

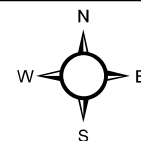


Legend

- Spill Origin
- Soil Sample Location
- Spill Path

0 125 250 500 Feet

1 inch = 225 feet



PROJECT NO:	013-3287
DRAWN BY:	SBS
DATE:	10/20/2014

AC MCLAUGHLIN 22
SPILL RESPONSE
CHEVRON USA, INC
RIO BLANCO COUNTY, COLORADO
SESW & SWSE S14 T2N R103W



Entrada Consulting Group
240 Mesa Avenue
Grand Junction, CO 81501
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FIGURE

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Table 1
AC McLaughlin 22
Soil Data Summary

SAMPLE SUMMARY																			
Location Description		Chevron AC McLaughlin 22																	
Sample Type		Soil																	

LABORATORY DATA SUMMARY																				
Sample ID	ACM-SS1	ACM22-SS1	ACM-SS2	ACM22-SS2	ACM-SS3	ACM22-SS3	ACM-SS4	ACM22-SS4	ACM-SS5	ACM22-SS5	ACM-SS6	ACM22-SS6	ACM-SS7	ACM22-BG1	ACM22-BG2	ACM22-BG3	ACM22-BG4	ACM22-BG5	COGCC TABLE 910-1 CONCENTRATION LEVELS	UNITS
Depth	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"	0-6"		
Sample Date	9/11/2014	10/11/2017	9/11/2014	10/11/2017	9/11/2014	10/11/2017	9/11/2014	10/11/2017	8/21/2014	10/11/2017	8/21/2014	10/11/2017	8/21/2014	10/3/2011	10/3/2011	4/4/2012	8/1/2013	8/1/2013		
Analytical Parameters																				
TPH																				
TPH Gasoline Range Organics	<3.1	NT	<3.5	NT	<3.0	NT	<3.2	NT	<3.0	NT	<3.0	NT	<3.4	NT	NT	NT	NT	NT	500	mg/kg
TPH Diesel Range Organics	39	NT	46	NT	27	NT	58	NT	39	NT	40	NT	<11	NT	NT	NT	NT	NT		
BTX																				
Benzene	<0.037	NT	<0.042	NT	<0.036	NT	<0.039	NT	<0.036	NT	<0.036	NT	<0.041	NT	NT	NT	NT	NT	0.17	mg/kg
Toluene	<0.037	NT	<0.042	NT	<0.036	NT	<0.039	NT	<0.036	NT	<0.036	NT	<0.041	NT	NT	NT	NT	NT	85	mg/kg
Ethylbenzene	<0.037	NT	<0.042	NT	<0.036	NT	<0.039	NT	<0.036	NT	<0.036	NT	<0.041	NT	NT	NT	NT	NT	100	mg/kg
Total Xylene	<0.110	NT	<0.130	NT	<0.110	NT	<0.120	NT	<0.110	NT	<0.110	NT	<0.120	NT	NT	NT	NT	NT	175	mg/kg
Metals																				
Arsenic	8.2	NT	5.8	NT	7.1	NT	6.9	NT	6.1	NT	6.1	NT	7.7	6.2	6.8	6.7	5.38	5.43	0.39	mg/kg
Barium	190	NT	85	NT	120	NT	100	NT	110	NT	130	NT	160	90.2	NT	NT	NT	NT	15,000	mg/kg
Cadmium	<0.69	NT	<0.74	NT	<0.77	NT	<0.73	NT	<0.66	NT	<0.66	NT	<0.86	<0.95	NT	NT	NT	NT	70	mg/kg
Chromium	9	NT	9	NT	12	NT	13	NT	11	NT	11	NT	13	8.5	NT	NT	NT	NT	NA	mg/kg
Copper	7.9	NT	10	NT	12	NT	13	NT	11	NT	10	NT	15	10.7	NT	NT	NT	NT	3,100	mg/kg
Lead	9	NT	13	NT	17	NT	18	NT	15	NT	14	NT	18	15.3	NT	NT	NT	NT	400	mg/kg
Mercury	0.018	NT	0.02	NT	0.02	NT	0.08	NT	0.015	NT	0.018	NT	0.033	<0.093	NT	NT	NT	NT	23	mg/kg
Nickel	12	NT	13	NT	16	NT	16	NT	14	NT	15	NT	21	12.1	NT	NT	NT	NT	1,600	mg/kg
Selenium	3.2	NT	2.5	NT	2.2	NT	2	NT	2.1	NT	2.5	NT	3.200	<4.8	NT	NT	NT	NT	390	mg/kg
Silver	<1.7	NT	<1.9	NT	<1.9	NT	<1.8	NT	<1.6	NT	<1.7	NT	<2.1	<2.9	NT	NT	NT	NT	390	mg/kg
Zinc	41	NT	60	NT	72	NT	74	NT	60	NT	59	NT	80	55	NT	NT	NT	NT	23,000	mg/kg
SAR Metals Analysis																				
Calcium	690	NT	120	180	330	150	45	190	610	150	260	320	70	29.1	NT	NT	NT	NT	NA	mg/L
Magnesium	190	NT	28	23	58	30	8.8	31	120	33	37	50	9.7	5.86	NT	NT	NT	NT	NA	mg/L
Sodium	700	NT	2000	30	4700	42	1300	38	6400	38	4200	41	83	7.42	NT	NT	NT	NT	NA	mg/L
Sodium Adsorption Ratio	6.1	NT	43	0.56	62	1.3	45	0.67	62	0.74	66	0.57	2.50	0.328	NT	NT	NT	NT	<12	ratio
Polynuclear Aromatic Hydrocarbons																				
Acenaphthene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	1,000	mg/kg
Anthracene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	1,000	mg/kg
Benzo(a)anthracene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(a)pyrene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	0.022	mg/kg
Benzo(b)fluoranthene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	0.22	mg/kg
Benzo(k)fluoranthene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	2.2	mg/kg
Chrysene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	22	mg/kg
Dibenzo(a,h)anthracene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	0.022	mg/kg
Fluoranthene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	1,000	mg/kg
Fluorene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	1,000	mg/kg
Indeno(1,2,3-cd)pyrene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	0.22	mg/kg
Napthalene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	23	mg/kg
Pyrene	<0.016	NT	<0.0092	NT	<0.016	NT	<0.016	NT	<0.015	NT	<0.014	NT	<0.018	NT	NT	NT	NT	NT	1,000	mg/kg
General Chemistry																				
Chromium, Hexavalent	<0.60	NT	<0.69	NT	<0.61	NT	0.74	NT	<0.59	NT	<0.60	NT	<0.68	<0.41	NT	NT	NT	NT	23	mg/kg
Chromium, Trivalent	9	NT	8.7	NT	11	NT	12	NT	11	NT	10	NT	13	8.5	NT	NT	NT	NT	120,000	mg/kg
Specific Conductivity	9.4	3.4	12.0	1.4	27.0	1.3	7.2	1.6	38.0	1.3	24.0	2.5	0.9	0.184	NT	NT	NT	NT	<4 or 2 x the background	mmhos/cm
pH	8.1	NT	8.4	NT	8.2	NT	8.4	NT	7.8	NT	8.1	NT	8.5	9.18	NT	NT	NT	NT	6-9	su

mg/kg - milligrams per kilogram
mg/L - milligrams per liter
J - indicates an estimated value
mmhos/cm - millimhos per centimeter
mv - millivolts
su - standard units
NA - not applicable
NT - parameter was not tested

Over COGCC Table 910-1 concentration levels but under BACKGROUND level.
Over COGCC Table 910-1 concentration levels and not within BACKGROUND level.
Over COGCC Table 910-1 concentration levels



31-Aug-2014

Tim Dobransky
Olsson Associates
760 Horizon Drive
Suite 102
Grand Junction, CO 81506

Re: **Chevron AC McLaughlin 22 Spill 8.21.14**

Work Order: **14081253**

Dear Tim,

ALS Environmental received 3 samples on 23-Aug-2014 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 27.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental The ALS logo, a stylized blue triangle with a yellow flame.

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill 8.21.14
Work Order: 14081253

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
14081253-01	ACM-SS7	Soil		8/21/2014 10:45	8/23/2014 10:00	<input type="checkbox"/>
14081253-02	ACM-SS6	Soil		8/21/2014 11:00	8/23/2014 10:00	<input type="checkbox"/>
14081253-03	ACM-SS5	Soil		8/21/2014 11:10	8/23/2014 10:00	<input type="checkbox"/>

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill 8.21.14
Work Order: 14081253

Case Narrative

Batch 62023 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 62193 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

Batch 62019 MS/MSD data for GRO is not related to this project's samples. No data requires qualification.

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: 31-Aug-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Work Order: 14081253

Sample ID: ACM-SS7

Lab ID: 14081253-01

Collection Date: 8/21/2014 10:45 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 8/27/14	Analyst: IT
DRO (C10-C28)	ND		11	mg/Kg-dry	1	8/27/2014 11:06 PM
Surr: 4-Terphenyl-d14	103		39-133	%REC	1	8/27/2014 11:06 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015		Prep: SW5035 / 8/25/14	Analyst: IT
GRO (C6-C10)	ND		3.4	mg/Kg-dry	1	8/26/2014 03:41 AM
Surr: Toluene-d8	106		50-150	%REC	1	8/26/2014 03:41 AM
MERCURY BY CVAA						
			SW7471		Prep: SW7471 / 8/25/14	Analyst: LR
Mercury	0.033		0.017	mg/Kg-dry	1	8/25/2014 09:38 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/27/14	Analyst: JEJ
Calcium	70		5.0	mg/L	10	8/27/2014 03:49 PM
Magnesium	9.7		2.0	mg/L	10	8/27/2014 03:49 PM
Sodium	83		2.0	mg/L	10	8/27/2014 03:49 PM
METALS BY ICP-MS						
			SW6020A		Prep: SW3050B / 8/25/14	Analyst: ML
Arsenic	7.7		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Barium	160		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Cadmium	ND		0.86	mg/Kg-dry	4	8/25/2014 08:42 PM
Chromium	13		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Copper	15		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Lead	18		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Nickel	21		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Selenium	3.2		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Silver	ND		2.1	mg/Kg-dry	4	8/25/2014 08:42 PM
Zinc	80		4.3	mg/Kg-dry	4	8/25/2014 08:42 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 8/27/14	Analyst: JEJ
Sodium Adsorption Ratio	2.5		0.010	none	1	8/27/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/27/14	Analyst: MK
Acenaphthene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Anthracene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Benzo(a)anthracene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Benzo(a)pyrene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Benzo(b)fluoranthene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Benzo(k)fluoranthene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Chrysene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Dibenzo(a,h)anthracene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Fluoranthene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 31-Aug-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Work Order: 14081253

Sample ID: ACM-SS7

Lab ID: 14081253-01

Collection Date: 8/21/2014 10:45 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Indeno(1,2,3-cd)pyrene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Naphthalene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Pyrene	ND		18	µg/Kg-dry	1	8/28/2014 05:19 PM
Surr: 2-Fluorobiphenyl	62.6		12-100	%REC	1	8/28/2014 05:19 PM
Surr: 4-Terphenyl-d14	104		25-137	%REC	1	8/28/2014 05:19 PM
Surr: Nitrobenzene-d5	52.9		37-107	%REC	1	8/28/2014 05:19 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 8/25/14		Analyst: AK
Benzene	ND		41	µg/Kg-dry	1	8/29/2014 07:27 AM
Ethylbenzene	ND		41	µg/Kg-dry	1	8/29/2014 07:27 AM
m,p-Xylene	ND		82	µg/Kg-dry	1	8/29/2014 07:27 AM
o-Xylene	ND		41	µg/Kg-dry	1	8/29/2014 07:27 AM
Toluene	ND		41	µg/Kg-dry	1	8/29/2014 07:27 AM
Xylenes, Total	ND		120	µg/Kg-dry	1	8/29/2014 07:27 AM
Surr: 1,2-Dichloroethane-d4	83.6		70-130	%REC	1	8/29/2014 07:27 AM
Surr: 4-Bromofluorobenzene	99.7		70-130	%REC	1	8/29/2014 07:27 AM
Surr: Dibromofluoromethane	90.4		70-130	%REC	1	8/29/2014 07:27 AM
Surr: Toluene-d8	93.0		70-130	%REC	1	8/29/2014 07:27 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 8/27/14		Analyst: MELB
Electrical Conductivity @ Saturation	0.92		0.050	mmhos/cm @25	10	8/27/2014 12:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	13		0.68	mg/Kg-dry	1	8/29/2014 04:54 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 8/27/14		Analyst: MB
Chromium, Hexavalent	ND		0.68	mg/Kg-dry	1	8/28/2014 04:00 PM
MOISTURE			A2540 G			Analyst: MELB
Moisture	27		0.050	% of sample	1	8/26/2014 07:45 PM
PH			SW9045D	Prep: EXTRACT / 8/27/14		Analyst: STP
pH	8.5			s.u.	1	8/27/2014 12:50 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 31-Aug-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Work Order: 14081253

