	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	0.032	0.00083	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.037	0.00083	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.064	0.00083	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.072	0.00083	0.0021	1
10725	Naphthalene	91-20-3	0.063	0.00083	0.0021	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	18 J	14	68 266.93
<b>GC Petroleum</b>	<b>ECY 97-602 NWTPH-Dx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons w/Si modified</b>					
02214	DRO C12-C24 w/Si Gel	n.a.	140	3.8	8.8 1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38 1
<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>	
00118	Moisture	n.a.	21.0	0.50	0.50 1

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 04:54	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15239A34A	08/31/2015 02:12	Jeremy C Giffin	266.93
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201523538634	08/20/2015 11:40	Client Supplied	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-22(2-2.5)MS Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018608  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS22

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 08:49	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00118	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-22(2-2.5)MSD Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018609  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.067	0.00083	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.066	0.00083	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.096	0.00083	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.066	0.00083	0.0021	1
10725	Chrysene	218-01-9	0.082	0.00042	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	0.030	0.00083	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.038	0.00083	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.069	0.00083	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.076	0.00083	0.0021	1
10725	Naphthalene	91-20-3	0.070	0.00083	0.0021	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg
02005	NWT PH-GX Soil C7-C12	n.a.	19 J	15 73 287.48

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg
02214	DRO C12-C24 w/Si Gel	n.a.	110	3.8 8.8 1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13 38 1

Wet Chemistry	SM 2540 G-1997	%	%	%
00118	Moisture	n.a.	21.0	0.50 0.50 1
00121	Moisture Duplicate	n.a.	17.0	0.50 0.50 1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 05:27	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-22(2-2.5)MSD Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018609  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 11:40 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS22

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 02:47	Jeremy C Giffin	287.48
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 11:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520007A	09/12/2015 09:11	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520007A	08/31/2015 08:45	Olivia Arosemena	1
00118	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-54(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018611  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 12:10 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS54

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.040	0.0038	0.0096	5
10725	Benzo(a)pyrene	50-32-8	0.036	0.0038	0.0096	5
10725	Benzo(b)fluoranthene	205-99-2	0.092	0.0038	0.0096	5
10725	Benzo(k)fluoranthene	207-08-9	0.025	0.0038	0.0096	5
10725	Chrysene	218-01-9	0.075	0.0019	0.0096	5
10725	Dibenz(a,h)anthracene	53-70-3	0.0075 J	0.0038	0.0096	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.025	0.0038	0.0096	5
10725	1-Methylnaphthalene	90-12-0	0.033	0.0038	0.0096	5
10725	2-Methylnaphthalene	91-57-6	0.054	0.0038	0.0096	5
10725	Naphthalene	91-20-3	0.053	0.0038	0.0096	5

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	72	311.68
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	23	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	140	12	35	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	13.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 03:48	Brian K Graham	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-54(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018611  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 12:10 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS54

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 03:22	Jeremy C Giffin	311.68
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 12:10	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 11:21	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-4A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018612  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 12:30 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS4A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0036	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0030	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0096	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0041	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.011	0.00041	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0018 J	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0012 J	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0022	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.0019 J	0.00081	0.0020	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	16	78	318.6
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	18.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 04:21	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-4A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018612  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 12:30 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS4A

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 03:58	Jeremy C Giffin	318.6
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 12:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 08:06	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820002B	08/28/2015 22:28	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-42(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018613  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 10:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS42

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.028	0.0036	0.0091	5
10725	Benzo(a)pyrene	50-32-8	0.023	0.0036	0.0091	5
10725	Benzo(b)fluoranthene	205-99-2	0.051	0.0036	0.0091	5
10725	Benzo(k)fluoranthene	207-08-9	0.018	0.0036	0.0091	5
10725	Chrysene	218-01-9	0.046	0.0018	0.0091	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0036	0.0091	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.011	0.0036	0.0091	5
10725	1-Methylnaphthalene	90-12-0	0.028	0.0036	0.0091	5
10725	2-Methylnaphthalene	91-57-6	0.037	0.0036	0.0091	5
10725	Naphthalene	91-20-3	0.032	0.0036	0.0091	5

The recovery for a target analyte(s) in the Laboratory Control Spike(s) and the recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.

The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg	
02005 NWT PH-GX Soil C7-C12	n.a.	N.D.	13	64	294.1
Reporting limits were raised due to sample foaming.					

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg	
02214 DRO C12-C24 w/Si Gel	n.a.	N.D.	3.3	7.7	1
02214 HRO C24-C40 w/Si Gel	n.a.	13 J	11	33	1

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111 Moisture	n.a.	8.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 06:00	Brian K Graham	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-42(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018613  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 10:00 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS42

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 04:33	Jeremy C Giffin	294.1
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 10:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 08:27	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-26A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018615  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 12:55 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS26

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0047	0.012	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0047	0.012	5
10725	Benzo(b)fluoranthene	205-99-2	0.0049 J	0.0047	0.012	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0047	0.012	5
10725	Chrysene	218-01-9	0.0042 J	0.0023	0.012	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0047	0.012	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0047	0.012	5
10725	1-Methylnaphthalene	90-12-0	N.D.	0.0047	0.012	5
10725	2-Methylnaphthalene	91-57-6	N.D.	0.0047	0.012	5
10725	Naphthalene	91-20-3	0.0048 J	0.0047	0.012	5

Reporting limits were raised due to interference from the sample matrix.

<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	23	110	401.88

Reporting limits were raised due to sample foaming.

<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
			mg/kg	mg/kg	mg/kg	
02214	DRO C12-C24 w/Si Gel	n.a.	76	21	49	5
02214	HRO C24-C40 w/Si Gel	n.a.	900	71	210	5

<b>Wet Chemistry SM 2540 G-1997</b>						
			%	%	%	
00111	Moisture	n.a.	29.2	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 06:33	Brian K Graham	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 05:08	Jeremy C Giffin	401.88
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 12:55	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 22:39	Heather E Williams	5

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-26A(2-2.5) Soil  
 Former Olympia Bulk Plant COC: R224123  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018615  
 LL Group # 1586960  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 12:55 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS26

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** AUS-SB-25A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018616  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 15:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0036	0.00078	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0049	0.00078	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.012	0.00078	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0045	0.00078	0.0019	1
10725	Chrysene	218-01-9	0.0079	0.00039	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	0.00098 J	0.00078	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0036	0.00078	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.0017 J	0.00078	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0032	0.00078	0.0019	1
10725	Naphthalene	91-20-3	0.0046	0.00078	0.0019	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	13	65	277.63
Reporting limits were raised due to sample foaming.						

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02214	DRO C12-C24 w/Si Gel	n.a.	5.8 J	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	55	12	35	1

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00111	Moisture	n.a.	14.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 07:06	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-25A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018616  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 15:00 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 08/22/2015 10:25

630 Plaza Drive

Reported: 10/08/2015 14:30

Highlands Ranch CO 80129

AVS25

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 06:19	Jeremy C Giffin	277.63
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 15:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 08:49	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-43A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018617  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 13:05 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS43

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.066	0.0040	0.010	5
10725	Benzo(a)pyrene	50-32-8	0.059	0.0040	0.010	5
10725	Benzo(b)fluoranthene	205-99-2	0.13	0.0040	0.010	5
10725	Benzo(k)fluoranthene	207-08-9	0.053	0.0040	0.010	5
10725	Chrysene	218-01-9	0.11	0.0020	0.010	5
10725	Dibenz(a,h)anthracene	53-70-3	0.0082 J	0.0040	0.010	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.027	0.0040	0.010	5
10725	1-Methylnaphthalene	90-12-0	0.013	0.0040	0.010	5
10725	2-Methylnaphthalene	91-57-6	0.025	0.0040	0.010	5
10725	Naphthalene	91-20-3	0.052	0.0040	0.010	5

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	17	87	356.26
Reporting limits were raised due to sample foaming.						

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg		
02214	DRO C12-C24 w/Si Gel	n.a.	10	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	77	12	36	1

Wet Chemistry	SM 2540 G-1997	%	%	%		
00111	Moisture	n.a.	17.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 07:39	Brian K Graham	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-43A(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018617  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 13:05 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS43

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 06:54	Jeremy C Giffin	356.26
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 13:05	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 09:11	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-63(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018620  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 16:00 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVS63

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0062 J	0.0035	0.0086	5
10725	Benzo(a)pyrene	50-32-8	0.0050 J	0.0035	0.0086	5
10725	Benzo(b)fluoranthene	205-99-2	0.018	0.0035	0.0086	5
10725	Benzo(k)fluoranthene	207-08-9	0.0069 J	0.0035	0.0086	5
10725	Chrysene	218-01-9	0.0097	0.0017	0.0086	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0035	0.0086	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0052 J	0.0035	0.0086	5
10725	1-Methylnaphthalene	90-12-0	N.D.	0.0035	0.0086	5
10725	2-Methylnaphthalene	91-57-6	0.0038 J	0.0035	0.0086	5
10725	Naphthalene	91-20-3	0.0056 J	0.0035	0.0086	5

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	12	298.29

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg	
02214	DRO C12-C24 w/Si Gel	n.a.	6.4 J	3.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	61	10	1

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111	Moisture	n.a.	4.1	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 08:13	Brian K Graham	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 07:29	Jeremy C Giffin	298.29

\*=This limit was used in the evaluation of the final result

**Sample Description:** AUS-SB-63(2-2.5) Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018620  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 16:00 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVS63

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 16:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 09:33	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-3 Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018621  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVSD3

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0013 J	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0014 J	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0042	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0017 J	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.0038	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00085 J	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0019 J	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0031	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.0038	0.00081	0.0020	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) and the recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary.

The following corrective action was taken:  
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	18	91
Reporting limits were raised due to sample foaming.					

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg	
02214	DRO C12-C24 w/Si Gel	n.a.	150	3.6	8.4
02214	HRO C24-C40 w/Si Gel	n.a.	270	12	36

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111	Moisture	n.a.	17.6	0.50	0.50
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/08/2015 08:46	Brian K Graham	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-3 Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018621  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVSD3

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15244A34A	09/02/2015 21:30	Marie D Beamenderfer	376.54
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/19/2015 00:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 10:59	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** DUP-4 Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018622  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/20/2015 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 08/22/2015 10:25

Reported: 10/08/2015 14:30

AVSD4

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.026 J	0.013	0.033	10
10725	Benzo(a)pyrene	50-32-8	0.028 J	0.013	0.033	10
10725	Benzo(b)fluoranthene	205-99-2	0.032 J	0.013	0.033	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.013	0.033	10
10725	Chrysene	218-01-9	0.038	0.0065	0.033	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.013	0.033	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.013	0.033	10
10725	1-Methylnaphthalene	90-12-0	2.5	0.013	0.033	10
10725	2-Methylnaphthalene	91-57-6	2.5	0.013	0.033	10
10725	Naphthalene	91-20-3	0.55	0.013	0.033	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	990	120	620	1569.26
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,900	30	69	5
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	98	300	5
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	49.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15240SLF026	09/09/2015 08:27	Brian K Graham	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15240SLF026	08/30/2015 15:00	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15239A34A	08/31/2015 08:04	Jeremy C Giffin	1569.26
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201523538634	08/20/2015 00:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520008A	09/12/2015 10:16	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520008A	08/31/2015 08:45	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: DUP-4 Soil  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8018622  
LL Group # 1586960  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/20/2015 by EE

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVSD4

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15240820003A	08/28/2015 21:09	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** TRIP BLANK Water  
Former Olympia Bulk Plant COC: R224123  
1117 West Bay Drive - Olympia, WA

LL Sample # WW 8018623  
LL Group # 1586960  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/19/2015

Atlantic Richfield c/o ARCADIS

Submitted: 08/22/2015 10:25

Suite 600

Reported: 10/08/2015 14:30

630 Plaza Drive

Highlands Ranch CO 80129

AVSTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>GC Volatiles</b>						
	<b>ECY 97-602</b>	<b>NWTPH-Gx</b>	ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1

### General Sample Comments

State of Washington Lab Certification No. C457

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	15238A53A	08/27/2015 14:50	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15238A53A	08/27/2015 14:50	Brett W Kenyon	1

\*=This limit was used in the evaluation of the final result

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15238SLG026	Sample number(s): 8018587-8018605								
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	104		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	103		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	112		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	98		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	109		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	121		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	115		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	95		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	99		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	97		76-118		
Batch number: 15240SLF026	Sample number(s): 8018607-8018609,8018611-8018613,8018615-8018617,8018620-8018622								
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	108		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	106		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	112		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	120*		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	118		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	108		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	105		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	99		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	100		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	103		76-118		
Batch number: 15273SLE026	Sample number(s): 8018606								
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	90		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	88		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	96		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	85		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	86		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	87		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	84		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	96		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	91		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	101		76-118		
Batch number: 15238A34A	Sample number(s): 8018592-8018594								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	83		65-120		
Batch number: 15238A53A	Sample number(s): 8018623								
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	93	93	80-123	0	30
Batch number: 15239A34A	Sample number(s): 8018607-8018609,8018611-8018613,8018615-								

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCS %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	79		65-120		
Batch number: 15242A34A	Sample number(s): 8018587-8018591,8018595-8018605								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	83	84	65-120	1	30
Batch number: 15244A34A	Sample number(s): 8018621								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	82	83	65-120	1	30
Batch number: 15268A31B	Sample number(s): 8018606								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	93	94	65-120	2	30
Batch number: 152520006A	Sample number(s): 8018587-8018595								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	85		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152520007A	Sample number(s): 8018596-8018604,8018607-8018609								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	74		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152520008A	Sample number(s): 8018605,8018611-8018613,8018615-8018617,8018620-8018622								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	84		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152750011A	Sample number(s): 8018606								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	92	82	50-133	12	20
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 15240820002A	Sample number(s): 8018587-8018599								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15240820002B	Sample number(s): 8018600-8018605,8018607-8018609,8018611-8018612								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15240820003A	Sample number(s): 8018613,8018615-8018617,8018620-8018622								
Moisture					100		99-101		
Batch number: 15268820001A	Sample number(s): 8018606								
Moisture					100		99-101		

## 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: 15238SLG026	Sample number(s): 8018587-8018605 UNSPK: 8018592								
Benzo(a)anthracene	87	89	75-119	2	30				

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
Benzo(a)pyrene	90	87	77-114	3	30				
Benzo(b)fluoranthene	126	120	74-140	4	30				
Benzo(k)fluoranthene	110	105	74-115	4	30				
Chrysene	90	91	76-122	1	30				
Dibenz(a,h)anthracene	60*	56*	77-126	6	30				
Indeno(1,2,3-cd)pyrene	57*	53*	77-122	7	30				
1-Methylnaphthalene	100	88	70-119	12	30				
2-Methylnaphthalene	106	90	66-123	14	30				
Naphthalene	106	91	76-118	14	30				

Batch number: 15240SLF026      Sample number(s): 8018607-8018609,8018611-8018613,8018615-8018617,8018620-8018622 UNSPK: 8018607

Benzo(a)anthracene	126*	142*	75-119	11	30				
Benzo(a)pyrene	116*	142*	77-114	17	30				
Benzo(b)fluoranthene	148*	187*	74-140	19	30				
Benzo(k)fluoranthene	128*	146*	74-115	12	30				
Chrysene	138*	157*	76-122	10	30				
Dibenz(a,h)anthracene	75*	69*	77-126	7	30				
Indeno(1,2,3-cd)pyrene	76*	79	77-122	3	30				
1-Methylnaphthalene	128*	138*	70-119	6	30				
2-Methylnaphthalene	135*	146*	66-123	6	30				
Naphthalene	113	131*	76-118	11	30				

Batch number: 15273SLE026      Sample number(s): 8018606 UNSPK: 8018606

Benzo(a)anthracene	103	105	75-119	2	30				
Benzo(a)pyrene	90	95	77-114	5	30				
Benzo(b)fluoranthene	107	107	74-140	0	30				
Benzo(k)fluoranthene	93	104	74-115	11	30				
Chrysene	64*	63*	76-122	1	30				
Dibenz(a,h)anthracene	65*	66*	77-126	2	30				
Indeno(1,2,3-cd)pyrene	58*	59*	77-122	2	30				
1-Methylnaphthalene	-1981	-2262	70-119	16	30				
	(2)	(2)							
2-Methylnaphthalene	-2010	-2186	66-123	14	30				
	(2)	(2)							
Naphthalene	-494	-565	76-118	14	30				
	(2)	(2)							

Batch number: 15238A34A      Sample number(s): 8018592-8018594 UNSPK: 8018592

NWTPH-GX Soil C7-C12	120	147*	65-120	1	30				
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Batch number: 15239A34A      Sample number(s): 8018607-8018609,8018611-8018613,8018615-8018617,8018620,8018622 UNSPK: 8018607

NWTPH-GX Soil C7-C12	149*	146*	65-120	7	30				
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Batch number: 152520006A      Sample number(s): 8018587-8018595 UNSPK: 8018592

DRO C12-C24 w/Si Gel	70	81	60-120	14	20				
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Batch number: 152520007A      Sample number(s): 8018596-8018604,8018607-8018609 UNSPK: 8018607

DRO C12-C24 w/Si Gel	85	63	60-120	30*	20				
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Batch number: 152520008A      Sample number(s): 8018605,8018611-8018613,8018615-8018617,8018620-8018622 UNSPK:

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
DRO C12-C24 w/Si Gel	8018605 75	80	60-120	7	20				
Batch number: 15240820002A	Sample number(s): 8018587-8018599 BKG: 8018592								
Moisture						11.5	11.6	1	5
Moisture						11.5	11.6	1	5
Moisture Duplicate						11.5	11.6	1	5
Batch number: 15240820002B	Sample number(s): 8018600-8018605,8018607-8018609,8018611-8018612 BKG: 8018607								
Moisture						21.0	17.0	21*	5
Moisture						21.0	17.0	21*	5
Moisture Duplicate						21.0	17.0	21*	5
Batch number: 15240820003A	Sample number(s): 8018613,8018615-8018617,8018620-8018622 BKG: P018541								
Moisture						12.0	13.3	10*	5
Batch number: 15268820001A	Sample number(s): 8018606 BKG: P061716								
Moisture						15.6	16.2	4	5

### 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: SIM SVOA (microwave)  
Batch number: 15238SLG026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8018587	96	83	84
8018588	108	91	91
8018589	102	84	91
8018590	98	83	84
8018591	91	88	85
8018592	89	86	85
8018593	96	91	85
8018594	90	89	83
8018595	89	79	81
8018596	102	91	82
8018597	100	95	85
8018598	86	74	80
8018599	100	85	111
8018600	93	83	79
8018601	94	92	88
8018602	93	90	83
8018603	76	66	73
8018604	93	95	72
8018605	100	93	89
Blank	77	101	91
LCS	94	100	91

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

### Surrogate Quality Control

MS	96	91	85
MSD	90	89	83
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)

Batch number: 15240SLF026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8018607	97	86	85
8018608	102	87	89
8018609	101	89	90
8018611	89	70	69
8018612	88	82	74
8018613	77	45*	61
8018615	69	62	54
8018616	92	85	76
8018617	86	71	63
8018620	91	76	61
8018621	37*	31*	32*
8018622	110	78	135
Blank	82	96	82
LCS	98	97	90
MS	102	87	89
MSD	101	89	90
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)

Batch number: 15273SLE026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8018606	256*	106	245*
Blank	98	96	94
LCS	103	100	97
MS	193*	96	188*
MSD	152*	102	191*
Limits:	49-151	62-137	39-152

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 15238A34A

Trifluorotoluene-F

8018592	84
8018593	81
8018594	86
Blank	103
LCS	104
MS	81
MSD	86
Limits:	50-142

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 15238A53A

Trifluorotoluene-F

8018623	112
Blank	110
LCS	110

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

### Surrogate Quality Control

LCSD 111  
Limits: 63-135

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15239A34A  
Trifluorotoluene-F

8018607	133
8018608	97
8018609	100
8018611	142
8018612	100
8018613	100
8018615	80
8018616	112
8018617	100
8018620	131
8018622	186*
Blank	95
LCS	102
MS	97
MSD	100

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15242A34A  
Trifluorotoluene-F

8018587	79
8018588	86
8018589	95
8018590	117
8018591	111
8018595	105
8018596	93
8018597	84
8018598	106
8018599	58
8018600	105
8018601	109
8018602	88
8018603	112
8018604	91
8018605	102
Blank	97
LCS	104
LCSD	105

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15244A34A  
Trifluorotoluene-F

8018621	115
Blank	103
LCS	105
LCSD	104

Limits: 50-142

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

### Surrogate Quality Control

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 15268A31B

Trifluorotoluene-F

8018606	90
Blank	97
LCS	98
LCSD	99

Limits: 50-142

Analysis Name: NWTPH-Dx soil w/Si Gel

Batch number: 152520006A

Orthoterphenyl

8018587	98
8018588	94
8018589	144
8018590	93
8018591	136
8018592	108
8018593	101
8018594	112
8018595	105
Blank	89
LCS	110
MS	101
MSD	112

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel

Batch number: 152520007A

Orthoterphenyl

8018596	96
8018597	91
8018598	104
8018599	79
8018600	94
8018601	88
8018602	91
8018603	101
8018604	99
8018607	91
8018608	112
8018609	91
Blank	93
LCS	98
MS	112
MSD	91

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel

Batch number: 152520008A

Orthoterphenyl

8018605	102
8018611	100
8018612	96
8018613	116

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/08/2015 14:30

Group Number: 1586960

### Surrogate Quality Control

8018615	118
8018616	110
8018617	100
8018620	108
8018621	98
8018622	95
Blank	126
LCS	102
MS	98
MSD	97

---

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152750011A  
Orthoterphenyl

8018606	90
Blank	108
LCS	109
LCSD	106

---

Limits: 50-150

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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.



Laboratory Management Program LaMP Chain of Custody Record

R224123

Page 1 of 4

BP Site Node Path: \_\_\_\_\_

Req Due Date (mm/dd/yy): Standard TAT

Rush TAT: Yes \_\_\_ No \_\_\_

BP Facility No: Former Olympia Bulk Plant

Lab Work Order Number: 175798

Lab Name: Lancaster Laboratories	Facility Address: 1117 West Bay Drive	Consultant/Contractor: ARCADIS
Lab Address: 2425 New Holland Pike, Lancaster PA	City, State, ZIP Code: Olympia, WA	Consultant/Contractor Project No: CPO4BPNA.W160
Lab PM: Stacy Butt	Lead Regulatory Agency: WADDE	Address: 1100 Olive Way, Seattle, WA
Lab Phone: 717-658-2300	California Global ID No.: —	Consultant/Contractor PM: Brian Marcum
Lab Shipping Acct: —	Enfos Proposal No.: —	Phone: 206-726-4755 Email: brian.marcum@arcadis.com
Lab Bottle Order No: 175798	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: Brian Marcum and to lab.enfosdoc@bp.com
Other Info: —	Stage: Activity:	Invoice To: BP Contractor <input checked="" type="checkbox"/>

BP Project Manager (PM): —	<b>Matrix</b>	<b>No. Containers / Preservative</b>	<b>Requested Analyses</b>	<b>Report Type &amp; QC Level</b>
BP PM Phone: —				Standard <input checked="" type="checkbox"/>
BP PM Email: —				Full Data Package ___

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Container:	Unpreserved	H2SO4	HNO3	HCl	Methanol	PAHs + Naph by 22025M	CRD by NWTPIH-Gx	DRO by NWTPIH-dx	Comments
	AUS-SB-60 (2-2.5)	08-19-15	0715	X				3	2				1	X	X	X	
	AUS-SB-59 (4.5-5)		0730														
	AUS-SB-48 (2-2.5)		0750														
	AUS-SB-58 (2-2.5)		0800														
	AUS-SB-47 (2-2.5)		0815														
	AUS-SB-57 (2-2.5)		0840														MS/MSD
	AUS-SB-46 (2-2.5)		1000														
	AUS-SB-56 (4.5-5)		1015														
	AUS-SB-55 (4.5-5)		1040	Y													
	AUS-SB-45 (2-2.5)	08-19-15	1120	X				3	2				1	X	X	X	

Sampler's Name: Eric Espie	Relinquished By / Affiliation: Eric Espie	Date: 08/21	Time: 1700	Accepted By / Affiliation: [Signature]	Date: 8-22-15	Time: 1625
Shipment Method: UPS	Ship Date: 08-21-15					
Shipment Tracking No:					464 / ELUC	

**Special Instructions:**

THIS LINE - LAB USE ONLY: Custody Seals In Place:  Yes /  No | Temp Blank:  Yes /  No | Cooler Temp on Receipt: 1.2-2.2 °C | Trip Blank:  Yes /  No | MS/MSD Sample Submitted:  Yes /  No







13255 1586960 8018587-623  
**Laboratory Management Program LaMP Chain of Custody Record**

R224126

Page 4 of 4

BP Site Node Path: \_\_\_\_\_

Req Due Date (mm/dd/yy): Standard TAT

Rush TAT: Yes \_\_\_ No \_\_\_

BP Facility No: Former Olympic Bulk Plant

Lab Work Order Number: 175798

Lab Name: <u>Lancaster Laboratories</u>	Facility Address: <u>1117 West Bay Drive</u>	Consultant/Contractor: <u>ARCADES</u>
Lab Address: <u>2425 New Holland Pkwy Lancaster, PA</u>	City, State, ZIP Code: <u>Olympia, WA</u>	Consultant/Contractor Project No: <u>LP09PPMA, WA60</u>
Lab PM: <u>Stacy Burt</u>	Lead Regulatory Agency: <u>WA DOE</u>	Address: <u>1100 Olive Way, Seattle, WA</u>
Lab Phone: <u>717-656-2300</u>	California Global ID No.: <u>—</u>	Consultant/Contractor PM: <u>Brian Marcum</u>
Lab Shipping Acct: <u>—</u>	Enfos Proposal No: <u>—</u>	Phone: <u>206-726-4759</u> Email: <u>brian.marcum@arcades.com</u>
Lab Bottle Order No: <u>175798</u>	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: <u>Brian Marcum</u> and to <u>lab.enfosdoc@bp.com</u>
Other Info: <u>—</u>	Stage: _____ Activity: _____	Invoice To: BP ___ Contractor <u>X</u>

BP Project Manager (PM):				Matrix		No. Containers / Preservative							Requested Analyses										Report Type & QC Level		
BP PM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Container:	Unpreserved	H2SO4	HNO3	HCl	Methanol	MS2028 PAHs & PCBs by MS2028 CRO by NW TSH-20K DRO by NW TSH-20K										Standard <u>X</u>	Full Data Package ___
BP PM Email:														Comments											
Lab No.	Sample Description	Date	Time																						
	DUP-3	08-19-15	—	X				3	2																
	DUP-4	08-20-15	—	X				3	2																
	TRIP BLANK	—	—		X			4			4														

Sampler's Name: <u>Eric Gpple</u>	Relinquished By / Affiliation: <u>Eric Gpple</u>	Date: <u>08/21</u>	Time: <u>1700</u>	Accepted By / Affiliation: _____	Date: _____	Time: _____		
Sampler's Company: <u>ARCADES</u>								
Shipment Method: <u>UPS</u>	Ship Date: <u>08-21-15</u>							
Shipment Tracking No: _____						<u>Lto G / ELLE</u>	<u>8-22-15</u>	<u>1025</u>

**Special Instructions:**

THIS LINE - LAB USE ONLY: Custody Seals In Place (3) Yes / No | Temp Blank: (0) Yes / No | Cooler Temp on Receipt: 1-2-2.2 °F (C) | Trip Blank: (0) Yes / No | MS/MSD Sample Submitted: (0) Yes / No

Client: Arcadis

**Delivery and Receipt Information**

Delivery Method: UPS Arrival Timestamp: 08/22/2015 10:25  
Number of Packages: 3 Number of Projects: 1

**Arrival Condition Summary**

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	7
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	Yes		

*Unpacked by Timothy Cubberley (6520) at 12:31 on 08/22/2015*

**Samples Chilled Details**

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	1.2	DT	Wet	Y	Bagged	N
2	DT121	2.0	DT	Wet	Y	Bagged	N
3	DT121	2.2	DT	Wet	Y	Bagged	N

**Container Quantity Discrepancy Details**

Sample ID on COC	Container Qty. Received	Container Qty. on COC	Comments
AUS-SB-24(2-2.5)	6	3	Recieved one extra vial and 2 extra jars.

**Sample Date/Time Discrepancy Details**

Sample ID on COC	Date/Time on Label	Comments
AUS-SB-42(2-2.5)	8/20/2015 12:30	Time on CoC is marked at 10:00.



# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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 per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

## Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

**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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC 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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL 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 Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

## ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

September 28, 2015

**Project: Former Olympia Bulk Plant**Submittal Date: 09/01/2015  
Group Number: 1589716  
PO Number: GP09BPNA.WA60  
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
SB-53-7.5 Soil	8032047
SB-42-7.5 Soil	8032048
SB-31-7.5 Soil	8032049
SB-32-7.5 Soil	8032050
SB-22-7.5 Soil	8032051
SB-23-A-7.5 Soil	8032052
SB-16-7.5 Soil	8032053
SB-15-7.5 Soil	8032054
SB-63-7.5 Soil	8032055
SB-54-7.5 Soil	8032056
SB-43-A-7.5 Soil	8032057
SB-55-9.5 Soil	8032058
SB-1A-12.5 Soil	8032059
SB-1A-12.5 MS Soil	8032060
SB-1A-12.5 MSD Soil	8032061
SB-2-9.5 Soil	8032062
SB-5A-12.5 Soil	8032063
SB-4A-7.5 Soil	8032064
SB-9-7.5 Soil	8032065
SB-10-7.5 Soil	8032066
SB-58-7.5 Soil	8032067
DUP-5 Soil	8032068
SB-41-7.5 Soil	8032069
SB-52-7.5 Soil	8032070
SB-30-7.5 Soil	8032071
SB-40-7.5 Soil	8032072
SB-51-7.5 Soil	8032073
SB-62-7.5 Soil	8032074
SB-1A-7.5 Soil	8032075
SB-29-7.5 Soil	8032076
SB-39-7.5 Soil	8032077
SB-25A-7.5 Soil	8032078

SB-25A-12.5 Soil	8032079
SB-5A-7.5 Soil	8032080
SB-50-7.5 Soil	8032081
SB-61-7.5 Soil	8032082
SB-21-7.5 Soil	8032083
SB-28-7.5 Soil	8032084
SB-27-7.5 Soil	8032085
SB-38-7.5 Soil	8032086
SB-49-7.5 Soil	8032087
TRIP Water	8032088

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Myles Perkins
ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Brian Marcum

Respectfully Submitted,



Stacy L. Butt  
Specialist

(717) 556-7236

---

Project Name: Former Olympia Bulk Plant  
LL Group #: 1589716

**General Comments:**

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****SW-846 8270C SIM, GC/MS Semivolatiles**

Sample #s: 8032074, 8032081, 8032082

Reporting limits were raised due to limited sample volume.

Sample #s: 8032056

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

Batch #: 15251SLF026 (Sample number(s): 8032051-8032058, 8032062-8032073 UNSPK: 8032051)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8032056

**ECY 97-602 NWTPH-Gx, GC Volatiles**

Sample #s: 8032055, 8032058, 8032062, 8032064, 8032065, 8032066, 8032069, 8032070, 8032072, 8032073, 8032074, 8032075, 8032076, 8032077, 8032078, 8032080, 8032081, 8032082, 8032083, 8032084, 8032085, 8032086

Reporting limits were raised due to sample foaming.

Batch #: 15246B34A (Sample number(s): 8032062-8032079, 8032081)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8032075, 8032078

**SM 2540 G-1997, Wet Chemistry**

Batch #: 15251820003A (Sample number(s): 8032047-8032058 BKG: 8032058)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:  
Moisture

**Sample Description:** SB-53-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032047  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 09:45 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-53

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00075	0.0019	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00075	0.0019	1
10725	Naphthalene	91-20-3	N.D.	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.0	5.0	22.17
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	12.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/16/2015 15:11	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 21:05	Jeremy C Giffin	22.17
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 09:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/10/2015 09:49	Nicholas R Rossi	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-53-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032047  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 09:45 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-53

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-42-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032048  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-42

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00075	0.0019	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00075	0.0019	1
10725	Naphthalene	91-20-3	N.D.	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.1	5.5	24.33
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	11.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/16/2015 15:44	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 21:41	Jeremy C Giffin	24.33
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 10:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/10/2015 10:31	Nicholas R Rossi	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result



Sample Description: SB-42-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032048  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

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### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-31-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032049  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 10:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-31

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00074	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00074	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00074	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	0.0019	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00074	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00074	0.0019	1
10725	Naphthalene	91-20-3	N.D.	0.00074	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.98	4.9	21.79
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	11.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/16/2015 16:18	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 22:16	Jeremy C Giffin	21.79
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 10:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/10/2015 10:52	Nicholas R Rossi	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-31-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032049  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 10:15 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-31

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-32-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032050  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-32

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.011	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.015	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.016	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0079	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.013	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0025	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0091	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0013 J	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0022	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.0053	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.3	26.18
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	37 J	36	84	10
02214	HRO C24-C40 w/Si Gel	n.a.	2,200	120	360	10
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	16.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/17/2015 07:13	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 22:51	Jeremy C Giffin	26.18
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 10:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/14/2015 23:39	Christine E Dolman	10
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-32-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032050  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-32

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-22-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032051  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 10:45 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00073	0.0018	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00073	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	0.00079 J	0.00073	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00073	0.0018	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00073	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00073	0.0018	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00073	0.0018	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00073	0.0018	1
10725	Naphthalene	91-20-3	N.D.	0.00073	0.0018	1
<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.97	4.9	21.82
<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.3	7.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	33	1
<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00111	Moisture	n.a.	10.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/19/2015 03:22	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 23:27	Jeremy C Giffin	21.82
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 10:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/10/2015 11:13	Nicholas R Rossi	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-22-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032051  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 10:45 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-22

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-23-A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032052  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 11:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB23A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00074	0.0018	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00074	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00074	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	0.0018	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	0.0018	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00074	0.0018	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00074	0.0018	1
10725	Naphthalene	91-20-3	N.D.	0.00074	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.1	5.3	23.75
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.3	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	33	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	10.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/19/2015 03:56	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246A34A	09/04/2015 00:37	Jeremy C Giffin	23.75
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201524538729	08/27/2015 11:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152480017A	09/10/2015 11:34	Nicholas R Rossi	1
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result



Sample Description: SB-23-A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032052  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 11:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB23A

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-16-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032053  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 15:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	1.4	0.0080	0.020	10
10725	Benzo(a)pyrene	50-32-8	1.8	0.0080	0.020	10
10725	Benzo(b)fluoranthene	205-99-2	2.1	0.0080	0.020	10
10725	Benzo(k)fluoranthene	207-08-9	0.86	0.0080	0.020	10
10725	Chrysene	218-01-9	1.5	0.0040	0.020	10
10725	Dibenz(a,h)anthracene	53-70-3	0.10	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.27	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.019	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.052	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.13	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.84	4.2	17.2
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	4.0 J	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	24 J	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/19/2015 04:30	Catherine E Bachman	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 12:23	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/04/2015 01:12	Jeremy C Giffin	17.2
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 15:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/14/2015 23:18	Christine E Dolman	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-16-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032053  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 15:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-16

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-15-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032054  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 15:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00074	0.0018	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00074	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00074	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	0.0018	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	0.0018	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00074	0.0018	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00074	0.0018	1
10725	Naphthalene	91-20-3	N.D.	0.00074	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.94	4.7	21.23
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.3	7.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	33	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	9.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/19/2015 05:03	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/04/2015 01:48	Jeremy C Giffin	21.23
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 15:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/10/2015 12:16	Nicholas R Rossi	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-15-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032054  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 15:30 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-15

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-63-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032055  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 16:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-63

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0013 J	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.0011 J	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.00088 J	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	13	63	263.59
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	16.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 12:56	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246A34A	09/04/2015 04:44	Jeremy C Giffin	263.59
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524538729	08/27/2015 16:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152480017A	09/10/2015 12:37	Nicholas R Rossi	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152480017A	09/08/2015 11:05	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-63-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032055  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 16:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-63

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-54-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032056  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 16:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-54

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00076	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00076	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00076	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00076	0.0019	1
10725	Chrysene	218-01-9	N.D.	0.00038	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00076	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00076	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.00092 J	0.00076	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0021	0.00076	0.0019	1
10725	Naphthalene	91-20-3	0.0018 J	0.00076	0.0019	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg	
02005 NWTPH-GX Soil C7-C12	n.a.	N.D.	1.0	5.1	22.51

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg	
02214 DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214 HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111 Moisture	n.a.	12.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 13:29	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/04/2015 04:09	Jeremy C Giffin	22.51
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 16:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480017A	09/10/2015 12:58	Nicholas R Rossi	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-54-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032056  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 16:15 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-54

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480017A	09/08/2015 11:05	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-43-A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032057  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 16:45 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB43A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0046	0.00078	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.0057	0.00078	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.0092	0.00078	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.0031	0.00078	0.0020	1
10725	Chrysene	218-01-9	0.0057	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00078	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0016 J	0.00078	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.0023	0.00078	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.0034	0.00078	0.0020	1
10725	Naphthalene	91-20-3	0.010	0.00078	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	6.4	27.49
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	100	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	520	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	14.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 14:02	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/04/2015 02:23	Jeremy C Giffin	27.49
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 16:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 08:26	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-43-A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032057  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 16:45 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB43A

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-55-9.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032058  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015 17:15 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-55

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	4.7	0.013	0.033	10
10725	Benzo(a)pyrene	50-32-8	4.7	0.013	0.033	10
10725	Benzo(b)fluoranthene	205-99-2	5.5	0.013	0.033	10
10725	Benzo(k)fluoranthene	207-08-9	2.1	0.013	0.033	10
10725	Chrysene	218-01-9	5.0	0.0066	0.033	10
10725	Dibenz(a,h)anthracene	53-70-3	0.59	0.013	0.033	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	2.4	0.013	0.033	10
10725	1-Methylnaphthalene	90-12-0	0.72	0.013	0.033	10
10725	2-Methylnaphthalene	91-57-6	0.90	0.013	0.033	10
10725	Naphthalene	91-20-3	2.3	0.013	0.033	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	27	140	341.72
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	57	5.9	14	1
02214	HRO C24-C40 w/Si Gel	n.a.	260	20	59	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	50.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/23/2015 09:23	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/04/2015 05:20	Jeremy C Giffin	341.72
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/27/2015 17:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 08:03	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-55-9.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032058  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/27/2015 17:15 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-55

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003A	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-1A-12.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032059  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S1A12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00080	0.0020	1
10725	Chrysene	218-01-9	N.D.	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00080	0.0020	1
10725	Naphthalene	91-20-3	N.D.	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.2	6.1	25.06
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/16/2015 06:55	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 19:19	Jeremy C Giffin	25.06
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 10:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 04:12	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-1A-12.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032059  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:20 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S1A12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-1A-12.5 MS Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032060  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

S1A12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.046	0.00081	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.043	0.00081	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.052	0.00081	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.041	0.00081	0.0020	1
10725	Chrysene	218-01-9	0.045	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.044	0.00081	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.042	0.00081	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.040	0.00081	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.041	0.00081	0.0020	1
10725	Naphthalene	91-20-3	0.041	0.00081	0.0020	1
<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	9.7	1.1	5.7	23.35
<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02214	DRO C12-C24 w/Si Gel	n.a.	140	3.6	8.4	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00118	Moisture	n.a.	17.7	0.50	0.50	1

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/16/2015 07:28	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246A34A	09/03/2015 19:55	Jeremy C Giffin	23.35
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 10:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 04:32	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-1A-12.5 MSD Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032061  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

S1A12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.047	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.045	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.054	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.044	0.00080	0.0020	1
10725	Chrysene	218-01-9	0.047	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.046	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.045	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.043	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.044	0.00080	0.0020	1
10725	Naphthalene	91-20-3	0.043	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	8.7	1.1	5.6	22.85
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	150	3.6	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	17.7	0.50	0.50	1
00121	Moisture Duplicate	n.a.	16.9	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLE026	09/16/2015 08:01	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLE026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246A34A	09/03/2015 20:30	Jeremy C Giffin	22.85
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201524538729	08/28/2015 10:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152480018A	09/10/2015 04:53	Heather E Williams	1
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-1A-12.5 MSD Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032061  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:20 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S1A12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00118	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-2-9.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032062  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

S295-

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0079	0.00076	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0082	0.00076	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.012	0.00076	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0040	0.00076	0.0019	1
10725	Chrysene	218-01-9	0.0086	0.00038	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00076	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0017 J	0.00076	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.00076 J	0.00076	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0019 J	0.00076	0.0019	1
10725	Naphthalene	91-20-3	0.0020	0.00076	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	10	52	225.77
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	12.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 15:09	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/05/2015 00:37	Jeremy C Giffin	225.77
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 10:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 07:42	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-2-9.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032062  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S295-

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-5A-12.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032063  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:45 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-5A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>						
	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0010	0.0025	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0010	0.0025	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0010	0.0025	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0010	0.0025	1
10725	Chrysene	218-01-9	N.D.	0.00051	0.0025	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0010	0.0025	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0010	0.0025	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.0010	0.0025	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.0010	0.0025	1
10725	Naphthalene	91-20-3	N.D.	0.0010	0.0025	1
<b>GC Volatiles</b>						
	<b>ECY 97-602 NWTPH-Gx</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.0	5.2	22.36
<b>GC Petroleum Hydrocarbons w/Si</b>						
	<b>ECY 97-602 NWTPH-Dx modified</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry</b>						
	<b>SM 2540 G-1997</b>		<b>%</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	13.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 15:42	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/04/2015 20:30	Jeremy C Giffin	22.36
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 10:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 05:15	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-5A-12.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032063  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:45 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-5A

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-4A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032064  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 11:10 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-4A

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00075	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00075	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.0012 J	0.00075	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00075	0.0019	1
10725	Chrysene	218-01-9	0.00073 J	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00075	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00075	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00075	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00075	0.0019	1
10725	Naphthalene	91-20-3	N.D.	0.00075	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	11	54	237.54
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	11.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 16:15	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 01:12	Jeremy C Giffin	237.54
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524538729	08/28/2015 11:10	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152480018A	09/10/2015 05:35	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152480018A	09/08/2015 11:05	Denise L Trimby	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-4A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032064  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 11:10 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-4A

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-9-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032065  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 11:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0043	0.00085	0.0021	1
10725	Benzo(a)pyrene	50-32-8	0.0053	0.00085	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.012	0.00085	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	0.0034	0.00085	0.0021	1
10725	Chrysene	218-01-9	0.0070	0.00043	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00085	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0016 J	0.00085	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0013 J	0.00085	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0028	0.00085	0.0021	1
10725	Naphthalene	91-20-3	0.0040	0.00085	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	13	66	255.37
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	8.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	22.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 16:48	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 01:47	Jeremy C Giffin	255.37
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201524538729	08/28/2015 11:20	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 07:00	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-9-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032065  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 11:20 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-09

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-10-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032066  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 11:55 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.15	0.00079	0.0020	1
10725	Benzo(a)pyrene	50-32-8	0.16	0.00079	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	0.21	0.00079	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	0.095	0.00079	0.0020	1
10725	Chrysene	218-01-9	0.16	0.00039	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	0.011	0.00079	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.032	0.00079	0.0020	1
10725	1-Methylnaphthalene	90-12-0	0.011	0.00079	0.0020	1
10725	2-Methylnaphthalene	91-57-6	0.019	0.00079	0.0020	1
10725	Naphthalene	91-20-3	0.043	0.00079	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	11	55	229.36
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	21 J	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	16.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/22/2015 17:22	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 02:23	Jeremy C Giffin	229.36
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201524538729	08/28/2015 11:55	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 07:21	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-10-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032066  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 11:55 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-10

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-58-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032067  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 13:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-58

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00085	0.0021	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00085	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00085	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00085	0.0021	1
10725	Chrysene	218-01-9	N.D.	0.00043	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00085	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00085	0.0021	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00085	0.0021	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00085	0.0021	1
10725	Naphthalene	91-20-3	N.D.	0.00085	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	57	4.9	25	95.3
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	30	3.8	8.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	29 J	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	22.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/23/2015 09:56	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/05/2015 03:33	Jeremy C Giffin	95.3
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 13:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 05:57	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-58-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032067  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 13:15 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-58

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032068  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

DUP-5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00077	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00077	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00077	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00077	0.0019	1
10725	Chrysene	218-01-9	N.D.	0.00039	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00077	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00077	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.011	0.00077	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.012	0.00077	0.0019	1
10725	Naphthalene	91-20-3	0.0057	0.00077	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.0	5.1	21.64
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	14.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/23/2015 10:29	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/04/2015 21:05	Jeremy C Giffin	21.64
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 00:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152480018A	09/10/2015 06:39	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152480018A	09/08/2015 11:05	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032068  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

DUP-5

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820003B	09/09/2015 09:19	William C Schwebel	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-41-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032069  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 07:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-41