Sample ID: ACM-SS6

Lab ID: 14081253-02

Collection Date: 8/21/2014 11:00 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	40		SW8015M		Prep: SW3541 / 8/27/14	Analyst: IT
Surr: 4-Terphenyl-d14	83.4		9.0	mg/Kg-dry	1	8/27/2014 11:36 PM
			39-133	%REC	1	8/27/2014 11:36 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015		Prep: SW5035 / 8/25/14	Analyst: IT
Surr: Toluene-d8	95.2		3.0	mg/Kg-dry	1	8/26/2014 04:56 AM
			50-150	%REC	1	8/26/2014 04:56 AM
MERCURY BY CVAA						
Mercury	0.018		SW7471		Prep: SW7471 / 8/25/14	Analyst: LR
			0.017	mg/Kg-dry	1	8/25/2014 09:40 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/27/14	Analyst: JEJ
Calcium	260		25	mg/L	50	8/28/2014 12:41 PM
Magnesium	37		2.0	mg/L	10	8/27/2014 03:54 PM
Sodium	4,200		10	mg/L	50	8/28/2014 12:41 PM
METALS BY ICP-MS						
			SW6020A		Prep: SW3050B / 8/25/14	Analyst: ML
Arsenic	6.1		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Barium	130		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Cadmium	ND		0.66	mg/Kg-dry	4	8/25/2014 08:48 PM
Chromium	11		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Copper	10		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Lead	14		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Nickel	15		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Selenium	2.5		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Silver	ND		1.7	mg/Kg-dry	4	8/25/2014 08:48 PM
Zinc	59		3.3	mg/Kg-dry	4	8/25/2014 08:48 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 8/27/14	Analyst: JEJ
Sodium Adsorption Ratio	66		0.010	none	1	8/27/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/27/14	Analyst: MK
Acenaphthene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Anthracene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Benzo(a)anthracene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Benzo(a)pyrene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Benzo(b)fluoranthene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Benzo(k)fluoranthene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Chrysene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Dibenzo(a,h)anthracene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Fluoranthene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 31-Aug-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Work Order: 14081253

Sample ID: ACM-SS6

Lab ID: 14081253-02

Collection Date: 8/21/2014 11:00 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Indeno(1,2,3-cd)pyrene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Naphthalene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Pyrene	ND		14	µg/Kg-dry	1	8/28/2014 05:39 PM
Surr: 2-Fluorobiphenyl	63.9		12-100	%REC	1	8/28/2014 05:39 PM
Surr: 4-Terphenyl-d14	109		25-137	%REC	1	8/28/2014 05:39 PM
Surr: Nitrobenzene-d5	55.1		37-107	%REC	1	8/28/2014 05:39 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 8/25/14		Analyst: AK
Benzene	ND		36	µg/Kg-dry	1	8/26/2014 08:28 AM
Ethylbenzene	ND		36	µg/Kg-dry	1	8/26/2014 08:28 AM
m,p-Xylene	ND		73	µg/Kg-dry	1	8/26/2014 08:28 AM
o-Xylene	ND		36	µg/Kg-dry	1	8/26/2014 08:28 AM
Toluene	ND		36	µg/Kg-dry	1	8/26/2014 08:28 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	8/26/2014 08:28 AM
Surr: 1,2-Dichloroethane-d4	82.4		70-130	%REC	1	8/26/2014 08:28 AM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	8/26/2014 08:28 AM
Surr: Dibromofluoromethane	89.3		70-130	%REC	1	8/26/2014 08:28 AM
Surr: Toluene-d8	94.6		70-130	%REC	1	8/26/2014 08:28 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 8/27/14		Analyst: MELB
Electrical Conductivity @ Saturation	24		0.050	mmhos/cm @25	10	8/27/2014 12:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	10		0.61	mg/Kg-dry	1	8/29/2014 04:54 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 8/27/14		Analyst: MB
Chromium, Hexavalent	ND		0.60	mg/Kg-dry	1	8/28/2014 04:00 PM
MOISTURE			A2540 G			Analyst: MELB
Moisture	18		0.050	% of sample	1	8/26/2014 07:45 PM
PH			SW9045D	Prep: EXTRACT / 8/27/14		Analyst: STP
pH	8.1			s.u.	1	8/27/2014 12:50 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 31-Aug-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Work Order: 14081253

Sample ID: ACM-SS5

Lab ID: 14081253-03

Collection Date: 8/21/2014 11:10 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	39		SW8015M		Prep: SW3541 / 8/27/14	Analyst: IT
Surr: 4-Terphenyl-d14	93.5		9.7	mg/Kg-dry	1	8/28/2014 12:07 PM
			39-133	%REC	1	8/28/2014 12:07 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015		Prep: SW5035 / 8/25/14	Analyst: IT
Surr: Toluene-d8	112		3.0	mg/Kg-dry	1	8/26/2014 09:33 AM
			50-150	%REC	1	8/26/2014 09:33 AM
MERCURY BY CVAA						
Mercury	0.015	J	SW7471		Prep: SW7471 / 8/25/14	Analyst: LR
			0.015	mg/Kg-dry	1	8/25/2014 09:42 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 8/27/14	Analyst: JEJ
Calcium	610		5.0	mg/L	10	8/27/2014 04:00 PM
Magnesium	120		2.0	mg/L	10	8/27/2014 04:00 PM
Sodium	6,400		10	mg/L	50	8/28/2014 12:14 PM
METALS BY ICP-MS						
			SW6020A		Prep: SW3050B / 8/25/14	Analyst: ML
Arsenic	6.1		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Barium	110		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Cadmium	ND		0.66	mg/Kg-dry	4	8/25/2014 08:54 PM
Chromium	11		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Copper	11		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Lead	15		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Nickel	14		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Selenium	2.1		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Silver	ND		1.6	mg/Kg-dry	4	8/25/2014 08:54 PM
Zinc	60		3.3	mg/Kg-dry	4	8/25/2014 08:54 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 8/27/14	Analyst: JEJ
Sodium Adsorption Ratio	62		0.010	none	1	8/27/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 8/27/14	Analyst: MK
Acenaphthene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Anthracene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Benzo(a)anthracene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Benzo(a)pyrene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Benzo(b)fluoranthene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Benzo(k)fluoranthene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Chrysene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Dibenzo(a,h)anthracene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Fluoranthene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 31-Aug-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Work Order: 14081253

Sample ID: ACM-SS5

Lab ID: 14081253-03

Collection Date: 8/21/2014 11:10 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Indeno(1,2,3-cd)pyrene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Naphthalene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Pyrene	ND		15	µg/Kg-dry	1	8/28/2014 06:00 PM
Surr: 2-Fluorobiphenyl	74.4		12-100	%REC	1	8/28/2014 06:00 PM
Surr: 4-Terphenyl-d14	111		25-137	%REC	1	8/28/2014 06:00 PM
Surr: Nitrobenzene-d5	63.5		37-107	%REC	1	8/28/2014 06:00 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 8/25/14		Analyst: AK
Benzene	ND		36	µg/Kg-dry	1	8/26/2014 08:53 AM
Ethylbenzene	ND		36	µg/Kg-dry	1	8/26/2014 08:53 AM
m,p-Xylene	ND		72	µg/Kg-dry	1	8/26/2014 08:53 AM
o-Xylene	ND		36	µg/Kg-dry	1	8/26/2014 08:53 AM
Toluene	ND		36	µg/Kg-dry	1	8/26/2014 08:53 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	8/26/2014 08:53 AM
Surr: 1,2-Dichloroethane-d4	82.8		70-130	%REC	1	8/26/2014 08:53 AM
Surr: 4-Bromofluorobenzene	99.8		70-130	%REC	1	8/26/2014 08:53 AM
Surr: Dibromofluoromethane	90.8		70-130	%REC	1	8/26/2014 08:53 AM
Surr: Toluene-d8	94.5		70-130	%REC	1	8/26/2014 08:53 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 8/27/14		Analyst: MELB
Electrical Conductivity @ Saturation	38		0.050	mmhos/cm @25	10	8/27/2014 12:30 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	11		0.60	mg/Kg-dry	1	8/29/2014 04:54 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 8/27/14		Analyst: MB
Chromium, Hexavalent	ND		0.59	mg/Kg-dry	1	8/28/2014 04:00 PM
MOISTURE			A2540 G			Analyst: MELB
Moisture	17		0.050	% of sample	1	8/26/2014 07:45 PM
PH			SW9045D	Prep: EXTRACT / 8/27/14		Analyst: STP
pH	7.8			s.u.	1	8/27/2014 12:50 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Olsson Associates

QC BATCH REPORT

Work Order: 14081253

Project: Chevron AC McLaughlin 22 Spill 8.21.14

Batch ID: 62100 Instrument ID GC8 Method: SW8015M

MBLK		Sample ID: DBLKS1-62100-62100				Units: mg/Kg		Analysis Date: 8/27/2014 08:04 PM		
Client ID:		Run ID: GC8_140827A				SeqNo: 2907978		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.949	0	2	0	97.4	39-133	0			

LCS		Sample ID: DLCSS1-62100-62100				Units: mg/Kg		Analysis Date: 8/27/2014 08:35 PM		
Client ID:		Run ID: GC8_140827A				SeqNo: 2907979		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	212.2	5.0	200	0	106	61-109	0			
Surr: 4-Terphenyl-d14	1.974	0	2	0	98.7	39-133	0			

MS		Sample ID: 14081279-03C MS				Units: mg/Kg		Analysis Date: 8/27/2014 09:05 PM		
Client ID:		Run ID: GC8_140827A				SeqNo: 2907980		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	361.2	8.1	323.9	25.19	104	48-110	0			
Surr: 4-Terphenyl-d14	2.963	0	3.239	0	91.5	39-133	0			

MSD		Sample ID: 14081279-03C MSD				Units: mg/Kg		Analysis Date: 8/27/2014 09:35 PM		
Client ID:		Run ID: GC8_140827A				SeqNo: 2907981		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	338.7	8.3	332.6	25.19	94.3	48-110	361.2	6.43	30	
Surr: 4-Terphenyl-d14	2.797	0	3.326	0	84.1	39-133	2.963	5.73	30	

The following samples were analyzed in this batch: 14081253-01A 14081253-02A 14081253-03A

Client: Olsson Associates
 Work Order: 14081253
 Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62019** Instrument ID **GC9** Method: **SW8015**

MBLK		Sample ID: MBLK-62019-62019				Units: µg/Kg		Analysis Date: 8/26/2014 03:16 AM		
Client ID:		Run ID: GC9_140825A			SeqNo:2903941		Prep Date: 8/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	4942	0	5000	0	98.8	50-150	0			

LCS		Sample ID: LCS-62019-62019				Units: µg/Kg		Analysis Date: 8/26/2014 02:51 AM		
Client ID:		Run ID: GC9_140825A			SeqNo:2903940		Prep Date: 8/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	499700	2,500	500000	0	99.9	70-130	0			
Surr: Toluene-d8	4361	0	5000	0	87.2	50-150	0			

MS		Sample ID: 14081253-01A MS				Units: µg/Kg		Analysis Date: 8/26/2014 04:06 AM		
Client ID: ACM-SS7			Run ID: GC9_140825A			SeqNo:2903943		Prep Date: 8/25/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	491700	2,500	500000	0	98.3	70-130	0			
Surr: Toluene-d8	4208	0	5000	0	84.2	50-150	0			

MSD				Sample ID: 14081253-01A MSD				Units: µg/Kg			Analysis Date: 8/26/2014 04:31 AM			
Client ID: ACM-SS7				Run ID: GC9_140825A				SeqNo:2903944			Prep Date: 8/25/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
GRO (C6-C10)		478100	2,500	500000	0	95.6	70-130	491700	2.81	30				
Surr: Toluene-d8		5714	0	5000	0	114	50-150	4208	30.3	30	R			

The following samples were analyzed in this batch:

14081253-01A	14081253-02A	14081253-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **61981** Instrument ID **HG1** Method: **SW7471**

MBLK				Sample ID: MBLK-61981-61981				Units: mg/Kg			Analysis Date: 8/25/2014 09:26 PM												
Client ID:				Run ID: HG1_140825A				SeqNo: 2903036			Prep Date: 8/25/2014		DF: 1										
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Mercury ND 0.020

LCS		Sample ID: LCS-61981-61981				Units:mg/Kg		Analysis Date: 8/25/2014 09:28 PM		
Client ID:		Run ID: HG1_140825A			SeqNo:2903037		Prep Date: 8/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1687 0.020 0.1665 0 101 80-120 0

MS		Sample ID: 14081254-01AMS				Units:mg/Kg		Analysis Date: 8/25/2014 09:47 PM		
Client ID:		Run ID: HG1_140825A		SeqNo:2903045		Prep Date: 8/25/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1151 0.012 0.1024 0.01049 102 75-125 0