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0030	0.0074	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0030	0.0074	1
10725	Benzo(b)fluoranthene	205-99-2	0.0039 J	0.0030	0.0074	1
10725	Benzo(k)fluoranthene	207-08-9	0.0067 J	0.0030	0.0074	1
10725	Chrysene	218-01-9	0.0030 J	0.0015	0.0074	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0030	0.0074	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0030	0.0074	1
10725	1-Methylnaphthalene	90-12-0	4.3	0.030	0.074	10
10725	2-Methylnaphthalene	91-57-6	5.5	0.030	0.074	10
10725	Naphthalene	91-20-3	0.76	0.0030	0.0074	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	81 J	33	160	181.39
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	250	13	31	1
02214	HRO C24-C40 w/Si Gel	n.a.	750	45	130	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	77.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/23/2015 11:02	Joseph M Gambler	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/24/2015 06:50	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 04:08	Jeremy C Giffin	181.39
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201524538726	09/02/2015 20:22	Mitchell R Washel	n.a.
		ECY 97-602	1	152520029A	09/12/2015 15:42	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-41-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032069  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 07:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-41

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-52-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032070  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 08:00 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-52

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0048 J	0.0026	0.0064	1
10725	Benzo(a)pyrene	50-32-8	0.0034 J	0.0026	0.0064	1
10725	Benzo(b)fluoranthene	205-99-2	0.0088	0.0026	0.0064	1
10725	Benzo(k)fluoranthene	207-08-9	0.0049 J	0.0026	0.0064	1
10725	Chrysene	218-01-9	0.0090	0.0013	0.0064	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0026	0.0064	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0026	0.0064	1
10725	1-Methylnaphthalene	90-12-0	6.6	0.026	0.064	10
10725	2-Methylnaphthalene	91-57-6	8.9	0.026	0.064	10
10725	Naphthalene	91-20-3	1.3	0.0026	0.0064	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	110 J	27	140	176.54
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	640	12	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,100	39	120	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	74.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/23/2015 11:36	Joseph M Gambler	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/24/2015 07:22	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 04:44	Jeremy C Giffin	176.54
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201524538726	09/02/2015 20:25	Mitchell R Washel	n.a.
		ECY 97-602	1	152520029A	09/12/2015 16:03	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-52-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032070  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 08:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-52

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-30-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032071  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 08:30 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-30

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.025	0.063	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.025	0.063	10
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.025	0.063	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.025	0.063	10
10725	Chrysene	218-01-9	N.D.	0.013	0.063	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.025	0.063	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.025	0.063	10
10725	1-Methylnaphthalene	90-12-0	2.9	0.025	0.063	10
10725	2-Methylnaphthalene	91-57-6	3.8	0.025	0.063	10
10725	Naphthalene	91-20-3	1.2	0.025	0.063	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	160	28	140	181.87
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	280	11	26	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,500	38	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	73.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/24/2015 07:55	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/05/2015 05:19	Jeremy C Giffin	181.87
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:28	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520029A	09/12/2015 16:25	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-40-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032072  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 09:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.023	0.059	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.023	0.059	10
10725	Benzo(b)fluoranthene	205-99-2	0.031 J	0.023	0.059	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.023	0.059	10
10725	Chrysene	218-01-9	0.040 J	0.012	0.059	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.023	0.059	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.023	0.059	10
10725	1-Methylnaphthalene	90-12-0	1.8	0.023	0.059	10
10725	2-Methylnaphthalene	91-57-6	2.1	0.023	0.059	10
10725	Naphthalene	91-20-3	0.87	0.023	0.059	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	62	310	439.6
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	400	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,200	35	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	71.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/24/2015 08:28	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/04/2015 19:19	Jeremy C Giffin	439.6
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201524538726	09/02/2015 20:30	Mitchell R Washel	n.a.
		ECY 97-602	1	152520029A	09/12/2015 16:47	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-40-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032072  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 09:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-40

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-51-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032073  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 09:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-51

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.030	0.074	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.030	0.074	10
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.030	0.074	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.030	0.074	10
10725	Chrysene	218-01-9	N.D.	0.015	0.074	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.030	0.074	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.030	0.074	10
10725	1-Methylnaphthalene	90-12-0	3.5	0.030	0.074	10
10725	2-Methylnaphthalene	91-57-6	3.8	0.030	0.074	10
10725	Naphthalene	91-20-3	0.87	0.030	0.074	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	84	420	470.2
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	220	13	31	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,300	45	130	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	77.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15251SLF026	09/24/2015 09:01	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15251SLF026	09/09/2015 09:30	Jessica M Velez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/04/2015 22:15	Jeremy C Giffin	470.2
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201524538726	09/02/2015 20:32	Mitchell R Washel	n.a.
		ECY 97-602	1	152520029A	09/12/2015 17:09	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result



Sample Description: SB-51-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032073  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 09:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-51

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-62-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032074  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 09:45 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-62

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.030	0.074	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.030	0.074	1
10725	Benzo(b)fluoranthene	205-99-2	0.052 J	0.030	0.074	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.030	0.074	1
10725	Chrysene	218-01-9	0.065 J	0.015	0.074	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.030	0.074	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.030	0.074	1
10725	1-Methylnaphthalene	90-12-0	0.64	0.030	0.074	1
10725	2-Methylnaphthalene	91-57-6	0.60	0.030	0.074	1
10725	Naphthalene	91-20-3	2.5	0.030	0.074	1

Reporting limits were raised due to limited sample volume.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	52 J	20	170.84

Reporting limits were raised due to sample foaming.

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg	
02214	DRO C12-C24 w/Si Gel	n.a.	190	8.9	21
02214	HRO C24-C40 w/Si Gel	n.a.	1,100	30	89

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111	Moisture	n.a.	66.2	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 11:37	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 05:54	Jeremy C Giffin	170.84
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:35	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520029A	09/12/2015 17:30	Heather E Williams	1
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-62-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032074  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 09:45 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-62

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-1A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032075  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

S1A75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.044	0.0019	0.0048	1
10725	Benzo(a)pyrene	50-32-8	0.045	0.0019	0.0048	1
10725	Benzo(b)fluoranthene	205-99-2	0.060	0.0019	0.0048	1
10725	Benzo(k)fluoranthene	207-08-9	0.020	0.0019	0.0048	1
10725	Chrysene	218-01-9	0.048	0.00097	0.0048	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0036 J	0.0019	0.0048	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.012	0.0019	0.0048	1
10725	1-Methylnaphthalene	90-12-0	0.013	0.0019	0.0048	1
10725	2-Methylnaphthalene	91-57-6	0.019	0.0019	0.0048	1
10725	Naphthalene	91-20-3	0.046	0.0019	0.0048	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	80	400	684.04
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,300	8.7	20	1
02214	HRO C24-C40 w/Si Gel	n.a.	680	29	87	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	65.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 12:10	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/04/2015 22:51	Jeremy C Giffin	684.04
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201524538726	09/02/2015 20:36	Mitchell R Washel	n.a.
		ECY 97-602	1	152520029A	09/12/2015 17:52	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520029A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-1A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032075  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S1A75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-29-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032076  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:22 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-29

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0023	0.0058	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0023	0.0058	1
10725	Benzo(b)fluoranthene	205-99-2	0.0034 J	0.0023	0.0058	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0023	0.0058	1
10725	Chrysene	218-01-9	0.0035 J	0.0012	0.0058	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0023	0.0058	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0023	0.0058	1
10725	1-Methylnaphthalene	90-12-0	2.0	0.023	0.058	10
10725	2-Methylnaphthalene	91-57-6	2.3	0.023	0.058	10
10725	Naphthalene	91-20-3	0.38	0.0023	0.0058	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	80 J	39	190	274.82
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	420	10	24	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,300	35	100	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	71.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 12:44	Joseph M Gambler	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 21:28	Catherine E Bachman	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/05/2015 06:29	Jeremy C Giffin	274.82
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:38	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520030A	09/12/2015 14:58	Heather E Williams	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-29-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032076  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:22 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-29

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-39-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032077  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:35 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-39

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.020	0.0023	0.0057	1
10725	Benzo(a)pyrene	50-32-8	0.0099	0.0023	0.0057	1
10725	Benzo(b)fluoranthene	205-99-2	0.029	0.0023	0.0057	1
10725	Benzo(k)fluoranthene	207-08-9	0.0083	0.0023	0.0057	1
10725	Chrysene	218-01-9	0.036	0.0011	0.0057	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0023	0.0057	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0038 J	0.0023	0.0057	1
10725	1-Methylnaphthalene	90-12-0	1.9	0.023	0.057	10
10725	2-Methylnaphthalene	91-57-6	1.9	0.023	0.057	10
10725	Naphthalene	91-20-3	1.0	0.0023	0.0057	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	68 J	37	190	271.04
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	330	10	24	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,400	34	100	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	71.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 13:17	Joseph M Gambler	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 22:01	Catherine E Bachman	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/05/2015 07:05	Jeremy C Giffin	271.04
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:39	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520030A	09/12/2015 15:20	Heather E Williams	1

\*=This limit was used in the evaluation of the final result



Sample Description: SB-39-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032077  
 LL Group # 1589716  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:35 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-39

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-25A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032078  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 12:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

S25A7

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0053 J	0.0025	0.0063	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0025	0.0063	1
10725	Benzo(b)fluoranthene	205-99-2	0.0065	0.0025	0.0063	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0025	0.0063	1
10725	Chrysene	218-01-9	0.0065	0.0013	0.0063	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0025	0.0063	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0025	0.0063	1
10725	1-Methylnaphthalene	90-12-0	0.012	0.0025	0.0063	1
10725	2-Methylnaphthalene	91-57-6	0.011	0.0025	0.0063	1
10725	Naphthalene	91-20-3	0.021	0.0025	0.0063	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1,000	5,200	6802.42
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	500	11	26	1
02214	HRO C24-C40 w/Si Gel	n.a.	2,000	38	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	73.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 13:50	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/04/2015 23:26	Jeremy C Giffin	6802.42
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:51	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520030A	09/12/2015 15:42	Heather E Williams	1
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-25A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032078  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 12:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S25A7

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-25A-12.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032079  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 12:45 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

25A12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00080	0.0020	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00080	0.0020	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00080	0.0020	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00080	0.0020	1
10725	Chrysene	218-01-9	N.D.	0.00040	0.0020	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00080	0.0020	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00080	0.0020	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00080	0.0020	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00080	0.0020	1
10725	Naphthalene	91-20-3	N.D.	0.00080	0.0020	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.1	5.5	22.7
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.6	8.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	36	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	17.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 08:19	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15246B34A	09/04/2015 19:54	Jeremy C Giffin	22.7
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524538729	08/28/2015 12:45	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520030A	09/12/2015 21:13	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-25A-12.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032079  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 12:45 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

25A12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004A	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-5A-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032080  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

S5A75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0049 J	0.0030	0.0074	1
10725	Benzo(a)pyrene	50-32-8	0.0057 J	0.0030	0.0074	1
10725	Benzo(b)fluoranthene	205-99-2	0.010	0.0030	0.0074	1
10725	Benzo(k)fluoranthene	207-08-9	0.0037 J	0.0030	0.0074	1
10725	Chrysene	218-01-9	0.0057 J	0.0015	0.0074	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0030	0.0074	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0030	0.0074	1
10725	1-Methylnaphthalene	90-12-0	0.065	0.0030	0.0074	1
10725	2-Methylnaphthalene	91-57-6	0.093	0.0030	0.0074	1
10725	Naphthalene	91-20-3	0.018	0.0030	0.0074	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	73	360	451.9
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	850	12	28	1
02214	HRO C24-C40 w/Si Gel	n.a.	580	40	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	75.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 14:23	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15251A34A	09/08/2015 20:32	Jeremy C Giffin	451.9
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:53	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520030A	09/12/2015 16:25	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-5A-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032080  
 LL Group # 1589716  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 10:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

S5A75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-50-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032081  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0098 J	0.0040	0.010	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0040	0.010	1
10725	Benzo(b)fluoranthene	205-99-2	0.0099 J	0.0040	0.010	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0040	0.010	1
10725	Chrysene	218-01-9	0.015	0.0020	0.010	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0040	0.010	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0051 J	0.0040	0.010	1
10725	1-Methylnaphthalene	90-12-0	2.7	0.040	0.10	10
10725	2-Methylnaphthalene	91-57-6	2.9	0.040	0.10	10
10725	Naphthalene	91-20-3	0.76	0.0040	0.010	1
Reporting limits were raised due to limited sample volume.						
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	38 J	33	170	268.3
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	350	18	43	2
02214	HRO C24-C40 w/Si Gel	n.a.	2,100	61	180	2
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	67.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 14:57	Joseph M Gambler	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 22:34	Catherine E Bachman	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15246B34A	09/05/2015 07:40	Jeremy C Giffin	268.3
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:55	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520030A	09/12/2015 23:01	Heather E Williams	2
		NWTPH-Dx modified					

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-50-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032081  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 10:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-50

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-61-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032082  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 11:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-61

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0046 J	0.0034	0.0086	1
10725	Benzo(a)pyrene	50-32-8	0.0048 J	0.0034	0.0086	1
10725	Benzo(b)fluoranthene	205-99-2	0.011	0.0034	0.0086	1
10725	Benzo(k)fluoranthene	207-08-9	0.0049 J	0.0034	0.0086	1
10725	Chrysene	218-01-9	0.013	0.0017	0.0086	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0034	0.0086	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0034	0.0086	1
10725	1-Methylnaphthalene	90-12-0	0.11	0.0034	0.0086	1
10725	2-Methylnaphthalene	91-57-6	0.10	0.0034	0.0086	1
10725	Naphthalene	91-20-3	0.79	0.0034	0.0086	1
Reporting limits were raised due to limited sample volume.						
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	40 J	32	160	269.47
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	260	9.0	21	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,400	30	90	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	66.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 15:30	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15251A34A	09/08/2015 23:28	Jeremy C Giffin	269.47
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:56	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520030A	09/12/2015 17:09	Heather E Williams	1
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-61-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032082  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 11:15 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-61

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-21-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032083  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 11:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-21

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0025	0.0063	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0025	0.0063	1
10725	Benzo(b)fluoranthene	205-99-2	0.0035 J	0.0025	0.0063	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0025	0.0063	1
10725	Chrysene	218-01-9	0.0048 J	0.0013	0.0063	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0025	0.0063	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0025	0.0063	1
10725	1-Methylnaphthalene	90-12-0	0.36	0.0025	0.0063	1
10725	2-Methylnaphthalene	91-57-6	0.14	0.0025	0.0063	1
10725	Naphthalene	91-20-3	0.052	0.0025	0.0063	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	69	350	455.11
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	340	11	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,800	38	110	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	73.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 16:03	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15251A34A	09/08/2015 19:22	Jeremy C Giffin	455.11
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 20:58	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152520030A	09/12/2015 17:30	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-21-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032083  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 11:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-21

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-28-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032084  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 12:30 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-28

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0027	0.0066	1
10725	Benzo(a)pyrene	50-32-8	0.0028 J	0.0027	0.0066	1
10725	Benzo(b)fluoranthene	205-99-2	0.0081	0.0027	0.0066	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0027	0.0066	1
10725	Chrysene	218-01-9	0.0049 J	0.0013	0.0066	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0027	0.0066	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0027	0.0066	1
10725	1-Methylnaphthalene	90-12-0	0.76	0.0027	0.0066	1
10725	2-Methylnaphthalene	91-57-6	0.21	0.0027	0.0066	1
10725	Naphthalene	91-20-3	0.11	0.0027	0.0066	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	73	360	449.8
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	220	12	28	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,600	40	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	75.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 23:08	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15251A34A	09/08/2015 21:07	Jeremy C Giffin	449.8
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201524538726	09/02/2015 21:00	Mitchell R Washel	n.a.
		ECY 97-602	1	152520030A	09/12/2015 17:52	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-28-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032084  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 12:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-28

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-27-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032085  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 12:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-27

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0030	0.0075	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0030	0.0075	1
10725	Benzo(b)fluoranthene	205-99-2	0.0059 J	0.0030	0.0075	1
10725	Benzo(k)fluoranthene	207-08-9	0.0032 J	0.0030	0.0075	1
10725	Chrysene	218-01-9	0.0048 J	0.0015	0.0075	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0030	0.0075	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0030	0.0075	1
10725	1-Methylnaphthalene	90-12-0	0.64	0.0030	0.0075	1
10725	2-Methylnaphthalene	91-57-6	0.21	0.0030	0.0075	1
10725	Naphthalene	91-20-3	0.066	0.0030	0.0075	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	140 J	52	260	288.78
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	220	13	31	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,400	45	130	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	77.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/17/2015 23:41	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15251A34A	09/08/2015 22:18	Jeremy C Giffin	288.78
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 21:01	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520030A	09/12/2015 18:26	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520030A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-27-7.5 Soil  
 Former Olympia Bulk Plant COC: R224114  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032085  
 LL Group # 1589716  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 12:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-27

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-38-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032086  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 13:05 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

SB-38

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0028	0.0071	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0028	0.0071	1
10725	Benzo(b)fluoranthene	205-99-2	0.0046 J	0.0028	0.0071	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0028	0.0071	1
10725	Chrysene	218-01-9	0.0030 J	0.0014	0.0071	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0028	0.0071	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0028	0.0071	1
10725	1-Methylnaphthalene	90-12-0	0.068	0.0028	0.0071	1
10725	2-Methylnaphthalene	91-57-6	0.035	0.0028	0.0071	1
10725	Naphthalene	91-20-3	0.028	0.0028	0.0071	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	77	390	453.02
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	350	13	29	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,400	42	130	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	76.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/18/2015 00:14	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15251A34A	09/08/2015 19:57	Jeremy C Giffin	453.02
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 21:04	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520031A	09/12/2015 12:48	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520031A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-38-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032086  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 13:05 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-38

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-49-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032087  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/28/2015 13:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/01/2015 09:25

Reported: 09/28/2015 15:12

SB-49

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0027 J	0.0024	0.0060	1
10725	Benzo(a)pyrene	50-32-8	0.0025 J	0.0024	0.0060	1
10725	Benzo(b)fluoranthene	205-99-2	0.0075	0.0024	0.0060	1
10725	Benzo(k)fluoranthene	207-08-9	0.0057 J	0.0024	0.0060	1
10725	Chrysene	218-01-9	0.0049 J	0.0012	0.0060	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0024	0.0060	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0024 J	0.0024	0.0060	1
10725	1-Methylnaphthalene	90-12-0	0.97	0.0024	0.0060	1
10725	2-Methylnaphthalene	91-57-6	0.31	0.0024	0.0060	1
10725	Naphthalene	91-20-3	0.11	0.0024	0.0060	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	65 J	40	200	275.56
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	820	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,700	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	72.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15252SLJ026	09/18/2015 00:47	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15252SLJ026	09/10/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15251A34A	09/08/2015 22:53	Jeremy C Giffin	275.56
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524538726	09/02/2015 21:05	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152520031A	09/12/2015 13:09	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152520031A	09/10/2015 09:00	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-49-7.5 Soil  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8032087  
LL Group # 1589716  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/28/2015 13:20 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/01/2015 09:25

630 Plaza Drive

Reported: 09/28/2015 15:12

Highlands Ranch CO 80129

SB-49

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15251820004B	09/09/2015 10:04	William C Schwebel	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** TRIP Water  
Former Olympia Bulk Plant COC: R224114  
1117 West Bay Drive - Olympia, WA

LL Sample # WW 8032088  
LL Group # 1589716  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/27/2015

Atlantic Richfield c/o ARCADIS

Submitted: 09/01/2015 09:25

Suite 600

Reported: 09/28/2015 15:12

630 Plaza Drive

Highlands Ranch CO 80129

OLYTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>GC Volatiles</b>						
	<b>ECY 97-602</b>	<b>NWTPH-Gx</b>	ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1

### General Sample Comments

State of Washington Lab Certification No. C457

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	15247A94A	09/08/2015 12:31	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15247A94A	09/08/2015 12:31	Brett W Kenyon	1

\*=This limit was used in the evaluation of the final result

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15251SLE026      Sample number(s): 8032047-8032050,8032059-8032061									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	117		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	112		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	135		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	108		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	115		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	103		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	99		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	104		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	107		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	107		76-118		
Batch number: 15251SLF026      Sample number(s): 8032051-8032058,8032062-8032073									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	103		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	98		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	110		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	101		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	103		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	97		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	92		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	99		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	104		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	97		76-118		
Batch number: 15252SLJ026      Sample number(s): 8032074-8032087									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	102		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	98		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	116		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	96		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	104		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	99		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	94		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	94		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	98		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	91		76-118		
Batch number: 15246A34A      Sample number(s): 8032047-8032061									
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	85		65-120		
Batch number: 15246B34A      Sample number(s): 8032062-8032079,8032081									
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	85	82	65-120	3	30
Batch number: 15247A94A      Sample number(s): 8032088									
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	90	93	80-123	4	30

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15251A34A NWTPH-GX Soil C7-C12	Sample number(s): 8032080,8032082-8032087 N.D.	1.0	5.0	mg/kg	85	89	65-120	5	30
Batch number: 152480017A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8032047-8032056 N.D.	3.0	7.0	mg/kg	97		50-133		
Batch number: 152480018A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8032057-8032068 N.D.	3.0	7.0	mg/kg	93		50-133		
Batch number: 152520029A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8032069-8032075 N.D.	3.0	7.0	mg/kg	66	74	50-133	12	20
Batch number: 152520030A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8032076-8032085 N.D.	3.0	7.0	mg/kg	73	85	50-133	15	20
Batch number: 152520031A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8032086-8032087 N.D.	3.0	7.0	mg/kg	87	80	50-133	7	20
Batch number: 15251820003A Moisture	Sample number(s): 8032047-8032058				100		99-101		
Batch number: 15251820003B Moisture Moisture Moisture Duplicate	Sample number(s): 8032059-8032068				100 100 100		99-101 99-101 99-101		
Batch number: 15251820004A Moisture	Sample number(s): 8032069-8032079				100		99-101		
Batch number: 15251820004B Moisture	Sample number(s): 8032080-8032087				100		99-101		

## 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: 15251SLE026	Sample number(s): 8032047-8032050,8032059-8032061 UNSPK: 8032059								
Benzo(a)anthracene	113	117	75-119	3	30				
Benzo(a)pyrene	106	111	77-114	5	30				
Benzo(b)fluoranthene	129	135	74-140	3	30				
Benzo(k)fluoranthene	102	110	74-115	6	30				
Chrysene	113	117	76-122	3	30				
Dibenz(a,h)anthracene	108	116	77-126	6	30				
Indeno(1,2,3-cd)pyrene	104	111	77-122	6	30				

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
1-Methylnaphthalene	100	106	70-119	5	30				
2-Methylnaphthalene	103	110	66-123	6	30				
Naphthalene	101	107	76-118	5	30				
Batch number: 15251SLF026	Sample number(s): 8032051-8032058,8032062-8032073 UNSPK: 8032051								
Benzo(a)anthracene	107	103	75-119	3	30				
Benzo(a)pyrene	102	97	77-114	5	30				
Benzo(b)fluoranthene	144*	126	74-140	14	30				
Benzo(k)fluoranthene	124*	107	74-115	15	30				
Chrysene	103	101	76-122	2	30				
Dibenz(a,h)anthracene	52*	69*	77-126	27	30				
Indeno(1,2,3-cd)pyrene	46*	63*	77-122	30	30				
1-Methylnaphthalene	105	100	70-119	6	30				
2-Methylnaphthalene	110	104	66-123	6	30				
Naphthalene	102	97	76-118	5	30				
Batch number: 15252SLJ026	Sample number(s): 8032074-8032087 UNSPK: 8032079								
Benzo(a)anthracene	103	103	75-119	0	30				
Benzo(a)pyrene	99	99	77-114	0	30				
Benzo(b)fluoranthene	113	118	74-140	4	30				
Benzo(k)fluoranthene	95	88	74-115	7	30				
Chrysene	105	104	76-122	0	30				
Dibenz(a,h)anthracene	95	95	77-126	0	30				
Indeno(1,2,3-cd)pyrene	91	91	77-122	0	30				
1-Methylnaphthalene	95	96	70-119	2	30				
2-Methylnaphthalene	99	101	66-123	1	30				
Naphthalene	97	97	76-118	0	30				
Batch number: 15246A34A	Sample number(s): 8032047-8032061 UNSPK: 8032059								
NWTPH-GX Soil C7-C12	96	89	65-120	10	30				
Batch number: 152480017A	Sample number(s): 8032047-8032056 BKG: 8032047								
DRO C12-C24 w/Si Gel						N.D.	N.D.	0 (1)	20
HRO C24-C40 w/Si Gel						N.D.	N.D.	0 (1)	20
Batch number: 152480018A	Sample number(s): 8032057-8032068 UNSPK: 8032059								
DRO C12-C24 w/Si Gel	86	95	60-120	11	20				
Batch number: 15251820003A	Sample number(s): 8032047-8032058 BKG: 8032058								
Moisture						50.0	46.6	7*	5
Batch number: 15251820003B	Sample number(s): 8032059-8032068 BKG: 8032059								
Moisture						17.7	16.9	5	5
Moisture						17.7	16.9	5	5
Moisture Duplicate						17.7	16.9	5	5
Batch number: 15251820004A	Sample number(s): 8032069-8032079 BKG: 8032079								
Moisture						17.7	17.2	3	5
Batch number: 15251820004B	Sample number(s): 8032080-8032087 BKG: P037614								
Moisture						23.2	23.1	0	5

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

### 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: SIM SVOA (microwave)  
Batch number: 15251SLE026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8032047	95	95	82
8032048	129	103	84
8032049	121	99	86
8032050	104	85	86
8032059	96	98	87
8032060	100	103	89
8032061	84	108	95
Blank	112	113	97
LCS	84	109	93
MS	100	103	89
MSD	84	108	95
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)  
Batch number: 15251SLF026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8032051	121	102	92
8032052	118	102	90
8032053	123	96	93
8032054	119	102	93
8032055	106	63	89
8032056	72	47*	87
8032057	134	100	97
8032058	104	97	96
8032062	101	97	87
8032063	100	99	88
8032064	129	101	91
8032065	125	95	90
8032066	120	75	89
8032067	90	88	83
8032068	83	94	92
8032069	96	92	75
8032070	101	81	55
8032071	115	96	92
8032072	138	85	77
8032073	104	85	79
Blank	111	104	94
LCS	106	98	89
MS	120	104	95
MSD	115	100	90
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)  
Batch number: 15252SLJ026

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

### Surrogate Quality Control

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8032074	133	100	84
8032075	115	92	77
8032076	109	89	77
8032077	103	83	73
8032078	98	79	72
8032079	98	92	84
8032080	118	96	79
8032081	107	92	74
8032082	106	91	71
8032083	103	86	79
8032084	118	92	81
8032085	123	93	83
8032086	97	95	83
8032087	95	90	74
Blank	105	107	93
LCS	75	98	87
MS	82	99	88
MSD	100	97	88
Limits:	49-151	62-137	39-152

Analysis Name: NWT PH-GX Soil C7-C12  
Batch number: 15246A34A

#### Trifluorotoluene-F

8032047	79
8032048	69
8032049	65
8032050	68
8032051	64
8032052	70
8032053	66
8032054	67
8032055	108
8032056	67
8032057	66
8032058	92
8032059	70
8032060	70
8032061	67
Blank	105
LCS	103
MS	70
MSD	67
Limits:	50-142

Analysis Name: NWT PH-GX Soil C7-C12  
Batch number: 15246B34A

#### Trifluorotoluene-F

8032062	97
8032063	64
8032064	123
8032065	100
8032066	80
8032067	68

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

### Surrogate Quality Control

8032068	63
8032069	99
8032070	80
8032071	95
8032072	127
8032073	127
8032074	100
8032075	143*
8032076	99
8032077	104
8032078	266*
8032079	63
8032081	92
Blank	104
LCS	101
LCSD	101

Limits: 50-142

Analysis Name: NWTPH-Gx water C7-C12  
Batch number: 15247A94A  
Trifluorotoluene-F

8032088	76
Blank	76
LCS	97
LCSD	95

Limits: 63-135

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15251A34A  
Trifluorotoluene-F

8032080	120
8032082	95
8032083	119
8032084	112
8032085	98
8032086	126
8032087	88
Blank	102
LCS	103
LCSD	104

Limits: 50-142

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152480017A  
Orthoterphenyl

8032047	109
8032048	113
8032049	109
8032050	106
8032051	110
8032052	105
8032053	116
8032054	106
8032055	100
8032056	96
Blank	115

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

### Surrogate Quality Control

DUP 101  
LCS 119  
Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152480018A  
Orthoterphenyl

8032057 119  
8032058 110  
8032059 99  
8032060 101  
8032061 115  
8032062 105  
8032063 112  
8032064 105  
8032065 108  
8032066 106  
8032067 104  
8032068 93  
Blank 125  
LCS 106  
MS 101  
MSD 115

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152520029A  
Orthoterphenyl

8032069 73  
8032070 80  
8032071 52  
8032072 86  
8032073 87  
8032074 69  
8032075 78  
Blank 104  
LCS 91  
LCSD 98

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152520030A  
Orthoterphenyl

8032076 72  
8032077 71  
8032078 83  
8032079 105  
8032080 111  
8032081 88  
8032082 82  
8032083 74  
8032084 74  
8032085 90  
Blank 108  
LCS 104  
LCSD 114

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 09/28/2015 15:12

Group Number: 1589716

### Surrogate Quality Control

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152520031A

Orthoterphenyl

---

8032086	70
8032087	82
Blank	114
LCS	107
LCSD	100

---

Limits: 50-150

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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.



13255 1589716 8032017-88  
**Laboratory Management Program LaMP Chain of Custody Record** R224114

BP Site Node Path: \_\_\_\_\_ Req Due Date (mm/dd/yy): \_\_\_\_\_ Rush TAT: Yes \_\_\_ No \_\_\_  
 BP Facility No: Farm, Olympia Butte Max Lab Work Order Number: \_\_\_\_\_

Lab Name: <u>Leicester Labs</u>	Facility Address: <u>1117 West Bay drive</u>	Consultant/Contractor: <u>Accordis</u>
Lab Address: <u>2425 New Holland Pkwy, PA</u>	City, State, ZIP Code: <u>Olympia, WA</u>	Consultant/Contractor Project No: <u>BP09011AWA.60</u>
Lab PM: <u>Stacy Buttr</u>	Lead Regulatory Agency: <u>WADOLE</u>	Address: <u>1100 Olive Way, Seattle WA</u>
Lab Phone: <u>717-650-2300</u>	California Global ID No.:	Consultant/Contractor PM: <u>Brian Morrison</u>
Lab Shipping Acct:	Enfos Proposal No:	Phone: <u>206-726-4755</u> Email: <u>Brian.Morrison@accordis-us.com</u>
Lab Bottle Order No:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: <u>Brian Morrison</u> and to <u>lab.enfosdoc@bp.com</u>
Other Info:	Stage: _____ Activity: _____	Invoice To: BP ___ Contractor <u>X</u>

BP Project Manager (PM):	<b>Matrix</b>	<b>No. Containers / Preservative</b>	<b>Requested Analyses</b>	<b>Report Type &amp; QC Level</b>
BP PM Phone:				Standard ___
BP PM Email:				Full Data Package ___

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Container:	Unpreserved	H2SO4	HNO3	HCl	Methanol	NTTPH-Gx *	NTTPH-Dx *	CPAHS + Naph *	Comments
	SB-53-7.5	8-27-15	0945	✓				3	2					X	X	X	
	SB-42-7.5	8-27-15	1000	✓				3	2								*Analyses requested per M. Perkins 9/8/15
	SB-31-7.5	8-27-15	1015	✓				3	2								
	SB-32-7.5	8-27-15	1030	✓				3	2								
	SB-22-7.5	8-27-15	1045	✓				3	2								
	SB-23A-7.5	8-27-15	1100	✓				3	2								
	SB-16-7.5	8-27-15	1500	✓				3	2								
	SB-15-7.5	8-27-15	1530	✓				3	2								
	SB-63-7.5	8-27-15	1600	✓				3	2								
	SB-54-7.5	8-27-15	1615	✓				3	2								

Sampler's Name: <u>Jason Little</u>	<b>Relinquished By / Affiliation</b>	<b>Date</b>	<b>Time</b>	<b>Accepted By / Affiliation</b>	<b>Date</b>	<b>Time</b>
Sampler's Company: <u>Accordis</u>						
Shipment Method: <u>VPS</u> Ship Date:						
Shipment Tracking No:				<u>Brian Morrison</u>	<u>9/15</u>	<u>925</u>

**Special Instructions:**









Client: Arcadis

**Delivery and Receipt Information**

Delivery Method: Fed Ex                      Arrival Timestamp: 09/01/2015 9:25  
 Number of Packages: 2                      Number of Projects: 1  
 State/Province of Origin: WA

**Arrival Condition Summary**

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	No
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	3
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	Yes		

*Unpacked by Brandy Barclay (2299) at 11:10 on 09/01/2015*

**Samples Chilled Details**

Thermometer Types:    *DT = Digital (Temp. Bottle)    IR = Infrared (Surface Temp)    All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	3.0	DT	Wet	Y	Bagged	N
2	DT146	4.6	DT	Wet	Y	Bagged	N

Client: Arcadis

### Container Quantity Discrepancy Details

<u>Sample ID on COC</u>	<u>Container Qty. Received</u>	<u>Container Qty. on COC</u>	<u>Comments</u>
SB-5A-7.5	2	3	Did not rec vial
SB-50-7.5	2	3	Did not rec vial
SB-61-7.5	2	3	Did not rec vial
SB-21-7.5	2	3	Did not rec vial
SB-28-7.5	2	3	Did not rec vial
SB-27-7.5	2	3	Did not rec vial
SB-38-7.5	2	3	Did not rec vial
SB-49-7.5	2	3	Did not rec vial
SB-41-7.5	2	3	Did not rec vial
SB-52-7.5	2	3	Did not rec vial
SB-30-7.5	2	3	Did not rec vial
SB-40-7.5	2	3	Did not rec vial
SB-51-7.5	2	3	Did not rec vial
SB-62-7.5	2	3	Did not rec vial
SB-1A-7.5	2	3	Did not rec vial
SB-29-7.5	2	3	Did not rec vial
SB-39-7.5	2	3	Did not rec vial
SB-25A-7.5	2	3	Did not rec vial

### Sample ID Discrepancy Details

<u>Sample ID on COC</u>	<u>Sample ID on Label</u>	<u>Comments</u>
SB-1A-7.5	SB-1-7.5	1 JAR ONLY

### Sample Date/Time Discrepancy Details

<u>Sample ID on COC</u>	<u>Date/Time on Label</u>	<u>Comments</u>
SB-1A-12.5	8/28/2015 10:20	
SB-10-7.5	8/28/2015 11:50	
SB-5A-7.5	8/28/2015 10:45	
SB-61-7.5	8/28/2015 11:15	
SB-38-7.5	8/28/2015 13:10	
SB-30-7.5	8/28/2015 10:22	1 JAR

# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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 per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

## Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

**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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC 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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL 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 Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

## ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

October 01, 2015

**Project: Former Olympia Bulk Plant**Submittal Date: 09/04/2015  
Group Number: 1590592  
PO Number: GP09BPNA.WA60  
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
SB-48-7.5 Soil	8036396
SB-3-7.5 Soil	8036397
SB-7-7.5 Soil	8036398
SB-36-7.5 Soil	8036399
SB-36-7.5 MS Soil	8036400
SB-36-7.5 MSD Soil	8036401
SB-36-12.5 Soil	8036402
SB-12-7.5 Soil	8036403
SB-18-7.5 Soil	8036404
SB-18A-12.5 Soil	8036405
SB-6-7.5 Soil	8036406
SB-6-7.5 MS Soil	8036407
SB-6-7.5 MSD Soil	8036408
SB-11-7.5 Soil	8036409
SB-11-12.5 Soil	8036410
SB-20-7.5 Soil	8036411
SB-20-12.5 Soil	8036412
SB-17-7.5 Soil	8036413
SB-24-7.5 Soil	8036414
SB-33-7.5 Soil	8036415
SB-19-7.5 Soil	8036416
SB-19-14.5 Soil	8036417
SB-44-7.5 Soil	8036418
SB-56-7.5 Soil	8036419
SB-45-7.5 Soil	8036420
SB-45-7.5 MS Soil	8036421
SB-45-7.5 MSD Soil	8036422
SB-46-7.5 Soil	8036423
SB-46-12.5 Soil	8036424
SB-57-7.5 Soil	8036425
SB-34-7.5 Soil	8036426
SB-8-7.5 Soil	8036427

SB-13-7.5 Soil	8036428
SB-41-Offset-7.5 Soil	8036429
SB-41-Offset-12.5 Soil	8036430
SB-52-Offset-7.5 Soil	8036431
SB-52-Offset-12.5 Soil	8036432
SB-62-Offset-7.5 Soil	8036433
SB-60-7.5 Soil	8036434
SB-59-7.5 Soil	8036435
SB-47-7.5 Soil	8036436
SB-47-12.5 Soil	8036437
SB-37-7.5 Soil	8036438
SB-37-12.5 Soil	8036439
SB-26A-7.5 Soil	8036440
SB-26A-12.5 Soil	8036441
SB-35-7.5 Soil	8036442
SB-14-7.5 Soil	8036443
SB-41-D-2.5 Soil	8036444
SB-41-E-2.5 Soil	8036445
SB-41-C-2.5 Soil	8036446
SB-41-E-7.5 Soil	8036447
SB-41-E-12.5 Soil	8036448
SB-41-C-7.5 Soil	8036449
SB-41-C-12.5 Soil	8036450
SB-41-D-7.5 Soil	8036451
SB-41-D-12.5 Soil	8036452
SB-41-B-2.5 Soil	8036453
SB-52-B-2.5 Soil	8036454
SB-41-B-7.5 Soil	8036455
SB-41-B-12.5 Soil	8036456
SB-52-B-7.5 Soil	8036457
DUP-6 Soil	8036458
DUP-7 Soil	8036459
TRIP BLANK Water	8036460
DUP-8 Soil	8036461

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC COPY TO  
ELECTRONIC COPY TO  
ARCADIS U.S., Inc.  
ARCADIS U.S., Inc.

Attn: Myles Perkins

Attn: Brian Marcum

Respectfully Submitted,



Stacy L. Butt  
Specialist

(717) 556-7236



---

Project Name: Former Olympia Bulk Plant  
LL Group #: 1590592

**General Comments:**

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****SW-846 8270C SIM, GC/MS Semivolatiles**

Sample #s: 8036404, 8036416

Reporting limits were raised due to interference from the sample matrix.

Sample #s: 8036449, 8036450, 8036452

Reporting limits were raised due to interference from the sample matrix. The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

Sample #s: 8036420, 8036421, 8036422, 8036447

The holding time was not met due to a laboratory error.

Sample #s: 8036403

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

Sample #s: 8036417

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Batch #: 15253SLH026 (Sample number(s): 8036396-8036405, 8036409-8036416 UNSPK: 8036399)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: 2-Methylnaphthalene, 1-Methylnaphthalene, Benzo(a)anthracene, Chrysene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Naphthalene

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: 2-Methylnaphthalene, 1-Methylnaphthalene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036403, 8036404, 8036416

Batch #: 15253SLI026 (Sample number(s): 8036406-8036408, 8036417-8036419, 8036423-8036438 UNSPK: 8036406)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Naphthalene, 2-Methylnaphthalene, 1-Methylnaphthalene, Benzo(b)fluoranthene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: 2-Methylnaphthalene, 1-Methylnaphthalene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036417

Batch #: 15253SLJ026 (Sample number(s): 8036439-8036446, 8036448-8036455)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036449, 8036450, 8036452

Batch #: 15259SLF026 (Sample number(s): 8036420-8036422, 8036447 UNSPK: 8036420)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene  
**ECY 97-602 NWTPH-Gx, GC Volatiles**

Sample #s: 8036447

Reporting limits were raised due to limited sample extract volume caused by absorption of the matrix of the sample.

Sample #s: 8036396, 8036397, 8036398, 8036399, 8036400, 8036401, 8036402, 8036403, 8036404, 8036406, 8036407, 8036408, 8036409, 8036410, 8036411, 8036412, 8036415, 8036416, 8036417, 8036418, 8036419, 8036420, 8036421, 8036423, 8036425, 8036426, 8036427, 8036428, 8036430, 8036431, 8036432, 8036433, 8036434, 8036435, 8036437, 8036438, 8036439, 8036440, 8036441, 8036442, 8036443, 8036444, 8036445, 8036446, 8036448, 8036449, 8036450, 8036451, 8036452, 8036454, 8036455, 8036456, 8036457, 8036459, 8036461

Reporting limits were raised due to sample foaming.

Sample #s: 8036422

Reporting limits were raised due to sample foaming.  
Reporting limits were raised due to interference from the sample matrix.

Batch #: 15252A31A (Sample number(s): 8036406-8036408, 8036423, 8036427, 8036430-8036432, 8036436-8036438, 8036458-8036459, 8036461 UNSPK: 8036406)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWTPH-GX Soil C7-C12

Batch #: 15252A34A (Sample number(s): 8036396-8036401, 8036403-8036404, 8036409, 8036411-8036412, 8036416 UNSPK: 8036399)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWTPH-GX Soil C7-C12

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: NWTPH-GX Soil C7-C12

Batch #: 15252B31A (Sample number(s): 8036433-8036435, 8036439, 8036441-8036447, 8036450-8036452)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036447

Batch #: 15252B34A (Sample number(s): 8036402, 8036405, 8036414, 8036420-8036422 UNSPK: 8036420)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: NWTPH-GX Soil C7-C12

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: NWTPH-GX Soil C7-C12

Batch #: 15257A34B (Sample number(s): 8036455-8036457)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036455

**ECY 97-602 NWTPH-Dx modified, GC Petroleum Hydrocarbons w/Si**

Batch #: 152530014A (Sample number(s): 8036396-8036405 UNSPK: 8036399)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: DRO C12-C24 w/Si Gel

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036404

Batch #: 152530026A (Sample number(s): 8036406-8036417 UNSPK: 8036406)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036416

Batch #: 152530040A (Sample number(s): 8036440-8036446, 8036458-8036459, 8036461)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8036458

Batch #: 152540006A (Sample number(s): 8036447-8036456 UNSPK: 8036454)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: DRO C12-C24 w/Si Gel

**SM 2540 G-1997, Wet Chemistry**

Batch #: 15258820006A (Sample number(s): 8036442-8036450 BKG: P44773)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: Moisture

**Sample Description:** SB-48-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036396  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 10:45 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

48-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0027	0.0067	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0027	0.0067	1
10725	Benzo(b)fluoranthene	205-99-2	0.0051 J	0.0027	0.0067	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0027	0.0067	1
10725	Chrysene	218-01-9	0.0052 J	0.0013	0.0067	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0027	0.0067	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0027	0.0067	1
10725	1-Methylnaphthalene	90-12-0	0.70	0.0027	0.0067	1
10725	2-Methylnaphthalene	91-57-6	0.26	0.0027	0.0067	1
10725	Naphthalene	91-20-3	0.080	0.0027	0.0067	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	72	360	440.65
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	530	12	28	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,300	40	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	75.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 08:23	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 21:18	Jeremy C Giffin	440.65
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:16	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 05:31	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-48-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036396  
 LL Group # 1590592  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 10:45 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

48-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-3-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036397  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 11:15 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

03-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0021	0.0053	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0021	0.0053	1
10725	Benzo(b)fluoranthene	205-99-2	0.0030 J	0.0021	0.0053	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0021	0.0053	1
10725	Chrysene	218-01-9	0.0050 J	0.0011	0.0053	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0021	0.0053	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0021	0.0053	1
10725	1-Methylnaphthalene	90-12-0	0.12	0.0021	0.0053	1
10725	2-Methylnaphthalene	91-57-6	0.054	0.0021	0.0053	1
10725	Naphthalene	91-20-3	0.041	0.0021	0.0053	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	57	280	447.77
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	170	9.5	22	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,500	32	95	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	68.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 09:02	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 21:53	Jeremy C Giffin	447.77
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:18	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 05:52	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-3-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036397  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 11:15 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

03-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-7-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036398  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 11:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

07-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0026 J	0.0024	0.0060	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0024	0.0060	1
10725	Benzo(b)fluoranthene	205-99-2	0.0061	0.0024	0.0060	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0024	0.0060	1
10725	Chrysene	218-01-9	0.0076	0.0012	0.0060	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0024	0.0060	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0024	0.0060	1
10725	1-Methylnaphthalene	90-12-0	0.96	0.0024	0.0060	1
10725	2-Methylnaphthalene	91-57-6	0.62	0.0024	0.0060	1
10725	Naphthalene	91-20-3	0.23	0.0024	0.0060	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	65	320	448.79
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	290	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,700	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	72.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 09:35	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 22:28	Jeremy C Giffin	448.79
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:20	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 06:14	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result



Sample Description: SB-7-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036398  
 LL Group # 1590592  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 11:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

07-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-36-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036399  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 11:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

36-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0027 J	0.0023	0.0059	1
10725	Benzo(a)pyrene	50-32-8	0.0025 J	0.0023	0.0059	1
10725	Benzo(b)fluoranthene	205-99-2	0.0061	0.0023	0.0059	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0023	0.0059	1
10725	Chrysene	218-01-9	0.0065	0.0012	0.0059	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0023	0.0059	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0023	0.0059	1
10725	1-Methylnaphthalene	90-12-0	0.37	0.0023	0.0059	1
10725	2-Methylnaphthalene	91-57-6	0.35	0.0023	0.0059	1
10725	Naphthalene	91-20-3	0.050	0.0023	0.0059	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	71 J	63	320	445.31
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	710	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,200	35	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	71.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/29/2015 17:43	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 18:56	Jeremy C Giffin	445.31
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:21	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 06:36	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-36-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036399  
 LL Group # 1590592  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 11:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

36-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-36-7.5 MS Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036400  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 11:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

36-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.084	0.0023	0.0058	1
10725	Benzo(a)pyrene	50-32-8	0.10	0.0023	0.0058	1
10725	Benzo(b)fluoranthene	205-99-2	0.13	0.0023	0.0058	1
10725	Benzo(k)fluoranthene	207-08-9	0.13	0.0023	0.0058	1
10725	Chrysene	218-01-9	0.085	0.0012	0.0058	1
10725	Dibenz(a,h)anthracene	53-70-3	0.060	0.0023	0.0058	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.058	0.0023	0.0058	1
10725	1-Methylnaphthalene	90-12-0	0.71	0.0023	0.0058	1
10725	2-Methylnaphthalene	91-57-6	0.62	0.0023	0.0058	1
10725	Naphthalene	91-20-3	0.20	0.0023	0.0058	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	250	J 61	310	429.88
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	870	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	860	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	71.9	0.50	0.50	1

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/29/2015 18:17	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 19:32	Jeremy C Giffin	429.88
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:23	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 06:57	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-36-7.5 MSD Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036401  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 11:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

36-75

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>							
10725	Benzo(a)anthracene	56-55-3	0.084		0.0023	0.0058	1
10725	Benzo(a)pyrene	50-32-8	0.091		0.0023	0.0058	1
10725	Benzo(b)fluoranthene	205-99-2	0.12		0.0023	0.0058	1
10725	Benzo(k)fluoranthene	207-08-9	0.11		0.0023	0.0058	1
10725	Chrysene	218-01-9	0.080		0.0012	0.0058	1
10725	Dibenz(a,h)anthracene	53-70-3	0.054		0.0023	0.0058	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.052		0.0023	0.0058	1
10725	1-Methylnaphthalene	90-12-0	0.36		0.0023	0.0058	1
10725	2-Methylnaphthalene	91-57-6	0.34		0.0023	0.0058	1
10725	Naphthalene	91-20-3	0.16		0.0023	0.0058	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>							
02005	NWTPH-GX Soil C7-C12	n.a.	180	J	59	290	413.72
Reporting limits were raised due to sample foaming.							
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>							
<b>Hydrocarbons w/Si modified</b>							
02214	DRO C12-C24 w/Si Gel	n.a.	850		11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,000		35	110	1
<b>Wet Chemistry SM 2540 G-1997</b>							
00118	Moisture	n.a.	71.9		0.50	0.50	1
00121	Moisture Duplicate	n.a.	73.9		0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.							