MSD				Sample ID: 14081254-01AMSD				Units: mg/Kg		Analysis Date: 8/25/2014 09:56 PM			
Client ID:				Run ID: HG1_140825A				SeqNo: 2903049		Prep Date: 8/25/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

Mercury 0.1145 0.012 0.1018 0.01049 102 75-125 0.1151 0.511 35

The following samples were analyzed in this batch:

14081253-01A	14081253-02A	14081253-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 14081253
 Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62023** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK		Sample ID: MBLK-62023-62023				Units: mg/Kg		Analysis Date: 8/25/2014 08:11 PM		
Client ID:		Run ID: ICPMS1_140825A				SeqNo: 2903634		Prep Date: 8/25/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	0.03108	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	0.001014	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.08685	0.50								J

LCS		Sample ID: LCS-62023-62023				Units: mg/Kg		Analysis Date: 8/25/2014 08:35 PM		
Client ID:		Run ID: ICPMS1_140825A				SeqNo: 2903638		Prep Date: 8/25/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.502	0.25	5	0	90	80-120	0			
Barium	4.706	0.25	5	0	94.1	80-120	0			
Cadmium	4.652	0.10	5	0	93	80-120	0			
Chromium	4.588	0.25	5	0	91.8	80-120	0			
Copper	4.45	0.25	5	0	89	80-120	0			
Lead	4.678	0.25	5	0	93.6	80-120	0			
Nickel	4.526	0.25	5	0	90.5	80-120	0			
Selenium	4.428	0.25	5	0	88.6	80-120	0			
Silver	4.622	0.25	5	0	92.4	80-120	0			
Zinc	4.468	0.50	5	0	89.4	80-120	0			

MS		Sample ID: 14081269-02AMS				Units: mg/Kg		Analysis Date: 8/25/2014 09:18 PM		
Client ID:		Run ID: ICPMS1_140825A				SeqNo: 2903657		Prep Date: 8/25/2014		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	20.86	1.5	7.541	17.48	44.8	75-125	0			S
Barium	50.92	1.5	7.541	65.32	-191	75-125	0			SO
Cadmium	7.306	0.60	7.541	0.2006	94.2	75-125	0			
Chromium	13.16	1.5	7.541	5.295	104	75-125	0			
Copper	9.897	1.5	7.541	3.225	88.5	75-125	0			
Lead	15.66	1.5	7.541	12.37	43.6	75-125	0			S
Nickel	10.97	1.5	7.541	4.319	88.2	75-125	0			
Selenium	7.982	1.5	7.541	0.6921	96.7	75-125	0			
Silver	6.965	1.5	7.541	0.05432	91.6	75-125	0			
Zinc	30.44	3.0	7.541	29.12	17.5	75-125	0			S

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 14081253
 Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: 62023 Instrument ID ICPMS1 Method: SW6020A

MS					Sample ID: 14081270-07AMS		Units:mg/Kg		Analysis Date: 8/25/2014 11:33 PM		
Client ID:			Run ID: ICPMS1_140825A			SeqNo:2903699		Prep Date: 8/25/2014		DF: 4	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	7.884	1.3	6.418	1.726	95.9	75-125	0				
Barium	29.14	1.3	6.418	20.85	129	75-125	0			S	
Cadmium	6.475	0.51	6.418	0.4562	93.8	75-125	0				
Chromium	8.822	1.3	6.418	2.763	94.4	75-125	0				
Copper	12.66	1.3	6.418	5.565	110	75-125	0				
Lead	15.5	1.3	6.418	10.76	74	75-125	0			S	
Nickel	8.008	1.3	6.418	1.943	94.5	75-125	0				
Selenium	6.28	1.3	6.418	0.9623	82.8	75-125	0				
Silver	5.805	1.3	6.418	0.03216	89.9	75-125	0				
Zinc	24.01	2.6	6.418	15.45	133	75-125	0			S	

MSD				Sample ID: 14081269-02AMSD			Units:mg/Kg		Analysis Date: 8/25/2014 09:24 PM		
Client ID:			Run ID: ICPMS1_140825A			SeqNo:2903659		Prep Date: 8/25/2014		DF: 4	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	18.77	1.5	7.657	17.48	16.9	75-125	20.86	10.5	25	S	
Barium	54.61	1.5	7.657	65.32	-140	75-125	50.92	6.99	25	SO	
Cadmium	7.538	0.61	7.657	0.2006	95.8	75-125	7.306	3.12	25		
Chromium	13.88	1.5	7.657	5.295	112	75-125	13.16	5.39	25		
Copper	9.868	1.5	7.657	3.225	86.8	75-125	9.897	0.295	25		
Lead	15.57	1.5	7.657	12.37	41.8	75-125	15.66	0.583	25	S	
Nickel	11.18	1.5	7.657	4.319	89.6	75-125	10.97	1.9	25		
Selenium	8.242	1.5	7.657	0.6921	98.6	75-125	7.982	3.21	25		
Silver	7.103	1.5	7.657	0.05432	92.1	75-125	6.965	1.95	25		
Zinc	30.36	3.1	7.657	29.12	16.2	75-125	30.44	0.27	25	S	

MSD					Sample ID: 14081270-07AMSD			Units:mg/Kg		Analysis Date: 8/25/2014 11:40 PM		
Client ID:			Run ID: ICPMS1_140825A			SeqNo:2903701		Prep Date: 8/25/2014		DF: 4		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	8.018	1.3	6.494	1.726	96.9	75-125	7.884	1.68	25			
Barium	31.84	1.3	6.494	20.85	169	75-125	29.14	8.87	25	S		
Cadmium	7.049	0.52	6.494	0.4562	102	75-125	6.475	8.49	25			
Chromium	9.74	1.3	6.494	2.763	107	75-125	8.822	9.9	25			
Copper	14.66	1.3	6.494	5.565	140	75-125	12.66	14.7	25	S		
Lead	17.26	1.3	6.494	10.76	100	75-125	15.5	10.7	25			
Nickel	8.597	1.3	6.494	1.943	102	75-125	8.008	7.1	25			
Selenium	6.86	1.3	6.494	0.9623	90.8	75-125	6.28	8.83	25			
Silver	6.21	1.3	6.494	0.03216	95.1	75-125	5.805	6.75	25			
Zinc	28.55	2.6	6.494	15.45	202	75-125	24.01	17.3	25	S		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62023** Instrument ID **ICPMS1** Method: **SW6020A**

The following samples were analyzed in this batch:

14081253-01A	14081253-02A	14081253-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62046** Instrument ID **SAR** Method: **USDA H60 Method**

DUP		Sample ID: 14081254-01BDUP				Units: none		Analysis Date: 8/27/2014		
Client ID:		Run ID: SAR_140827A				SeqNo: 2908981		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	9.259	0.010	0	0	0		8.569	7.74	50	

The following samples were analyzed in this batch:

14081253-01B	14081253-02B	14081253-03B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62099** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-62099-62099				Units: µg/Kg		Analysis Date: 8/29/2014 04:02 AM		
Client ID:		Run ID: SVMS4_140828A				SeqNo: 2910193		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
<i>Surr: 2-Fluorobiphenyl</i>	<i>1436</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>86.2</i>	<i>12-100</i>	<i>0</i>			
<i>Surr: 4-Terphenyl-d14</i>	<i>1740</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>104</i>	<i>25-137</i>	<i>0</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>1163</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>69.8</i>	<i>37-107</i>	<i>0</i>			

LCS		Sample ID: SLCSS1-62099-62099				Units: µg/Kg		Analysis Date: 8/29/2014 04:26 AM		
Client ID:		Run ID: SVMS4_140828A				SeqNo: 2910194		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	483.3	6.7	666.7	0	72.5	45-110	0			
Anthracene	612	6.7	666.7	0	91.8	55-105	0			
Benzo(a)anthracene	578	6.7	666.7	0	86.7	50-110	0			
Benzo(a)pyrene	599.3	6.7	666.7	0	89.9	50-110	0			
Benzo(b)fluoranthene	546.3	6.7	666.7	0	81.9	45-115	0			
Benzo(k)fluoranthene	622.3	6.7	666.7	0	93.3	45-115	0			
Chrysene	607.3	6.7	666.7	0	91.1	55-110	0			
Dibenzo(a,h)anthracene	580.3	6.7	666.7	0	87	40-125	0			
Fluoranthene	563.7	6.7	666.7	0	84.5	55-115	0			
Fluorene	569.7	6.7	666.7	0	85.4	50-110	0			
Indeno(1,2,3-cd)pyrene	579	6.7	666.7	0	86.8	40-120	0			
Naphthalene	496	6.7	666.7	0	74.4	40-105	0			
Pyrene	652	6.7	666.7	0	97.8	45-125	0			
Surr: 2-Fluorobiphenyl	1253	0	1667	0	75.2	12-100	0			
Surr: 4-Terphenyl-d14	1571	0	1667	0	94.3	25-137	0			
Surr: Nitrobenzene-d5	1076	0	1667	0	64.6	37-107	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 14081253
 Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: 62099 Instrument ID SVMS4 Method: SW846 8270D

MS				Sample ID: 14081279-03C MS				Units: µg/Kg		Analysis Date: 8/29/2014 04:49 AM	
Client ID:		Run ID: SVMS4_140828A			SeqNo:2910195		Prep Date: 8/27/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1002	13	1287	0	77.9	45-110	0				
Anthracene	1213	13	1287	0	94.3	55-105	0				
Benzo(a)anthracene	1161	13	1287	0	90.2	50-110	0				
Benzo(a)pyrene	1200	13	1287	0	93.3	50-110	0				
Benzo(b)fluoranthene	1134	13	1287	0	88.1	45-115	0				
Benzo(k)fluoranthene	1215	13	1287	0	94.4	45-115	0				
Chrysene	1174	13	1287	0	91.2	55-110	0				
Dibenzo(a,h)anthracene	1159	13	1287	0	90	40-125	0				
Fluoranthene	1143	13	1287	0	88.8	55-115	0				
Fluorene	1173	13	1287	0	91.2	50-110	0				
Indeno(1,2,3-cd)pyrene	1220	13	1287	0	94.8	40-120	0				
Naphthalene	1020	13	1287	0	79.3	40-105	0				
Pyrene	1207	13	1287	0	93.8	45-125	0				
Surr: 2-Fluorobiphenyl	2462	0	3217	0	76.5	12-100	0				
Surr: 4-Terphenyl-d14	2900	0	3217	0	90.1	25-137	0				
Surr: Nitrobenzene-d5	2036	0	3217	0	63.3	37-107	0				

MSD				Sample ID: 14081279-03C MSD				Units: µg/Kg		Analysis Date: 8/29/2014 05:13 AM	
Client ID:			Run ID: SVMS4_140828A			SeqNo:2910196		Prep Date: 8/27/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1046	13	1324	0	79	45-110	1002	4.23	30		
Anthracene	1178	13	1324	0	89	55-105	1213	2.95	30		
Benzo(a)anthracene	1076	13	1324	0	81.3	50-110	1161	7.55	30		
Benzo(a)pyrene	1060	13	1324	0	80	50-110	1200	12.5	30		
Benzo(b)fluoranthene	1085	13	1324	0	81.9	45-115	1134	4.46	30		
Benzo(k)fluoranthene	1058	13	1324	0	79.9	45-115	1215	13.9	30		
Chrysene	1065	13	1324	0	80.4	55-110	1174	9.76	30		
Dibenzo(a,h)anthracene	1063	13	1324	0	80.3	40-125	1159	8.62	30		
Fluoranthene	1053	13	1324	0	79.5	55-115	1143	8.16	30		
Fluorene	1206	13	1324	0	91.1	50-110	1173	2.78	30		
Indeno(1,2,3-cd)pyrene	1160	13	1324	0	87.6	40-120	1220	5.01	30		
Naphthalene	1074	13	1324	0	81.1	40-105	1020	5.14	30		
Pyrene	1111	13	1324	0	83.9	45-125	1207	8.26	30		
Surr: 2-Fluorobiphenyl	2621	0	3309	0	79.2	12-100	2462	6.25	40		
Surr: 4-Terphenyl-d14	2799	0	3309	0	84.6	25-137	2900	3.53	40		
Surr: Nitrobenzene-d5	2196	0	3309	0	66.4	37-107	2036	7.55	40		

The following samples were analyzed in this batch:

14081253-01A 14081253-02A 14081253-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 14081253
 Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62013** Instrument ID **VMS8** Method: **SW8260B**

MBLK				Sample ID: MBLK-62013-62013				Units: µg/Kg			Analysis Date: 8/26/2014 02:01 AM		
Client ID:			Run ID: VMS8_140825A				SeqNo:2903848			Prep Date: 8/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	ND	30											
Ethylbenzene	ND	30											
m,p-Xylene	ND	60											
o-Xylene	ND	30											
Toluene	ND	30											
Xylenes, Total	ND	90											
Surr: 1,2-Dichloroethane-d4	996	0	1000	0	99.6	70-130	0						
Surr: 4-Bromofluorobenzene	980	0	1000	0	98	70-130	0						
Surr: Dibromofluoromethane	981.5	0	1000	0	98.2	70-130	0						
Surr: Toluene-d8	960.5	0	1000	0	96	70-130	0						