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/29/2015 18:50	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 20:07	Jeremy C Giffin	413.72
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:24	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 07:19	Heather E Williams	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-36-7.5 MSD Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036401  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 11:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

36-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1
00118	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-36-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036402  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 12:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

36-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0043	0.00092	0.0023	1
10725	Benzo(a)pyrene	50-32-8	0.0053	0.00092	0.0023	1
10725	Benzo(b)fluoranthene	205-99-2	0.0062	0.00092	0.0023	1
10725	Benzo(k)fluoranthene	207-08-9	0.0037	0.00092	0.0023	1
10725	Chrysene	218-01-9	0.0052	0.00046	0.0023	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00092	0.0023	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0018 J	0.00092	0.0023	1
10725	1-Methylnaphthalene	90-12-0	0.029	0.00092	0.0023	1
10725	2-Methylnaphthalene	91-57-6	0.026	0.00092	0.0023	1
10725	Naphthalene	91-20-3	0.014	0.00092	0.0023	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	72	259.88
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	11	4.2	9.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	33 J	14	42	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	28.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 10:09	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B34A	09/10/2015 21:04	Jeremy C Giffin	259.88
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 12:15	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/15/2015 00:47	Heather E Williams	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-36-12.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036402  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 12:15 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

36-12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



Sample Description: SB-12-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036403  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 12:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

12-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0026	0.0066	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0026	0.0066	1
10725	Benzo(b)fluoranthene	205-99-2	0.0035 J	0.0026	0.0066	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0026	0.0066	1
10725	Chrysene	218-01-9	0.0029 J	0.0013	0.0066	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0026	0.0066	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0026	0.0066	1
10725	1-Methylnaphthalene	90-12-0	0.12	0.0026	0.0066	1
10725	2-Methylnaphthalene	91-57-6	0.044	0.0026	0.0066	1
10725	Naphthalene	91-20-3	0.017	0.0026	0.0066	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg	
02005 NWTPH-GX Soil C7-C12	n.a.	N.D.	69	350	438.34
Reporting limits were raised due to sample foaming.					

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	mg/kg	
02214 DRO C12-C24 w/Si Gel	n.a.	580	12	27	1
02214 HRO C24-C40 w/Si Gel	n.a.	1,900	39	120	1

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111 Moisture	n.a.	74.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 10:42	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 23:03	Jeremy C Giffin	438.34
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:26	Scott W Freisher	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-12-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036403  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 12:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

12-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/13/2015 07:41	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-18-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036404  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 12:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

18-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	19	0.34	0.85	5
10725	Benzo(a)pyrene	50-32-8	16	0.34	0.85	5
10725	Benzo(b)fluoranthene	205-99-2	39	0.34	0.85	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.34	0.85	5
10725	Chrysene	218-01-9	26	0.17	0.85	5
10725	Dibenz(a,h)anthracene	53-70-3	2.4	0.34	0.85	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	4.4	0.34	0.85	5
10725	1-Methylnaphthalene	90-12-0	16	0.34	0.85	5
10725	2-Methylnaphthalene	91-57-6	19	0.34	0.85	5
10725	Naphthalene	91-20-3	19	0.34	0.85	5

Reporting limits were raised due to interference from the sample matrix.

<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	55 J	33	170	399.28

Reporting limits were raised due to sample foaming.

<b>GC Petroleum</b>	<b>ECY 97-602 NWTPH-Dx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
<b>Hydrocarbons w/Si</b>	<b>modified</b>					
02214	DRO C12-C24 w/Si Gel	n.a.	4,500	150	360	25
02214	HRO C24-C40 w/Si Gel	n.a.	10,000	510	1,500	25

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00111	Moisture	n.a.	51.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 11:15	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A34A	09/09/2015 23:39	Jeremy C Giffin	399.28
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:28	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/15/2015 01:30	Heather E Williams	25

\*=This limit was used in the evaluation of the final result

Sample Description: SB-18-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036404  
 LL Group # 1590592  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 12:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

18-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-18A-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036405  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 13:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

18A12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0011 J	0.00072	0.0018	1
10725	Benzo(a)pyrene	50-32-8	0.00096 J	0.00072	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	0.0011 J	0.00072	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00072	0.0018	1
10725	Chrysene	218-01-9	0.00095 J	0.00036	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00072	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00072	0.0018	1
10725	1-Methylnaphthalene	90-12-0	0.00083 J	0.00072	0.0018	1
10725	2-Methylnaphthalene	91-57-6	0.0014 J	0.00072	0.0018	1
10725	Naphthalene	91-20-3	N.D.	0.00072	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	2.0 J	0.91	4.6	21.02
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.2	7.5	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	32	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	7.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 11:49	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Nicholas W Shroyer	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B34A	09/10/2015 21:39	Jeremy C Giffin	21.02
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 13:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530014A	09/15/2015 01:08	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530014A	09/11/2015 11:00	Denise L Trimby	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-18A-12.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036405  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 13:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

18A12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004A	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-6-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036406  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

06-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.013	0.032	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.013	0.032	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.013	0.032	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.013	0.032	5
10725	Chrysene	218-01-9	0.010 J	0.0064	0.032	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.013	0.032	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.013	0.032	5
10725	1-Methylnaphthalene	90-12-0	1.4	0.013	0.032	5
10725	2-Methylnaphthalene	91-57-6	1.9	0.013	0.032	5
10725	Naphthalene	91-20-3	0.056	0.013	0.032	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	69	340	443.49
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	290	12	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,100	39	120	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	74.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/24/2015 22:07	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/09/2015 19:03	Jeremy C Giffin	443.49
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:29	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/14/2015 23:42	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-6-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036406  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

06-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-6-7.5 MS Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036407  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

06-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.13	0.013	0.032	5
10725	Benzo(a)pyrene	50-32-8	0.12	0.013	0.032	5
10725	Benzo(b)fluoranthene	205-99-2	0.16	0.013	0.032	5
10725	Benzo(k)fluoranthene	207-08-9	0.14	0.013	0.032	5
10725	Chrysene	218-01-9	0.12	0.0064	0.032	5
10725	Dibenz(a,h)anthracene	53-70-3	0.057	0.013	0.032	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.056	0.013	0.032	5
10725	1-Methylnaphthalene	90-12-0	3.5	0.013	0.032	5
10725	2-Methylnaphthalene	91-57-6	4.8	0.013	0.032	5
10725	Naphthalene	91-20-3	0.24	0.013	0.032	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	170	J 69	340	442.95
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	880	11	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,900	38	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	74.2	0.50	0.50	1

**General Sample Comments**

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/24/2015 22:40	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/09/2015 19:39	Jeremy C Giffin	442.95
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:31	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/15/2015 01:52	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
00118	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-6-7.5 MSD Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036408  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

06-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.13	0.013	0.032	5
10725	Benzo(a)pyrene	50-32-8	0.13	0.013	0.032	5
10725	Benzo(b)fluoranthene	205-99-2	0.19	0.013	0.032	5
10725	Benzo(k)fluoranthene	207-08-9	0.14	0.013	0.032	5
10725	Chrysene	218-01-9	0.13	0.0064	0.032	5
10725	Dibenz(a,h)anthracene	53-70-3	0.061	0.013	0.032	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.057	0.013	0.032	5
10725	1-Methylnaphthalene	90-12-0	2.4	0.013	0.032	5
10725	2-Methylnaphthalene	91-57-6	2.8	0.013	0.032	5
10725	Naphthalene	91-20-3	0.23	0.013	0.032	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	140	J 69	340	444.82
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	810	11	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,400	38	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	74.2	0.50	0.50	1
00121	Moisture Duplicate	n.a.	74.1	0.50	0.50	1
The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/24/2015 23:13	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/09/2015 20:15	Jeremy C Giffin	444.82
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:32	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/15/2015 02:13	Heather E Williams	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-6-7.5 MSD Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036408  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

06-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
00118	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-11-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036409  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 14:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

11-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.012	0.029	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.012	0.029	5
10725	Benzo(b)fluoranthene	205-99-2	0.016 J	0.012	0.029	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.012	0.029	5
10725	Chrysene	218-01-9	0.0098 J	0.0059	0.029	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.012	0.029	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.012	0.029	5
10725	1-Methylnaphthalene	90-12-0	0.57	0.012	0.029	5
10725	2-Methylnaphthalene	91-57-6	0.75	0.012	0.029	5
10725	Naphthalene	91-20-3	0.093	0.012	0.029	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	63	320	443.68
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	310	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,300	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	72.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 12:22	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A34A	09/10/2015 00:49	Jeremy C Giffin	443.68
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:34	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530026A	09/15/2015 02:35	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-11-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036410  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 14:10 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

11-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.13	0.0038	0.0095	5
10725	Benzo(a)pyrene	50-32-8	0.13	0.0038	0.0095	5
10725	Benzo(b)fluoranthene	205-99-2	0.18	0.0038	0.0095	5
10725	Benzo(k)fluoranthene	207-08-9	0.073	0.0038	0.0095	5
10725	Chrysene	218-01-9	0.14	0.0019	0.0095	5
10725	Dibenz(a,h)anthracene	53-70-3	0.012	0.0038	0.0095	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.039	0.0038	0.0095	5
10725	1-Methylnaphthalene	90-12-0	0.027	0.0038	0.0095	5
10725	2-Methylnaphthalene	91-57-6	0.031	0.0038	0.0095	5
10725	Naphthalene	91-20-3	0.026	0.0038	0.0095	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	11	54	234.04
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	8.0	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	13.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 12:56	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15254A31A	09/11/2015 22:43	Jeremy C Giffin	234.04
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 14:10	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/14/2015 21:34	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-11-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036410  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 14:10 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

11-12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-20-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036411  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 14:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

20-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0023	0.0057	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0023	0.0057	1
10725	Benzo(b)fluoranthene	205-99-2	0.0047 J	0.0023	0.0057	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0023	0.0057	1
10725	Chrysene	218-01-9	0.0020 J	0.0011	0.0057	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0023	0.0057	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0023	0.0057	1
10725	1-Methylnaphthalene	90-12-0	0.41	0.0023	0.0057	1
10725	2-Methylnaphthalene	91-57-6	0.42	0.0023	0.0057	1
10725	Naphthalene	91-20-3	0.057	0.0023	0.0057	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	160 J	58	290	418.49
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	150	10	24	1
02214	HRO C24-C40 w/Si Gel	n.a.	810	34	100	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	71.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 13:30	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A34A	09/10/2015 02:35	Jeremy C Giffin	418.49
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:36	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530026A	09/14/2015 23:21	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-20-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036412  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 14:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

20-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0027	0.0067	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0027	0.0067	1
10725	Benzo(b)fluoranthene	205-99-2	0.0065 J	0.0027	0.0067	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0027	0.0067	1
10725	Chrysene	218-01-9	0.0046 J	0.0013	0.0067	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0027	0.0067	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0028 J	0.0027	0.0067	1
10725	1-Methylnaphthalene	90-12-0	0.10	0.0027	0.0067	1
10725	2-Methylnaphthalene	91-57-6	0.11	0.0027	0.0067	1
10725	Naphthalene	91-20-3	0.049	0.0027	0.0067	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	73	360	448.74
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	170	12	28	1
02214	HRO C24-C40 w/Si Gel	n.a.	630	41	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	75.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 14:03	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A34A	09/10/2015 01:24	Jeremy C Giffin	448.74
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:38	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530026A	09/14/2015 23:00	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-17-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036413  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 14:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

17-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.018	0.00074	0.0018	1
10725	Benzo(a)pyrene	50-32-8	0.019	0.00074	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	0.023	0.00074	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	0.011	0.00074	0.0018	1
10725	Chrysene	218-01-9	0.019	0.00037	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	0.0017 J	0.00074	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	0.00074	0.0018	1
10725	1-Methylnaphthalene	90-12-0	0.0021	0.00074	0.0018	1
10725	2-Methylnaphthalene	91-57-6	0.0027	0.00074	0.0018	1
10725	Naphthalene	91-20-3	0.0045	0.00074	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.99	4.9	22.05
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	10.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 14:37	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15254A31A	09/11/2015 21:29	Jeremy C Giffin	22.05
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 14:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/14/2015 21:55	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-24-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036414  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 14:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

24-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00072	0.0018	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00072	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00072	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00072	0.0018	1
10725	Chrysene	218-01-9	N.D.	0.00036	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00072	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00072	0.0018	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00072	0.0018	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00072	0.0018	1
10725	Naphthalene	91-20-3	N.D.	0.00072	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.83	4.2	19.01
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.2	7.6	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	32	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	8.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 15:10	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B34A	09/10/2015 23:25	Jeremy C Giffin	19.01
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 14:50	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/14/2015 22:16	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-33-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036415  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 15:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

33-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00074	0.0018	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00074	0.0018	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00074	0.0018	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00074	0.0018	1
10725	Chrysene	218-01-9	N.D.	0.00037	0.0018	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	0.0018	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00074	0.0018	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00074	0.0018	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00074	0.0018	1
10725	Naphthalene	91-20-3	N.D.	0.00074	0.0018	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	20	99	443.47
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.3	7.7	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	33	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	10.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 15:43	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15254A31A	09/11/2015 23:19	Jeremy C Giffin	443.47
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524838751	08/31/2015 15:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530026A	09/14/2015 22:38	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-33-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036415  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 15:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

33-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-19-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036416  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 15:05 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

19-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	7.7	0.11	0.28	5
10725	Benzo(a)pyrene	50-32-8	7.0	0.11	0.28	5
10725	Benzo(b)fluoranthene	205-99-2	16	0.11	0.28	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.11	0.28	5
10725	Chrysene	218-01-9	11	0.057	0.28	5
10725	Dibenz(a,h)anthracene	53-70-3	0.87	0.11	0.28	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	1.7	0.11	0.28	5
10725	1-Methylnaphthalene	90-12-0	2.1	0.11	0.28	5
10725	2-Methylnaphthalene	91-57-6	2.0	0.11	0.28	5
10725	Naphthalene	91-20-3	3.3	0.11	0.28	5

Reporting limits were raised due to interference from the sample matrix.

<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	58	290	423.32

Reporting limits were raised due to sample foaming.

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02214	DRO C12-C24 w/Si Gel	n.a.	9,600	1,000	2,400	100
02214	HRO C24-C40 w/Si Gel	n.a.	64,000	3,400	10,000	100

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00111	Moisture	n.a.	70.7	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLH026	09/30/2015 16:16	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLH026	09/11/2015 17:40	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A34A	09/10/2015 02:00	Jeremy C Giffin	423.32
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:39	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530026A	09/15/2015 03:18	Heather E Williams	100
07024	DRO Alternate Soil Extraction	NWTPH-Dx modified ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-19-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036416  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 15:05 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

19-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-19-14.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036417  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 15:25 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

19-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	7.7	0.041	0.10	50
10725	Benzo(a)pyrene	50-32-8	6.7	0.041	0.10	50
10725	Benzo(b)fluoranthene	205-99-2	6.7	0.041	0.10	50
10725	Benzo(k)fluoranthene	207-08-9	3.1	0.041	0.10	50
10725	Chrysene	218-01-9	7.7	0.020	0.10	50
10725	Dibenz(a,h)anthracene	53-70-3	0.69	0.041	0.10	50
10725	Indeno(1,2,3-cd)pyrene	193-39-5	1.9	0.041	0.10	50
10725	1-Methylnaphthalene	90-12-0	14	0.041	0.10	50
10725	2-Methylnaphthalene	91-57-6	23	0.41	1.0	500
10725	Naphthalene	91-20-3	50	0.41	1.0	500

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

<b>GC Volatiles</b>	<b>ECY 97-602 NWT PH-Gx</b>	<b>mg/kg</b>		<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWT PH-GX Soil C7-C12	n.a.	28 J	12	59	235.66

Reporting limits were raised due to sample foaming.

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWT PH-Dx modified</b>	<b>mg/kg</b>		<b>mg/kg</b>	<b>mg/kg</b>	
02214	DRO C12-C24 w/Si Gel	n.a.	580	37	87	10
02214	HRO C24-C40 w/Si Gel	n.a.	2,300	120	370	10

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>		<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	19.5	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 13:41	Joseph M Gambler	50
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/29/2015 09:57	Joseph M Gambler	500
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15254A31A	09/11/2015 23:55	Jeremy C Giffin	235.66
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 15:25	Client Supplied	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-19-14.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036417  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 15:25 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

19-14

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530026A	09/15/2015 02:56	Heather E Williams	10
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530026A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-44-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036418  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 15:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

44-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0052	0.00074	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.0069	0.00074	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.010	0.00074	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.0045	0.00074	0.0019	1
10725	Chrysene	218-01-9	0.0055	0.00037	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00074	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0019	0.00074	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.0015 J	0.00074	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.0015 J	0.00074	0.0019	1
10725	Naphthalene	91-20-3	0.0043	0.00074	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	8.7	44	193.8
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.4	7.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	34	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	11.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 00:19	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15254A31B	09/14/2015 19:25	Marie D Beamenderfer	193.8
06647	GC-5g Field Preserved MeOH	NWTPH-Gx				Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	SW-846 5035A	1	201524838751	08/31/2015 15:20		
		ECY 97-602	1	152530027A	09/12/2015 23:22	Heather E Williams	1
		NWTPH-Dx modified					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-44-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036418  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 15:20 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

44-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-56-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036419  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

56-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0012 J	0.00093	0.0023	1
10725	Benzo(a)pyrene	50-32-8	0.0014 J	0.00093	0.0023	1
10725	Benzo(b)fluoranthene	205-99-2	0.0046	0.00093	0.0023	1
10725	Benzo(k)fluoranthene	207-08-9	0.0013 J	0.00093	0.0023	1
10725	Chrysene	218-01-9	0.0031	0.00046	0.0023	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00093	0.0023	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00093	0.0023	1
10725	1-Methylnaphthalene	90-12-0	0.0088	0.00093	0.0023	1
10725	2-Methylnaphthalene	91-57-6	0.013	0.00093	0.0023	1
10725	Naphthalene	91-20-3	0.034	0.00093	0.0023	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	15	75	266.65
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	9.9	4.2	9.8	1
02214	HRO C24-C40 w/Si Gel	n.a.	23 J	14	42	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	29.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 00:52	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15254A31B	09/14/2015 20:02	Marie D Beamenderfer	266.65
06647	GC-5g Field Preserved MeOH	NWTPH-Gx				Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	SW-846 5035A	1	201524838751	08/31/2015 16:00		
		ECY 97-602	1	152530027A	09/12/2015 23:44	Heather E Williams	1
		NWTPH-Dx modified					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-56-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036419  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

56-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820004B	09/15/2015 22:33	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-45-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036420  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:10 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

45-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0052 J	0.0036	0.0089	1
10725	Benzo(a)pyrene	50-32-8	0.0054 J	0.0036	0.0089	1
10725	Benzo(b)fluoranthene	205-99-2	0.015	0.0036	0.0089	1
10725	Benzo(k)fluoranthene	207-08-9	0.0047 J	0.0036	0.0089	1
10725	Chrysene	218-01-9	0.011	0.0018	0.0089	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0036	0.0089	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0043 J	0.0036	0.0089	1
10725	1-Methylnaphthalene	90-12-0	0.015	0.0036	0.0089	1
10725	2-Methylnaphthalene	91-57-6	0.015	0.0036	0.0089	1
10725	Naphthalene	91-20-3	0.038	0.0036	0.0089	1

The holding time was not met due to a laboratory error.

<b>GC Volatiles</b>	<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	65	330	452.47

Reporting limits were raised due to sample foaming.