LCS				Sample ID: LCS-62013-62013			Units: µg/Kg		Analysis Date: 8/25/2014 11:34 PM		
Client ID:		Run ID: VMS8_140825A			SeqNo:2903847		Prep Date: 8/25/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1004	30	1000	0	100	75-125	0				
Ethylbenzene	1018	30	1000	0	102	75-125	0				
m,p-Xylene	2014	60	2000	0	101	80-125	0				
o-Xylene	1018	30	1000	0	102	75-125	0				
Toluene	1020	30	1000	0	102	70-125	0				
Xylenes, Total	3032	90	3000	0	101	75-125	0				
Surr: 1,2-Dichloroethane-d4	1007	0	1000	0	101	70-130	0				
Surr: 4-Bromofluorobenzene	998	0	1000	0	99.8	70-130	0				
Surr: Dibromofluoromethane	990	0	1000	0	99	70-130	0				
Surr: Toluene-d8	1000	0	1000	0	100	70-130	0				

MS					Sample ID: 14081188-56A MS			Units: µg/Kg		Analysis Date: 8/30/2014 09:23 PM	
Client ID:			Run ID: VMS7_140830A			SeqNo:2912006		Prep Date: 8/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	918.5	30	1000	0	91.8	75-125	0				
Ethylbenzene	845	30	1000	0	84.5	75-125	0				
m,p-Xylene	1640	60	2000	0	82	80-125	0				
o-Xylene	844	30	1000	0	84.4	75-125	0				
Toluene	829	30	1000	0	82.9	70-125	0				
Xylenes, Total	2484	90	3000	0	82.8	75-125	0				
Surr: 1,2-Dichloroethane-d4	821.5	0	1000	0	82.2	70-130	0				
Surr: 4-Bromofluorobenzene	1016	0	1000	0	102	70-130	0				
Surr: Dibromofluoromethane	927.5	0	1000	0	92.8	70-130	0				
Surr: Toluene-d8	931.5	0	1000	0	93.2	70-130	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62013** Instrument ID **VMS8** Method: **SW8260B**

MSD				Sample ID: 14081188-56A MSD				Units: µg/Kg		Analysis Date: 8/30/2014 09:48 PM	
Client ID:			Run ID: VMS7_140830A			SeqNo: 2912007		Prep Date: 8/25/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	896	30	1000	0	89.6	75-125	918.5	2.48	30		
Ethylbenzene	832.5	30	1000	0	83.2	75-125	845	1.49	30		
m,p-Xylene	1620	60	2000	0	81	80-125	1640	1.23	30		
o-Xylene	838.5	30	1000	0	83.8	75-125	844	0.654	30		
Toluene	818	30	1000	0	81.8	70-125	829	1.34	30		
Xylenes, Total	2458	90	3000	0	81.9	75-125	2484	1.03	30		
Surr: 1,2-Dichloroethane-d4	830.5	0	1000	0	83	70-130	821.5	1.09	30		
Surr: 4-Bromofluorobenzene	1005	0	1000	0	100	70-130	1016	1.04	30		
Surr: Dibromofluoromethane	936.5	0	1000	0	93.6	70-130	927.5	0.966	30		
Surr: Toluene-d8	931	0	1000	0	93.1	70-130	931.5	0.0537	30		

The following samples were analyzed in this batch: 14081253-01A 14081253-02A 14081253-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62046** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 14081254-01BDUP				Units: mmhos/cm @25°C		Analysis Date: 8/27/2014 12:30 PM		
Client ID:		Run ID: WETCHEM_140827G				SeqNo: 2906463		Prep Date: 8/27/2014		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	12.84	0.050	0	0	0		12.73	0.86	50	

The following samples were analyzed in this batch:

14081253-01B	14081253-02B	14081253-03B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62111** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-62111-62111				Units:s.u.			Analysis Date: 8/27/2014 12:50 PM		
Client ID:				Run ID: WETCHEM_140827L				SeqNo:2906816		Prep Date: 8/27/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH 3.95 0 4 0 98.8 90-110 0

DUP				Sample ID: 14081019-06B DUP				Units: s.u.		Analysis Date: 8/27/2014 12:50 PM			
Client ID:				Run ID: WETCHEM_140827L				SeqNo: 2906820		Prep Date: 8/27/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH 5.6 0 0 0 0 0-0 5.81 3.68 20

DUP				Sample ID: 14081276-01A DUP				Units: s.u.		Analysis Date: 8/27/2014 12:50 PM			
Client ID:				Run ID: WETCHEM_140827L				SeqNo: 2906829		Prep Date: 8/27/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH 8.41 0 0 0 0 0-0 8.18 2.77 20

The following samples were analyzed in this batch:

14081253-01A	14081253-02A	14081253-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **62193** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-62193-62193				Units: mg/Kg		Analysis Date: 8/28/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140828P				SeqNo: 2909053		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-62193-62193				Units: mg/Kg		Analysis Date: 8/28/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140828P				SeqNo: 2909052		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.768 0.50 2 0 88.4 80-120 0

MS		Sample ID: 14081320-51B MSI				Units: mg/Kg		Analysis Date: 8/28/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140828P				SeqNo: 2909038		Prep Date: 8/27/2014		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1070 50 1263 0 84.7 75-125 0

MS		Sample ID: 14081320-51BMS				Units: mg/Kg		Analysis Date: 8/28/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140828P				SeqNo: 2909040		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.9524 0.50 1.984 0 48 75-125 0 S

MSD		Sample ID: 14081320-51BMSD				Units: mg/Kg		Analysis Date: 8/28/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140828P				SeqNo: 2909041		Prep Date: 8/27/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.2024 0.50 1.984 0 10.2 75-125 0.9524 0 20 JS

The following samples were analyzed in this batch:

14081253-01A	14081253-02A	14081253-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 14081253
Project: Chevron AC McLaughlin 22 Spill 8.21.14

QC BATCH REPORT

Batch ID: **R147049** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS1-140827-R147049				Units: % of sample		Analysis Date: 8/26/2014 07:45 PM		
Client ID:		Run ID: MOIST_140826J				SeqNo: 2907132		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: WLCSS1-140827-R147049				Units: % of sample		Analysis Date: 8/26/2014 07:45 PM		
Client ID:		Run ID: MOIST_140826J				SeqNo: 2907133		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 99.92 0.050 100 0 99.9 99.5-100.5 0

DUP		Sample ID: 14081188-30B DUP				Units: % of sample		Analysis Date: 8/26/2014 07:45 PM		
Client ID:		Run ID: MOIST_140826J				SeqNo: 2907117		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 2.56 0.050 0 0 0 0-0 2.53 1.18 20

DUP		Sample ID: 14081221-04B DUP				Units: % of sample		Analysis Date: 8/26/2014 07:45 PM		
Client ID:		Run ID: MOIST_140826J				SeqNo: 2907120		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 6.09 0.050 0 0 0 0-0 5.96 2.16 20

The following samples were analyzed in this batch:

14081253-01A	14081253-02A	14081253-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **23-Aug-14 10:00**

Work Order: **14081253**

Received by: **KRW**

Checklist completed by <u>Keith Wurenga</u>	25-Aug-14	Reviewed by: <u>Ann Preston</u>	25-Aug-14
eSignature	Date	eSignature	Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>3.4 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>8/25/2014 8:34:46 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



25-Sep-2014

Tim Dobransky
Olsson Associates
760 Horizon Drive
Suite 102
Grand Junction, CO 81506

Re: **Chevron AC McLaughlin 22 Spill 9.11.14**

Work Order: **1409663**

Dear Tim,

ALS Environmental received 4 samples on 13-Sep-2014 10:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 30.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill 9.11.14
Work Order: 1409663

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1409663-01	ACM-SS4	Soil		9/11/2014 10:35	9/13/2014 10:45	<input type="checkbox"/>
1409663-02	ACM-SS3	Soil		9/11/2014 10:45	9/13/2014 10:45	<input type="checkbox"/>
1409663-03	ACM-SS2	Soil		9/11/2014 11:10	9/13/2014 10:45	<input type="checkbox"/>
1409663-04	ACM-SS1	Soil		9/11/2014 11:15	9/13/2014 10:45	<input type="checkbox"/>

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill 9.11.14
Work Order: 1409663

Case Narrative

Batch 62834 sample 1409663-01 through 1409663-04 reporting limits for Metals were elevated due to dilution for high concentrations of non-target analytes. The MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 62939 MS/MSD data for PAHs is not related to this project's samples. No data requires qualification.

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS4

Lab ID: 1409663-01

Collection Date: 9/11/2014 10:35 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	58		10	mg/Kg-dry	1	9/18/2014 10:55 PM
Surr: 4-Terphenyl-d14	68.7		39-133	%REC	1	9/18/2014 10:55 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		3.2	mg/Kg-dry	1	9/17/2014 01:21 AM
Surr: Toluene-d8	134		50-150	%REC	1	9/17/2014 01:21 AM
MERCURY BY CVAA						
Mercury	0.080		0.017	mg/Kg-dry	1	9/18/2014 02:42 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/17/14	Analyst: JEC
Calcium	45		5.0	mg/L	10	9/18/2014 12:06 PM
Magnesium	8.8		2.0	mg/L	10	9/18/2014 12:06 PM
Sodium	1,300		2.0	mg/L	10	9/18/2014 12:06 PM
METALS BY ICP-MS						
			SW6020A		Prep: SW3050B / 9/16/14	Analyst: ML
Arsenic	6.9		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Barium	100		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Cadmium	ND		0.73	mg/Kg-dry	4	9/17/2014 04:24 AM
Chromium	13		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Copper	13		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Lead	18		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Nickel	16		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Selenium	2.0		1.8	mg/Kg-dry	4	9/17/2014 05:55 PM
Silver	ND		1.8	mg/Kg-dry	4	9/17/2014 04:24 AM
Zinc	74		3.6	mg/Kg-dry	4	9/17/2014 04:24 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 9/17/14	Analyst: JEC
Sodium Adsorption Ratio	45		0.010	none	1	9/18/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/18/14	Analyst: RM
Acenaphthene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Anthracene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Benzo(a)anthracene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Benzo(a)pyrene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Benzo(b)fluoranthene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Benzo(k)fluoranthene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Chrysene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Dibenzo(a,h)anthracene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Fluoranthene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS4

Lab ID: 1409663-01

Collection Date: 9/11/2014 10:35 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Indeno(1,2,3-cd)pyrene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Naphthalene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Pyrene	ND		16	µg/Kg-dry	1	9/20/2014 12:43 PM
Surr: 2-Fluorobiphenyl	64.6		12-100	%REC	1	9/20/2014 12:43 PM
Surr: 4-Terphenyl-d14	90.5		25-137	%REC	1	9/20/2014 12:43 PM
Surr: Nitrobenzene-d5	57.1		37-107	%REC	1	9/20/2014 12:43 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/15/14		Analyst: RS
Benzene	ND		39	µg/Kg-dry	1	9/20/2014 05:08 AM
Ethylbenzene	ND		39	µg/Kg-dry	1	9/20/2014 05:08 AM
m,p-Xylene	ND		78	µg/Kg-dry	1	9/20/2014 05:08 AM
o-Xylene	ND		39	µg/Kg-dry	1	9/20/2014 05:08 AM
Toluene	ND		39	µg/Kg-dry	1	9/20/2014 05:08 AM
Xylenes, Total	ND		120	µg/Kg-dry	1	9/20/2014 05:08 AM
Surr: 1,2-Dichloroethane-d4	106		70-130	%REC	1	9/20/2014 05:08 AM
Surr: 4-Bromofluorobenzene	95.8		70-130	%REC	1	9/20/2014 05:08 AM
Surr: Dibromofluoromethane	101		70-130	%REC	1	9/20/2014 05:08 AM
Surr: Toluene-d8	94.6		70-130	%REC	1	9/20/2014 05:08 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 9/17/14		Analyst: JB
Electrical Conductivity @ Saturation	7.2		0.050	mmhos/cm @25	10	9/17/2014 02:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	12		0.65	mg/Kg-dry	1	9/19/2014 08:34 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/17/14		Analyst: MB
Chromium, Hexavalent	0.74		0.65	mg/Kg-dry	1	9/18/2014 04:00 PM
MOISTURE			A2540 G			Analyst: RLM
Moisture	23		0.050	% of sample	1	9/17/2014 10:18 AM
PH			SW9045D	Prep: EXTRACT / 9/17/14		Analyst: STP
pH	8.4			s.u.	1	9/17/2014 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS3

Lab ID: 1409663-02

Collection Date: 9/11/2014 10:45 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	27		10	mg/Kg-dry	1	9/18/2014 11:50 PM
Surr: 4-Terphenyl-d14	95.8		39-133	%REC	1	9/18/2014 11:50 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		3.0	mg/Kg-dry	1	9/17/2014 01:46 AM
Surr: Toluene-d8	111		50-150	%REC	1	9/17/2014 01:46 AM
MERCURY BY CVAA						
Mercury	0.020		0.016	mg/Kg-dry	1	9/18/2014 02:45 PM
SOLUBLE CATIONS FOR SAR						
Calcium	330		50	mg/L	100	9/18/2014 01:26 PM
Magnesium	58		20	mg/L	100	9/18/2014 01:26 PM
Sodium	4,700		20	mg/L	100	9/18/2014 01:26 PM
METALS BY ICP-MS						
Arsenic	7.1		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Barium	120		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Cadmium	ND		0.77	mg/Kg-dry	4	9/17/2014 04:30 AM
Chromium	12		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Copper	12		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Lead	17		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Nickel	16		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Selenium	2.2		1.9	mg/Kg-dry	4	9/17/2014 06:01 PM
Silver	ND		1.9	mg/Kg-dry	4	9/17/2014 04:30 AM
Zinc	72		3.8	mg/Kg-dry	4	9/17/2014 04:30 AM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	62		0.010	none	1	9/18/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Anthracene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Benzo(a)anthracene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Benzo(a)pyrene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Benzo(b)fluoranthene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Benzo(k)fluoranthene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Chrysene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Dibenzo(a,h)anthracene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Fluoranthene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS3

Lab ID: 1409663-02

Collection Date: 9/11/2014 10:45 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Indeno(1,2,3-cd)pyrene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Naphthalene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Pyrene	ND		16	µg/Kg-dry	1	9/20/2014 12:21 PM
Surr: 2-Fluorobiphenyl	76.1		12-100	%REC	1	9/20/2014 12:21 PM
Surr: 4-Terphenyl-d14	109		25-137	%REC	1	9/20/2014 12:21 PM
Surr: Nitrobenzene-d5	71.2		37-107	%REC	1	9/20/2014 12:21 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/15/14		Analyst: RS
Benzene	ND		36	µg/Kg-dry	1	9/20/2014 05:33 AM
Ethylbenzene	ND		36	µg/Kg-dry	1	9/20/2014 05:33 AM
m,p-Xylene	ND		73	µg/Kg-dry	1	9/20/2014 05:33 AM
o-Xylene	ND		36	µg/Kg-dry	1	9/20/2014 05:33 AM
Toluene	ND		36	µg/Kg-dry	1	9/20/2014 05:33 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	9/20/2014 05:33 AM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	9/20/2014 05:33 AM
Surr: 4-Bromofluorobenzene	94.4		70-130	%REC	1	9/20/2014 05:33 AM
Surr: Dibromofluoromethane	101		70-130	%REC	1	9/20/2014 05:33 AM
Surr: Toluene-d8	93.8		70-130	%REC	1	9/20/2014 05:33 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 9/17/14		Analyst: JB
Electrical Conductivity @ Saturation	27		0.050	mmhos/cm @25	10	9/17/2014 02:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	11		0.61	mg/Kg-dry	1	9/19/2014 08:34 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/17/14		Analyst: MB
Chromium, Hexavalent	ND		0.61	mg/Kg-dry	1	9/18/2014 04:00 PM
MOISTURE			A2540 G			Analyst: RLM
Moisture	18		0.050	% of sample	1	9/17/2014 10:18 AM
PH			SW9045D	Prep: EXTRACT / 9/17/14		Analyst: STP
pH	8.2			s.u.	1	9/17/2014 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS2

Lab ID: 1409663-03

Collection Date: 9/11/2014 11:10 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	46		20	mg/Kg-dry	1	9/19/2014 12:18 PM
Surr: 4-Terphenyl-d14	87.7		39-133	%REC	1	9/19/2014 12:18 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		3.5	mg/Kg-dry	1	9/17/2014 02:12 AM
Surr: Toluene-d8	137		50-150	%REC	1	9/17/2014 02:12 AM
MERCURY BY CVAA						
Mercury	0.020		0.018	mg/Kg-dry	1	9/18/2014 02:47 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/17/14	Analyst: JEC
Calcium	120		5.0	mg/L	10	9/18/2014 12:16 PM
Magnesium	28		2.0	mg/L	10	9/18/2014 12:16 PM
Sodium	2,000		2.0	mg/L	10	9/18/2014 12:16 PM
METALS BY ICP-MS						
			SW6020A		Prep: SW3050B / 9/16/14	Analyst: ML
Arsenic	5.8		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Barium	85		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Cadmium	ND		0.74	mg/Kg-dry	4	9/17/2014 04:36 AM
Chromium	8.9		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Copper	10		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Lead	13		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Nickel	13		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Selenium	2.5		1.9	mg/Kg-dry	4	9/17/2014 06:07 PM
Silver	ND		1.9	mg/Kg-dry	4	9/17/2014 04:36 AM
Zinc	60		3.7	mg/Kg-dry	4	9/17/2014 04:36 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 9/17/14	Analyst: JEC
Sodium Adsorption Ratio	43		0.010	none	1	9/18/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/23/14	Analyst: RM
Acenaphthene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Anthracene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Benzo(a)anthracene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Benzo(a)pyrene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Benzo(b)fluoranthene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Benzo(k)fluoranthene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Chrysene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Dibenzo(a,h)anthracene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Fluoranthene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS2

Lab ID: 1409663-03

Collection Date: 9/11/2014 11:10 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Indeno(1,2,3-cd)pyrene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Naphthalene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Pyrene	ND		9.2	µg/Kg-dry	1	9/24/2014 12:52 PM
Surr: 2-Fluorobiphenyl	44.1		12-100	%REC	1	9/24/2014 12:52 PM
Surr: 4-Terphenyl-d14	53.5		25-137	%REC	1	9/24/2014 12:52 PM
Surr: Nitrobenzene-d5	52.9		37-107	%REC	1	9/24/2014 12:52 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/15/14		Analyst: RS
Benzene	ND		42	µg/Kg-dry	1	9/20/2014 05:58 AM
Ethylbenzene	ND		42	µg/Kg-dry	1	9/20/2014 05:58 AM
m,p-Xylene	ND		84	µg/Kg-dry	1	9/20/2014 05:58 AM
o-Xylene	ND		42	µg/Kg-dry	1	9/20/2014 05:58 AM
Toluene	ND		42	µg/Kg-dry	1	9/20/2014 05:58 AM
Xylenes, Total	ND		130	µg/Kg-dry	1	9/20/2014 05:58 AM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	9/20/2014 05:58 AM
Surr: 4-Bromofluorobenzene	95.4		70-130	%REC	1	9/20/2014 05:58 AM
Surr: Dibromofluoromethane	99.9		70-130	%REC	1	9/20/2014 05:58 AM
Surr: Toluene-d8	94.7		70-130	%REC	1	9/20/2014 05:58 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 9/17/14		Analyst: JB
Electrical Conductivity @ Saturation	12		0.25	mmhos/cm @25	50	9/17/2014 02:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	8.7		0.70	mg/Kg-dry	1	9/19/2014 08:34 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/17/14		Analyst: MB
Chromium, Hexavalent	ND		0.69	mg/Kg-dry	1	9/18/2014 04:00 PM
MOISTURE			A2540 G			Analyst: RLM
Moisture	28		0.050	% of sample	1	9/17/2014 10:18 AM
PH			SW9045D	Prep: EXTRACT / 9/17/14		Analyst: STP
pH	8.4			s.u.	1	9/17/2014 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS1

Lab ID: 1409663-04

Collection Date: 9/11/2014 11:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	39		10	mg/Kg-dry	1	9/19/2014 12:45 PM
Surr: 4-Terphenyl-d14	78.5		39-133	%REC	1	9/19/2014 12:45 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		3.1	mg/Kg-dry	1	9/17/2014 02:37 AM
Surr: Toluene-d8	111		50-150	%REC	1	9/17/2014 02:37 AM
MERCURY BY CVAA						
Mercury	0.018		0.016	mg/Kg-dry	1	9/18/2014 02:56 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 9/17/14	Analyst: JEC
Calcium	690		5.0	mg/L	10	9/18/2014 12:21 PM
Magnesium	190		2.0	mg/L	10	9/18/2014 12:21 PM
Sodium	700		2.0	mg/L	10	9/18/2014 12:21 PM
METALS BY ICP-MS						
			SW6020A		Prep: SW3050B / 9/16/14	Analyst: ML
Arsenic	8.2		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Barium	190		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Cadmium	ND		0.69	mg/Kg-dry	4	9/17/2014 04:43 AM
Chromium	9.0		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Copper	7.9		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Lead	9.4		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Nickel	12		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Selenium	3.2		1.7	mg/Kg-dry	4	9/17/2014 06:13 PM
Silver	ND		1.7	mg/Kg-dry	4	9/17/2014 04:43 AM
Zinc	41		3.5	mg/Kg-dry	4	9/17/2014 04:43 AM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 9/17/14	Analyst: JEC
Sodium Adsorption Ratio	6.1		0.010	none	1	9/18/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 9/18/14	Analyst: RM
Acenaphthene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Anthracene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Benzo(a)anthracene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Benzo(a)pyrene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Benzo(b)fluoranthene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Benzo(k)fluoranthene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Chrysene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Dibenzo(a,h)anthracene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Fluoranthene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill 9.11.14

Work Order: 1409663

Sample ID: ACM-SS1

Lab ID: 1409663-04

Collection Date: 9/11/2014 11:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Indeno(1,2,3-cd)pyrene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Naphthalene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Pyrene	ND		16	µg/Kg-dry	1	9/19/2014 11:38 PM
Surr: 2-Fluorobiphenyl	68.3		12-100	%REC	1	9/19/2014 11:38 PM
Surr: 4-Terphenyl-d14	98.9		25-137	%REC	1	9/19/2014 11:38 PM
Surr: Nitrobenzene-d5	64.8		37-107	%REC	1	9/19/2014 11:38 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 9/15/14		Analyst: RS
Benzene	ND		37	µg/Kg-dry	1	9/20/2014 06:22 AM
Ethylbenzene	ND		37	µg/Kg-dry	1	9/20/2014 06:22 AM
m,p-Xylene	ND		74	µg/Kg-dry	1	9/20/2014 06:22 AM
o-Xylene	ND		37	µg/Kg-dry	1	9/20/2014 06:22 AM
Toluene	ND		37	µg/Kg-dry	1	9/20/2014 06:22 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	9/20/2014 06:22 AM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	9/20/2014 06:22 AM
Surr: 4-Bromofluorobenzene	95.9		70-130	%REC	1	9/20/2014 06:22 AM
Surr: Dibromofluoromethane	98.8		70-130	%REC	1	9/20/2014 06:22 AM
Surr: Toluene-d8	95.1		70-130	%REC	1	9/20/2014 06:22 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 9/17/14		Analyst: JB
Electrical Conductivity @ Saturation	9.4		0.050	mmhos/cm @25	10	9/17/2014 02:00 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: JJG
Chromium, Trivalent	9.0		0.61	mg/Kg-dry	1	9/19/2014 08:34 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 9/17/14		Analyst: MB
Chromium, Hexavalent	ND		0.60	mg/Kg-dry	1	9/18/2014 04:00 PM
MOISTURE			A2540 G			Analyst: RLM
Moisture	19		0.050	% of sample	1	9/17/2014 10:18 AM
PH			SW9045D	Prep: EXTRACT / 9/17/14		Analyst: STP
pH	8.1			s.u.	1	9/17/2014 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 25-Sep-14

Client: Olsson Associates

Work Order: 1409663

Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62901**

Instrument ID **GC8**

Method: **SW8015C**

MBLK		Sample ID: DBLKS1-62901-62901				Units: mg/Kg		Analysis Date: 9/18/2014 06:47 PM		
Client ID:		Run ID: GC8_140918A				SeqNo: 2942820		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.59	0	2	0	79.5	39-133		0		

LCS		Sample ID: DLCSS1-62901-62901				Units: mg/Kg		Analysis Date: 9/18/2014 07:15 PM		
Client ID:		Run ID: GC8_140918A				SeqNo: 2942822		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	162.5	5.0	200	0	81.3	61-109		0		
Surr: 4-Terphenyl-d14	1.542	0	2	0	77.1	39-133		0		

MS		Sample ID: 1409642-01B MS				Units: mg/Kg		Analysis Date: 9/18/2014 07:43 PM		
Client ID:		Run ID: GC8_140918A				SeqNo: 2942824		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	253.1	8.1	325.9	6.942	75.5	48-110		0		
Surr: 4-Terphenyl-d14	2.38	0	3.259	0	73	39-133		0		

MSD		Sample ID: 1409642-01B MSD				Units: mg/Kg		Analysis Date: 9/18/2014 08:10 PM		
Client ID:		Run ID: GC8_140918A				SeqNo: 2942826		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	260.7	8.1	323.6	6.942	78.4	48-110	253.1	2.98	30	
Surr: 4-Terphenyl-d14	2.403	0	3.236	0	74.3	39-133	2.38	0.976	30	