<b>GC Petroleum Hydrocarbons w/Si</b>	<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>		
02214	DRO C12-C24 w/Si Gel	n.a.	86	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	350	36	110	1

<b>Wet Chemistry</b>	<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	<b>%</b>		
00111	Moisture	n.a.	72.3	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15259SLF026	09/24/2015 19:55	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15259SLF026	09/17/2015 19:22	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B34A	09/10/2015 18:43	Jeremy C Giffin	452.47
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:40	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/14/2015 22:16	Heather E Williams	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-45-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036420  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:10 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

45-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-45-7.5 MS Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036421  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:10 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

45-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.18	0.0036	0.0090	1
10725	Benzo(a)pyrene	50-32-8	0.18	0.0036	0.0090	1
10725	Benzo(b)fluoranthene	205-99-2	0.25	0.0036	0.0090	1
10725	Benzo(k)fluoranthene	207-08-9	0.19	0.0036	0.0090	1
10725	Chrysene	218-01-9	0.18	0.0018	0.0090	1
10725	Dibenz(a,h)anthracene	53-70-3	0.10	0.0036	0.0090	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.099	0.0036	0.0090	1
10725	1-Methylnaphthalene	90-12-0	0.18	0.0036	0.0090	1
10725	2-Methylnaphthalene	91-57-6	0.20	0.0036	0.0090	1
10725	Naphthalene	91-20-3	0.20	0.0036	0.0090	1
The holding time was not met due to a laboratory error.						
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	130	J 63	310	434.28
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	440	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	400	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00118	Moisture	n.a.	72.3	0.50	0.50	1

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15259SLF026	09/24/2015 20:28	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15259SLF026	09/17/2015 19:22	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B34A	09/10/2015 19:19	Jeremy C Giffin	434.28
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:42	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/14/2015 22:38	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
00118	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-45-7.5 MSD Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036422  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:10 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

45-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS</b>	<b>Semivolatiles</b>	<b>SW-846 8270C SIM</b>	<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.16	0.0035	0.0088	1
10725	Benzo(a)pyrene	50-32-8	0.17	0.0035	0.0088	1
10725	Benzo(b)fluoranthene	205-99-2	0.22	0.0035	0.0088	1
10725	Benzo(k)fluoranthene	207-08-9	0.20	0.0035	0.0088	1
10725	Chrysene	218-01-9	0.16	0.0018	0.0088	1
10725	Dibenz(a,h)anthracene	53-70-3	0.095	0.0035	0.0088	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.092	0.0035	0.0088	1
10725	1-Methylnaphthalene	90-12-0	0.18	0.0035	0.0088	1
10725	2-Methylnaphthalene	91-57-6	0.19	0.0035	0.0088	1
10725	Naphthalene	91-20-3	0.20	0.0035	0.0088	1

The holding time was not met due to a laboratory error.

GC Volatiles	ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	63	438.2

Reporting limits were raised due to sample foaming.

Reporting limits were raised due to interference from the sample matrix.

GC Petroleum	ECY 97-602 NWTPH-Dx	mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si</b>	<b>modified</b>				
02214	DRO C12-C24 w/Si Gel	n.a.	420	11	1
02214	HRO C24-C40 w/Si Gel	n.a.	450	36	1

Wet Chemistry	SM 2540 G-1997	%	%	%	
00118	Moisture	n.a.	72.3	0.50	1
00121	Moisture Duplicate	n.a.	73.9	0.50	1

The duplicate moisture value is provided to assess the precision of the moisture test. For comparability purposes, the initial moisture determination is the value used to perform dry weight calculations.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15259SLF026	09/24/2015 21:01	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15259SLF026	09/17/2015 19:22	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B34A	09/10/2015 19:54	Jeremy C Giffin	438.2

\*=This limit was used in the evaluation of the final result



Sample Description: SB-45-7.5 MSD Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036422  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 16:10 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

45-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:43	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/14/2015 23:00	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
00118	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1
00121	Moisture Duplicate	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-46-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036423  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

46-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.14	0.011	0.028	5
10725	Benzo(a)pyrene	50-32-8	0.13	0.011	0.028	5
10725	Benzo(b)fluoranthene	205-99-2	0.18	0.011	0.028	5
10725	Benzo(k)fluoranthene	207-08-9	0.065	0.011	0.028	5
10725	Chrysene	218-01-9	0.14	0.0055	0.028	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.028	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.024 J	0.011	0.028	5
10725	1-Methylnaphthalene	90-12-0	2.0	0.011	0.028	5
10725	2-Methylnaphthalene	91-57-6	1.6	0.011	0.028	5
10725	Naphthalene	91-20-3	0.99	0.011	0.028	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	60	300	449.3
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	240	9.9	23	1
02214	HRO C24-C40 w/Si Gel	n.a.	710	33	99	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	70.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 01:25	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A31A	09/09/2015 23:24	Jeremy C Giffin	449.3
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201525038756	09/06/2015 22:46	Scott W Freisher	n.a.
		ECY 97-602	1	152530027A	09/14/2015 23:21	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-46-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036423  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:15 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

46-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-46-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036424  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

46-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00077	0.0019	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00077	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.00078 J	0.00077	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00077	0.0019	1
10725	Chrysene	218-01-9	N.D.	0.00038	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00077	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00077	0.0019	1
10725	1-Methylnaphthalene	90-12-0	N.D.	0.00077	0.0019	1
10725	2-Methylnaphthalene	91-57-6	N.D.	0.00077	0.0019	1
10725	Naphthalene	91-20-3	0.0018 J	0.00077	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.96	4.8	20.69
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.5	8.1	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	12	35	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	13.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 01:58	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15254A31A	09/11/2015 22:06	Jeremy C Giffin	20.69
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	08/31/2015 16:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/14/2015 21:12	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-46-12.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036424  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

46-12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-57-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036425  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

57-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.0027	0.00090	0.0022	1
10725	Benzo(a)pyrene	50-32-8	0.0025	0.00090	0.0022	1
10725	Benzo(b)fluoranthene	205-99-2	0.0067	0.00090	0.0022	1
10725	Benzo(k)fluoranthene	207-08-9	0.0022 J	0.00090	0.0022	1
10725	Chrysene	218-01-9	0.0060	0.00045	0.0022	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00090	0.0022	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.00093 J	0.00090	0.0022	1
10725	1-Methylnaphthalene	90-12-0	0.013	0.00090	0.0022	1
10725	2-Methylnaphthalene	91-57-6	0.028	0.00090	0.0022	1
10725	Naphthalene	91-20-3	0.042	0.00090	0.0022	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	70	261.17
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.0	9.3	1
02214	HRO C24-C40 w/Si Gel	n.a.	14 J	13	40	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	25.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 02:31	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15254A31B	09/14/2015 20:38	Marie D Beamenderfer	261.17
06647	GC-5g Field Preserved MeOH	NWTPH-Gx				Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	SW-846 5035A	1	201524838751	08/31/2015 16:40		
		ECY 97-602	1	152530027A	09/14/2015 21:34	Heather E Williams	1
		NWTPH-Dx modified					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-57-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036425  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 16:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

57-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-34-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036426  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 17:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

34-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.019 J	0.011	0.028	5
10725	Benzo(a)pyrene	50-32-8	0.016 J	0.011	0.028	5
10725	Benzo(b)fluoranthene	205-99-2	0.044	0.011	0.028	5
10725	Benzo(k)fluoranthene	207-08-9	0.014 J	0.011	0.028	5
10725	Chrysene	218-01-9	0.025 J	0.0056	0.028	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.028	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.028	5
10725	1-Methylnaphthalene	90-12-0	1.3	0.011	0.028	5
10725	2-Methylnaphthalene	91-57-6	1.4	0.011	0.028	5
10725	Naphthalene	91-20-3	0.42	0.011	0.028	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	55	270	406.28
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	130	10	23	1
02214	HRO C24-C40 w/Si Gel	n.a.	210	33	100	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	70.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 03:04	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15254A31B	09/14/2015 21:14	Marie D Beamenderfer	406.28
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:47	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/14/2015 21:55	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result



Sample Description: SB-34-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036426  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 17:00 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

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Highlands Ranch CO 80129

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### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-8-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036427  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 08:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

08-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.027	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.027	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.027	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.027	5
10725	Chrysene	218-01-9	0.0062 J	0.0054	0.027	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.027	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.027	5
10725	1-Methylnaphthalene	90-12-0	0.22	0.011	0.027	5
10725	2-Methylnaphthalene	91-57-6	0.091	0.011	0.027	5
10725	Naphthalene	91-20-3	0.083	0.011	0.027	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	54	270	409.85
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	310	19	45	2
02214	HRO C24-C40 w/Si Gel	n.a.	1,800	65	190	2
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	69.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 03:37	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A31A	09/10/2015 00:00	Jeremy C Giffin	409.85
01150	GC - Bulk Soil Prep	NWTPH-Gx					
02214	NWTPH-Dx soil w/Si Gel	SW-846 5030A	1	201525038756	09/06/2015 22:49	Scott W Freisher	n.a.
		ECY 97-602	1	152530027A	09/14/2015 23:42	Heather E Williams	2
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530027A	09/11/2015 16:50	JoElla L Rice	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-8-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036427  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 08:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

08-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-13-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036428  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 09:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

13-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.027	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.027	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.027	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.027	5
10725	Chrysene	218-01-9	0.0056 J	0.0053	0.027	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.027	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.027	5
10725	1-Methylnaphthalene	90-12-0	0.48	0.011	0.027	5
10725	2-Methylnaphthalene	91-57-6	0.22	0.011	0.027	5
10725	Naphthalene	91-20-3	0.21	0.011	0.027	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	260	1,300	2024.3
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	340	48	110	5
02214	HRO C24-C40 w/Si Gel	n.a.	1,900	160	480	5
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	69.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 04:09	Catherine E Bachman	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15257A34A	09/14/2015 21:35	Jeremy C Giffin	2024.3
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524838752	09/05/2015 15:00	Lisa J Cooke	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/15/2015 00:47	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-13-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036428  
 LL Group # 1590592  
 Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 09:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

13-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-Offset-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036429  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 09:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41075

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0094	0.024	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0094	0.024	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0094	0.024	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0094	0.024	5
10725	Chrysene	218-01-9	0.0084 J	0.0047	0.024	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0094	0.024	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0094	0.024	5
10725	1-Methylnaphthalene	90-12-0	8.7	0.094	0.24	50
10725	2-Methylnaphthalene	91-57-6	13	0.094	0.24	50
10725	Naphthalene	91-20-3	24	0.094	0.24	50
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	1,700	190	970	1695.91
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,200	43	100	5
02214	HRO C24-C40 w/Si Gel	n.a.	2,400	140	430	5
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	65.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/25/2015 05:15	Catherine E Bachman	5
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 14:15	Joseph M Gambler	50
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15254A31B	09/14/2015 22:26	Marie D Beamenderfer	1695.91
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:51	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530027A	09/15/2015 01:08	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530027A	09/11/2015 16:50	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-41-Offset-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036429  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 09:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41075

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-Offset-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036430  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 09:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41012

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0026	0.0066	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0026	0.0066	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0026	0.0066	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0026	0.0066	1
10725	Chrysene	218-01-9	0.0030 J	0.0013	0.0066	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0026	0.0066	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0026	0.0066	1
10725	1-Methylnaphthalene	90-12-0	0.23	0.0026	0.0066	1
10725	2-Methylnaphthalene	91-57-6	0.24	0.0026	0.0066	1
10725	Naphthalene	91-20-3	0.49	0.0026	0.0066	1
<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	71	360	449.51
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	250	12	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	840	39	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	74.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 14:48	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15252A31A	09/10/2015 01:12	Jeremy C Giffin	449.51
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:53	Scott W Freisher	n.a.
02214	NWT PH-Dx soil w/Si Gel	ECY 97-602 NWT PH-Dx modified	1	152530039A	09/15/2015 02:35	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWT PH-Dx 06/97	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-52-Offset-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036431  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

52075

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0099	0.025	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0099	0.025	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0099	0.025	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0099	0.025	5
10725	Chrysene	218-01-9	0.0084 J	0.0050	0.025	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0099	0.025	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0099	0.025	5
10725	1-Methylnaphthalene	90-12-0	3.9	0.0099	0.025	5
10725	2-Methylnaphthalene	91-57-6	5.8	0.050	0.12	25
10725	Naphthalene	91-20-3	2.8	0.0099	0.025	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	160 J	52	260	431.91
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	740	8.9	21	1
02214	HRO C24-C40 w/Si Gel	n.a.	980	30	89	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	66.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 15:21	Joseph M Gambler	5
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/29/2015 10:31	Joseph M Gambler	25
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252A31A	09/10/2015 01:55	Jeremy C Giffin	431.91
NWTPH-Gx							
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 22:55	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530039A	09/15/2015 02:56	Heather E Williams	1
NWTPH-Dx modified							
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
NWTPH-Dx 06/97							

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-52-Offset-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036431  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

52075

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-52-Offset-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036432  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 10:15 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

52012

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0064 J	0.0026	0.0066	1
10725	Benzo(a)pyrene	50-32-8	0.0062 J	0.0026	0.0066	1
10725	Benzo(b)fluoranthene	205-99-2	0.018	0.0026	0.0066	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0026	0.0066	1
10725	Chrysene	218-01-9	0.014	0.0013	0.0066	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0026	0.0066	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0032 J	0.0026	0.0066	1
10725	1-Methylnaphthalene	90-12-0	0.68	0.0026	0.0066	1
10725	2-Methylnaphthalene	91-57-6	0.72	0.0026	0.0066	1
10725	Naphthalene	91-20-3	0.95	0.0026	0.0066	1
<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	72	360	454.54
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,000	12	28	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,300	40	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	74.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 15:55	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15252A31A	09/09/2015 21:28	Jeremy C Giffin	454.54
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:29	Scott W Freisher	n.a.
02214	NWT PH-Dx soil w/Si Gel	ECY 97-602 NWT PH-Dx modified	1	152530039A	09/15/2015 03:18	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWT PH-Dx 06/97	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820005A	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-62-Offset-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036433  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

62075

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00097	0.0024	1
10725	Benzo(a)pyrene	50-32-8	0.0018 J	0.00097	0.0024	1
10725	Benzo(b)fluoranthene	205-99-2	0.0059	0.00097	0.0024	1
10725	Benzo(k)fluoranthene	207-08-9	0.0013 J	0.00097	0.0024	1
10725	Chrysene	218-01-9	0.0027	0.00049	0.0024	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00097	0.0024	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0012 J	0.00097	0.0024	1
10725	1-Methylnaphthalene	90-12-0	0.0043	0.00097	0.0024	1
10725	2-Methylnaphthalene	91-57-6	0.0045	0.00097	0.0024	1
10725	Naphthalene	91-20-3	0.042	0.00097	0.0024	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	25	120	426.35
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	11	4.3	10	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	43	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	31.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 16:28	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/10/2015 21:24	Jeremy C Giffin	426.35
06647	GC-5g Field Preserved MeOH	NWTPH-Gx SW-846 5035A	1	201524838751	09/01/2015 10:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530039A	09/15/2015 14:02	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-62-Offset-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036433  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

62075

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-60-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036434  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 10:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

60-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00091	0.0023	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00091	0.0023	1
10725	Benzo(b)fluoranthene	205-99-2	0.0020 J	0.00091	0.0023	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00091	0.0023	1
10725	Chrysene	218-01-9	0.0015 J	0.00046	0.0023	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00091	0.0023	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00091	0.0023	1
10725	1-Methylnaphthalene	90-12-0	0.027	0.00091	0.0023	1
10725	2-Methylnaphthalene	91-57-6	0.025	0.00091	0.0023	1
10725	Naphthalene	91-20-3	0.10	0.00091	0.0023	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	17	86	310.86
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.1	9.6	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	41	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	27.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 17:02	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/10/2015 22:00	Jeremy C Giffin	310.86
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524838751	09/01/2015 10:40	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530039A	09/15/2015 04:44	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-60-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036434  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 10:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

60-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-59-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036435  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 11:00 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

59-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00091	0.0023	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00091	0.0023	1
10725	Benzo(b)fluoranthene	205-99-2	0.0021 J	0.00091	0.0023	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00091	0.0023	1
10725	Chrysene	218-01-9	0.0013 J	0.00045	0.0023	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00091	0.0023	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00091	0.0023	1
10725	1-Methylnaphthalene	90-12-0	0.013	0.00091	0.0023	1
10725	2-Methylnaphthalene	91-57-6	0.0092	0.00091	0.0023	1
10725	Naphthalene	91-20-3	0.045	0.00091	0.0023	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	15	75	274.94
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	5.1 J	4.1	9.6	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	41	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	26.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 17:35	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/10/2015 23:19	Jeremy C Giffin	274.94
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524838751	09/01/2015 11:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530039A	09/15/2015 05:06	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-59-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036435  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 11:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

59-75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-47-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036436  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 11:10 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

47-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.013	0.033	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.013	0.033	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.013	0.033	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.013	0.033	5
10725	Chrysene	218-01-9	0.0080 J	0.0066	0.033	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.013	0.033	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.013	0.033	5
10725	1-Methylnaphthalene	90-12-0	2.6	0.013	0.033	5
10725	2-Methylnaphthalene	91-57-6	1.7	0.013	0.033	5
10725	Naphthalene	91-20-3	0.38	0.013	0.033	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	420	73	360	455.48
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,500	12	28	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,000	40	120	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	74.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 18:08	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/10/2015 02:32	Jeremy C Giffin	455.48
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:31	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530039A	09/15/2015 05:27	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-47-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036437  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 11:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

47-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.020 J	0.010	0.025	5
10725	Benzo(a)pyrene	50-32-8	0.024 J	0.010	0.025	5
10725	Benzo(b)fluoranthene	205-99-2	0.034	0.010	0.025	5
10725	Benzo(k)fluoranthene	207-08-9	0.015 J	0.010	0.025	5
10725	Chrysene	218-01-9	0.026	0.0051	0.025	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.025	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.025	5
10725	1-Methylnaphthalene	90-12-0	0.048	0.010	0.025	5
10725	2-Methylnaphthalene	91-57-6	0.046	0.010	0.025	5
10725	Naphthalene	91-20-3	0.051	0.010	0.025	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	53	260	430.27
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	120	9.2	21	1
02214	HRO C24-C40 w/Si Gel	n.a.	690	31	92	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	67.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 18:42	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/10/2015 03:08	Jeremy C Giffin	430.27
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:33	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530039A	09/15/2015 05:48	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-37-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036438  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 12:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

37-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.029	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.029	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.029	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.029	5
10725	Chrysene	218-01-9	0.0066 J	0.0057	0.029	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.029	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.029	5
10725	1-Methylnaphthalene	90-12-0	0.57	0.011	0.029	5
10725	2-Methylnaphthalene	91-57-6	0.26	0.011	0.029	5
10725	Naphthalene	91-20-3	0.090	0.011	0.029	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	63	310	449.97
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	740	10	24	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,700	34	100	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	71.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLI026	09/28/2015 19:16	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLI026	09/11/2015 18:00	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/09/2015 22:04	Jeremy C Giffin	449.97
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:34	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530039A	09/15/2015 06:10	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-37-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036439  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 12:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

37-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.013	0.033	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.013	0.033	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.013	0.033	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.013	0.033	5
10725	Chrysene	218-01-9	0.0077 J	0.0065	0.033	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.013	0.033	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.013	0.033	5
10725	1-Methylnaphthalene	90-12-0	0.041	0.013	0.033	5
10725	2-Methylnaphthalene	91-57-6	0.041	0.013	0.033	5
10725	Naphthalene	91-20-3	0.084	0.013	0.033	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	69	350	441.7
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	260	12	27	1
02214	HRO C24-C40 w/Si Gel	n.a.	720	39	120	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	74.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/28/2015 19:49	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/10/2015 23:56	Jeremy C Giffin	441.7
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:36	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530039A	09/15/2015 14:23	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530039A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-26A-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036440  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 12:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

26A75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.012	0.030	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.012	0.030	5
10725	Benzo(b)fluoranthene	205-99-2	0.012 J	0.012	0.030	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.012	0.030	5
10725	Chrysene	218-01-9	0.014 J	0.0059	0.030	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.012	0.030	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.012	0.030	5
10725	1-Methylnaphthalene	90-12-0	1.5	0.012	0.030	5
10725	2-Methylnaphthalene	91-57-6	1.5	0.012	0.030	5
10725	Naphthalene	91-20-3	0.23	0.012	0.030	5
<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>						
02005	NWT PH-GX Soil C7-C12	n.a.	240 J	65	330	451.96
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,700	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	2,000	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	72.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/28/2015 20:22	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15254A31B	09/14/2015 21:50	Marie D Beamenderfer	451.96
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:39	Scott W Freisher	n.a.
02214	NWT PH-Dx soil w/Si Gel	ECY 97-602 NWT PH-Dx modified	1	152530040A	09/15/2015 05:27	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWT PH-Dx 06/97	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-26A-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036441  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 12:55 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

26A12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.026 J	0.012	0.030	5
10725	Benzo(a)pyrene	50-32-8	0.030	0.012	0.030	5
10725	Benzo(b)fluoranthene	205-99-2	0.040	0.012	0.030	5
10725	Benzo(k)fluoranthene	207-08-9	0.021 J	0.012	0.030	5
10725	Chrysene	218-01-9	0.029 J	0.0060	0.030	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.012	0.030	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.012	0.030	5
10725	1-Methylnaphthalene	90-12-0	0.029 J	0.012	0.030	5
10725	2-Methylnaphthalene	91-57-6	0.021 J	0.012	0.030	5
10725	Naphthalene	91-20-3	0.062	0.012	0.030	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	67	330	457.36
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	300	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,200	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	72.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/28/2015 20:56	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 00:32	Jeremy C Giffin	457.36
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:41	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530040A	09/15/2015 05:48	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820005B	09/15/2015 20:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-35-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036442  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 13:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

35-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.025	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.025	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.025	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.025	5
10725	Chrysene	218-01-9	0.0055 J	0.0050	0.025	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.025	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.025	5
10725	1-Methylnaphthalene	90-12-0	1.2	0.010	0.025	5
10725	2-Methylnaphthalene	91-57-6	0.41	0.010	0.025	5
10725	Naphthalene	91-20-3	0.17	0.010	0.025	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	51	260	424.34
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	130	9.0	21	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,000	30	90	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	67.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/28/2015 21:29	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 01:08	Jeremy C Giffin	424.34
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:43	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530040A	09/15/2015 06:10	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-14-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036443  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 13:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

14-75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0096	0.024	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0096	0.024	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0096	0.024	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0096	0.024	5
10725	Chrysene	218-01-9	0.0066 J	0.0048	0.024	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0096	0.024	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0096	0.024	5
10725	1-Methylnaphthalene	90-12-0	0.030	0.0096	0.024	5
10725	2-Methylnaphthalene	91-57-6	0.020 J	0.0096	0.024	5
10725	Naphthalene	91-20-3	0.018 J	0.0096	0.024	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	47	240	408.71
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	210	8.5	20	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,200	28	85	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	65.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 11:04	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 01:44	Jeremy C Giffin	408.71
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:44	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530040A	09/15/2015 06:31	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-D-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036444  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41D25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00086	0.0022	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00086	0.0022	1
10725	Benzo(b)fluoranthene	205-99-2	0.0014 J	0.00086	0.0022	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00086	0.0022	1
10725	Chrysene	218-01-9	0.0014 J	0.00043	0.0022	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00086	0.0022	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00086	0.0022	1
10725	1-Methylnaphthalene	90-12-0	0.0028	0.00086	0.0022	1
10725	2-Methylnaphthalene	91-57-6	0.0047	0.00086	0.0022	1
10725	Naphthalene	91-20-3	0.0048	0.00086	0.0022	1
<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	2.0	9.8	37.81
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.9	9.0	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	39	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	22.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 11:37	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 02:27	Jeremy C Giffin	37.81
06647	GC-5g Field Preserved MeOH	NWT PH-Gx SW-846 5035A	1	201524838751	09/01/2015 13:40	Client Supplied	n.a.
02214	NWT PH-Dx soil w/Si Gel	ECY 97-602	1	152530040A	09/15/2015 14:02	Heather E Williams	1
07024	DRO Alternate Soil Extraction	NWT PH-Dx modified ECY 97-602 NWT PH-Dx 06/97	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: SB-41-D-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036444  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 13:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41D25

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-E-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036445  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 13:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41E25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00085	0.0021	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00085	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00085	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00085	0.0021	1
10725	Chrysene	218-01-9	0.00048 J	0.00043	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00085	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00085	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.026	0.00085	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.063	0.00085	0.0021	1
10725	Naphthalene	91-20-3	0.040	0.00085	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	68	262.95
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	8.9	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	38	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	22.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 12:10	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 03:04	Jeremy C Giffin	262.95
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524838751	09/01/2015 13:50	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530040A	09/15/2015 14:23	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-41-E-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036445  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 13:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41E25

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-C-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036446  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 14:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41C25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00086	0.0021	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00086	0.0021	1
10725	Benzo(b)fluoranthene	205-99-2	0.0015 J	0.00086	0.0021	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00086	0.0021	1
10725	Chrysene	218-01-9	0.0012 J	0.00043	0.0021	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00086	0.0021	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00086	0.0021	1
10725	1-Methylnaphthalene	90-12-0	0.0011 J	0.00086	0.0021	1
10725	2-Methylnaphthalene	91-57-6	0.0015 J	0.00086	0.0021	1
10725	Naphthalene	91-20-3	0.0097	0.00086	0.0021	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	72	279.12
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.9	9.0	1
02214	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	39	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	22.8	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 12:44	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 04:16	Jeremy C Giffin	279.12
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524838751	09/01/2015 14:30	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152530040A	09/15/2015 08:18	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

Sample Description: SB-41-C-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036446  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 09/01/2015 14:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41C25

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-E-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036447  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 14:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41E75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.025	0.062	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.025	0.062	10
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.025	0.062	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.025	0.062	10
10725	Chrysene	218-01-9	0.017 J	0.012	0.062	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.025	0.062	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.025	0.062	10
10725	1-Methylnaphthalene	90-12-0	1.3	0.025	0.062	10
10725	2-Methylnaphthalene	91-57-6	1.6	0.025	0.062	10
10725	Naphthalene	91-20-3	4.2	0.025	0.062	10
The holding time was not met due to a laboratory error.						
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	390 J	160	820	1612
Reporting limits were raised due to limited sample extract volume caused by absorption of the matrix of the sample.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	1,400	15	35	2
02214	HRO C24-C40 w/Si Gel	n.a.	2,300	50	150	2
<b>Wet Chemistry SM 2540 G-1997</b>						
			%	%	%	
00111	Moisture	n.a.	60.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15259SLF026	09/25/2015 04:42	Catherine E Bachman	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15259SLF026	09/17/2015 19:22	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252B31A	09/11/2015 07:24	Jeremy C Giffin	1612
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:46	Scott W Freisher	n.a.

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-41-E-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036447  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 14:40 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

41E75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/15/2015 19:22	Heather E Williams	2
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-E-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036448  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 14:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41E12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0082	0.021	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0082	0.021	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0082	0.021	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0082	0.021	5
10725	Chrysene	218-01-9	0.0095 J	0.0041	0.021	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0082	0.021	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0082	0.021	5
10725	1-Methylnaphthalene	90-12-0	0.17	0.0082	0.021	5
10725	2-Methylnaphthalene	91-57-6	0.19	0.0082	0.021	5
10725	Naphthalene	91-20-3	0.27	0.0082	0.021	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	230	1,100	2250.78
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	400	7.5	17	1
02214	HRO C24-C40 w/Si Gel	n.a.	920	25	75	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	60.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 13:17	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15257A34A	09/14/2015 22:11	Jeremy C Giffin	2250.78
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201524838752	09/05/2015 14:55	Lisa J Cooke	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/15/2015 15:50	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-C-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036449  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41C75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM mg/kg</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.027	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.027	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.027	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.027	5
10725	Chrysene	218-01-9	N.D.	0.0053	0.027	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.027	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.027	5
10725	1-Methylnaphthalene	90-12-0	0.85	0.011	0.027	5
10725	2-Methylnaphthalene	91-57-6	0.94	0.011	0.027	5
10725	Naphthalene	91-20-3	2.7	0.011	0.027	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	mg/kg	
02005 NWT PH-GX Soil C7-C12	n.a.	N.D.	570	2,900	4447.69

Reporting limits were raised due to sample foaming.

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	mg/kg	
02214 DRO C12-C24 w/Si Gel	n.a.	4,400	48	110	5
02214 HRO C24-C40 w/Si Gel	n.a.	8,200	160	480	5

Wet Chemistry	SM 2540 G-1997	%	%	%	
00111 Moisture	n.a.	68.9	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 13:50	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15254A31B	09/14/2015 23:09	Marie D Beamenderfer	4447.69
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:49	Scott W Freisher	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-C-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036449  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:00 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

41C75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/15/2015 20:05	Heather E Williams	5
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-C-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036450  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:20 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41C12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles</b>	<b>SW-846 8270C SIM</b>		<b>mg/kg</b>	<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.011	0.028	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.011	0.028	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.011	0.028	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.011	0.028	5
10725	Chrysene	218-01-9	N.D.	0.0055	0.028	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.011	0.028	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.011	0.028	5
10725	1-Methylnaphthalene	90-12-0	1.5	0.011	0.028	5
10725	2-Methylnaphthalene	91-57-6	1.9	0.011	0.028	5
10725	Naphthalene	91-20-3	0.87	0.011	0.028	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg		mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	63 J	60	300	444.86

Reporting limits were raised due to sample foaming.

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWT PH-Dx modified	mg/kg		mg/kg	mg/kg	
02214	DRO C12-C24 w/Si Gel	n.a.	780	20	47	2
02214	HRO C24-C40 w/Si Gel	n.a.	2,200	67	200	2

Wet Chemistry	SM 2540 G-1997	%		%	%	
00111	Moisture	n.a.	70.1	0.50	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 14:24	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWT PH-GX Soil C7-C12	ECY 97-602 NWT PH-Gx	1	15252B31A	09/11/2015 04:52	Jeremy C Giffin	444.86
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:50	Scott W Freisher	n.a.

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-C-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036450  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:20 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41C12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/15/2015 22:57	Heather E Williams	2
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820006A	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-D-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036451  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41D75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0083	0.021	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0083	0.021	5
10725	Benzo(b)fluoranthene	205-99-2	0.021 J	0.0083	0.021	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0083	0.021	5
10725	Chrysene	218-01-9	0.021	0.0042	0.021	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0083	0.021	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0083	0.021	5
10725	1-Methylnaphthalene	90-12-0	0.055	0.0083	0.021	5
10725	2-Methylnaphthalene	91-57-6	0.050	0.0083	0.021	5
10725	Naphthalene	91-20-3	0.76	0.0083	0.021	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	270	42	210	419.84
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	980	38	88	5
02214	HRO C24-C40 w/Si Gel	n.a.	2,100	130	380	5
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	60.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 14:57	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15252B31A	09/11/2015 05:35	Jeremy C Giffin	419.84
		NWTPH-Gx					
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:52	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152540006A	09/16/2015 18:39	Heather E Williams	5
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
		NWTPH-Dx 06/97					
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-41-D-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036452  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41D12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM mg/kg</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0096	0.024	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0096	0.024	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0096	0.024	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0096	0.024	5
10725	Chrysene	218-01-9	N.D.	0.0048	0.024	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0096	0.024	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0096	0.024	5
10725	1-Methylnaphthalene	90-12-0	0.33	0.0096	0.024	5
10725	2-Methylnaphthalene	91-57-6	0.36	0.0096	0.024	5
10725	Naphthalene	91-20-3	0.79	0.0096	0.024	5

Reporting limits were raised due to interference from the sample matrix.

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

GC Volatiles	ECY 97-602 NWTTPH-Gx	mg/kg	mg/kg	mg/kg
02005 NWTTPH-GX Soil C7-C12	n.a.	N.D.	49	240
Reporting limits were raised due to sample foaming.				

GC Petroleum Hydrocarbons w/Si	ECY 97-602 NWTTPH-Dx modified	mg/kg	mg/kg	mg/kg
02214 DRO C12-C24 w/Si Gel	n.a.	2,500	17	40
02214 HRO C24-C40 w/Si Gel	n.a.	2,000	58	170

Wet Chemistry	SM 2540 G-1997	%	%	%
00111 Moisture	n.a.	65.7	0.50	0.50
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 15:30	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTTPH-GX Soil C7-C12	ECY 97-602 NWTTPH-Gx	1	15252B31A	09/11/2015 06:11	Jeremy C Giffin	417.05
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:54	Scott W Freisher	n.a.

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-41-D-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036452  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/01/2015 15:40 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41D12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/15/2015 23:18	Heather E Williams	2
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-B-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036453  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 09:40 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41B25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0069	0.017	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0069	0.017	5
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.0069	0.017	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0069	0.017	5
10725	Chrysene	218-01-9	0.0065 J	0.0034	0.017	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0069	0.017	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0069	0.017	5
10725	1-Methylnaphthalene	90-12-0	0.012 J	0.0069	0.017	5
10725	2-Methylnaphthalene	91-57-6	0.017 J	0.0069	0.017	5
10725	Naphthalene	91-20-3	0.36	0.0069	0.017	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	150	12	61	147.53
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	340	12	29	2
02214	HRO C24-C40 w/Si Gel	n.a.	1,600	41	120	2
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	52.0	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 16:03	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15257A34A	09/14/2015 20:25	Jeremy C Giffin	147.53
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:55	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/15/2015 23:40	Heather E Williams	2
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-52-B-2.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036454  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

52B25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.0040	0.0099	5
10725	Benzo(a)pyrene	50-32-8	N.D.	0.0040	0.0099	5
10725	Benzo(b)fluoranthene	205-99-2	0.0095 J	0.0040	0.0099	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.0040	0.0099	5
10725	Chrysene	218-01-9	N.D.	0.0020	0.0099	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0040	0.0099	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0040	0.0099	5
10725	1-Methylnaphthalene	90-12-0	N.D.	0.0040	0.0099	5
10725	2-Methylnaphthalene	91-57-6	N.D.	0.0040	0.0099	5
10725	Naphthalene	91-20-3	0.0051 J	0.0040	0.0099	5
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	12	60	247.79
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	210	7.2	17	2
02214	HRO C24-C40 w/Si Gel	n.a.	340	24	72	2
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	16.9	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 16:37	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15257A34A	09/14/2015 22:46	Jeremy C Giffin	247.79
06647	GC-5g Field Preserved MeOH	NWTPH-Gx					
		SW-846 5035A	1	201524838751	09/02/2015 10:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152540006A	09/16/2015 17:34	Heather E Williams	2
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-52-B-2.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036454  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 10:00 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

52B25

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-B-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036455  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41B75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.029 J	0.012	0.030	5
10725	Benzo(a)pyrene	50-32-8	0.016 J	0.012	0.030	5
10725	Benzo(b)fluoranthene	205-99-2	0.036	0.012	0.030	5
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.012	0.030	5
10725	Chrysene	218-01-9	0.051	0.0060	0.030	5
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.012	0.030	5
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.012	0.030	5
10725	1-Methylnaphthalene	90-12-0	14	0.12	0.30	50
10725	2-Methylnaphthalene	91-57-6	25	0.12	0.30	50
10725	Naphthalene	91-20-3	17	0.12	0.30	50
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	870 J	660	3,300	4514.47
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	920	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,400	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	72.5	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/29/2015 17:10	Joseph M Gambler	5
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15253SLJ026	09/30/2015 06:09	Joseph M Gambler	50
10811	BNA Soil Microwave SIM	SW-846 3546	1	15253SLJ026	09/11/2015 18:05	Shawn J McMullen	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602	1	15257A34B	09/15/2015 19:56	Marie D	4514.47
		NWTPH-Gx				Beamenderfer	
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/06/2015 23:58	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602	1	152540006A	09/15/2015 22:35	Heather E Williams	1
		NWTPH-Dx modified					
07024	DRO Alternate Soil Extraction	ECY 97-602	1	152540006A	09/14/2015 16:20	JoElla L Rice	1
		NWTPH-Dx 06/97					

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-B-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036455  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 10:30 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41B75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-B-12.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036456  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 10:50 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

41B12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.021	0.053	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.021	0.053	10
10725	Benzo(b)fluoranthene	205-99-2	0.022 J	0.021	0.053	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	0.053	10
10725	Chrysene	218-01-9	0.032 J	0.011	0.053	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.021	0.053	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.021	0.053	10
10725	1-Methylnaphthalene	90-12-0	1.3	0.021	0.053	10
10725	2-Methylnaphthalene	91-57-6	2.0	0.021	0.053	10
10725	Naphthalene	91-20-3	0.88	0.021	0.053	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	83 J	55	280	432.08
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	920	19	45	2
02214	HRO C24-C40 w/Si Gel	n.a.	2,100	64	190	2
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	68.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15254SLF026	09/24/2015 10:40	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15254SLF026	09/14/2015 17:55	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15257A34B	09/15/2015 20:31	Marie D Beamenderfer	432.08
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/07/2015 00:00	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540006A	09/16/2015 00:02	Heather E Williams	2
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540006A	09/14/2015 16:20	JoElla L Rice	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-41-B-12.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036456  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 10:50 by JL

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/04/2015 09:35

630 Plaza Drive

Reported: 10/01/2015 13:13

Highlands Ranch CO 80129

41B12

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result



**Sample Description:** SB-52-B-7.5 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036457  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 11:00 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

52B75

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00088	0.0022	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00088	0.0022	1
10725	Benzo(b)fluoranthene	205-99-2	0.0018 J	0.00088	0.0022	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00088	0.0022	1
10725	Chrysene	218-01-9	0.0016 J	0.00044	0.0022	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00088	0.0022	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00088	0.0022	1
10725	1-Methylnaphthalene	90-12-0	0.0027	0.00088	0.0022	1
10725	2-Methylnaphthalene	91-57-6	0.0047	0.00088	0.0022	1
10725	Naphthalene	91-20-3	0.013	0.00088	0.0022	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	14	72	270.3
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	12	4.0	9.2	1
02214	HRO C24-C40 w/Si Gel	n.a.	20 J	13	40	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	25.3	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15254SLF026	09/24/2015 11:13	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15254SLF026	09/14/2015 17:55	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15257A34B	09/15/2015 21:06	Marie D Beamenderfer	270.3
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201524838751	09/02/2015 11:00	Client Supplied	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152540008A	09/15/2015 16:11	Heather E Williams	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** SB-52-B-7.5 Soil  
 Former Olympia Bulk Plant COC: R224118  
 1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036457  
 LL Group # 1590592  
 Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 09/02/2015 11:00 by JL

Atlantic Richfield c/o ARCADIS  
 Suite 600  
 630 Plaza Drive  
 Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

52B75

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152540008A	09/14/2015 20:00	Sally L Appleyard	1
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-6 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036458  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

DUP-6

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	5.3	0.036	0.091	1
10725	Benzo(a)pyrene	50-32-8	4.0	0.036	0.091	1
10725	Benzo(b)fluoranthene	205-99-2	6.0	0.036	0.091	1
10725	Benzo(k)fluoranthene	207-08-9	2.3	0.036	0.091	1
10725	Chrysene	218-01-9	5.5	0.018	0.091	1
10725	Dibenz(a,h)anthracene	53-70-3	0.27	0.036	0.091	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.67	0.036	0.091	1
10725	1-Methylnaphthalene	90-12-0	3.4	0.036	0.091	1
10725	2-Methylnaphthalene	91-57-6	3.4	0.036	0.091	1
10725	Naphthalene	91-20-3	6.0	0.036	0.091	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	1,100	35	170	391.95
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	8,900	660	1,500	100
02214	HRO C24-C40 w/Si Gel	n.a.	44,000	2,200	6,600	100
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	54.7	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15254SLF026	09/24/2015 11:46	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15254SLF026	09/14/2015 17:55	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/10/2015 03:44	Jeremy C Giffin	391.95
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/07/2015 00:01	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530040A	09/15/2015 09:22	Heather E Williams	100
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-7 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036459  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

DUP-7

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	N.D.	0.025	0.062	10
10725	Benzo(a)pyrene	50-32-8	N.D.	0.025	0.062	10
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.025	0.062	10
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.025	0.062	10
10725	Chrysene	218-01-9	N.D.	0.012	0.062	10
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.025	0.062	10
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.025	0.062	10
10725	1-Methylnaphthalene	90-12-0	7.9	0.025	0.062	10
10725	2-Methylnaphthalene	91-57-6	12	0.025	0.062	10
10725	Naphthalene	91-20-3	0.25	0.025	0.062	10
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	77 J	66	330	438.24
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	440	11	26	1
02214	HRO C24-C40 w/Si Gel	n.a.	1,500	37	110	1
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	73.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15254SLF026	09/24/2015 12:19	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	15254SLF026	09/14/2015 17:55	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/10/2015 04:20	Jeremy C Giffin	438.24
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/07/2015 00:03	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530040A	09/15/2015 08:39	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: DUP-7 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036459  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

DUP-7

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15258820006B	09/15/2015 21:32	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** TRIP BLANK Water  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # WW 8036460  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

FOBTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
<b>GC Volatiles</b>						
	<b>ECY 97-602</b>	<b>NWTPH-Gx</b>	ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1

### General Sample Comments

State of Washington Lab Certification No. C457

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	15247A94A	09/08/2015 12:56	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15247A94A	09/08/2015 12:56	Brett W Kenyon	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** DUP-8 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036461  
LL Group # 1590592  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/31/2015 by JL

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 09/04/2015 09:35

Reported: 10/01/2015 13:13

DUP-8

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			mg/kg	mg/kg	mg/kg	
10725	Benzo(a)anthracene	56-55-3	0.0046 J	0.0024	0.0061	1
10725	Benzo(a)pyrene	50-32-8	0.0057 J	0.0024	0.0061	1
10725	Benzo(b)fluoranthene	205-99-2	0.019	0.0024	0.0061	1
10725	Benzo(k)fluoranthene	207-08-9	0.0065	0.0024	0.0061	1
10725	Chrysene	218-01-9	0.012	0.0012	0.0061	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0024	0.0061	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0034 J	0.0024	0.0061	1
10725	1-Methylnaphthalene	90-12-0	0.020	0.0024	0.0061	1
10725	2-Methylnaphthalene	91-57-6	0.015	0.0024	0.0061	1
10725	Naphthalene	91-20-3	0.037	0.0024	0.0061	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			mg/kg	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	64	320	439.61
Reporting limits were raised due to sample foaming.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			mg/kg	mg/kg	mg/kg	
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	290	11	25	1
02214	HRO C24-C40 w/Si Gel	n.a.	740	36	110	1
<b>Wet Chemistry SM 2540 G-1997</b>			%	%	%	
00111	Moisture	n.a.	72.6	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15254SLF026	09/24/2015 12:52	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15254SLF026	09/14/2015 17:55	Benjamin J Rosenberger	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15252A31A	09/09/2015 22:47	Jeremy C Giffin	439.61
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201525038756	09/07/2015 00:05	Scott W Freisher	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152530040A	09/15/2015 09:00	Heather E Williams	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152530040A	09/14/2015 08:45	Olivia Arosemena	1

\*=This limit was used in the evaluation of the final result

Sample Description: DUP-8 Soil  
Former Olympia Bulk Plant COC: R224118  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8036461  
LL Group # 1590592  
Account # 13255

Project Name: Former Olympia Bulk Plant

Collected: 08/31/2015 by JL

Atlantic Richfield c/o ARCADIS

Submitted: 09/04/2015 09:35

Suite 600

Reported: 10/01/2015 13:13

630 Plaza Drive

Highlands Ranch CO 80129

DUP-8

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	SM 2540 G-1997	1	15252820001B	09/09/2015 10:48	William C Schwebel	1

\*=This limit was used in the evaluation of the final result



## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15253SLH026      Sample number(s): 8036396-8036405,8036409-8036416									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	92		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	95		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	98		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	99		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	92		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	103		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	100		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	94		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	90		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	92		76-118		
Batch number: 15253SLI026      Sample number(s): 8036406-8036408,8036417-8036419,8036423-8036438									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	113		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	105		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	127		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	102		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	112		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	102		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	98		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	105		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	109		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	99		76-118		
Batch number: 15253SLJ026      Sample number(s): 8036439-8036446,8036448-8036455									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	95	94	75-119	1	30
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	97	97	77-114	0	30
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	108	109	74-140	1	30
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	98	98	74-115	0	30
Chrysene	N.D.	0.00033	0.0017	mg/kg	95	95	76-122	0	30
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	94	92	77-126	2	30
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	91	89	77-122	2	30
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	95	95	70-119	1	30
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	90	91	66-123	2	30
Naphthalene	N.D.	0.00067	0.0017	mg/kg	92	94	76-118	1	30
Batch number: 15254SLF026      Sample number(s): 8036456-8036459,8036461									
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	107	104	75-119	3	30
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	104	100	77-114	4	30
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	131	126	74-140	4	30
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	104	100	74-115	3	30
Chrysene	N.D.	0.00033	0.0017	mg/kg	105	102	76-122	3	30
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	92	89	77-126	3	30
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	89	86	77-122	3	30