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1409663
 Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62789** Instrument ID **GC9** Method: **SW8015**

MBLK		Sample ID: MBLK-62789-62789				Units: µg/Kg		Analysis Date: 9/16/2014 04:03 PM		
Client ID:		Run ID: GC9_140916B				SeqNo: 2938454		Prep Date: 9/15/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	5816	0	5000	0	116	50-150	0			

LCS		Sample ID: LCS-62789-62789				Units: µg/Kg		Analysis Date: 9/16/2014 03:12 PM		
Client ID:		Run ID: GC9_140916B				SeqNo: 2938452		Prep Date: 9/15/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	524400	2,500	500000	0	105	70-130	0			
Surr: Toluene-d8	4586	0	5000	0	91.7	50-150	0			

MS		Sample ID: 1409631-02B MS				Units: µg/Kg		Analysis Date: 9/17/2014 04:37 PM		
Client ID:		Run ID: GC9_140917A				SeqNo: 2940484		Prep Date: 9/15/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	488600	2,500	500000	0	97.7	70-130	0			
Surr: Toluene-d8	5802	0	5000	0	116	50-150	0			

MSD		Sample ID: 1409631-02B MSD				Units: µg/Kg		Analysis Date: 9/17/2014 05:02 PM		
Client ID:		Run ID: GC9_140917A				SeqNo: 2940486		Prep Date: 9/15/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	489900	2,500	500000	0	98	70-130	488600	0.272	30	
Surr: Toluene-d8	5822	0	5000	0	116	50-150	5802	0.335	30	

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62905** Instrument ID **HG1** Method: **SW7471**

Sample ID: MBLK-62905-62905					Units: mg/Kg		Analysis Date: 9/18/2014 02:01 PM				
Client ID:			Run ID: HG1_140918A			SeqNo: 2941527		Prep Date: 9/18/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.0015	0.020								J	

LCS		Sample ID: LCS-62905-62905				Units:mg/Kg		Analysis Date: 9/18/2014 02:03 PM		
Client ID:		Run ID: HG1_140918A			SeqNo:2941528		Prep Date: 9/18/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1686	0.020	0.1665	0	101	80-120	0			

MS	Sample ID: 1409643-14BMS					Units:mg/Kg		Analysis Date: 9/18/2014 02:29 PM		
	Client ID:		Run ID: HG1_140918A			SeqNo:2941541		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1394	0.013	0.1089	0.02222	108	75-125	0			

MSD				Sample ID: 1409643-14BMSD				Units:mg/Kg		Analysis Date: 9/18/2014 02:31 PM			
Client ID:				Run ID: HG1_140918A				SeqNo:2941542		Prep Date: 9/18/2014		DF: 1	
Analyte				Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury				0.1405	0.013	0.1105	0.02222	107	75-125	0.1394	0.839	35	

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62834** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK		Sample ID: MBLK-62834-62834				Units: mg/Kg		Analysis Date: 9/17/2014 01:38 AM		
Client ID:		Run ID: ICPMS1_140916A				SeqNo: 2938695		Prep Date: 9/16/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	0.00115	0.10								J
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.1326	0.50								J

LCS		Sample ID: LCS-62834-62834				Units: mg/Kg		Analysis Date: 9/17/2014 01:44 AM		
Client ID:		Run ID: ICPMS1_140916A				SeqNo: 2938696		Prep Date: 9/16/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.328	0.25	5	0	86.6	80-120	0			
Barium	4.52	0.25	5	0	90.4	80-120	0			
Cadmium	4.59	0.10	5	0	91.8	80-120	0			
Chromium	4.779	0.25	5	0	95.6	80-120	0			
Copper	4.716	0.25	5	0	94.3	80-120	0			
Lead	4.549	0.25	5	0	91	80-120	0			
Nickel	4.803	0.25	5	0	96.1	80-120	0			
Selenium	4.134	0.25	5	0	82.7	80-120	0			
Silver	4.772	0.25	5	0	95.4	80-120	0			
Zinc	4.772	0.50	5	0	95.4	80-120	0			

MS		Sample ID: 1409656-01AMS				Units: mg/Kg		Analysis Date: 9/17/2014 03:16 AM		
Client ID:		Run ID: ICPMS1_140916A				SeqNo: 2938721		Prep Date: 9/16/2014		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.39	1.3	6.676	4.525	133	75-125	0			S
Barium	51.78	1.3	6.676	40.32	172	75-125	0			SO
Cadmium	7.02	0.53	6.676	0.6186	95.9	75-125	0			
Copper	56.05	1.3	6.676	62.52	-96.9	75-125	0			SO
Lead	21.34	1.3	6.676	12.54	132	75-125	0			S
Nickel	34.66	1.3	6.676	19.37	229	75-125	0			S
Selenium	6.87	1.3	6.676	1.393	82	75-125	0			
Silver	6.008	1.3	6.676	0.1461	87.8	75-125	0			
Zinc	223.9	2.7	6.676	153.3	1060	75-125	0			SO

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62834** Instrument ID **ICPMS1** Method: **SW6020A**

MS		Sample ID: 1409656-01AMS				Units: mg/Kg		Analysis Date: 9/17/2014 05:37 PM		
Client ID:		Run ID: ICPMS1_140917A				SeqNo: 2940099		Prep Date: 9/16/2014		DF: 40
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	1034	13	6.676	589.9	6650	75-125	0			SO

MSD		Sample ID: 1409656-01AMSD				Units: mg/Kg		Analysis Date: 9/17/2014 03:22 AM		
Client ID:		Run ID: ICPMS1_140916A				SeqNo: 2938722		Prep Date: 9/16/2014		DF: 4
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.31	1.3	6.729	4.525	101	75-125	13.39	16.8	25	
Barium	47.16	1.3	6.729	40.32	102	75-125	51.78	9.33	25	O
Cadmium	7.101	0.54	6.729	0.6186	96.3	75-125	7.02	1.15	25	
Copper	52.6	1.3	6.729	62.52	-147	75-125	56.05	6.35	25	SO
Lead	22.72	1.3	6.729	12.54	151	75-125	21.34	6.26	25	S
Nickel	24.31	1.3	6.729	19.37	73.5	75-125	34.66	35.1	25	SR
Selenium	6.711	1.3	6.729	1.393	79	75-125	6.87	2.35	25	
Silver	5.865	1.3	6.729	0.1461	85	75-125	6.008	2.4	25	
Zinc	184.2	2.7	6.729	153.3	460	75-125	223.9	19.4	25	SO

MSD		Sample ID: 1409656-01AMSD				Units: mg/Kg		Analysis Date: 9/17/2014 05:43 PM		
Client ID:		Run ID: ICPMS1_140917A				SeqNo: 2940100		Prep Date: 9/16/2014		DF: 40
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	610.2	13	6.729	589.9	302	75-125	1034	51.6	25	SRO

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62939** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-62939-62939				Units: µg/Kg		Analysis Date: 9/19/2014 05:38 PM		
Client ID:		Run ID: SVMS5_140919A				SeqNo: 2945712		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	1494	0	1667	0	89.6	12-100	0			
Surr: 4-Terphenyl-d14	2035	0	1667	0	122	25-137	0			
Surr: Nitrobenzene-d5	1306	0	1667	0	78.4	37-107	0			

LCS		Sample ID: SLCSS1-62939-62939				Units: µg/Kg		Analysis Date: 9/19/2014 06:00 PM		
Client ID:		Run ID: SVMS5_140919A				SeqNo: 2945714		Prep Date: 9/18/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Anthracene	688.3	6.7	666.7	0	103	55-105	0			
Benzo(a)anthracene	714	6.7	666.7	0	107	50-110	0			
Benzo(a)pyrene	722	6.7	666.7	0	108	50-110	0			
Benzo(b)fluoranthene	730	6.7	666.7	0	109	45-115	0			
Benzo(k)fluoranthene	724	6.7	666.7	0	109	45-115	0			
Chrysene	729.3	6.7	666.7	0	109	55-110	0			
Dibenzo(a,h)anthracene	669.3	6.7	666.7	0	100	40-125	0			
Fluoranthene	712	6.7	666.7	0	107	55-115	0			
Fluorene	598.3	6.7	666.7	0	89.7	50-110	0			
Indeno(1,2,3-cd)pyrene	636	6.7	666.7	0	95.4	40-120	0			
Naphthalene	696	6.7	666.7	0	104	40-105	0			
Pyrene	771	6.7	666.7	0	116	45-125	0			
Surr: 2-Fluorobiphenyl	1193	0	1667	0	71.6	12-100	0			
Surr: 4-Terphenyl-d14	1733	0	1667	0	104	25-137	0			
Surr: Nitrobenzene-d5	1421	0	1667	0	85.2	37-107	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1409663
 Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: 62939 Instrument ID SVMS5 Method: SW846 8270D

MS				Sample ID: 1409728-02A MS			Units: µg/Kg		Analysis Date: 9/19/2014 06:55 PM		
Client ID:			Run ID: SVMS5_140919A			SeqNo:2945716		Prep Date: 9/18/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Anthracene	1951	18	1838	0	106	55-105	0			S	
Benzo(a)anthracene	1915	18	1838	26.1	103	50-110	0				
Benzo(a)pyrene	1944	18	1838	0	106	50-110	0				
Benzo(b)fluoranthene	1988	18	1838	0	108	45-115	0				
Benzo(k)fluoranthene	2010	18	1838	0	109	45-115	0				
Chrysene	1953	18	1838	0	106	55-110	0				
Dibenzo(a,h)anthracene	1858	18	1838	0	101	40-125	0				
Fluoranthene	1993	18	1838	0	108	55-115	0				
Fluorene	1832	18	1838	0	99.6	50-110	0				
Indeno(1,2,3-cd)pyrene	1805	18	1838	0	98.2	40-120	0				
Naphthalene	1643	18	1838	0	89.4	40-105	0				
Pyrene	2021	18	1838	0	110	45-125	0				
Surr: 2-Fluorobiphenyl	3624	0	4596	0	78.9	12-100	0				
Surr: 4-Terphenyl-d14	4542	0	4596	0	98.8	25-137	0				
Surr: Nitrobenzene-d5	3391	0	4596	0	73.8	37-107	0				

MSD				Sample ID: 1409728-02A MSD				Units: µg/Kg		Analysis Date: 9/19/2014 07:17 PM	
Client ID:			Run ID: SVMS5_140919A			SeqNo:2945717		Prep Date: 9/18/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Anthracene	2008	19	1910	0	105	55-105	1951	2.86	30	S	
Benzo(a)anthracene	2099	19	1910	26.1	108	50-110	1915	9.17	30		
Benzo(a)pyrene	2070	19	1910	0	108	50-110	1944	6.28	30		
Benzo(b)fluoranthene	2093	19	1910	0	110	45-115	1988	5.14	30		
Benzo(k)fluoranthene	2098	19	1910	0	110	45-115	2010	4.26	30		
Chrysene	2004	19	1910	0	105	55-110	1953	2.57	30		
Dibenzo(a,h)anthracene	2001	19	1910	0	105	40-125	1858	7.39	30		
Fluoranthene	2081	19	1910	0	109	55-115	1993	4.36	30		
Fluorene	2100	19	1910	0	110	50-110	1832	13.6	30		
Indeno(1,2,3-cd)pyrene	1960	19	1910	0	103	40-120	1805	8.23	30		
Naphthalene	1730	19	1910	0	90.5	40-105	1643	5.13	30		
Pyrene	2193	19	1910	0	115	45-125	2021	8.16	30		
Surr: 2-Fluorobiphenyl	4057	0	4776	0	84.9	12-100	3624	11.3	40		
Surr: 4-Terphenyl-d14	4838	0	4776	0	101	25-137	4542	6.31	40		
Surr: Nitrobenzene-d5	3679	0	4776	0	77	37-107	3391	8.17	40		

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1409663
 Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **63071** Instrument ID **SVMS4** Method: **SW846 8270D**

MBLK				Sample ID: SBLKS1-63071-63071			Units: µg/Kg		Analysis Date: 9/23/2014 09:18 PM		
Client ID:			Run ID: SVMS4_140923A			SeqNo:2951173		Prep Date: 9/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	ND	6.7									
Anthracene	ND	6.7									
Benzo(a)anthracene	ND	6.7									
Benzo(a)pyrene	ND	6.7									
Benzo(b)fluoranthene	ND	6.7									
Benzo(k)fluoranthene	ND	6.7									
Chrysene	ND	6.7									
Dibenzo(a,h)anthracene	ND	6.7									
Fluoranthene	ND	6.7									
Fluorene	ND	6.7									
Indeno(1,2,3-cd)pyrene	ND	6.7									
Naphthalene	ND	6.7									
Pyrene	ND	6.7									
Surr: 2-Fluorobiphenyl	1384	0	1667	0	83.1	12-100		0			
Surr: 4-Terphenyl-d14	1708	0	1667	0	102	25-137		0			
Surr: Nitrobenzene-d5	1307	0	1667	0	78.4	37-107		0			

LCS		Sample ID: SLCSS1-63071-63071				Units: µg/Kg		Analysis Date: 9/23/2014 09:44 PM		
Client ID:		Run ID: SVMS4_140923A			SeqNo:2951174		Prep Date: 9/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	563.7	6.7	666.7	0	84.5	45-110	0			
Anthracene	662.3	6.7	666.7	0	99.3	55-105	0			
Benzo(a)anthracene	635	6.7	666.7	0	95.2	50-110	0			
Benzo(a)pyrene	657	6.7	666.7	0	98.5	50-110	0			
Benzo(b)fluoranthene	654.7	6.7	666.7	0	98.2	45-115	0			
Benzo(k)fluoranthene	693	6.7	666.7	0	104	45-115	0			
Chrysene	680.7	6.7	666.7	0	102	55-110	0			
Dibenzo(a,h)anthracene	685.7	6.7	666.7	0	103	40-125	0			
Fluoranthene	641.7	6.7	666.7	0	96.2	55-115	0			
Fluorene	590.3	6.7	666.7	0	88.5	50-110	0			
Indeno(1,2,3-cd)pyrene	666.7	6.7	666.7	0	100	40-120	0			
Naphthalene	564	6.7	666.7	0	84.6	40-105	0			
Pyrene	721.7	6.7	666.7	0	108	45-125	0			
Surr: 2-Fluorobiphenyl	1395	0	1667	0	83.7	12-100	0			
Surr: 4-Terphenyl-d14	1792	0	1667	0	108	25-137	0			
Surr: Nitrobenzene-d5	1362	0	1667	0	81.7	37-107	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
 Work Order: 1409663
 Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: 63071 Instrument ID SVMS4 Method: SW846 8270D

MS				Sample ID: 1409959-01A MS			Units: µg/Kg		Analysis Date: 9/23/2014 10:10 PM		
Client ID:		Run ID: SVMS4_140923A			SeqNo:2951175		Prep Date: 9/23/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1587	20	1973	0	80.4	45-110	0				
Anthracene	1933	20	1973	0	97.9	55-105	0				
Benzo(a)anthracene	1854	20	1973	42.16	91.8	50-110	0				
Benzo(a)pyrene	1985	20	1973	0	101	50-110	0				
Benzo(b)fluoranthene	2068	20	1973	0	105	45-115	0				
Benzo(k)fluoranthene	2145	20	1973	0	109	45-115	0				
Chrysene	1956	20	1973	0	99.1	55-110	0				
Dibenzo(a,h)anthracene	1931	20	1973	56.82	95	40-125	0				
Fluoranthene	1946	20	1973	0	98.6	55-115	0				
Fluorene	1699	20	1973	0	86.1	50-110	0				
Indeno(1,2,3-cd)pyrene	1992	20	1973	111.8	95.3	40-120	0				
Naphthalene	1552	20	1973	0	78.6	40-105	0				
Pyrene	1974	20	1973	0	100	45-125	0				
Surr: 2-Fluorobiphenyl	3790	0	4933	0	76.8	12-100	0				
Surr: 4-Terphenyl-d14	4781	0	4933	0	96.9	25-137	0				
Surr: Nitrobenzene-d5	3650	0	4933	0	74	37-107	0				

MSD				Sample ID: 1409959-01A MSD				Units: µg/Kg		Analysis Date: 9/23/2014 10:36 PM	
Client ID:			Run ID: SVMS4_140923A			SeqNo:2951176		Prep Date: 9/23/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1540	19	1891	0	81.4	45-110	1587	3.01	30		
Anthracene	1898	19	1891	0	100	55-105	1933	1.78	30		
Benzo(a)anthracene	1807	19	1891	42.16	93.3	50-110	1854	2.56	30		
Benzo(a)pyrene	1863	19	1891	0	98.5	50-110	1985	6.31	30		
Benzo(b)fluoranthene	1993	19	1891	0	105	45-115	2068	3.68	30		
Benzo(k)fluoranthene	1983	19	1891	0	105	45-115	2145	7.85	30		
Chrysene	1855	19	1891	0	98.1	55-110	1956	5.31	30		
Dibenzo(a,h)anthracene	1822	19	1891	56.82	93.3	40-125	1931	5.79	30		
Fluoranthene	1870	19	1891	0	98.9	55-115	1946	4	30		
Fluorene	1636	19	1891	0	86.5	50-110	1699	3.79	30		
Indeno(1,2,3-cd)pyrene	1829	19	1891	111.8	90.8	40-120	1992	8.49	30		
Naphthalene	1513	19	1891	0	80	40-105	1552	2.55	30		
Pyrene	1933	19	1891	0	102	45-125	1974	2.07	30		
Surr: 2-Fluorobiphenyl	3552	0	4727	0	75.1	12-100	3790	6.48	40		
Surr: 4-Terphenyl-d14	4558	0	4727	0	96.4	25-137	4781	4.77	40		
Surr: Nitrobenzene-d5	3540	0	4727	0	74.9	37-107	3650	3.07	40		

The following samples were analyzed in this batch:

1409663-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62791** Instrument ID **VMS8** Method: **SW8260B**

MBLK				Sample ID: MBLK-62791-62791				Units: µg/Kg			Analysis Date: 9/16/2014 05:38 AM		
Client ID:			Run ID: VMS8_140915B				SeqNo:2937095			Prep Date: 9/15/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	ND	30											
Ethylbenzene	ND	30											
m,p-Xylene	ND	60											
o-Xylene	ND	30											
Toluene	ND	30											
Xylenes, Total	ND	90											
Surr: 1,2-Dichloroethane-d4	989	0	1000	0	98.9	70-130		0					
Surr: 4-Bromofluorobenzene	936	0	1000	0	93.6	70-130		0					
Surr: Dibromofluoromethane	997	0	1000	0	99.7	70-130		0					
Surr: Toluene-d8	913	0	1000	0	91.3	70-130		0					

LCS				Sample ID: LCS-62791-62791			Units: µg/Kg		Analysis Date: 9/16/2014 01:34 AM		
Client ID:			Run ID: VMS8_140915B			SeqNo:2937093		Prep Date: 9/15/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1006	30	1000	0	101	75-125	0				
Ethylbenzene	1036	30	1000	0	104	75-125	0				
m,p-Xylene	2077	60	2000	0	104	80-125	0				
o-Xylene	1038	30	1000	0	104	75-125	0				
Toluene	985.5	30	1000	0	98.6	70-125	0				
Xylenes, Total	3116	90	3000	0	104	75-125	0				
Surr: 1,2-Dichloroethane-d4	975.5	0	1000	0	97.6	70-130	0				
Surr: 4-Bromofluorobenzene	1024	0	1000	0	102	70-130	0				
Surr: Dibromofluoromethane	1005	0	1000	0	100	70-130	0				
Surr: Toluene-d8	959	0	1000	0	95.9	70-130	0				

MS					Sample ID: 1409667-02A MS			Units: µg/Kg		Analysis Date: 9/18/2014 11:47 AM	
Client ID:			Run ID: VMS8_140917B			SeqNo:2940997		Prep Date: 9/15/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	955.5	30	1000	0	95.6	75-125	0				
Ethylbenzene	924.5	30	1000	0	92.4	75-125	0				
m,p-Xylene	1879	60	2000	0	94	80-125	0				
o-Xylene	938	30	1000	0	93.8	75-125	0				
Toluene	870.5	30	1000	0	87	70-125	0				
Xylenes, Total	2817	90	3000	0	93.9	75-125	0				
Surr: 1,2-Dichloroethane-d4	980.5	0	1000	0	98	70-130	0				
Surr: 4-Bromofluorobenzene	984	0	1000	0	98.4	70-130	0				
Surr: Dibromofluoromethane	1025	0	1000	0	102	70-130	0				
Surr: Toluene-d8	907.5	0	1000	0	90.8	70-130	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62791** Instrument ID **VMS8** Method: **SW8260B**

MSD				Sample ID: 1409667-02A MSD			Units: µg/Kg		Analysis Date: 9/18/2014 12:12 PM	
Client ID:				Run ID: VMS8_140917B			SeqNo: 2941000		Prep Date: 9/15/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	902	30	1000	0	90.2	75-125	955.5	5.76	30	
Ethylbenzene	933	30	1000	0	93.3	75-125	924.5	0.915	30	
m,p-Xylene	1846	60	2000	0	92.3	80-125	1879	1.8	30	
o-Xylene	942	30	1000	0	94.2	75-125	938	0.426	30	
Toluene	879	30	1000	0	87.9	70-125	870.5	0.972	30	
Xylenes, Total	2788	90	3000	0	92.9	75-125	2817	1.05	30	
Surr: 1,2-Dichloroethane-d4	957	0	1000	0	95.7	70-130	980.5	2.43	30	
Surr: 4-Bromofluorobenzene	999	0	1000	0	99.9	70-130	984	1.51	30	
Surr: Dibromofluoromethane	975.5	0	1000	0	97.6	70-130	1025	4.95	30	
Surr: Toluene-d8	893.5	0	1000	0	89.4	70-130	907.5	1.55	30	

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62793** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 1409667-02B DUP				Units: mmhos/cm @25°C		Analysis Date: 9/17/2014 02:00 PM			
Client ID:		Run ID: WETCHEM_1409171				SeqNo: 2939237		Prep Date: 9/17/2014		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Electrical Conductivity @ Saturation	39.1	0.050	0	0	0		40.4	3.27	50		

The following samples were analyzed in this batch:

1409663-01B	1409663-02B	1409663-03B
1409663-04B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62871** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-R148365-62871				Units:s.u.		Analysis Date: 9/17/2014 01:00 PM				
Client ID:				Run ID: WETCHEM_140917Q				SeqNo:2939720		Prep Date: 9/17/2014		DF: 1		
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH 4 0 4 0 100 90-110 0

DUP				Sample ID: 1409663-03A DUP				Units: s.u.		Analysis Date: 9/17/2014 01:00 PM			
Client ID: ACM-SS2				Run ID: WETCHEM_140917Q				SeqNo: 2939724		Prep Date: 9/17/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH 8.39 0 0 0 0 0-0 8.4 0.119 20

DUP				Sample ID: 1409739-02B DUP				Units: s.u.		Analysis Date: 9/17/2014 01:00 PM			
Client ID:				Run ID: WETCHEM_140917Q				SeqNo: 2939732		Prep Date: 9/17/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		

pH 8.71 0 0 0 0 0-0 8.7 0.115 20

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **62951** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-62951-62951				Units: mg/Kg		Analysis Date: 9/18/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140918K				SeqNo: 2941981		Prep Date: 9/17/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-62951-62951				Units: mg/Kg		Analysis Date: 9/18/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140918K				SeqNo: 2941980		Prep Date: 9/17/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.72 0.50 2 0 86 80-120 0

MS		Sample ID: 1409667-03A MS				Units: mg/Kg		Analysis Date: 9/18/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140918K				SeqNo: 2941973		Prep Date: 9/17/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.765 0.50 1.992 0.164 80.4 75-125 0

MS		Sample ID: 1409667-03A MSI				Units: mg/Kg		Analysis Date: 9/18/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140918K				SeqNo: 2941975		Prep Date: 9/17/2014		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1073 49 1018 0.164 105 75-125 0

MSD		Sample ID: 1409667-03A MSD				Units: mg/Kg		Analysis Date: 9/18/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_140918K				SeqNo: 2941974		Prep Date: 9/17/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.652 0.49 1.976 0.164 75.3 75-125 1.765 6.6 20

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates
Work Order: 1409663
Project: Chevron AC McLaughlin 22 Spill 9.11.14

QC BATCH REPORT

Batch ID: **R148385** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R148385				Units: % of sample		Analysis Date: 9/17/2014 10:18 AM		
Client ID:		Run ID: MOIST_140917A				SeqNo: 2940487		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: LCS-R148385				Units: % of sample		Analysis Date: 9/17/2014 10:18 AM		
Client ID:		Run ID: MOIST_140917A				SeqNo: 2940485		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1409631-02A DUP				Units: % of sample		Analysis Date: 9/17/2014 10:18 AM		
Client ID:		Run ID: MOIST_140917A				SeqNo: 2940456		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.32 0.050 0 0 0 0-0 12.48 6.51 20

DUP		Sample ID: 1409594-01A DUP				Units: % of sample		Analysis Date: 9/17/2014 10:18 AM		
Client ID:		Run ID: MOIST_140917A				SeqNo: 2940481		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 22.1 0.050 0 0 0 0-0 22.23 0.587 20

The following samples were analyzed in this batch:

1409663-01A	1409663-02A	1409663-03A
1409663-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Chain of Custody Form