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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>
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	103	101	70-119	2	30
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	109	108	66-123	1	30
Naphthalene	N.D.	0.00067	0.0017	mg/kg	98	98	76-118	1	30
Batch number: 15259SLF026	Sample number(s): 8036420-8036422,8036447								
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	108		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	104		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	131		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	103		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	106		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	92		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	89		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	102		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	109		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	96		76-118		
Batch number: 15247A94A	Sample number(s): 8036460								
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	90	93	80-123	4	30
Batch number: 15252A31A	Sample number(s): 8036406-8036408,8036423,8036427,8036430-8036432,8036436-8036438,8036458-8036459,8036461								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	90		65-120		
Batch number: 15252A34A	Sample number(s): 8036396-8036401,8036403-8036404,8036409,8036411-8036412,8036416								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	88		65-120		
Batch number: 15252B31A	Sample number(s): 8036433-8036435,8036439,8036441-8036447,8036450-8036452								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	102	92	65-120	10	30
Batch number: 15252B34A	Sample number(s): 8036402,8036405,8036414,8036420-8036422								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	88		65-120		
Batch number: 15254A31A	Sample number(s): 8036410,8036413,8036415,8036417,8036424								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	93	95	65-120	2	30
Batch number: 15254A31B	Sample number(s): 8036418-8036419,8036425-8036426,8036429,8036440,8036449								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	93	95	65-120	2	30
Batch number: 15257A34A	Sample number(s): 8036428,8036448,8036453-8036454								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	86	87	65-120	1	30
Batch number: 15257A34B	Sample number(s): 8036455-8036457								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	86	87	65-120	1	30
Batch number: 152530014A	Sample number(s): 8036396-8036405								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	87		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152530026A	Sample number(s): 8036406-8036417								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	93		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152530027A	Sample number(s): 8036418-8036429								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	78		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 152530039A	Sample number(s): 8036430-8036439								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	64	74	50-133	14	20
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152530040A	Sample number(s): 8036440-8036446,8036458-8036459,8036461								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	78	80	50-133	3	20
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152540006A	Sample number(s): 8036447-8036456								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	86		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 152540008A	Sample number(s): 8036457								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	77		50-133		
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 15252820001B	Sample number(s): 8036461								
Moisture					100		99-101		
Batch number: 15258820004A	Sample number(s): 8036396-8036405								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15258820004B	Sample number(s): 8036406-8036419								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15258820005A	Sample number(s): 8036420-8036432								
Moisture					100		99-101		
Moisture					100		99-101		
Moisture Duplicate					100		99-101		
Batch number: 15258820005B	Sample number(s): 8036433-8036441								
Moisture					100		99-101		
Batch number: 15258820006A	Sample number(s): 8036442-8036450								
Moisture					100		99-101		
Batch number: 15258820006B	Sample number(s): 8036451-8036459								
Moisture					100		99-101		

## 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: 15253SLH026	Sample number(s): 8036396-8036405,8036409-8036416 UNSPK: 8036399								
Benzo(a)anthracene	69*	70*	75-119	1	30				

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>BKG</u> <u>MAX</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
Benzo(a)pyrene	85	76*	77-114	12	30			
Benzo(b)fluoranthene	108	94	74-140	13	30			
Benzo(k)fluoranthene	112	94	74-115	17	30			
Chrysene	67*	63*	76-122	6	30			
Dibenz(a,h)anthracene	52*	46*	77-126	11	30			
Indeno(1,2,3-cd)pyrene	49*	45*	77-122	10	30			
1-Methylnaphthalene	298*	-2*	70-119	65*	30			
2-Methylnaphthalene	234*	-12*	66-123	60*	30			
Naphthalene	125*	96	76-118	19	30			
Batch number: 15253SLI026	Sample number(s): 8036406-8036408,8036417-8036419,8036423-8036438 UNSPK: 8036406							
Benzo(a)anthracene	98	103	75-119	4	30			
Benzo(a)pyrene	94	98	77-114	4	30			
Benzo(b)fluoranthene	127	149*	74-140	15	30			
Benzo(k)fluoranthene	110	110	74-115	0	30			
Chrysene	86	90	76-122	5	30			
Dibenz(a,h)anthracene	45*	48*	77-126	6	30			
Indeno(1,2,3-cd)pyrene	44*	45*	77-122	1	30			
1-Methylnaphthalene	1593	743 (2)	70-119	38*	30			
	(2)							
2-Methylnaphthalene	2230	718 (2)	66-123	51*	30			
	(2)							
Naphthalene	141*	135*	76-118	4	30			
Batch number: 15259SLF026	Sample number(s): 8036420-8036422,8036447 UNSPK: 8036420							
Benzo(a)anthracene	96	88	75-119	10	30			
Benzo(a)pyrene	97	93	77-114	6	30			
Benzo(b)fluoranthene	133	116	74-140	14	30			
Benzo(k)fluoranthene	103	111	74-115	6	30			
Chrysene	92	84	76-122	10	30			
Dibenz(a,h)anthracene	57*	54*	77-126	7	30			
Indeno(1,2,3-cd)pyrene	53*	50*	77-122	8	30			
1-Methylnaphthalene	95	94	70-119	2	30			
2-Methylnaphthalene	100	101	66-123	1	30			
Naphthalene	90	93	76-118	2	30			
Batch number: 15252A31A	Sample number(s): 8036406-8036408,8036423,8036427,8036430-8036432,8036436-8036438,8036458-8036459,8036461 UNSPK: 8036406							
NWTPH-GX Soil C7-C12	382*	308*	65-120	21	30			
Batch number: 15252A34A	Sample number(s): 8036396-8036401,8036403-8036404,8036409,8036411-8036412,8036416 UNSPK: 8036399							
NWTPH-GX Soil C7-C12	467*	285*	65-120	37*	30			
Batch number: 15252B34A	Sample number(s): 8036402,8036405,8036414,8036420-8036422 UNSPK: 8036420							
NWTPH-GX Soil C7-C12	314*	0*	65-120	200*	30			
Batch number: 152530014A	Sample number(s): 8036396-8036405 UNSPK: 8036399							
DRO C12-C24 w/Si Gel	33*	31*	60-120	1	20			
Batch number: 152530026A	Sample number(s): 8036406-8036417 UNSPK: 8036406							
DRO C12-C24 w/Si Gel	114	101	60-120	8	20			

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

(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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### 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: 152530027A DRO C12-C24 w/Si Gel	74	69	60-120	6	20	UNSPK: 8036420			
Batch number: 152540006A DRO C12-C24 w/Si Gel	132*	91	60-120	17	20	UNSPK: 8036454			
Batch number: 152540008A DRO C12-C24 w/Si Gel	68	63	60-120	6	20	UNSPK: 8036457			
Batch number: 15252820001B Moisture						BKG: P030687	6.0	5.8	4
Batch number: 15258820004A Moisture						BKG: 8036399	71.9	73.9	3
Moisture							71.9	73.9	3
Moisture Duplicate							71.9	73.9	3
Batch number: 15258820004B Moisture						BKG: 8036406	74.2	74.1	0
Moisture							74.2	74.1	0
Moisture Duplicate							74.2	74.1	0
Batch number: 15258820005A Moisture						BKG: 8036420	72.3	73.9	2
Moisture							72.3	73.9	2
Moisture Duplicate							72.3	73.9	2
Batch number: 15258820005B Moisture						BKG: 8036433	31.7	30.2	5
Batch number: 15258820006A Moisture						BKG: P044773	7.5	6.6	12*
Batch number: 15258820006B Moisture						BKG: P044774	19.4	19.5	1

### 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: SIM SVOA (microwave)

Batch number: 15253SLH026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8036396	100	89	80
8036397	73	72	45
8036398	92	87	73

\*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

8036399	109	95	87
8036400	103	84	94
8036401	87	75	89
8036402	117	93	91
8036403	62	56*	47
8036404	3313*	1496*	147
8036405	110	95	87
8036409	88	92	78
8036410	141	101	93
8036411	101	90	85
8036412	82	67	61
8036413	109	96	88
8036414	111	98	89
8036415	104	95	84
8036416	0*	436*	109
Blank	100	105	96
LCS	93	100	91
MS	103	84	94
MSD	87	75	89
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)

Batch number: 15253SLI026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8036406	136	116	104
8036407	124	100	94
8036408	136	104	97
8036417	147	159*	87
8036418	128	95	101
8036419	142	93	88
8036423	142	92	89
8036424	134	105	99
8036425	134	100	98
8036426	151	101	100
8036427	99	83	68
8036428	94	91	77
8036429	100	89	88
8036430	107	96	76
8036431	101	82	73
8036432	96	87	67
8036433	102	88	77
8036434	111	98	86
8036435	114	100	87
8036436	78	68	67
8036437	127	98	86
8036438	82	77	71
Blank	116	108	98
LCS	116	108	98
MS	124	100	94
MSD	136	104	97
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)

Batch number: 15253SLJ026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-
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\*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.



## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

			d10
8036439	104	90	84
8036440	105	94	94
8036441	102	88	84
8036442	96	79	71
8036443	101	83	74
8036444	102	93	87
8036445	95	88	85
8036446	100	90	87
8036448	110	83	72
8036449	45*	39*	31*
8036450	77	59*	52
8036451	88	70	71
8036452	51	47*	41
8036453	111	92	84
8036454	126	97	85
8036455	86	79	83
Blank	73	99	89
LCS	90	98	90
LCSD	89	98	90
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)  
Batch number: 15254SLF026

			1-Methylnaphthalene-d10
	Fluoranthene-d10	Benzo(a)pyrene-d12	
8036456	68	62	51
8036457	127	97	82
8036458	104	71	62
8036459	117	100	95
8036461	121	95	78
Blank	91	107	99
LCS	106	103	96
LCSD	105	100	95
Limits:	49-151	62-137	39-152

Analysis Name: SIM SVOA (microwave)  
Batch number: 15259SLF026

			1-Methylnaphthalene-d10
	Fluoranthene-d10	Benzo(a)pyrene-d12	
8036420	134	96	89
8036421	143	98	89
8036422	128	92	85
8036447	67	69	63
Blank	102	100	94
LCS	105	100	95
MS	143	98	89
MSD	128	92	85
Limits:	49-151	62-137	39-152

Analysis Name: NWTPH-Gx water C7-C12  
Batch number: 15247A94A

		Trifluorotoluene-F
8036460	75	
Blank	76	

\*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

LCS 97  
LCSD 95  
Limits: 63-135

Analysis Name: NWT PH-GX Soil C7-C12  
Batch number: 15252A31A  
Trifluorotoluene-F

8036406 71  
8036407 94  
8036408 71  
8036423 75  
8036427 95  
8036430 79  
8036431 98  
8036432 76  
8036436 91  
8036437 87  
8036438 103  
8036458 82  
8036459 114  
8036461 100  
Blank 97  
LCS 101  
MS 94  
MSD 71  
Limits: 50-142

Analysis Name: NWT PH-GX Soil C7-C12  
Batch number: 15252A34A  
Trifluorotoluene-F

8036396 123  
8036397 125  
8036398 140  
8036399 92  
8036400 83  
8036401 95  
8036403 110  
8036404 70  
8036409 96  
8036411 104  
8036412 89  
8036416 61  
Blank 107  
LCS 104  
MS 83  
MSD 95  
Limits: 50-142

Analysis Name: NWT PH-GX Soil C7-C12  
Batch number: 15252B31A  
Trifluorotoluene-F

8036433 74  
8036434 110  
8036435 104  
8036439 81  
8036441 78

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

8036442	103
8036443	94
8036444	92
8036445	113
8036446	106
8036447	196*
8036450	72
8036451	93
8036452	119
Blank	105
LCS	103
LCSD	100

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 15252B34A

Trifluorotoluene-F

8036402	113
8036405	112
8036414	67
8036420	98
8036421	77
8036422	71
Blank	104
LCS	103
MS	77
MSD	71

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 15254A31A

Trifluorotoluene-F

8036410	97
8036413	118
8036415	107
8036417	103
8036424	115
Blank	101
LCS	100
LCSD	100

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 15254A31B

Trifluorotoluene-F

8036418	105
8036419	100
8036425	81
8036426	66
8036429	132
8036440	67
8036449	119
Blank	100
LCS	100
LCSD	100

Limits: 50-142

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

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- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15257A34A

Trifluorotoluene-F

8036428	109
8036448	135
8036453	79
8036454	101
Blank	102
LCS	103
LCSD	102

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15257A34B

Trifluorotoluene-F

8036455	434*
8036456	89
8036457	118
Blank	103
LCS	103
LCSD	102

Limits: 50-142

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152530014A

Orthoterphenyl

8036396	85
8036397	88
8036398	75
8036399	104
8036400	81
8036401	76
8036402	108
8036403	82
8036404	315*
8036405	106
Blank	110
LCS	108
MS	81
MSD	76

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152530026A

Orthoterphenyl

8036406	94
8036407	73
8036408	69
8036409	90
8036410	113
8036411	74
8036412	81
8036413	116
8036414	116

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

8036415 118  
8036416 181\*  
8036417 118  
Blank 106  
LCS 113  
MS 73  
MSD 69

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel

Batch number: 152530027A

Orthoterphenyl

8036418 95  
8036419 103  
8036420 81  
8036421 83  
8036422 64  
8036423 85  
8036424 111  
8036425 100  
8036426 94  
8036427 77  
8036428 75  
8036429 91  
Blank 93  
LCS 102  
MS 83  
MSD 64

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel

Batch number: 152530039A

Orthoterphenyl

8036430 116  
8036431 80  
8036432 89  
8036433 75  
8036434 93  
8036435 100  
8036436 113  
8036437 83  
8036438 117  
8036439 86  
Blank 107  
LCS 95  
LCSD 101

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/Si Gel

Batch number: 152530040A

Orthoterphenyl

8036440 72  
8036441 90  
8036442 89  
8036443 92  
8036444 97

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/01/2015 13:13

Group Number: 1590592

### Surrogate Quality Control

8036445	103
8036446	116
8036458	506*
8036459	91
8036461	94
Blank	108
LCS	101
LCSD	101

Limits: 50-150

Analysis Name: NWT PH-Dx soil w/Si Gel  
Batch number: 152540006A  
Orthoterphenyl

8036447	87
8036448	84
8036449	135
8036450	100
8036451	122
8036452	88
8036453	89
8036454	117
8036455	102
8036456	91
Blank	110
LCS	106
MS	98
MSD	92

Limits: 50-150

Analysis Name: NWT PH-Dx soil w/Si Gel  
Batch number: 152540008A  
Orthoterphenyl

8036457	97
Blank	101
LCS	100
MS	96
MSD	96

Limits: 50-150

\*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

















Client: Arcadis

**Sample ID Discrepancy Details**

<u>Sample ID on COC</u>	<u>Sample ID on Label</u>	<u>Comments</u>
SB-45-7.5	SB-46-7.5	1 jar only, collection info matches other SB-45-7.5 jars
SB-41-Offset-7.5	SB-41-7.5	1 jar labeled SB-41-7.5
SB-41-Offset-12.5	SB-41-12.5	1 jar labeled SB-41-12.5

**Sample Date/Time Discrepancy Details**

<u>Sample ID on COC</u>	<u>Date/Time on Label</u>	<u>Comments</u>
SB-45-7.5	8/31/2015 14:10	*
SB-46-12.5	8/31/2015 14:30	*
SB-52-B-7.5	9/02/2015 10:50	MeOH vial time labeled 1050

General Comments: No MeOH vials received for sample SB-36-7.5 (container count correct just 6 jars received)

\* follow collection times on COC per J. Little.  
8/13 9/10/15

# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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 per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

## Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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## ANALYTICAL RESULTS

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2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

October 14, 2015

### Project: Former Olympia Bulk Plant

Submittal Date: 10/01/2015  
Group Number: 1597468  
PO Number: GP09BPNA.WA60  
State of Sample Origin: WA

Client Sample Description

DUP-9 Soil

Lancaster Labs (LL) #

8072191

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

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ARCADIS U.S., Inc.  
ARCADIS U.S., Inc.

Attn: Myles Perkins

Attn: Brian Marcum

Respectfully Submitted,



Stacy L. Butt  
Specialist

(717) 556-7236

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Project Name: Former Olympia Bulk Plant  
LL Group #: 1597468

**General Comments:**

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:****SW-846 8270C SIM, GC/MS Semivolatiles**

Batch #: 15285SLE026 (Sample number(s): 8072191 UNSPK: P76183)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene

**ECY 97-602 NWTPH-Gx, GC Volatiles**

Sample #s: 8072191

The holding time was not met. The sample was submitted to the laboratory outside of the holding time.

**ECY 97-602 NWTPH-DX modified, GC Petroleum Hydrocarbons w/Si**

Sample #s: 8072191

The holding time was not met. The client was notified and the data reported.

**Sample Description:** DUP-9 Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8072191  
LL Group # 1597468  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS  
Suite 600  
630 Plaza Drive  
Highlands Ranch CO 80129

Submitted: 10/01/2015 14:38

Reported: 10/14/2015 12:26

DUP-9

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>						
10725	Benzo(a)anthracene	56-55-3	0.20	0.00078	0.0019	1
10725	Benzo(a)pyrene	50-32-8	0.23	0.00078	0.0019	1
10725	Benzo(b)fluoranthene	205-99-2	0.36	0.00078	0.0019	1
10725	Benzo(k)fluoranthene	207-08-9	0.12	0.00078	0.0019	1
10725	Chrysene	218-01-9	0.24	0.00039	0.0019	1
10725	Dibenz(a,h)anthracene	53-70-3	0.030	0.00078	0.0019	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.093	0.00078	0.0019	1
10725	1-Methylnaphthalene	90-12-0	0.018	0.00078	0.0019	1
10725	2-Methylnaphthalene	91-57-6	0.043	0.00078	0.0019	1
10725	Naphthalene	91-20-3	0.060	0.00078	0.0019	1
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>						
02005	NWTPH-GX Soil C7-C12	n.a.	6.4 J	1.4	7.0	29.48
The holding time was not met. The sample was submitted to the laboratory outside of the holding time.						
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>						
<b>Hydrocarbons w/Si modified</b>						
02214	DRO C12-C24 w/Si Gel	n.a.	7.9 J	3.5	8.2	1
02214	HRO C24-C40 w/Si Gel	n.a.	43	12	35	1
The holding time was not met. The client was notified and the data reported.						
<b>Wet Chemistry SM 2540 G-1997</b>						
00111	Moisture	n.a.	15.4	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

### General Sample Comments

State of Washington Lab Certification No. C457  
This sample was originally submitted to the laboratory on 08/20/15 at 10:00. We received authorization for further testing on 10/01/15.

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
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	15285SLE026	10/13/2015 23:22	Catherine E Bachman	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	15285SLE026	10/13/2015 07:30	Joseph S Feister	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	15279B34A	10/07/2015 19:49	Jeremy C Giffin	29.48

\*=This limit was used in the evaluation of the final result



**Sample Description:** DUP-9 Soil  
Former Olympia Bulk Plant COC: R224110  
1117 West Bay Drive - Olympia, WA

LL Sample # SW 8072191  
LL Group # 1597468  
Account # 13255

**Project Name:** Former Olympia Bulk Plant

Collected: 08/17/2015 11:30 by EE

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 10/01/2015 14:38

630 Plaza Drive

Reported: 10/14/2015 12:26

Highlands Ranch CO 80129

DUP-9

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201527439004	10/01/2015 20:31	Mitchell R Washel	n.a.
02214	NWTPH-Dx soil w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	152750011A	10/06/2015 20:07	Christine E Dolman	1
07024	DRO Alternate Soil Extraction	ECY 97-602 NWTPH-Dx 06/97	1	152750011A	10/03/2015 15:25	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	15279820002B	10/06/2015 20:01	Scott W Freisher	1

\*=This limit was used in the evaluation of the final result

## Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS  
Reported: 10/14/2015 12:26

Group Number: 1597468

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</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: 15285SLE026	Sample number(s): 8072191								
Benzo(a)anthracene	N.D.	0.00067	0.0017	mg/kg	93		75-119		
Benzo(a)pyrene	N.D.	0.00067	0.0017	mg/kg	89		77-114		
Benzo(b)fluoranthene	N.D.	0.00067	0.0017	mg/kg	97		74-140		
Benzo(k)fluoranthene	N.D.	0.00067	0.0017	mg/kg	90		74-115		
Chrysene	N.D.	0.00033	0.0017	mg/kg	89		76-122		
Dibenz(a,h)anthracene	N.D.	0.00067	0.0017	mg/kg	87		77-126		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	0.0017	mg/kg	83		77-122		
1-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	99		70-119		
2-Methylnaphthalene	N.D.	0.00067	0.0017	mg/kg	99		66-123		
Naphthalene	N.D.	0.00067	0.0017	mg/kg	94		76-118		
Batch number: 15279B34A	Sample number(s): 8072191								
NWTPH-GX Soil C7-C12	N.D.	1.0	5.0	mg/kg	95	99	65-120	4	30
Batch number: 152750011A	Sample number(s): 8072191								
DRO C12-C24 w/Si Gel	N.D.	3.0	7.0	mg/kg	92	82	50-133	12	20
HRO C24-C40 w/Si Gel	N.D.	10.	30	mg/kg					
Batch number: 15279820002B	Sample number(s): 8072191								
Moisture					100		99-101		

### 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: 15285SLE026	Sample number(s): 8072191 UNSPK: P076183								
Benzo(a)anthracene	98	92	75-119	5	30				
Benzo(a)pyrene	96	89	77-114	8	30				
Benzo(b)fluoranthene	111	89	74-140	15	30				
Benzo(k)fluoranthene	96	88	74-115	7	30				
Chrysene	103	82	76-122	17	30				
Dibenz(a,h)anthracene	83	73*	77-126	12	30				
Indeno(1,2,3-cd)pyrene	77	70*	77-122	10	30				
1-Methylnaphthalene	100	95	70-119	5	30				
2-Methylnaphthalene	102	93	66-123	8	30				
Naphthalene	107	98	76-118	8	30				

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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: Atlantic Richfield c/o ARCADIS  
Reported: 10/14/2015 12:26

Group Number: 1597468

### 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</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
Batch number: 15279820002B	Sample number(s): 8072191				BKG: P069861			
Moisture					19.6	18.7	5	5

### 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: SIM SVOA (microwave)  
Batch number: 15285SLE026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8072191	125	97	97
Blank	103	100	99
LCS	102	98	96
MS	121	97	93
MSD	123	97	92
Limits:	49-151	62-137	39-152

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 15279B34A

	Trifluorotoluene-F
8072191	99
Blank	114
LCS	111
LCSD	111
Limits:	50-142

Analysis Name: NWTPH-Dx soil w/Si Gel  
Batch number: 152750011A

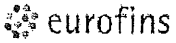
	Orthoterphenyl
8072191	100
Blank	108
LCS	109
LCSD	106
Limits:	50-150

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (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.





Lancaster Laboratories  
Environmental

## Sample Administration Receipt Documentation Log

Doc Log ID: 98740

Group Number(s): ~~1586402~~

1597468  
@KAR 10/1/15

Client: BP

### Delivery and Receipt Information

Delivery Method: UPS Arrival Timestamp: 08/20/2015 10:00  
 Number of Packages: 3 Number of Projects: 1

### Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace $\geq$ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	3
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 13:46 on 08/20/2015

### Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	2.4	DT	Wet	Y	Bagged	N
2	DT121	1.5	DT	Wet	Y	Bagged	N
3	DT121	1.6	DT	Wet	Y	Bagged	N

# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter
<b>&lt;</b>	less than		
<b>&gt;</b>	greater than		
<b>ppm</b>	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 per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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.		

## Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value  $\geq$  the Method Detection Limit (MDL or DL) and the  $<$  Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column  $>40\%$ . The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column  $>100\%$ . The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

## Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) 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.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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