Page 1 of 1

COC ID: 123456

- | | | |
|--|--|--|
| <input type="checkbox"/> Cincinnati, OH
+1 513 733 5336 | <input checked="" type="checkbox"/> Holland, MI
+1 616 399 6070 | <input type="checkbox"/> Salt Lake City, UT
+1 801 266 7700 |
| <input type="checkbox"/> Everett, WA
+1 425 356 2600 | <input type="checkbox"/> Houston, TX
+1 281 530 5656 | <input type="checkbox"/> Spring City, PA
+1 610 948 4903 |
| <input type="checkbox"/> Fort Collins, CO
+1 970 490 1511 | <input type="checkbox"/> Middletown, PA
+1 717 944 5541 | <input type="checkbox"/> York, PA
+1 717 505 5280 |

[illegible]

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **13-Sep-14 10:45**

Work Order: **1409663**

Received by: **DS**

Checklist completed by Andrea Gitchell
eSignature

15-Sep-14

Date

Reviewed by: Ann Preston
eSignature

16-Sep-14

Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): 3.0 c

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 9/15/2014 9:34:24 AM

Water - VOA vials have zero headspace? Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt? Yes ☐ No ☐ N/A ☒

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by:

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

ALS Environmental

Houston, Texas 77099

Phone: 281-530-5050

Project: 9

Client: Olen

Sample ID:

Date:

Time:

Analysis:

BO Prep'd on:

Preparative: Neat

ORIGIN
TIM DOW
OLSON
780 HOR

GRAND JUNCTION, CO 81506
UNITED STATES US

BILL SENDER

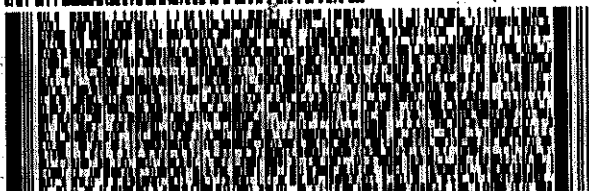
TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
3352 128TH AVE

HOLLAND MI 49424

(616) 399-8870

PO: 13.3287.100004

114121 005-288125



FedEx
Express



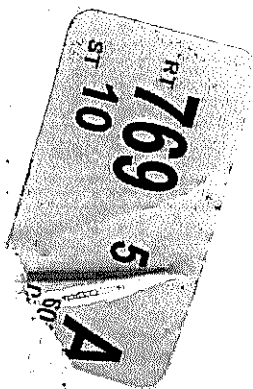
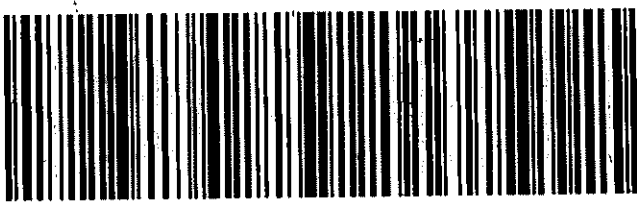
TRK# 5632 6808 6050
0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

X0 HLMA

49424
MI-US GRR

Part 4 100148-404 NRT 08-07





27-Oct-2017

Tim Dobransky
Olsson Associates
760 Horizon Drive
Suite 102
Grand Junction, CO 81506

Re: **Chevron AC McLaughlin 22 Spill**

Work Order: **17101039**

Dear Tim,

ALS Environmental received 6 samples on 14-Oct-2017 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 12.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
Work Order: 17101039

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
17101039-01	ACM22-SS1	Soil		10/11/2017 10:50	10/16/2017 10:00	<input type="checkbox"/>
17101039-02	ACM22-SS2	Soil		10/11/2017 11:00	10/16/2017 10:00	<input type="checkbox"/>
17101039-03	ACM22-SS3	Soil		10/11/2017 11:05	10/16/2017 10:00	<input type="checkbox"/>
17101039-04	ACM22-SS4	Soil		10/11/2017 11:15	10/16/2017 10:00	<input type="checkbox"/>
17101039-05	ACM22-SS5	Soil		10/11/2017 11:20	10/16/2017 10:00	<input type="checkbox"/>
17101039-06	ACM22-SS6	Soil		10/11/2017 11:30	10/16/2017 10:00	<input type="checkbox"/>

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
WorkOrder: 17101039

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

ALS Group, USA

Date: 27-Oct-17

Client: Olsson Associates

Project: Chevron AC McLaughlin 22 Spill

Sample ID: ACM22-SS1

Collection Date: 10/11/2017 10:50 AM

Work Order: 17101039

Lab ID: 17101039-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B /		Analyst: JB
					10/24/17		
Electrical Conductivity @ Saturation	3.4		0.028	0.25	mmhos/cm @25°	50	10/24/2017 13:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA**Date:** 27-Oct-17

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
Sample ID: ACM22-SS2
Collection Date: 10/11/2017 11:00 AM

Work Order: 17101039
Lab ID: 17101039-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: RH
Sodium Adsorption Ratio	0.56		0.010	0.010	none	1	10/24/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/24/17		Analyst: JF
Calcium	180		0.86	5.0	mg/L	10	10/24/2017 15:54
Magnesium	23		0.068	2.0	mg/L	10	10/24/2017 15:54
Sodium	30		0.34	2.0	mg/L	10	10/24/2017 15:54
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: JB
Electrical Conductivity @ Saturation	1.4		0.028	0.25	mmhos/cm @25°	50	10/24/2017 13:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA**Date:** 27-Oct-17

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
Sample ID: ACM22-SS3
Collection Date: 10/11/2017 11:05 AM

Work Order: 17101039
Lab ID: 17101039-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: RH
Sodium Adsorption Ratio	0.81		0.010	0.010	none	1	10/24/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/24/17		Analyst: JF
Calcium	150		0.86	5.0	mg/L	10	10/24/2017 15:56
Magnesium	30		0.068	2.0	mg/L	10	10/24/2017 15:56
Sodium	42		0.34	2.0	mg/L	10	10/24/2017 15:56
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: JB
Electrical Conductivity @ Saturation	1.3		0.028	0.25	mmhos/cm @25°	50	10/24/2017 13:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA**Date:** 27-Oct-17

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
Sample ID: ACM22-SS4
Collection Date: 10/11/2017 11:15 AM

Work Order: 17101039
Lab ID: 17101039-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: RH
Sodium Adsorption Ratio	0.67		0.010	0.010	none	1	10/24/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/24/17		Analyst: JF
Calcium	190		0.86	5.0	mg/L	10	10/24/2017 15:57
Magnesium	31		0.068	2.0	mg/L	10	10/24/2017 15:57
Sodium	38		0.34	2.0	mg/L	10	10/24/2017 15:57
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: JB
Electrical Conductivity @ Saturation	1.6		0.028	0.25	mmhos/cm @25°	50	10/24/2017 13:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA**Date:** 27-Oct-17

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
Sample ID: ACM22-SS5
Collection Date: 10/11/2017 11:20 AM

Work Order: 17101039
Lab ID: 17101039-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: RH
Sodium Adsorption Ratio	0.74		0.010	0.010	none	1	10/24/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/24/17		Analyst: JF
Calcium	150		0.86	5.0	mg/L	10	10/24/2017 15:59
Magnesium	33		0.068	2.0	mg/L	10	10/24/2017 15:59
Sodium	38		0.34	2.0	mg/L	10	10/24/2017 15:59
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: JB
Electrical Conductivity @ Saturation	1.3		0.028	0.25	mmhos/cm @25°	50	10/24/2017 13:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA**Date:** 27-Oct-17

Client: Olsson Associates
Project: Chevron AC McLaughlin 22 Spill
Sample ID: ACM22-SS6
Collection Date: 10/11/2017 11:30 AM

Work Order: 17101039
Lab ID: 17101039-06
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: RH
Sodium Adsorption Ratio	0.57		0.010	0.010	none	1	10/24/2017
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A		Prep: USDA Method 20B / 10/24/17		Analyst: JF
Calcium	320		0.86	5.0	mg/L	10	10/24/2017 16:00
Magnesium	50		0.068	2.0	mg/L	10	10/24/2017 16:00
Sodium	41		0.34	2.0	mg/L	10	10/24/2017 16:00
ELECTRICAL CONDUCTIVITY (SAR)							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 10/24/17		Analyst: JB
Electrical Conductivity @ Saturation	2.5		0.028	0.25	mmhos/cm @25°	50	10/24/2017 13:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Olsson Associates

QC BATCH REPORT

Work Order: 17101039

Project: Chevron AC McLaughlin 22 Spill

Batch ID: 109473

Instrument ID SAR

Method: USDA H60 Metho

DUP		Sample ID: 17101039-06ADUP				Units: none		Analysis Date: 10/24/2017		
Client ID: ACM22-SS6		Run ID: SAR_171024A				SeqNo: 4720222		Prep Date: 10/24/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.6033	0.010	0	0	0		0.5678	6.07	50	

The following samples were analyzed in this batch:

17101039-01A	17101039-02A	17101039-03A
17101039-04A	17101039-05A	17101039-06A

Batch ID: 109473

Instrument ID ICPMS3

Method: SW6020A

DUP		Sample ID: 17101039-06ADUP				Units: mg/L		Analysis Date: 10/24/2017 04:02 PM		
Client ID: ACM22-SS6		Run ID: ICPMS3_171024A				SeqNo: 4719664		Prep Date: 10/24/2017		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	360.2	5.0	0	0	0	0-0	315.7	13.2		
Magnesium	56.86	2.0	0	0	0	0-0	50.17	12.5		
Sodium	46.68	2.0	0	0	0	0-0	41.15	12.6		

The following samples were analyzed in this batch:

17101039-01A	17101039-02A	17101039-03A
17101039-04A	17101039-05A	17101039-06A

Batch ID: 109473

Instrument ID WETCHEM

Method: USDA H60 Metho

DUP		Sample ID: 17101039-06A DUP				Units: mmhos/cm @25°		Analysis Date: 10/24/2017 01:45 PM		
Client ID: ACM22-SS6		Run ID: WETCHEM_171024K				SeqNo: 4718148		Prep Date: 10/24/2017		DF: 50
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.665	0.25	0	0	0		2.465	7.8	50	

The following samples were analyzed in this batch:

17101039-01A	17101039-02A	17101039-03A
17101039-04A	17101039-05A	17101039-06A



Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 123456

☐ Cincinnati, OH
+1 513 723 6336

☐ Everett, WA
+1 425 358 2808

☐ Fort Collins, CO
+1 970 490 1511

☒ Holland, MI
+1 616 299 6878

☐ Houston, TX
+1 281 530 8868

☐ Middletown, PA
+1 717 844 8841

☐ Salt Lake City, UT
+1 801 266 7706

☐ Spring City, PA
+1 610 548 4903

☐ York, PA
+1 717 888 8330

ALS Project Manager:

Work Order #:

17101039

Customer Information		Project Information		Parameter/Method Request for Analysis													
Purchase Order		Project Name	Chevron AC McLaughlin 22 Spill	A TPH (GRO & DRO)													
Work Order		Project Number	013.3287.400.400004	B BTEX													
Company Name	Olsson Associates	Bill To Company	Olsson Associates	C PAH (See Attached List) CO Table 910													
Send Report To	Tim Dobransky	Invoice Attn.	Tim Dobransky	D Electrical Conductivity													
Address	780 Horizon Drive, Ste. 102	Address	780 Horizon Drive, Ste. 102	E Sodium Adsorption Ratio													
				F pH													
City/State/Zip	Grand Junction, CO 81508	City/State/Zip	Grand Junction, CO 81508	G Metals (See Attached List) CO Table 910													
Phone	970.263.7800	Phone	970.263.7800	H Arsenic Only													
Fax	970.263.7458	Fax	970.263.7458	I													
e-Mail Address	tdobransky@olssonassoc.com	e-Mail Address	tdobransky@olssonassoc.com	J													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	ACM22-SS1	10/11/17	1050	Soil	8	1				X							
2	ACM22-SS2	10/11/17	1100	Soil	8	1				X	X						
3	ACM22-SS3	10/11/17	1105	Soil	8	1				X	X						
4	ACM22-SS4	10/11/17	1115	Soil	8	1				X	X						
5	ACM22-SS5	10/11/17	1120	Soil	8	1				X	X						
6	ACM22-SS6	10/11/17	1130	Soil	8	1				X	X						
7																	

Sampler(s): Please Print & Sign Tim Dobransky		Shipment Method: FedEx		Required Turnaround Time: <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour		Results Due Date:	
Relinquished by:	Date: 10/17/17	Time: 1212	Received by:	Notes: Chevron Pricing Applies - Per Bruce Schlatter			
Relinquished by:	Date: 10-13-17	Time: 1820	Received by (Laboratory):	QC Package: (Check Box Below)			
Logged by (Laboratory):	Date: 10/16/17	Time: 1230	Checked by (Laboratory):	Cooler Temp: 48°C	<input checked="" type="checkbox"/> Level II: Standard QC		
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035				<input type="checkbox"/> Level III: Std QC + Raw Data			
				<input type="checkbox"/> Level IV: SW846 CLP-Like			
				Other:			

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **14-Oct-17 10:00**

Work Order: **17101039**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

16-Oct-17
Date

Reviewed by: Chad Whelton
eSignature

16-Oct-17
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.8/4.8 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>10/16/2017 12:58:22 PM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: